CITY OF PASADENA

CLASS 32 CATEGORICAL EXEMPTION EVALUATION REPORT

Heritage Square South Mixed-Use Development Project

710-738 N. Fair Oaks Avenue and 19-25 E. Orange Grove Boulevard, Pasadena, CA 91103

May 13, 2020

This Statement of Findings documents the eligibility of the City of Pasadena's proposed Heritage Square South Mixed-Use Development Project (Heritage Square South) for a Categorical Exemption from the California Environmental Quality Act (CEQA).

Project Description and Location

The Project Site consists of a 1.3-acre group of parcels located at the northeast corner of the intersection of North Fair Oaks Avenue and East Orange Grove Boulevard, in Pasadena, Los Angeles County, California. The Project Site is bound by North Fair Oaks Avenue to the west, East Orange Grove Boulevard to the south, Wheeler Alley to the east, and the Heritage Square North development (affordable senior multi-family housing) to the north. See **Figures 1** and **2** for the Regional Location Map and the Project Location Map.

Proposed Project

The Proposed Project is a mixed-use development consisting of commercial uses and affordable housing, with surface parking. The commercial portion of the Proposed Project would be located on the ground floor of the proposed mixed-use building and would include approximately 7,500 square feet of retail space.[1] The residential component of the Project would include 69 units of affordable senior housing plus one (1) manager's unit. The residential units would be located in two floors above the commercial space and in an adjacent three-story residential building on the Project Site. The residential component would be permanent supportive housing for homeless seniors. The Proposed Project would include a total of 44 on-site surface parking spaces, which would be accessed from a central driveway located between the Project Site and the Heritage Square North development immediately to the north. This driveway would allow ingress and egress onto Fair Oaks Avenue to the west and Wheeler Alley to the east. There would be an additional driveway to the south that would lead directly onto Orange Grove Boulevard.

The Proposed Project would not exceed three stories in height and would include design features such as elevation articulation and a mix of building materials to complement the Heritage Square North development immediately north of the Project Site.

[1] The proposed development concept includes 7,500 square feet of commercial space; however, the technical studies prepared for this Report are based on a prior iteration of the Project Description, which included a more intensive commercial use within the Project totaling 10,000 to 15,000 square feet of retail and restaurant space.

Construction of the Proposed Project is projected to begin in July 2022, with anticipated Project occupation in January 2024. Project construction, including demolition, site preparation, and construction, would result in approximately 25,200 cubic yards of soil export.

The Proposed Project would require the following discretionary approvals from the City of Pasadena:

- Development, Loan, and Lease Agreement
- Minor Conditional Use Permit (for Density Bonus) Approval
- Design Approval

Existing Conditions

The Project Site is owned by the City of Pasadena, following its purchase in 2004, and consists of vacant, previously disturbed lots, as well as an existing fast food restaurant (Church's Chicken) surrounded by a surface parking lot. The previously disturbed lots are characterized by gravel, bare soil, ruderal plants, and evidence of prior improvements, such as graded parcels and remnants of utilities. The center of the Project Site contains several mature trees varying in size, species, and health, including one heritage oak. As part of the Proposed Project, the heritage tree would be preserved in place, relocated to another location within the project site, or relocated just outside the northern boundary of the project site at the Heritage Square North senior apartments which is also owned and operated by the developer of the Proposed Project. If the oak tree is relocated, the City will monitor the tree's health for at least three years. If the tree does not survive relocation, it would be replaced in accordance with the City's tree replacement matrix (a minimum 2:1 replacement ratio). Alternatively, a replacement fee could be paid to the City for 50 percent of the replacement trees in accordance with the "Alternative to Replacement Matrix Requirements" provisions in the City Trees and Tree Protection Ordinance (Chapter 8.52 of the City's Municipal Code).

An approximately 6-foot-high chain-link fence runs along the Project Site's Wheeler Alley frontage, as well as along the northern and eastern parcel boundary of the fast food restaurant located on the southwest portion of the Project Site. The southeast corner of the Project Site, at the corner of East Orange Grove Boulevard and Wheeler Alley, is characterized by bare earth, ruderal groundcover, limited unmaintained landscaping, and an approximately 6-foot-high concrete block wall dividing it from the fast food restaurant to the west and the vacant lot to the north.

The Project Site is zoned to accommodate commercial and mixed-use development and is located within the Fair Oaks/Orange Grove Specific Plan (FGSP) area. This Specific Plan was adopted by the City in 2002 and limits development to a maximum of 40 units per acre and 40 feet in height.

The Project Site is surrounded by multi-family and single-family residential uses to the northeast, commercial uses to the southeast and south, commercial uses and vacant lots to the west, and affordable senior housing to the north (Heritage Square North).

Categorical Exemption

CEQA and the State CEQA Guidelines require the preparation of environmental documents to assess and report the environmental impacts of certain types of projects that could result in adverse effects on the environment. Pursuant to CEQA Section 21084, the CEQA Guidelines (Section 15300 et seq.) also define classes of projects that are found by the Secretary of the California Natural Resources Agency to not have a significant effect on the environment and thus

are declared to be categorically exempt from the requirement for the preparation of environmental documents. These types of projects are exempt from CEQA, provided that none of the exceptions to the use of categorical exemptions apply (CEQA Guidelines Section 15300.2).

Among the list of categorically exempt classes of projects is Class 32 In-Fill Development Projects, as defined in CEQA Guidelines Section 15332. Class 32 projects consist of those characterized as infill development meeting the following conditions identified in Section 15332:

> (a) the project is consistent with the applicable general plan designation and all applicable general plan policies as well as with applicable zoning designation and regulations;
>
> (b) the proposed development occurs within city limits on a project site of no more than five acres substantially surrounded by urban uses;
>
> (c) the project site has no habitat for endangered, rare, or threatened species;
>
> (d) approval of the project would not result in any significant effects relating to traffic, noise, air quality, or water quality; and
>
> (e) the site can be adequately served by all required utilities and public services.

The paragraphs below evaluate the Project's satisfaction of these criteria.

Consistency with General Plan Designation and Policies and Zoning Designation and Regulations

As discussed above, the Proposed Project would consist of a mixed-use structure with commercial/retail uses on the ground floor and two levels of affordable senior housing above, with an adjacent three-level multi-family residential building. The Project Site is included in the FGSP's Limited Commercial District 3, Subdistrict "a" and is designated in the General Plan as Medium Mixed-Use. According to the City of Pasadena Zoning Code Section 17.33.040, mixed-use projects, such as those proposed, are a permitted use within the FGSP zoning designation.

The Pasadena General Plan Land Use Element states that Medium Mixed-Use designations have a permissible floor area ratio (FAR) of up to 2.25:1 and residential density of up to 87 dwelling units per acre (du/ac). A FAR of 2.25:1 means that the Project Site could accommodate a 2.25-story structure over the entire buildable area of the Project Site or a 4.5-story structure over half of the buildable area of the Project Site. As conceptually designed, the Proposed Project would meet the 2.25:1 FAR standard, with proposed three-story mixed-use buildings covering approximately half of the site, with the remainder of the site to be devoted to parking and courtyard/landscaped areas. During the City's plan check and design review processes, the applicant must demonstrate that the Project would have a FAR of less than or equal to 2.25:1, as verified by the City's Planning staff. The Pasadena Zoning Code has specific development standards for projects within the FGSP Specific Plan Area, as discussed below.

The Project Site is classified as FGSP-C-3a in the Pasadena Zoning Code (Section 17.33.050.A). This zone has a maximum density of 40 du/ac. The Project proposes to construct 70 units of housing on 1.3 acres, which would result in a residential density of 50 to 54 du/ac. However, the Pasadena Zoning Code allows a density bonus of up to 35 percent as guided by Section 17.43.040. Because the Project would provide the requisite percentage of affordable housing units to qualify for the 35 percent density bonus, the allowed residential density on the Project Site would be 54 du/ac, or 70 units for the 1.3-acre Project Site. To qualify for the 35 percent residential density bonus, a project must include 11 percent very low-income units or 20 percent low-income units. As a 100

percent affordable housing project (with the exception of one resident manager unit), the Proposed Project includes 100 percent extremely low-income units. Therefore, the Project qualifies for the 35 percent residential density bonus. As noted above, the Proposed Project would include 70 residential units, which would be within the allowable density of 70 units with the 35 percent density bonus applied. The maximum building height in the FGSP-C-3a zone is 36 feet. As such, the Project would not exceed three stories and 36 feet in height (except for appurtenances meeting the requirements of PMC Section 17.40.060(D)(2)(b)).

Further, the General Plan vision for the FGSP area is to visually and physically unify the north and south ends of the area, which extends along Fair Oaks Avenue between Interstate 210 (I-210 or the Ventura Freeway) to the south and the City's boundary with Altadena (near Montana Street) to the north. Specifically, the General Plan's vision aims to remove planning and zoning barriers to new businesses and to protect residential neighborhoods. The General Plan states "the process of revitalization and development along this corridor will be anchored by a Neighborhood Village at the primary intersection of East Orange Grove Boulevard and North Fair Oaks Avenue."[2] Further, the General Plan states that the intersection that includes the Proposed Project would "accommodate additional local serving shops with housing and pedestrian-oriented amenities to serve nearby residential and institutional uses."[3] The Proposed Project, with neighborhood-serving commercial uses on the first floor, oriented toward the North Fair Oaks Avenue and East Orange Grove Boulevard intersection, along with the residential uses on the site, would provide the mix of commercial uses and housing in the General Plan's vision for this area. Therefore, the Project would be consistent with the FGSP's vision, as well as consistent with the Project Site's zoning and General Plan designations and all relevant General Plan policies and zoning regulations.

Consistency with the City of Pasadena Climate Action Plan

The Pasadena Climate Action Plan (CAP), adopted on March 5, 2018, is a strategic framework for measuring, planning, and reducing the City's share of GHG emissions and includes an ambitious goal of reducing emissions by more than half by the year 2035. The purpose of the Pasadena CAP is to analyze GHG emissions at a programmatic-level, outline a strategy to reduce and mitigate municipal and community-wide GHG emissions, demonstrate Pasadena's commitment to achieving the state-wide emissions reduction targets, and serve as a qualified GHG reduction plan consistent with CEQA Guidelines Section 15183.5.

To determine whether new development projects are consistent with the Pasadena CAP, and to ensure that projects are contributing to GHG reductions, the Pasadena CAP Consistency Checklist (Checklist) is used for discretionary projects subject to and not exempt from CEQA. Projects seeking a Class 32 Categorical Exemption from CEQA are also required to demonstrate consistency with the CAP.

The Project's consistency with the Pasadena CAP is analyzed in accordance with Steps 1 through 3 of the Pasadena CAP Consistency Checklist. Step 1 of the Checklist requires the completion of a Master Land Use Application Form. Step 2 of the Checklist requires demonstrating consistency with the Land Use Element of the City of Pasadena General Plan (General Plan), adopted August 18, 2015. Step 3 of the Checklist requires that the Project demonstrate consistency with one of three options: Option A (Sustainable Development Actions), Option B (GHG Efficiency), and/or Option C (Net Zero GHG Emissions). For the purpose of this project, consistency with Option A is utilized. Option A requires implementation of sustainable development actions, as deemed

[2] City of Pasadena, General Plan Land Use Element, Section 1, Page 34, 2016.

[3] City of Pasadena, General Plan Land Use Element, Section 1, Page 34, 2016.

appropriate by the Pasadena CAP, which would become conditions of the entitlement for approval of a project.

Step 1: Complete a Master Land Use Application Form

In compliance with Step 1, the Project Applicant is required to submit a Master Land Use Application Form to the City following City Council approval of the development agreement and loan agreement. As such, compliance with this requirement would ensure that the Proposed Project would be compliant with Checklist Step 1.

Step 2: Demonstrate Consistency with the Land Use Element of the General Plan

As discussed above in the General Plan Consistency section, the Proposed Project would be consistent with the Fair Oaks/Orange Grove Specific Plan (FGSP), the Project Site's zoning and General Plan designations, and all relevant General Plan policies and zoning regulations. Therefore, the proposed Project is compliant with Checklist Step 2.

Step 3: Demonstrate Consistency with Pasadena's CAP

As discussed above, Option A (Sustainable Development Actions) has been chosen to demonstrate consistency with the Pasadena CAP.

Mandatory Actions

In accordance with Checklist Option A, the City requires a project to implement the Mandatory Actions shown in **Table 1: Pasadena CAP Mandatory Actions**, to be considered consistent with the Pasadena CAP.

Table 1: Pasadena CAP Mandatory Actions

GHG Reduction Strategy	Sustainable Development Actions
T-1.2: Continue to improve bicycle and pedestrian safety	**Bicycle Storage:** Does the project provide bicycle storage lockers, racks, or other bicycle storage facilities for residents/employees?
T-3.1: Decrease annual commuter miles traveled by single occupancy vehicles	**Transportation Demand Management (TDM):** Does the project include a TDM plan? A TDM plan is required for the following projects: multifamily residential development that are 100 or more units; mixed-use developments with 50 or more residential units or 50,000 square feet or more of non-residential development; or non-residential projects which exceed 75,000 square feet.
T-4.1: Expand the availability and use of alternative fuel vehicles and fueling infrastructure	**Alternative Vehicle Fueling Wiring:** For projects with more than three parking spaces, does the project provide wiring for at least one 240V Type II electric car charger?
E-1.2: Encourage the use of energy conservation devices and passive design concepts that make use of the natural climate to increase energy efficiency	**Passive Design Features:** Does the project utilize passive design techniques such as awnings or overhangs on the east, west, and south facing windows which block the high summer sun but allow in lower winter sun?
WC-1.1: Reduce potable water usage throughout Pasadena	**Irrigation Efficiency:** Will the project utilize drought tolerant landscaping and/or drip irrigation and/or weather controllers to reduce outdoor water use?
WR-1.1: Continue to reduce solid waste and landfill GHG emissions	**Facilitate Recycling:** Does the project include a space for separate trash and recycling bins as well as provide informational signage/handouts for residents/employees outlining materials to be recycled?

Source: City of Pasadena, *Pasadena Climate Action Plan Appendix D, Climate Action Plan Consistency Checklist*, adopted March 5, 2018.

The Proposed Project would include the following sustainable design features that would satisfy the Mandatory Actions shown in **Table 1**:

- **T-1.2:** Bicycle Storage – In accordance with the City's development standards, the Proposed Project would include bicycle parking for residents and employees (PMC 17.46.320).
- **T-3.1:** Travel Demand Management (TDM) Plan – In accordance with PMC Section 17.46.290, Trip Reduction Requirements for Residential and Nonresidential, mixed-use projects with 50 units or more must submit a TDM Program Plan as required by Chapter 10.64 of the PMC. Therefore, as a mixed-use project with 65-70 units, the Proposed Project would be required by Code to include a TDM plan and would, thereby, satisfy this action.
- **T-4.1:** Alternative Vehicle Fueling Wiring – In accordance with Section 4.106.4.2 of the 2019 California Green Building Code (CalGreen), for new multifamily dwelling projects, "If residential parking is available, ten (10) percent of the total number of parking spaces on a building site, provided for all types of parking facilities, shall be electric vehicle charging spaces (EV spaces) capable of supporting future [electric vehicle supply equipment]." Therefore, by complying with the CalGreen code, the Proposed Project would satisfy this action.
- **E-1.2:** Passive Design Features – The Proposed Project will be designed with the sun orientation in mind, creating opportunities for natural light and ventilation with window location, operability and shading orientation.
- **WC-1.1:** Drought-Tolerant Landscaping – In accordance with the City's development code, the Proposed Project would include drought tolerant landscaping and weather controllers to reduce outdoor water use (PMC 17.44.050).
- **WR-1.1:** Facilitate Recycling – In accordance with PMC Section 17.40.120 - Refuse Storage Facilities, the Proposed Project is required to include a space for separate trash and recycling bins. Additionally, the solid waste collector would provide informational handouts to its customers every six months (PMC 8.61.175). Therefore, by complying with the Municipal Code, the Proposed Project would satisfy this action.

Selective Actions

In addition to the Mandatory Actions outlined in **Table 1**, the Project would also be required to implement Selective Actions consistent with Checklist Option A. Selective Actions are classified into five categories: Energy Efficiency and Conservation, Sustainable Mobility and Land Use, Water Conservation, Waste Reduction, and Urban Greening. Examples of Selective Actions include renewable energy, bike and car sharing, rainwater capture and reuse, on-site composting, and public greenspace, among others.

In accordance with Checklist Option A, the Project would be required to include, at a minimum, the following Selective Actions:

- One additional action in the Energy Efficiency and Conservation category;
- One additional action in the Sustainable Mobility and Land Use category; and
- Three additional actions from any category.

The potential Selective Actions from Checklist Option A are shown in **Table 2: Pasadena CAP Selective Actions.**

Table 2: Pasadena CAP Selective Actions

GHG Reduction Strategy	Sustainable Development Actions
ENERGY EFFICIENCY AND CONSERVATION	
E-1.1: Increase energy efficiency requirements of new buildings to perform better than the 2016 Title 24 Standards	**Zero-Net Energy (ZNE):** Does the project generate 100% of electricity required on site?
	Energy Efficiency (Exceed 2016 Title 24): Does the project exceed the 2016 Title 24 Efficiency Standards by at least 5%?
E-4.1: Increase city-wide use of carbon neutral energy by encouraging and/or supporting carbon-neutral technologies	**Renewable Energy:** Does the project generate at least 60% of the building's projected electricity needs through renewable energy?
SUSTAINABLE MOBILITY AND LAND USE	
T-1.1: Continue to expand Pasadena's bicycle and pedestrian network	**End-of-Trip Bicycle Facilities (Commercial Development):** Does the project provide at least one shower for every 50 employees?
	Bike Share: Does the project include a bike share station? Please include these specifications on the project plans.
T-3.1: Decrease annual commuter miles traveled by single occupancy vehicles.	**Car Sharing:** Does the project provide/facilitate car sharing by providing a designated car share space on or within the immediate vicinity of the project site? Examples of car share options include ZipCar, PitCarz, and Getaround. Please include these specifications on the project plans
	Parking De-Coupling: Does the project separate the cost of parking from the cost of commercial space and/or residential housing by charging for each individually? Please include these specifications on the project plans
	Transportation Demand Management (TDM): Does the project include a TDM plan? Please submit the TDM plan for review (Note: this measure cannot be combined with the mandatory measure that requires a TDM plan for projects that meet certain size thresholds.)
T-4.1: Expand the availability and use of alternative fuel vehicles and fueling infrastructure.	**Alternative Vehicle Fueling Infrastructure:** Does the proposed project include functioning 240V Type II electric car chargers at 3% of parking spaces (at least one charger) AND conduit to allow for future charger installation to 25% of spaces?
T-5.1: Facilitate high density, mixed-use, transit-oriented, and infill development.	**Transit Oriented Development:** Is the project located within 0.25 mile of a major transit stop as defined in the Zoning Code. Please include a map outlining the nearest transit stop.
T-6.1: Reduce GHG emissions from heavy duty construction equipment and vehicles.	**Reduce GHG emissions from heavy-construction equipment:** Will the project utilize at least 30% alternative fueled construction equipment (by pieces of equipment) and implement an equipment idling limit of 3 minutes? Please provide idling limit plan including implementation strategies along with the total pieces of equipment and those utilizing alternative fuels.
WATER CONSERVATION	
WC-1.1: Reduce potable water use throughout Pasadena.	**Indoor Water Efficiency:** Will the project achieve at least a 35% reduction in indoor water use per the LEED V4 Indoor Water Use Reduction Calculator? Please attach the calculator output.
WC-2.1: Increase access to and use of non-potable water.	**Rainwater Capture and Reuse:** Does the project utilize a rainwater capture and reuse system to reduce the amount of potable water consumed on site? Please include these specifications on the project plans.
	Indoor & Outdoor Recycled Water: Will the project be plumbed to utilize recycled water for either indoor or outdoor water use? Please include these specifications on the project plans.
	Greywater: Will the project be plumbed to take advantage of greywater produced on site such as a laundry to landscape system or another on-site water reuse system? Please include these specifications on the project plans.

GHG Reduction Strategy	Sustainable Development Actions
WC-3.1: Improve storm water to slow, sink, and treat water run-off, recharge groundwater, and improve water quality.	**Permeable Surfaces:** Is at least 30% of the hardscape (e.g., surface parking lots, walkways, patios, etc.) permeable to allow infiltration? Please include these specifications on the project plans.
	Stormwater Capture: Is the project designed to retain stormwater resulting from the 95th percentile, 24 hour rain event as defined by the Los Angeles County 95th percentile precipitation isohyetal map?
WASTE REDUCTION	
WR-1.1: Continue to reduce solid waste and landfill GHG emissions.	**Recycled Materials:** Does the project utilize building materials and furnishings with at least 50% (pre- or post-consumer) recycled content or products which are designed for reuse? At a minimum, projects must show at least 10% of the material by cost meets the recycled content requirement? Please submit the plan for review.
WR-3.1: Implement a city-wide composting program to limit the amount of organic material entering landfills.	**On-Site Composting:** Does the project include an area specifically designated for on-site composting? Please include these specifications on the project plans.
URBAN GREENING	
UG-1.1: Continue to preserve, enhance, and acquire additional green space throughout Pasadena to improve carbon sequestration, reduce the urban heat-island effect, and increase opportunities for active recreation.	**Greenspace:** Does the project include at least 500 sq. ft. of public use greenspace (landscaped yards, parklets, rooftop garden, etc.)? At a minimum, 50% of the required greenspace must include softscape landscaping (e.g., trees, plants, grass, etc.).
UG-2.1: Continue to protect existing trees and plant new ones to improve and ensure viability of Pasadena's urban forest	**Trees:** Does the project result in a net gain of trees? Please include these specifications on the project plans.

Source: City of Pasadena, *Pasadena Climate Action Plan Appendix D, Climate Action Plan Consistency Checklist*, adopted March 5, 2018.

The Proposed Project would incorporate the following five sustainable design features that would satisfy the Selective Actions criterion discussed above for Checklist Option A:

Energy Efficiency and Conservation

- **E-4.1**: Renewable Energy – The Proposed Project will install a roof top Photo Voltaic system which will offset at least 60% of the buildings electricity needs.

Sustainable Mobility and Land Use

- **T-5.1:** Transit Oriented Development – Section of the State CEQA Guidelines defines a major transit stop as "a site containing an existing rail transit station, a ferry terminal served by either a bus or rail transit service, or the intersection of two or more major bus routes with a frequency of service interval of 15 minutes or less during the morning and afternoon peak commute periods." Public transit service within the project study area is currently provided by LA Metro and Pasadena Transit (PT). The locations of public transit stops near the project are summarized as follows:

  - Fair Oaks Ave at Orange Grove Blvd, northeast corner: PT 20, 51, 52; Metro 260
  - Fair Oaks Ave at Orange Grove Blvd, southwest corner: PT 51, 52; Metro 260
  - Fair Oaks Ave at Raymond Ave, southwest corner: PT 20
  - Fair Oaks Ave at Mountain St, northeast corner: PT 20; Metro 260
  - Fair Oaks Ave at Mountain St, southwest corner PT 20, 51; Metro 260

  Given the proximity of multiple transit stops and transit lines, including transit lines with 15 minute or less service intervals during the peak hours, the Proposed Project satisfies this action.

Water Conservation

- **WC-2.1:** Rainwater Capture and Reuse – The Proposed Project will include a landscape irrigation system with an efficient rain capture and reuse feature that will include a rain sensor mounted to the irrigation controller station.

Waste Reduction

- **WR-1.1:** Recycled Materials - The project will utilize construction materials that have recycled content, achieving a minimum of 10% of total construction costs attributable to products made with recycled content. Products will include high fly ash content concrete and carpet products made from recycled material.

Urban Greening

- **UG-2.1**: Trees – The project will preserve the existing California Oak tree located in the center of the Project Site, preserving it in place, or relocating it within the Project Site or the Heritage Square North site. As stated above, if the tree does not survive relocation, replacement trees would be planted on-site in accordance with Pasadena Municipal Code Chapter 8.52. The Project will also provide a minimum of four additional trees to provide adequate shading within the common area onsite.

As discussed above, the proposed project includes sustainable design features that would satisfy the requirements for Pasadena CAP Consistency Checklist Option A. As part of the City's normal design review and plan check process, the City will verify that final Project design plans comply with the Mandatory Actions and Selective Actions identified above. As such, the Project would be consistent with the Pasadena CAP.

Project Location within City Limits on a Site no more than 5 Acres Substantially Surrounded by Urban Uses

The Project Site is in an urbanized and developed area of the City of Pasadena. The approximately 1.3-acre site is surrounded by multi-family residential to the northeast across Wheeler Alley; commercial uses to the southeast, south, and southwest across Fair Oaks Avenue and Orange Grove Boulevard; a vacant parcel to the west across Fair Oaks Avenue; and affordable senior housing immediately to the north (Heritage Square North). As such, the Project Site is within the Pasadena City limits, located on a site that is less than 5 acres in size, and is substantially surrounded by urban land uses. Therefore, the Project is consistent with this condition.

Habitat for Endangered, Rare, or Threatened Species

As stated above, the Project Site does not contain any habitat that is biologically sensitive as it is already developed or has been disturbed by previous development. Further, the Project Site is located in a highly urbanized area and is completely surrounded by development. Vacant areas on the Project Site have been previously disturbed and are characterized by gravel, bare earth, ruderal groundcover, and unmaintained non-native landscaping. One heritage oak tree is located in the center of the Project Site; however, as part of the Proposed Project, this tree would be preserved in place, relocated to another location within the project site, or relocated just outside the northern boundary of the project site at the Heritage Square North senior apartments which is also owned and operated by the developer of the Proposed Project. The California Department of Fish and Wildlife's California Natural Diversity Database (CNDDB) shows that there

have been endangered, rare, or threatened species identified in the Pasadena Quadrangle (where the Project would be located).[4] However, the Project Site does not contain any Critical Habitat, as delineated by the US Fish and Wildlife Service, nor does it contain the habitat necessary to support any of the listed species. Further, the Project Site is not identified by the City of Pasadena as a biologically sensitive area, nor does it contain any wetland or riparian habitat as identified by the National Wetlands Inventory.[5]

Therefore, because Project-related demolition and construction activities would take place on a site that has been disturbed by existing commercial uses and past construction activities, and because the Project Site is located within a fully urbanized environment that is surrounded by disturbed areas (such as a sidewalks, residential homes, commercial uses, overhead powerlines and streetlights, and major arterial streets), implementation of the Proposed Project would not result in loss of habitat utilized by endangered, rare, or threatened species.

Effects Relating to Traffic, Noise, Air Quality, or Water Quality

Traffic

The analysis provided in this section is derived from the Transportation Impact Analysis prepared for the Proposed Project by the City of Pasadena's Department of Transportation, available as **Appendix A** of this report.[6] As stated above, the Proposed Project is bound by Fair Oaks Avenue to the west, Orange Grove Boulevard to the south, Wheeler Alley to the east, and an existing senior housing development (Heritage Square North) to the north. Fair Oaks Avenue is a north/south City Connector with two through travel lanes in each direction and turn lanes at key intersections. It has a speed limit of 30 miles per hour (mph) and is classified as Commercial – Suburban within the Project vicinity in the City's Street Design Guide. Time-limited parking signage is found along the Project's street frontage. Primary access to the Project Site would be along Fair Oaks Avenue. Wheeler Alley is a 20-foot wide alley with no curb, gutter, or sidewalk. Secondary access to the Project Site would be available via Wheeler Alley. Orange Grove Boulevard is a City Connector with two lanes in each direction. No parking is allowed adjacent to the Project along this street. Orange Grove Boulevard has a posted speed limit of 35 mph. For this analysis, Orange Grove Boulevard is evaluated as Commercial – Suburban within the Project vicinity.

Project analyses are based on the City of Pasadena's Transportation Impact Analysis Guidelines. Proposed projects are analyzed using the City's calibrated travel demand forecasting model (TDF) built on Southern California Association of Governments' (SCAG) regional model. The City's TDF model uses TransCAD software to simulate traffic levels and travel patterns for the City of Pasadena. The program consists of input files that summarize the City's land uses, street network, travel characteristics, and other key factors. Using this data, the model performs a series of calculations to determine the number of trips generated, the beginning and ending location of each trip, and the route taken by the trip. To be deemed accurate for project transportation impact on the transportation system, a model must be calibrated to a year in which actual land use data and traffic volumes are available and well documented. The Pasadena TDF has been

[4] California Department of Fish and Wildlife, CNDDB Quad Species List, Pasadena Quadrangle, accessed March 16, 2020..

[5] City of Pasadena, General Plan Update Draft EIR, Figure 5.3-2, 2015; US Fish and Wildlife Service, National Wetlands Inventory, Wetlands Mapper, accessed March 16, 2020.

[6] City of Pasadena, Transportation Impact Analysis, Heritage Square South, CEQA Evaluation, February 5, 2020.

calibrated to 2013 base year conditions using actual traffic counts, Census data, and land use data compiled by City staff with land uses' associated population and job increase estimates.

Projects with proposed land uses that are consistent with the General Plan and complementary to their surrounding land uses are expected to reduce the trip length associated with adjacent land uses and/or increase the service population access to pedestrians, bike, and transit facilities if the project is within a quarter mile of those facilities.

The City of Pasadena has five metrics with impact thresholds that determine significance pursuant to CEQA. These thresholds of significance are displayed in **Table 3**, below, and are further described in the included Transportation Impact Analysis prepared for the Proposed Project.

Table 3

City of Pasadena CEQA Thresholds of Significance

Metric	Description	Impact Threshold
1. VMT (vehicle miles traveled) Per Capita	VMT in the City of Pasadena per service population (population + jobs).	CEQA Threshold: An increase over existing Citywide VMT per capita of 22.6.
2. VT (vehicle trips) Per Capita	VT in the City of Pasadena per service population (population + jobs).	CEQA Threshold: An increase over existing Citywide VT per capita of 2.8.
3. Proximity and Quality of Bicycle Network	Percent of service population (population + jobs) within a quarter mile of bicycle facility types.	CEQA Threshold: Any decrease in existing citywide 31.7% of service population (population + jobs) within a quarter mile of Level 1 & 2 bike facilities.
4. Proximity and Quality of Transit Network	Percent of service population (population + jobs) located within a quarter mile of transit facility types.	CEQA Threshold: Any decrease in existing citywide 66.6% of service population (population + jobs) within a quarter mile of Level 1 & 2 transit facilities.
5. Pedestrian Accessibility	The Pedestrian Accessibility Score uses the mix of destinations and a network-based walk shed to evaluate walkability.	CEQA Threshold: Any decrease in the Citywide Pedestrian Accessibility Score.

Source: City of Pasadena, Transportation Impact Analysis, Heritage Square South, CEQA Evaluation, February 5, 2020

Based on the Project's vehicular and non-vehicular trip-generating characteristics, trip length, and its interaction with other surrounding/Citywide land uses, as well as the City's transportation network, the Project would not exceed any adopted CEQA thresholds of significance, as shown in **Table 4**, below.

Table 4

Transportation Performance Metrics Summary and Significance Determination

Transportation Performance Metrics	Significant Impact Cap (Existing)	Incremental Change (Existing + Project)	Significant Impact?
VMT Per Capita	>22.6	7.2	No

VT Per Capita	>2.8	1.5	No
Proximity and Quality of Bicycle Network	<31.7%	31.8	No
Proximity and Quality of Transit Network	<66.6%	66.7	No
Pedestrian Accessibility	<3.9	3.9	No

Notes: VMT = Vehicle Miles Traveled, VT = Vehicle Trips
Source: City of Pasadena, Transportation Impact Analysis, Heritage Square South, CEQA Evaluation, February 5, 2020

Therefore, the analysis conducted by the City of Pasadena's Department of Transportation determined that demolition of existing structures and the construction of the Project at the northeast corner of Fair Oaks Avenue and Orange Grove Boulevard would not exceed any of the CEQA thresholds outlined in the City's guidelines. As such, impacts would be less than significant, and no mitigation measures are required.

Noise

The analysis in the following paragraphs is a summary of the Noise Technical Memorandum prepared for the Proposed Project, available as **Appendix B** of this report.[7] The Project would generate noise as part of Project construction and operation. Construction activities would occur over approximately 16 months and would include the following phases: demolition, grading, building construction, and architectural coating. Project construction would require a variety of equipment, including concrete/industrial saws, rubber-tired dozers, and tractors/loaders/backhoes during demolition; graders, rubber-tired dozers, loaders, and tractors/loaders/backhoes during grading; cranes, forklifts, generator sets, tractors/loaders/backhoes, and welders during building construction; and air compressors during architectural coatings. Sensitive receptors surrounding the Project Site include residences to the east, west, and north, which may be exposed to elevated noise levels during Project construction. However, the Project would adhere to the City's Noise Ordinance governing hours of construction, prescribed noise levels generated by construction and mechanical equipment, and the allowed level of ambient noise (Municipal Code Chapter 9.36). In accordance with these regulations, construction noise would be limited to normal working hours (7:00 a.m. to 7:00 p.m. Monday through Friday, 8:00 a.m. to 5:00 p.m. on Saturday, in or within 500 feet of a residential area; construction activities are not allowed on Sundays or holidays). Municipal Code Section 9.36.080, Construction Equipment, prohibits operation of any powered construction equipment if the operation of such equipment emits noise at a level in excess of 85 dBA when measured within a radius of 100 feet from such equipment. Due to geometric spreading, these noise levels would diminish with distance from the construction site at a rate of approximately 6 dBA per doubling of distance. As shown in the Noise Technical Memorandum prepared for this Project, the loudest piece of equipment associated with Project construction (a concrete saw) would operate at a maximum noise level of 84 dBA at 100 feet from the source. Therefore, construction noise levels would not exceed the City's Noise Ordinance threshold of 85 dBA at 100 feet and the impact associated with construction noise would be considered less than significant.

With respect to Project operation, the Project would generate vehicle traffic, which would incrementally add to the existing mobile traffic noise along Fair Oaks Avenue and Orange Grove Boulevard. The Project would generate a maximum of 543 daily trips, including 37 a.m. peak hour trips and 47 p.m. peak hour trips, and the average daily trips (ADT) on roadways surrounding the

[7] Michael Baker International, Heritage Square South Project – Noise Technical Memorandum, March 31, 2020.

Project Site range from 12,000 to 25,000 ADT.[8] Assuming all Project-generated daily trips occurred on the roadway with lowest average daily trips of 12,000, the Proposed Project would increase the daily trips in the Project vicinity by 4.5 percent. The California Department of Transportation (Caltrans) states that a doubling of traffic (100 percent increase) on a roadway would be required to result in a perceptible increase in traffic noise levels (approximately 3 dBA).[9] Therefore, the Project's 4.5 percent increase in daily traffic compared to existing traffic conditions on the surrounding roadways would be much less than the 100 percent increase required to result in a perceptible increase in traffic noise. Thus, the Project would result in a less than significant impact in this regard.

The Project would also generate stationary noise, such as noise generated by the operation of mechanical equipment, parking lot activities, and outdoor areas. The Noise Technical Memorandum prepared for this Project states that noise generated by heating, ventilation, and air conditioning equipment would be 49 dBA at the nearest sensitive receptor and would not exceed the City's 70 dBA CNEL normally acceptable exterior noise compatibility standard for residential uses. Further, the Noise Technical Memorandum found that parking lot activities can result in noise levels up to 61 dBA at a distance of 50 feet. Noise resulting from parking lot activities would be lower than the existing ambient noise levels (between 61.2 and 61.8 dBA Ldn) in the Project vicinity. Therefore, these noise levels would not exceed the City's 70 dBA CNEL normally acceptable exterior noise compatibility standard for residential uses. Finally, outdoor gathering areas have potential to generate noise from large groups of people; however, the Noise Technical Memorandum calculated that crowd noise would be reduced to approximately 28.8 dBA at the nearest sensitive receptor to the Project's outdoor gathering space due to the distance between the Project Site and the nearest sensitive receptor. As such, operation of the Project would not generate noise levels that would exceed the City's noise standards at the closest sensitive receptors.

Lastly, Project construction can generate varying degrees of groundborne vibration, depending on the construction procedure and the construction equipment used. Operation of some heavy-duty construction equipment generates vibrations that spread through the ground and diminish in amplitude with distance from the source; however, these vibrations can have effects on nearby structures. Using Federal Transit Administration data, the Noise Technical Memorandum prepared for the Project determined that vibration velocities from typical heavy construction equipment operations would range from 0.003 to 0.089 inch/second peak particle velocity (PPV) at 25 feet from the source of activity. The nearest structures are commercial and residential buildings located to the east of the Project Site. The Project would not utilize heavy-duty construction equipment with noticeable vibration levels (e.g., vibratory rollers, jackhammers, pile drivers) near off-site uses or nearby structures. Caltrans identifies a PPV of 0.2 inches/second as the threshold at which there is a risk of architectural damage to normal dwellings (houses with plastered walls and ceilings); structures built of more substantial construction (e.g., masonry, reinforced concrete, steel) have higher thresholds.[10] Continuous or frequent intermittent vibration levels less than 0.2 PPV pose virtually no risk of architectural damage to normal buildings. As such, because

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8 City of Pasadena, Transportation Impact Analysis, Outside of CEQA Evaluation, Heritage Square South Project, February 5, 2020.

9 California Department of Transportation, Technical Noise Supplement to the Traffic Noise Analysis Protocol, September 2013.

10 California Department of Transportation, Transportation and Construction Vibration Manual, 2013.

construction activities would not be capable of exceeding the 0.2 inch/second PPV significance threshold for vibration, impacts would be less than significant.

For the above-described reasons, and because the Project is not located in the vicinity of a public or private airstrip or located within an airport land use plan, the Project would have a less than significant impact related to noise and groundborne vibration impacts.

Air Quality

The analysis in the following paragraphs summarizes the Air Quality Technical Memorandum prepared for the Proposed Project, available as **Appendix C** of this Report.[11] The Project is located within the South Coast Air Basin (Basin). The South Coast Air Quality Management District (SCAQMD) has jurisdiction in the Basin, which has a history of recorded air quality violations and is an area where both state and Federal ambient air quality standards are exceeded. In order to reduce emissions, the SCAQMD adopted the 2016 Air Quality Management Plan (AQMP) which establishes a program of rules and regulations directed at reducing air pollutant emissions and achieving State and Federal air quality standards. The 2016 AQMP pollutant control strategies are based on the latest scientific and technical information and planning assumptions, including the 2016-2040 Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS) produced by the Southern California Association of Governments (SCAG), updated emission inventory methodologies for various source categories, and SCAG's latest growth forecasts. SCAG's latest growth forecasts were defined in consultation with local governments and with reference to local general plans. The SCAQMD considers projects that are consistent with the AQMP to have a less than significant cumulative air quality impacts.

The SCAQMD established two criteria for determining consistency with the AQMP. The first criterion considers whether a project would result in an increase in the frequency or severity of existing air quality violations, cause or contribute to new violations, or delay attainment of air quality standards. The second criterion considers whether a project would be consistent with the population, housing, and employment growth projections utilized by the AQMP. For determining consistency with AQMP consistency criterion 1, **Table 5** and **Table 6,** below, show Project-related emissions for construction and operation, as well as the SCAQMD thresholds for determining a significant impact.

In the short term, Project-related emissions would be generated by construction equipment, fugitive dust, worker vehicle exhaust, and applications of asphalt and surface coatings. In accordance with the SCAQMD Guidelines, the Air Quality Technical Memorandum utilized CalEEMod to model construction emissions for ROG, NO_X, CO, SO_X, PM_{10}, and $PM_{2.5}$, which are shown in **Table 5**, below.

Table 5

Project Construction Emissions

Emissions Source	Pollutant (pounds/day)[1]					
	ROG[2]	NO_X	CO	SO_2	PM_{10}	$PM_{2.5}$
Year 1						
Construction Related Emissions[3]	2.13	30.62	15.70	0.06	3.61	1.89
Year 2						

[11] Michael Baker International, Heritage Square South Project – Air Quality Technical Memorandum, March 31, 2020.

Construction Related Emissions[3]	8.01	15.37	17.59	0.04	1.65	0.92
SCAQMD Thresholds	*75*	*100*	*550*	*150*	*150*	*55*
Is Threshold Exceeded?	***No***	***No***	***No***	***No***	***No***	***No***

ROG = reactive organic gases; NO_X = nitrogen oxides; CO = carbon monoxide; SO_X = sulfur oxides; PM_{10} = particulate matter up to 10 microns; $PM_{2.5}$ = particulate matter up to 2.5 microns.

Notes:

1. Emissions were calculated using CalEEMod, version 2016.3.2.
2. In addition to gaseous and particulate emissions, the application of asphalt and surface coatings creates ROG emissions, which are O_3 precursors. As required, all architectural coatings for the proposed project structures would comply with SCAQMD Regulation XI, Rule 1113 – Architectural Coating. Rule 1113 provides specifications on painting practices as well as regulating the ROG content of paint.
3. Modeling assumptions include compliance with SCAQMD Rule 403 which requires the following: properly maintain mobile and other construction equipment; replace ground cover in disturbed areas quickly; water exposed surfaces three times daily; cover stock piles with tarps; water all haul roads twice daily; and limit speeds on unpaved roads to 15 miles per hour.

Source: Refer to Appendix A, *Air Quality Emissions Data*, of the Air Quality Technical Memorandum (see Appendix C) prepared for this Project for detailed model input/output data.

As indicated in **Table 5**, above, criteria pollutant emissions during construction of the Proposed Project would not exceed the SCAQMD significance thresholds. Thus, total construction-related air emissions would be less than significant.

Long-term emissions would be generated by the Proposed Project via mobile source emissions (i.e., motor vehicles), energy emissions (e.g., electricity and natural gas usage), and area source emissions (e.g., consumer products, architectural coatings, and landscaping equipment). Operational pollutant emissions are shown in **Table 6**, below.

Table 6

Long-Term Operational Air Emissions

Emissions Source	Pollutant (lbs/day)[1]					
	ROG	**NO_X**	**CO**	**SO_X**	**PM_{10}**	**$PM_{2.5}$**
Existing Conditions Summer Emissions[2]						
Area Source Emissions	0.03	<0.01	<0.01	0.00	<0.01	<0.01
Energy Emissions	0.01	0.07	0.06	<0.01	0.01	0.01
Mobile Emissions[3]	0.45	2.25	5.65	0.02	1.75	0.48
Total Emissions[4]	**0.48**	**2.32**	**5.71**	**0.02**	**1.75**	**0.48**
Proposed Project Summer Emissions[2]						
Area Source Emissions	2.13	1.11	6.23	<0.01	0.12	0.12
Energy Emissions	0.07	0.66	0.47	<0.01	0.05	0.05
Mobile Emissions[3]	1.41	7.21	18.75	0.07	5.90	1.61
Total Emissions[4]	**3.61**	**8.98**	**25.46**	**0.08**	**6.07**	**1.78**
Net Increase of Total Emissions[4]	**3.13**	**6.65**	**19.75**	**0.06**	**4.31**	**1.30**
SCAQMD Threshold	*55*	*55*	*550*	*150*	*150*	*55*
Is Threshold Exceeded?	***No***	***No***	***No***	***No***	***No***	***No***

Notes:

1. Emissions were calculated using CalEEMod, version 2016.3.2.
2. Summer emissions represent the worst-case scenario for long-term operational emissions; refer to Appendix C of this report.
3. The mobile source emissions were calculated using the trip generation data provided in the City of Pasadena Department of Transportation, *Transportation Impact Analysis Outside of CEQA Evaluation*, dated February 5, 2020.
4. The numbers in this table may not add exactly to the totals due to rounding.

Source: Refer to Appendix A, *Air Quality Emissions Data*, of the Air Quality Technical Memorandum (see Appendix C) prepared for this Project for detailed model input/output data.

As indicated in **Table 6**, above, criteria pollutant emissions during operation of the Proposed Project would not exceed the SCAQMD significance thresholds. Thus, operation-related air emissions would be less than significant. As such, because the Proposed Project would result in long-term and short-term emissions below the SCAQMD thresholds, the Project would not have the potential to cause a violation of the ambient air quality standards.

Because AQMP consistency criterion 1 pertains to pollutant concentrations, rather than to total regional emissions, an analysis of the Project's pollutant emissions relative to localized pollutant concentrations is also used for evaluating project consistency. As stated in the Air Quality Technical Memorandum prepared for this Project, localized significance thresholds (LSTs) only apply to the operational phase of a project if the project includes stationary sources or attracts mobile sources that may spend extended periods queuing and idling at the site (e.g., warehouse or transfer facilities). Since the Project does not include such uses, an LST analysis is not necessary for Project operation. However, Project construction would result in on-site emissions, including off-road construction equipment emissions and fugitive dust. **Table 7**, below, displays the localized significance of construction emissions for the Proposed Project, as well as the SCAQMD LST screening thresholds for determining significance.

Table 7

Localized Significance of Construction Emissions

Maximum Emissions	Pollutant (pounds/day)			
	NO_X	CO	PM_{10}	$PM_{2.5}$
Maximum Daily Emissions (on-site)	19.70	14.49	2.34	1.51
LST Screening Thresholds	98	812	6	4
Screening Thresholds Exceeded?	***No***	***No***	***No***	***No***

Note:
1. The LST Screening Thresholds were determined using Appendix C of the SCAQMD *Final Localized Significant Threshold Methodology* guidance document for pollutants NO_X, CO, PM_{10}, and $PM_{2.5}$. The Screening Thresholds are based on the anticipated daily acreage disturbance for construction (the thresholds for 2 acres were used), the distance to sensitive receptors (25 meters), and the source receptor area (SRA 8).

As seen in **Table 7**, emissions would not exceed the LST screening thresholds for source receptor area 8 (SRA 8), which includes the Project Site. Construction LST impacts would be less than significant in this regard. Therefore, because both Project-related emissions of criteria pollutants and construction-related localized pollutant emissions would be less than significant, the Project would be consistent with criterion 1 of the SCAQMD's AQMP consistency evaluation process.

As stated above, the second AQMP consistency criterion determines whether a project would be consistent with the population, housing, and employment growth projections, as well as land use strategies utilized by the AQMP. In the case of the 2016 AQMP, four sources of data form the basis for the projections of air pollutant emissions: the City of Pasadena General Plan, the FGSP, SCAG's regional growth forecast, and the SCAG RTP/SCS. The RTP/SCS also provides socioeconomic forecast projections of regional population growth. As stated above, the Project Site is designated in the General Plan as Medium Mixed-Use and Commercial Mixed-Use in the FGSP. The Project would not differ from the current General Plan and FGSP Land Use and Zoning Designations. Therefore, the Proposed Project is consistent with the General Plan and FGSP, and is consistent with the types, intensity, and patterns of land use envisioned for the site vicinity. The population,

housing, and employment forecasts, which are adopted by SCAG's Regional Council, are based on the local plans and policies applicable to the City. As the SCAQMD has incorporated these same projections into the 2016 AQMP, it can be concluded that the Proposed Project would be consistent with the projections, and would therefore meet the second AQMP consistency criterion.

Regarding sensitive receptors (which are defined as facilities or land uses that include members of the population that are particularly sensitive to the effects of air pollutants, such as children, the elderly, and people with illnesses), the closest sensitive receptors are the residences located approximately 20 feet east of the Project Site. To identify impacts to sensitive receptors, the SCAQMD recommends addressing SCAQMD's LSTs for construction impacts (on-site emissions only) and operations impacts (only if the project includes stationary sources or attracts idling vehicles). As shown above, construction-related emissions would not exceed the LST screening thresholds established by the SCAQMD and Project operations do not include stationary sources or attract idling vehicles. Therefore, LST impacts would be less than significant.

Finally, the Proposed Project would not cause any significant odor impacts. Land uses associated with odor complaints typically include agricultural uses, wastewater treatment plants, food processing plants, chemical plants, composting, refineries, landfills, dairies, and fiberglass molding. The Proposed Project would not include any of these uses. While construction activities may generate detectable odors from heavy-duty equipment exhaust and architectural coatings, construction-related odors would be short term in nature and would cease upon Project completion. Further, existing state and regional regulations, such as state codes limiting idling time of construction equipment and SCAQMD's Rule 1113, which minimizes odor impacts from architectural coatings, would ensure that any odor impacts associated with the Proposed Project would be less than significant.

Water Quality

The Project Site is located within an urban setting and is currently characterized by disturbed, vacant lots and an existing fast food restaurant, surrounded by a surface parking lot. Given this past disturbance, the Project Site is effectively a flat urban lot that is partially covered by impervious surfaces. The Project would represent an increase in the amount of impervious surfaces on the Project Site; however, stormwater quality would be managed through compliance with local and regional controls. Specifically, storm-related erosion of uncovered soils during construction activities would be prevented by complying with the City's best management practices (BMPs) outlined in Pasadena's Municipal Code, which aim to prevent erosion and prevent loose soils from washing off-site during construction. Specifically, these BMPs include prohibitions on construction or industrial vehicle washing, requirements for storing soil on-site so as to minimize sediment erosion, and requirements to clean up materials tracked off-site within the same day during the rainy season (October 15 through April 15). Further, because the Project would disturb an area greater than one acre during construction, the Project would be required to comply with the County of Los Angeles' National Pollutant Discharge Elimination System (NPDES) permit and the State Water Resources Control Board's Construction General Permit requirements. The Construction General Permit requires the development of a Stormwater Pollution Prevention Plan (SWPPP). In general, the Construction General Permit requires construction activities to incorporate BMPs, which could include the use of berms or drainage ditches to divert water around the site and preventing sediment from migrating off-site by using temporary swales, silt fences, or gravel rolls.

Once occupied, the Project Site would be covered by either impervious surfaces or managed gardens/turf areas and, thus, would not be susceptible to erosion or siltation. In addition, to comply with the County of Los Angeles' Municipal Separate Storm Sewer System (MS4) Permit, the Project would be required to develop a low-impact development (LID) plan, to be approved by City of Pasadena staff during the Project's design review process. The LID plan requires projects to retain on-site stormwater runoff generated by the 85th percentile, 24-hour rain event, which in Pasadena would be approximately 1.0–1.2 inches per hour, through site design and use of BMPs such as rainwater capture or biofiltration systems.[12] Therefore, because the Project would be required to comply with existing local and regional water requirements, the Project would result in less than significant impacts related to water quality.

Utilities and Public Services

The Project Site is currently served by electric, natural gas, trash, water, and wastewater services. The Proposed commercial (retail and restaurant) and residential uses would require new service connections for electricity, water, wastewater, and natural gas services, which would be undertaken during the construction period and could occur within the Project Site. Water and electricity services to the Proposed Project would be provided by the Pasadena Department of Water and Power (PWP). The PWP's latest Urban Water Management Plan (UWMP) uses the Pasadena General Plan's planned growth and development in the City to anticipate future water consumption within the City.[13] As such, since the Project would be consistent with its underlying zoning and General Plan designation, and since the UWMP demonstrates adequate water supply for all normal and dry year scenarios through the plan's horizon year (2040), the Project's water demand could be adequately served by PWP.

For wastewater services, the City of Pasadena operates and maintains its own sanitary sewer system, consisting of gravity pipelines that convey approximately 14 million gallons per day (gpd) of untreated wastewater to the Los Angeles County Sanitation Districts (Sanitation Districts) trunk sewer system.[14] The Project's wastewater would be conveyed through the sewer system to the Sanitation Districts' system of water reclamation plants (WRPs), including the Whittier Narrows WRP and the San Jose Creek WRP, which have treatment capacities of 15 million gpd and 100 million gpd, respectively.[15] These WRPs are located approximately 10 miles southeast of the Project Site. The Project, with 70 residential units and up to 10,000-15,000 square feet of restaurant and retail space, would generate approximately 19,170 gpd of wastewater.[16] This total estimated

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12 City of Pasadena, Low Impact Development, accessed April 2, 2020, https://www.cityofpasadena.net/planning/building-and-safety/low-impact-development/.

13 City of Pasadena, Water and Power Department, 2015 Urban Water Management Plan, June 2016.

14 City of Pasadena, Sewer System Management Plan, November 2019.

15 Los Angeles County Sanitation Districts, Whittier Narrows WRP, Website, accessed April 3, 2020, https://www.lacsd.org/services/wastewater/wwfacilities/wwtreatmentplant/whittier_narrows.asp; San Jose Creek WRP, Website, accessed April 3, 2020, https://www.lacsd.org/services/wastewater/wwfacilities/wwtreatmentplant/san_jose_cree.asp.

16 Los Angeles County Sanitation Districts, Will Serve, Table 1: Loadings for Each Class of Land Use, undated. To be conservative, the Project used 70 residential units and 15,000 square feet of commercial in the following calculations of wastewater generation (subsequent to this analysis, the commercial component was downscaled to a total of 7,500 square feet). . Using the Sanitation District's loading factor of 156 gpd per unit, the residential component would have a wastewater generation of approximately 10,920 gpd (156*70). Dividing the commercial 15,000 square feet evenly between restaurant and retail (7,500 square feet each), the Project would result in wastewater generation of 7,500 gpd for the restaurant (a loading factor of 1,000 gpd

wastewater volume would decrease when considering the wastewater generated by the existing restaurant on the Project Site, which would be removed as part of the Proposed Project. The Project's net increase in wastewater generation would be a small fraction of the Sanitation Districts' existing WRP capacity. Further, because PWP uses the City's General Plan to assist with long-term sewer infrastructure planning efforts, the Project's consistency with the General Plan and FGSP would ensure that the City's sewer infrastructure has sufficient capacity to serve the Proposed Project.

Electricity service is provided to the Project Site by PWP, whose existing portfolio of resources includes renewable energy (38 percent), coal (31 percent), large hydroelectric (3 percent), natural gas (11 percent), nuclear (6 percent), and unspecified power sources provided by a combination of owned and contracted energy resources.[17] This mix of resources enhances electrical system resilience by not relying on a single transmission source. The PWP's 2018 Power Integrated Resource Plan has a primary objective of system reliability and includes a resource procurement plan that states that "PWP is fully resourced for energy needs until 2025" and that PWP will "likely meet future energy needs through wind and solar resources, as well as a mix of shorter-term renewable contacts."[18] Therefore, PWP's long-term forecasts for electricity demand within their service area, which includes the Project Site, would account for Project-related electricity demand through PWP's demand forecast modeling. Further, the Project's electricity usage would be slightly offset by the demolition and removal of the existing restaurant, which currently consumes electricity. In short, PWP's long-term planning would ensure that the City's electrical grid would have adequate capacity to support the Proposed Project.

Natural gas service is provided to the Project Site by Southern California Gas Company (SoCalGas), which is the principal distributor of natural gas in Southern California. SoCalGas projects that total natural gas demand will decline at an annual rate of 0.74 percent from 2018 to 2035 due to aggressive energy efficiency standards.[19] Further, SoCalGas is anticipated to meet a projected demand of 2,753 million cubic feet of natural gas per day in 2022 through a combination of withdrawals from underground storage facilities and flowing pipeline supplies. As such, because of SoCalGas's extremely large service area and natural gas supplies, in addition to decreasing natural gas demand, SoCalGas would have adequate capacity to support the Project.

Regarding solid waste collection, the City of Pasadena does not collect solid waste from commercial units or multi-family residential units containing five or more units unless upon written request by the property owner. As such, trash collection services would be provided by the City or a private, commercial trash collection company approved by the City. According to CalRecycle's Solid Waste Information System facility database, one of the largest landfills in the Pasadena area is the Scholl Waste Landfill (located at 3001 Scholl Canyon Road in Glendale) which has a total remaining capacity of 9,900,000 cubic yards. As such, with multiple trash collectors and existing capacity at nearby landfills, there is adequate trash service capacity to serve the Project.

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per 1,000 square feet), and 750 gpd for the commercial retail (a loading factor of 100 gpd per 1,000 square feet). In total, the Project would generate approximately 19,170 gpd of wastewater (10,920 + 7,500 + 750).

17 City of Pasadena, Water and Power Department, 2018 Power Integrated Resource Plan, December 2018.

18 City of Pasadena, Water and Power Department, 2018 Power Integrated Resource Plan, page 69, December 2018.

19 California Gas and Electric Utilities, 2018 California Gas Report, 2018.

The Project would also incrementally increase the demand for public services, such as fire protection and emergency medical services, police protection, and other public services (such as parks and libraries). Because the residential component would include permanent supportive housing for seniors, the Project would not have any impact on area schools. The Pasadena Fire Department (PFD) would provide fire protection and emergency medical services. Project building plans would be reviewed by the PFD for compliance with applicable safety and emergency access standards, such as circulation standards and ensuring the facility has adequate fire flow and fire hydrant placement. The PFD has eight stations located throughout the 23-square-mile service area. The nearest station is Station No. 36, located approximately one-half mile north of the Project Site. The Pasadena Police Department (PPD) would provide law enforcement services to the Project. The PPD's service area includes the City of Pasadena, where services such as emergency response, community services, aerial patrol response, criminal investigations, field operations, and non-emergency support services are provided. The PPD has specialized units, such as Park Safety units, K-9 units, and homeless outreach units, that service five community services areas (CSAs). The Project Site is located within the West CSA. The Project would adhere to all City impact fee requirements associated with public services provided by the police and fire departments in order to offset the Project's service requirements. Further, because the Project would be consistent with the Project Site's zoning and General Plan designation, the level of growth associated with the Project would be consistent with the City's long-term growth planning. As such, the Project would result in less than significant impacts related to utilities and public services.

Considerations of Exceptions to the Use of a Categorical Exemption

Section 15300.2 of the CEQA Guidelines identifies the following exceptions to the use of a categorical exemption:

a) Location. Classes 3, 4, 5, 6, and 11 are qualified by consideration of where the project is to be located—a project that is ordinarily insignificant in its impact on the environment may in a particularly sensitive environment be significant. Therefore, these classes are considered to apply in all instances, except where the project may impact on an environmental resource of hazardous or critical concern where designated, precisely mapped, and officially adopted pursuant to law by federal, state, or local agencies.

b) Cumulative Impact. All exemptions for these classes are inapplicable when the cumulative impact of successive projects of the same type in the same place, over time is significant.

c) Significant Effect. A categorical exemption shall not be used for an activity where there is a reasonable possibility that the activity will have a significant effect on the environment due to unusual circumstances.

d) Scenic Highways. A categorical exemption shall not be used for a project which may result in damage to scenic resources, including, but not limited to, trees, historic buildings, rock outcroppings, or similar resources, within a highway officially designated as a state scenic highway. This does not apply to improvements which are required as mitigation by an adopted negative declaration or certified EIR.

e) Hazardous Waste Sites. A categorical exemption shall not be used for a project located on a site which is included on any list compiled pursuant to Section 65962.5 of the Government Code.

f) Historical Resources. A categorical exemption shall not be used for a project which may cause a substantial adverse change in the significance of a historical resource.

As evaluated below, none of these exceptions apply to the Proposed Project. Therefore, the lead agency (the City of Pasadena) is not precluded from categorically exempting the Proposed Project from CEQA.

Location

The location exception does not apply to the Class 32 categorical exemption. Regardless, the Project site is not within a particularly sensitive environment and there are no designated environmental resources of hazardous or critical concern on the site or in the vicinity. The Project Site is a partially vacant/partially developed urban lot that is surrounded by commercial and single- and multi-family residential development

Cumulative Impact

There is a similar mixed-use project known as the Lincoln Orange Grove (LOG) project located approximately 1,500 feet from the project site at the corner of North Orange Grove Boulevard and Lincoln Avenue. The LOG project consists of the construction of 46 affordable homeowner units and 11,683 square feet of commercial space. As described below, the Proposed Project and related project, including the LOG project, would not result in any significant cumulative impacts.

The Proposed Project would involve demolition of the existing fast food restaurant building and construction of a three-story mixed-use structure, which would result in generation of noise and air pollutants. As stated above, the Project's construction- and operation-related noise would not generate noise levels that would exceed the City's noise standards at the closest sensitive receptors. With regard to air quality, the SCAQMD considers projects that are consistent with the AQMP to have a less than significant cumulative air quality impacts. As stated above, and as further described in the Air Quality Technical Memorandum prepared for this Project, the Project would be consistent with the AQMP. As such, the Project would not result in cumulatively considerable air quality or noise impacts.

The CEQA transportation analysis conducted for the project, as discussed above, considered five measures of the Project's effect on the Citywide circulation system. By their nature, the City's CEQA transportation analyses are cumulative analyses, as they evaluate changes in citywide measurements of VMT/capita, VT/capita, access to the bicycle and transit networks, and pedestrian accessibility. As shown above, the Project's transportation impacts, as measured against these cumulative metrics, would be less than significant.

Based on the analysis herein, the Project would not considerably contribute to any significant impacts resulting from successive projects of the same type in the same place over time.

Significant Effect Due to Unusual Circumstances

There are no features that distinguish this Project from others in the exempt class; therefore, there are no unusual circumstances. Mixed-use developments are common in Pasadena and the FGSP allows and encourages mixed-use development within the FGSP area.[20] Further, the Project Site is located within an urbanized area and has been disturbed by past uses. Given that the Project would be constructed on a site that has been previously developed, that the Project would be

[20] City of Pasadena, Fair Oaks and Orange Grove Specific Plan, Chapter 4.0, Land Use Recommendations, 2002.

consistent with the development pattern in the area, and that the City regularly considers applications for mixed-use and affordable housing development projects as a normal course of business, there are no unusual circumstances.

Scenic Highways

The only designated state scenic highway that traverses the City of Pasadena is the Angeles Crest Highway (State Highway 2), which is located north of Arroyo Seco Canyon in the extreme northwest portion of the City.[21] The majority of the designated scenic highway segment of Angeles Crest Highway is within the Angeles National Forest. The Project site is more than 4 miles from the closest segment of the Angeles Crest Highway and the Project site does not contain any scenic resources that contribute to views from this scenic highway.

The segment of I-210 between State Route 134 on the south and I-5 on the north has been classified by Caltrans as an "eligible" scenic highway.[22] This portion of I-210 has views of scenic resources that include the San Gabriel Mountains and open space to the north and west of I-210. The Project Site is located approximately 2,200 feet east of I-210 and is not visible by motorists traveling on this eligible scenic highway due to an existing berm and sound wall on the east side of the interstate, as well as existing mature landscape between the interstate and the Project Site. Further, the scenic views from the portion of I-210 nearest the Project Site are of the San Gabriel Mountains to the north, which would not be obstructed by Project-related development to the east. Therefore, the Project would have no impact on scenic resources within a state scenic highway.

Hazardous Waste Sites

Section 65962.5 of the Government Code requires that the California Department of Toxic Substances Control (DTSC), the California Department of Public Health (CDPH), and the State Water Resources Control Board compile lists of all hazardous waste facilities subject to corrective action; all sites included in the Abandoned Site Assessment Program; all drinking water wells that contain detectable levels of organic contaminants; all underground storage tanks with unauthorized releases; and all solid waste disposal sites with a migration of hazardous materials.

The Project Site is not included on any of the above-described lists compiled by the DTSC, CDPH, or the State Water Resources Control Board. The DTSC maintains the EnviroStor database, which provides a list of all hazardous waste sites, as required by Section 65962.5 described above, as well as information about other sites that are under investigation of reported hazardous substance contamination and past cases where contamination was identified at a site and properly removed. The Project Site is not listed in EnviroStor, and there are no results listed within one mile of the Project Site.[23] The Project Site is not listed in GeoTracker, a database maintained by the State Water Resources Control Board; however, there is a leaking underground storage tank (LUST) clean-up site listed at an Arco gasoline station approximately 950 feet east of the Site.[24] This clean-

[21] California Department of Transportation, List of Designated and Eligible State Scenic Highways, 2017.

[22] California Department of Transportation, List of Designated and Eligible State Scenic Highways, 2017.

[23] California Department of Toxic Substances Control, EnviroStor, accessed March 11, 2020, https://www.envirostor.dtsc.ca.gov/public/map/?myaddress=Pasadena%2C+CA.

[24] State Water Resources Control Board, GeoTracker, accessed March 11, 2020, https://geotracker.waterboards.ca.gov/map/?CMD=runreport&myaddress=Pasadena%2C+CA. GeoTracker returned another case on the map approximately 500 feet east of the Project Site; however, its location on the map is incorrect as this clean-up site is located at 707 S. Raymond Avenue in Pasadena, which is over 1.5 miles south of the Project Site.

up site was deemed complete in 2004 and would therefore not be exacerbated by Project-related ground disturbance.[25] Therefore, because the Project is not listed on the hazardous waste/substances site list compiled pursuant to Section 65962.5 of the California Government Code, this exception does not apply to the Project.

Historical Resources

Section 15300.2 of the CEQA Guidelines states that a categorical exemption shall not be used for a project which may cause a substantial adverse change in the significance of a historical resource. CEQA Section 15064.5(b) states:

> A project with an effect that may cause a substantial adverse change in the significance of an historical resource is a project that may have a significant effect on the environment.
>
> (1) Substantial adverse change in the significance of an historical resource means physical demolition, destruction, relocation, or alteration of the resource or its immediate surroundings such that the significance of an historical resource would be materially impaired.
>
> (2) The significance of an historical resource is materially impaired when a project:
>
> (A) Demolishes or materially alters in an adverse manner those physical characteristics of an historical resource that convey its historical significance and that justify its inclusion in, or eligibility for, inclusion in the California Register; or
>
> (B) Demolishes or materially alters in an adverse manner those physical characteristics that account for its inclusion in a local register of historical resources pursuant to section 5020.1(k) of the Public Resources Code or its identification in an historical resources survey meeting the requirements of section 5024.1(g) of the Public Resources Code; … or
>
> (C) Demolishes or materially alters in an adverse manner those physical characteristics of a historical resource that convey its historical significance and that justify its eligibility for inclusion in the California Register as determined by a lead agency for purposes of CEQA.
>
> (3) Generally, a project that follows the Secretary of the Interior's Standards for the Treatment of Historic Properties with Guidelines for Preserving, Rehabilitating, Restoring, and Reconstructing Historic Buildings or the Secretary of the Interior's Standards for Rehabilitation and Guidelines for Rehabilitating Historic Buildings … shall be considered as mitigated to a level of less than a significant impact on the historical resource.

The Project Site is currently vacant, apart from an existing fast food restaurant at the southwest corner of the Project Site (at the corner of Orange Grove Boulevard and Fair Oaks Avenue). The restaurant building is surrounded by asphalt surface parking and drive aisles. Constructed in 1975, the structure is approximately 1,100 square feet in size and is characterized by painted, white brick;

[25] State Water Resources Control Board, GeoTracker, Arco #1073, accessed March 11, 2020, https://geotracker.waterboards.ca.gov/profile_report.asp?global_id=T0603702022.

glass; metal; and boldly colored fast food signage. The structure does not have any significant distinguishing features that could be attributable to a specific architectural style identified in the City of Pasadena's Historic Context Report.[26] As such, the City of Pasadena Design and Historic Preservation Staff have evaluated the Project Site and have determined that there are no resources on the Site that are eligible for designation as a local historical resource or for listing on the California Register of Historical Resources or National Register of Historic Places. Therefore, the Project would not cause a substantial adverse change in the significance of a historical resource.

Conclusion

As described above, the Proposed Project meets the requirements of Class 32 exemption, as it meets the definition of infill development; would be consistent with the applicable General Plan designation and all applicable General Plan policies as well as with the applicable zoning designation and regulations; occurs within City limits on a Project Site of no more than 5 acres substantially surrounded by urban uses; would be located on a site that has no habitat for endangered, rare, or threatened species; would not result in any significant effects relating to traffic, noise, air quality, or water quality; and could be adequately served by all required utilities and public services. Further, none of the exceptions to the use of a categorical exemption apply to the Project. Therefore, the Proposed Project is categorically exempt from CEQA pursuant to Section 15332 of the State CEQA Guidelines—Class 32, In-Fill Development Projects.

[26] City of Pasadena, Cultural Resources of the Recent Past: Historic Context Report, October 2007.

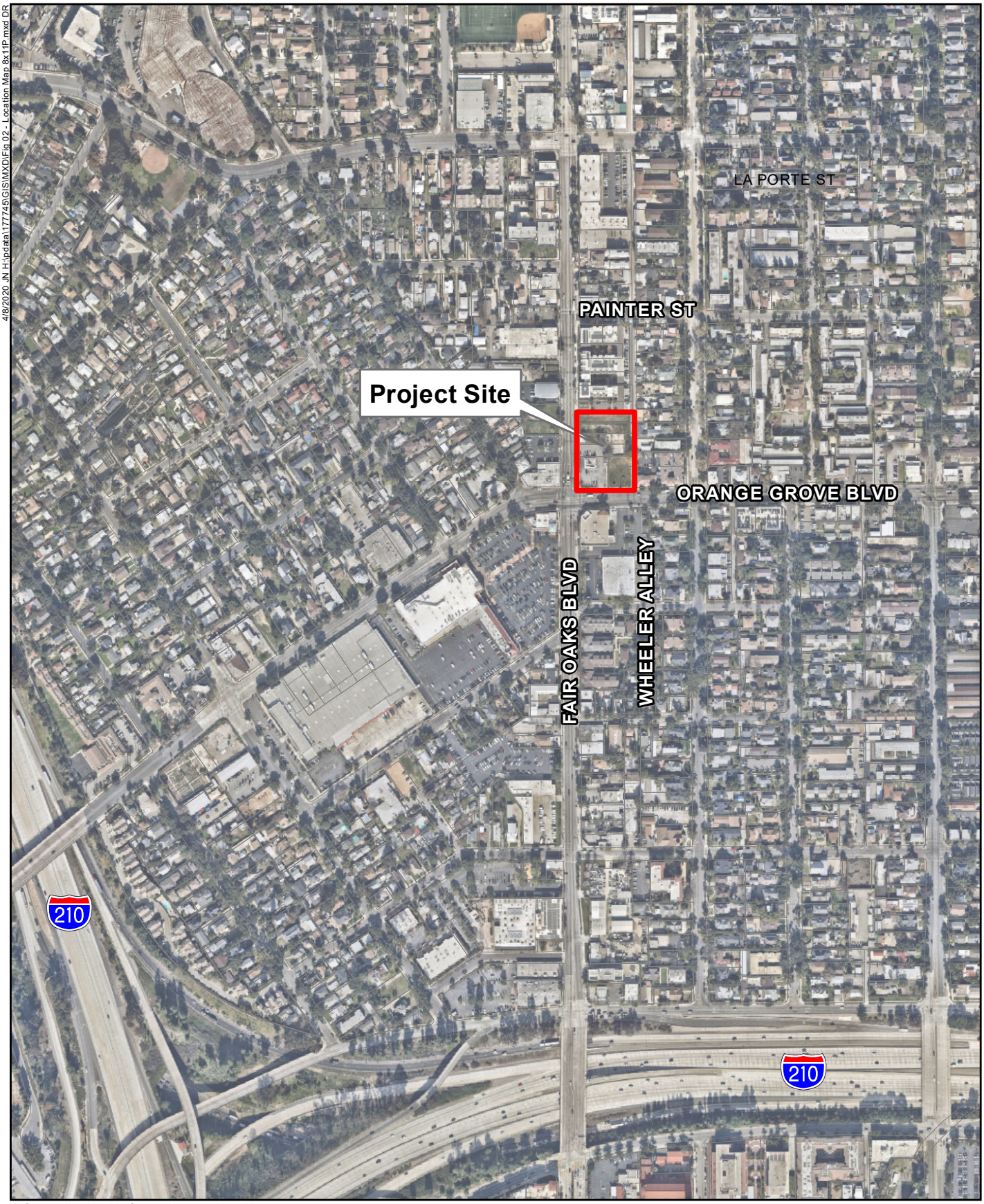
Source: Esri Street Map

0 2.25 4.5 Miles

FIGURE 1

Regional Location Map

Michael Baker INTERNATIONAL



Source: Los Angeles County Assessor, Near Map

0 250 500
Feet

FIGURE 2

Project Location Map

Michael Baker INTERNATIONAL

Appendices

- **Appendix A:** Transportation Impact Analysis, City of Pasadena Department of Transportation.
- **Appendix B:** Noise Technical Memorandum, Michael Baker International.
- **Appendix C:** Air Quality Technical Memorandum, Michael Baker International.

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- State Water Resources Control Board, GeoTracker, Arco #1073, accessed March 11, 2020, https://geotracker.waterboards.ca.gov/profile_report.asp?global_id=T0603702022.
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APPENDIX A:
TRANSPORTATION IMPACT ANALYSIS

PASADENA
DEPARTMENT OF TRANSPORTATION

Transportation Impact Analysis

CEQA Evaluation

Project Address: 710-738 North Fair Oaks Avenue;
19-25 East Orange Grove Boulevard

Project Summary: Heritage Square South project with 70 rental units and 15,000 sf commercial development

Applicant:
City of Pasadena Department of Housing
Attn: James Wong
649 North Fair Oaks Avenue, Suite 202
Pasadena, CA 91109

Attention:
Talyn Mirzakhanian, Planning Manager
City Planning Department

February 5, 2020

Table of Contents

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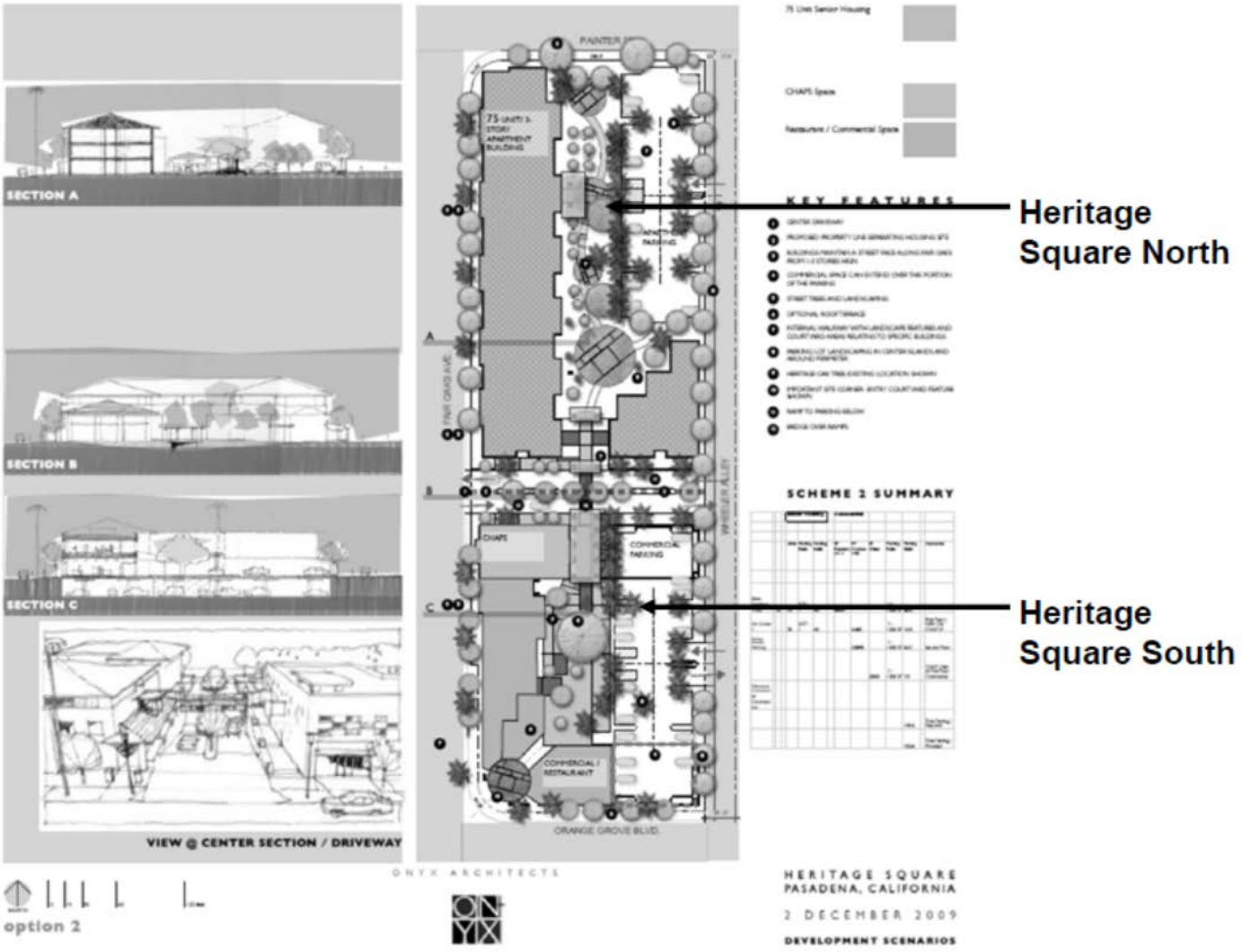
I. Study Objective

This report analyzed the impact the development will have on the City transportation system by estimating incremental changes in vehicle miles traveled (VMT) per capita, vehicle trips per capita (VT), the project impact on service population proximity access to transit and bike facilities, and walk accessibility score.

II. Project Description

The City of Pasadena Department of Transportation conducted an analysis to review potential transportation impacts related to the demolition of existing structures and the construction of the Heritage Square South project at the northeast corner of Fair Oaks Avenue and Orange Grove Boulevard.

Figure 1. Development Site Plan



III. Existing Transportation Network

Street System Classifications

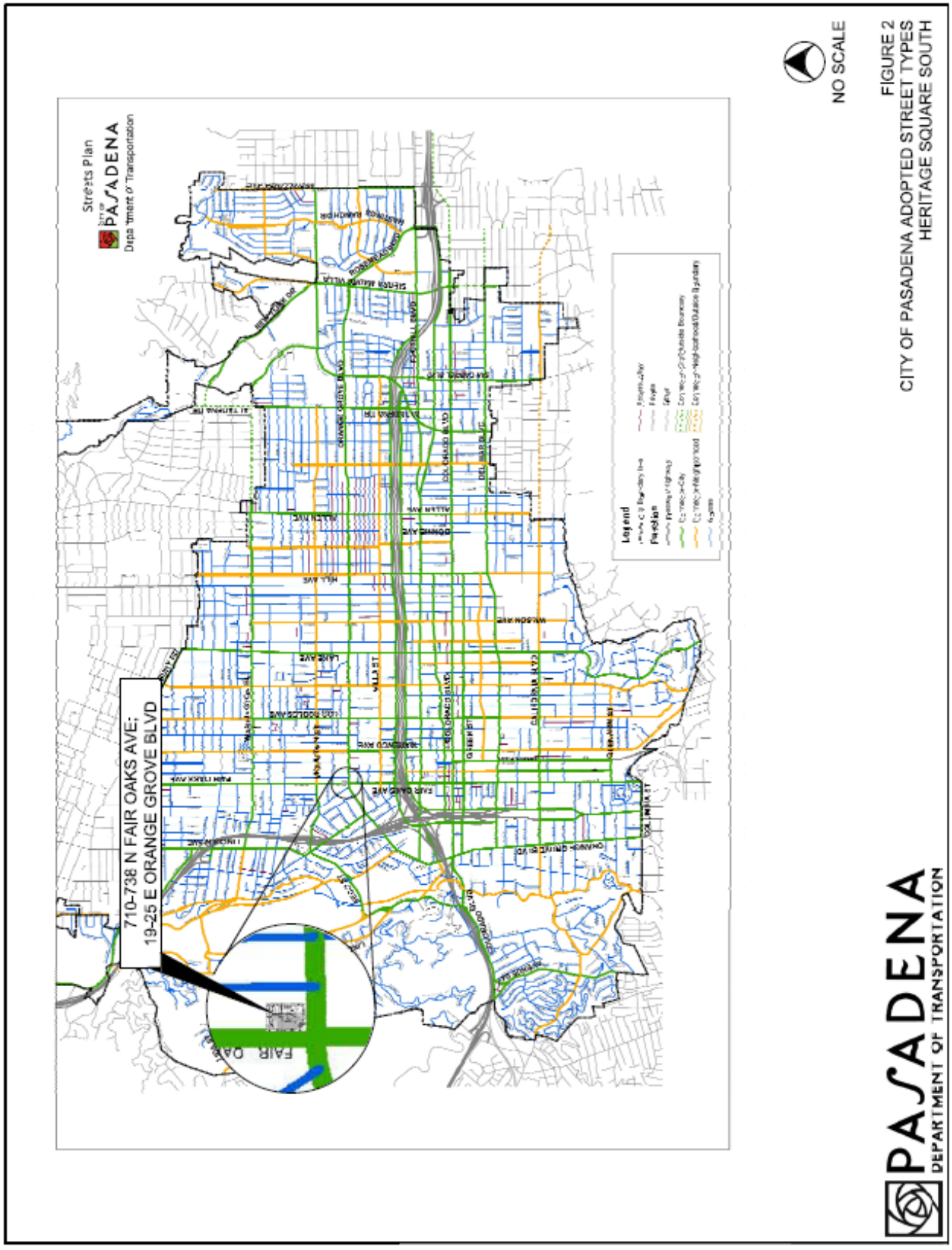
Fair Oaks Avenue is a north/south City Connector with two through travel lanes in each direction and turn lanes at key intersections. It has a speed limit of 30 mph, and is classified as Commercial – Suburban within the project's vicinity in the City's Street Design Guide. Time limited parking signage is found along the project's street frontage. Primary site access is along Fair Oaks Avenue.

Wheeler Lane is a 20' alley with no curb, gutter, or sidewalk. Secondary site access is along Wheeler Lane.

Orange Grove Boulevard is a City Connector that borders the southwest portion of the project with 2 lanes in each direction. No parking is allowed adjacent to the project along this street. Orange Grove Boulevard has a posted speed limit of 35 MPH. Orange Grove Boulevard shall be evaluated from a Commercial – Suburban street context adjacent to the project.

Figure 2 depicts the project in the City of Pasadena's Adopted Streets Plan map.

Figure 2. City of Pasadena Adopted Street Types Map



Existing Transit Service

Public transit service within the project study area is currently provided by LA Metro and Pasadena Transit (PT). The locations of public transit stops near the project are summarized as follows:

Location	**Route**
Fair Oaks Ave at Orange Grove Blvd – Northeast corner	PT 20, 51, 52; Metro 260
Fair Oaks Ave at Orange Grove Blvd – Southwest corner	PT 51, 52; Metro 260
Fair Oaks Ave at Raymond Ave – Southwest corner	PT 20
Fair Oaks Ave at Mountain St – Northeast corner	PT 20; Metro 260
Fair Oaks Ave at Mountain St – Southwest corner	PT 20, 51; Metro 260

IV. Transportation Analysis Methodology

With the City of Pasadena General Plan, the City's guiding principles cumulatively represent the community's vision for the future:

- Growth will be targeted to serve community needs and enhance quality of life.
- New construction that could affect the integrity of historic resources will be compatible with, and differentiated from, the existing historic resource.
- Economic vitality will be promoted to provide jobs, services, revenues, and opportunities.
- Pasadena will be a socially, economically, and environmentally sustainable community.
- Pasadena will be a city where people can circulate without cars.
- Pasadena will be promoted as a cultural, scientific, corporate, entertainment, and educational center for the region.
- Community participation will be a permanent part of achieving a greater city.
- Pasadena is committed to public education and a diverse educational system responsive to the broad needs of the community.

Understanding the goals and objectives of the General Plan, the Pasadena Department of Transportation sets forth goals and policies to improve overall transportation in Pasadena and create "a community where people can circulate without cars." Inherent in this vision statement is to accommodate different modes of transportation including vehicle, pedestrian, bicycle, and transit. The analysis is based on City Transportation Impact Analysis Guidelines. This report will assess accessibility of these different modes of travel and the project's transportation impacts using the City's adopted transportation performance measures.

Analysis Purpose

Pasadena reviews several types and sizes of projects that could be subject to environmental review under the California Environmental Quality Act (CEQA). Transportation impact analyses are an integral part of the environmental review process that is required for all proposed projects not categorically exempt under CEQA.

Analysis Cap Criteria - Transportation Performance Measures

The Pasadena Department of Transportation adopted a set of performance measures and CEQA thresholds that are closely aligned with the Mobility Element objectives and policies. Pasadena Department of Transportation's mobility performance measures assess the quality of walking, biking, transit, and vehicular travel in the City. A combination of vehicular and multimodal performance measures are employed to evaluate system performance in reviewing new development projects. They are:

- Vehicle Miles Traveled per Capita
- Vehicle Trips per Capita
- Proximity and Quality of the Bicycle Network
- Proximity and Quality of the Transit Network
- Pedestrian Accessibility

These performance measures align with the sustainability goals of the General Plan by evaluating the "efficiency" of projects by analyzing the per capita length and number of trips associated with changes in land use. With the expanded emphasis on sustainability and a continued focus on livability, the proposed performance measures will assist in determining how to balance travel modes as well as understand the mobility needs of the community.

VMT Per Capita

The Vehicle Miles Traveled (VMT) per Capita measure sums the miles traveled for trips within the City of Pasadena Travel Demand Model (that is based on the SCAG regional model). The VMT total considers 100% of the mileage of trips that begin and end inside Pasadena and 50% of the distance travelled for trips with one end outside of Pasadena. The City's VMT is then divided by the City's total service population, defined as the population plus the number of jobs.

Although VMT itself will likely increase with the addition of new residents, the City can reduce VMT on a per-capita basis with land use policies that help Pasadena residents meet their daily needs within a short distance of home, reducing trip lengths, and by encouraging development in areas with access to various modes of transportation other than auto.

VT Per Capita

Vehicle Trips (VT) per Capita is a measure of motor vehicle trips associated with the City. The measure sums the trips with origins and destination within the City of Pasadena, as generated by the 2013 Trip-based citywide Travel Demand Model. The regional VT is

calculated by adding the VT associated with trips generated and attracted within City of Pasadena boundaries, and 50% of the VT associated with trips that either begin or end in the City, but have one trip end outside of the City. The City's VT is then divided by the City's total service population, defined as the population plus the number of jobs.

As with VMT, VT itself will likely increase with the addition of new residents, but the City can reduce VT on a per-capita basis with land use policies that help Pasadena residents meet their daily needs within a short distance of home, reducing trip lengths, and by encouraging development in areas with access to various modes of transportation other than auto.

Proximity and Quality of Bicycle Network

The Proximity and Quality of Bicycle Network provides a measure of the percent of the City's service population (population + jobs) within a quarter mile of bicycle facility types. The facility types are aggregated into three hierarchy levels, obtained from the City's (Draft) Bicycle Transportation Plan categories as shown in the following table:

Table 1. Bicycle Facilities Hierarchy

LEVEL	DESCRIPTION	FACILITIES INCLUDED
1	Advanced Facilities	Bike Paths Multipurpose Paths Cycle Tracks/Protected Bike Lanes
2	Dedicated Facilities	Buffered Bike Lanes Bike Lanes Bike Boulevards
3	Basic Facilities	Bike Routes Enhanced Bike Routes Emphasized Bikeways

For each bike facility level, a quarter-mile network distance buffer is calculated and the total service population (population + jobs) within the buffer is identified.

The City can improve measures of bike facility access by improving and expanding existing bike facilities and by encouraging residential and commercial development in areas with high-quality bike facilities.

Proximity and Quality of Transit Network

The Proximity and Quality of Transit Network provides a measure of the percent of the City's service population (population + jobs) within a quarter mile of each of each of three transit facility types, as defined in the following table:

Table 2. Description of Transit Facilities

TRANSIT FACILITIES HIERARCHY	
LEVEL	FACILITIES INCLUDED
1	Includes all Gold Line stops as well as corridors with transit service, whether it be a single route or multiple routes combined, with headways of five minutes or less during the peak periods.
2	Includes corridors with transit headways of between six and 15 minutes in peak periods.
3	Includes corridors with transit headways of 16 minutes or more at peak periods.

For each facility level, a quarter-mile network distance buffer is calculated and the total service population (population + jobs) within the buffer is identified.

The City can improve the measures of transit proximity and quality by reducing headways on existing transit routes, by expanding transit routes to cover new areas, and by encouraging residential and commercial development to occur in areas with an already high-quality transit service.

Pedestrian Accessibility Score

Proximity and Quality of Pedestrian Environment score provides a measure of the average walkability in the TAZ surrounding Pasadena residents, based on a Pedestrian Accessibility metric. The Pedestrian proximity metric is a simple count of the number of land use types accessible to a Pasadena resident or employee in a given TAZ within a 5-minute walk.

The ten categories of land uses are:

- Retail
- Personal Services
- Restaurant
- Entertainment
- Office (including private sector and government offices)
- Medical (including medical office and hospital uses)
- Culture (including churches, religious and other cultural uses)
- Park and Open Space
- School (including elementary and high schools)
- College

The following table summarizes the City's Metrics for determining CEQA Caps:

Table 3. City of Pasadena CEQA Thresholds of Significance

METRIC	DESCRIPTION	IMPACT THRESHOLD
1. VMT Per Capita	Vehicle Miles Traveled (VMT) in the City of Pasadena per service population (population + jobs).	CEQA Threshold: An increase over existing Citywide VMT per Capita of 22.6.
2. VT Per Capita	Vehicle Trips (VT) in the City of Pasadena per service population (population + jobs).	CEQA Threshold: An increase over existing Citywide VT per Capita of 2.8.
3. Proximity and Quality of Bicycle Network	Percent of service population (population + jobs) within a quarter mile of bicycle facility types	CEQA Threshold: Any decrease in existing citywide 31.7% of service population (population + jobs) within a quarter mile of Level 1 & 2 bike facilities.
4. Proximity and Quality of Transit Network	Percent of service population (population + jobs) located within a quarter mile of transit facility types.	CEQA Threshold: Any decrease in existing citywide 66.6% of service population (population + jobs) within a quarter mile of Level 1 & 2 transit facilities.
5. Pedestrian Accessibility	The Pedestrian Accessibility Score uses the mix of destinations, and a network-based walk shed to evaluate walkability	CEQA Threshold: Any decrease in the Citywide Pedestrian Accessibility Score

V. Project Transportation Impact Analysis

Project analyses are based on the City's Transportation Impact Analysis Guidelines. Proposed projects are analyzed using the City's calibrated travel demand forecasting model (TDF) built on SCAG's regional model.

The City's TDF model uses TransCAD software to simulate traffic levels and travel patterns for the City of Pasadena. The program consists of input files that summarize the City's land uses, street network, travel characteristics, and other key factors. Using this data, the model performs a series of calculations to determine the amount of trips generated, the beginning and ending location of each trip, and the route taken by the trip. To be deemed accurate for project transportation impact on the transportation system, a model must be calibrated to a year in which actual land use data and traffic volumes are available and well documented. The Pasadena TDF has been calibrated to 2013 base year conditions using actual traffic counts, Census data, and land use data compiled by City staff with land uses' associated population and job increase estimates.

Projects with proposed land uses that are consistent with the General Plan and complimentary to their surrounding land uses are expected to reduce the trip length associated with adjacent land uses; and/or increase the service population access to pedestrians, bike, and transit facilities if the project is within a quarter mile of those facilities.

Table 4 summarizes the following analyses of the proposed project's impacts on the transportation system using the calibrated TDF model. The results are based on the project's vehicular and non-vehicular trip making characteristics, trip length, and its interaction with other surrounding/citywide land uses, and the City's transportation network.

Table 4. Transportation Performance Metrics Summary

Transportation Performance Metrics	Significant Impact Cap (existing)	Incremental change (existing + project)	Significant Impact?
VMT per Capita	>22.6	7.2	No
VT per Capita	>2.8	1.5	No
Proximity and Quality of Bicycle Network	<31.7%	31.8	No
Proximity and Quality of Transit Network	<66.6%	66.7	No
Pedestrian Accessibility	<3.9	3.9	No

The TDF model calculation results determined that the project does not exceed any adopted CEQA thresholds of significance.

VI. Conclusion

The City of Pasadena Department of Transportation conducted an analysis to review potential transportation impacts related to the demolition of existing structures and the construction of the Heritage Square South project at the northeast corner of Fair Oaks Avenue and Orange Grove Boulevard.

Using the City's Transportation Demand Model, DOT found that the proposed project does not exceed any of the CEQA thresholds outlined in the City's guidelines.

VII. Appendices

Memorandum of Understanding
City's Travel Demand Forecasting Model Output/Results

Appendix:
Memorandum of Understanding

Viana, Conrad

From: Wong, Jim
Sent: Tuesday, January 28, 2020 2:29 PM
To: Viana, Conrad
Cc: Rocha, Luis; Bagheri, Mike; Mirzakhanian, Talyn; Huang, William; Bellas, John
Subject: RE: Heritage Square South; Traffic Study

That should be 7,500 **sf** for restaurant.

From: Wong, Jim
Sent: Tuesday, January 28, 2020 2:29 PM
To: Viana, Conrad <cviana@cityofpasadena.net>
Cc: Rocha, Luis <lrocha@cityofpasadena.net>; Bagheri, Mike <mbagheri@cityofpasadena.net>; Mirzakhanian, Talyn <TMirzakhanian@cityofpasadena.net>; Huang, William <whuang@cityofpasadena.net>; Bellas, John <jbel-contractor@cityofpasadena.net>
Subject: Heritage Square South; Traffic Study

Conrad,

The project is a mixed-use development consisting of:

- 70 units of rental housing for extremely low and very low income senior homeless persons
- 15,000 sf of retail use of which $7,500 would be restaurant

I'll provide you with the maximum required number of parking spaces for the housing soon.

Please let me know if you need additional information to get started.

Thank you,
Jim

James Wong
Senior Project Manager
City of Pasadena
Housing & Career Services Department
☎(626) 744-8316
✉ jwong@cityofpasadena.net

Appendix:
City's Travel Demand Forecasting Model Output/Results

710-756 North Fair Oaks Avenue and 19-35 E Orange Grove Blvd

VMT/Cap and VT/Cap Calculation Summary

Daily Trips	Internal	External
Internal	350,983	335,917
External	335,917	491,127

Pop	136,102
Emp	111,374
Ext. Factor	50%

FINAL REDUCED DAILY VMT BY SPEED BIN					EMFAC
Speed	**Internal**	**External**	**Regional**	**Total**	**INPUT**
5	109	0	1,740	1,849	0%
10	672	135	14,352	15,159	0%
15	4,633	1,355	45,855	51,842	1%
20	15,943	4,468	75,156	95,567	2%
25	96,924	12,498	150,144	259,566	5%
30	490,501	61,506	275,008	827,016	15%
35	822,286	139,486	320,097	1,281,870	23%
40	201,485	55,345	225,388	482,218	9%
45	136,051	105,189	169,337	410,578	7%
50	112,472	2,074	211,665	326,211	6%
55	95,553	7,976	229,219	332,748	6%
60	119,961	15,075	238,015	373,051	7%
65	323,427	20,888	180,982	525,297	9%
70	3,630	0	528,837	532,467	11%
75	0	0	77,246	77,246	
80	0	0	0	0	
85	0	0	0	0	
SUM	**2,423,647**	**425,997**	**2,743,042**	**5,592,686**	**100%**

TOTAL RAW DAILY SUMMARY					
Metric	**Internal**	**External**	**Regional**	**Total**	**Capita**
VMT	2,423,647	851,994	5,486,084	8,761,725	35.4
VT	350,983	671,834	-	1,022,817	4.1
Length	6.9	1.3	-	8.6	-

REDUCED DAILY SUMMARY					
Metric	**Internal**	**External**	**Regional**	**Total**	**Capita**
VMT	2,423,647	425,997	2,743,042	5,592,686	22.6
VT	350,983	335,917	-	686,900	2.8
Length	6.9	1.3	-	8.1	-

FINAL DAILY SCENARIO SUMMARY					
Pop	**Emp**	**VMT**	**VT**	**VMT/Cap**	**VT/Cap**
136,102	111,374	5,592,686	686,900	22.6	2.8

2013 EXISTING SUMMARY					
Pop	**Emp**	**VMT**	**VT**	**VMT/Cap**	**VT/Cap**
135,938	111,348	5,591,328	686,619	22.6	2.8

INCREMENTAL SCENARIO RESULTS					
Pop	**Emp**	**VMT**	**VT**	**VMT/Cap**	**VT/Cap**
164	26	1,358	280	7.2	1.5
				PASS	PASS

710-756 North Fair Oaks Avenue and 19-35 E Orange Grove Blvd

Proximity and Quality Metric Calculations

Proximity and Quality of Bicycle Network

Existing

Facility Type	Service Population	Service Population Adjustment	Final Service Population	Percent of Service Population
Level 2	78,415	0	78,415	31.7%
Level 3	123,670	0	123,670	50.0%
No Facility	45,202	0	45,202	18.3%
Exist City Total	247,286	0	247,286	100.0%

Existing + Project

Facility Type	Service Population	Service Population Adjustment	Final Service Population	Percent of Service Population
Level 2	78,415	189.7240841	78,605	31.8%
Level 3	123,670	0	123,670	50.0%
No Facility	45,202	0	45,202	18.3%
Exist City Total	247,286	189.7240841	247,476	100.0%

Proximity and Quality Metric Summary - Bicycle

Network	Service Population Adjustment	Significant Impact Threshold	Service Population %	Impact?
Bike	189.7240841	< 31.7%	31.8%	No

Proximity and Quality of Transit Network

Existing

Facility Type	Service Population	Service Population Adjustment	Final Service Population	Percent of Service Population
Level 1	90,600	0	90,600	36.6%
Level 2	74,298	0	74,298	30.0%
Level 3	50,495	0	50,495	20.4%
No Facility	31,893	0	31,893	12.9%
Exist City Total	247,286	0	247,286	100.0%

Existing + Project

Facility Type	Service Population	Service Population Adjustment	Final Service Population	Percent of Service Population
Level 1	90,600	189.7240841	90,790	36.7%
Level 2	74,298	0	74,298	30.0%
Level 3	50,495	0	50,495	20.4%
No Facility	31,893	0	31,893	12.9%
Exist City Total	247,286	189.7240841	247,476	100.0%

Proximity and Quality Metric Summary - Transit

Network	Service Population Adjustment	Significant Impact Threshold	Service Population %	Impact?
Transit	189.7240841	< 66.6%	66.7%	No

710-756 North Fair Oaks Avenue and 19-35 E Orange Grove Blvd

Pedestrian Accessibility Calculation Summary

					Weighted Average:	**3.873700892**
PasadenaDTATAZ	Land Use Types	Population_In_TAZ	Employment_In_TAZ	Service_Population	Land Use Types	
245	3	1978.33308	250.3257823	2228.658862	3	

APPENDIX B:
NOISE TECHNICAL MEMORANDUM

Michael Baker INTERNATIONAL

We Make a Difference

MEMORANDUM

To: John Bellas, Michael Baker International
Brent Schleck, Michael Baker International

From: Eddie Torres, Michael Baker International
Zhe Chen, Michael Baker International

Date: March 31, 2020

Subject: Heritage Square South Project – Noise Technical Memorandum

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PURPOSE

The purpose of this technical memorandum is to evaluate potential short- and long-term noise and groundborne vibration impacts as a result of the proposed Heritage Square South Project (project), located in Pasadena, California.

PROJECT LOCATION

The project site is located at 710 to 738 North Fair Oaks Avenue and 19 to 25 East Orange Grove Boulevard in Pasadena, bound by Fair Oaks Avenue to the west, Orange Grove Boulevard to the south, Wheeler Lane to the east, and Heritage Square North Senior Apartments buildings to the north. Major transportation facilities in the vicinity of the proposed project site include Interstate 210 (Foothill Freeway) at 0.4 miles south of the site and 0.4 miles west of the site.

EXISTING SITE CONDITIONS

The project site is approximately 1.3 acres and currently vacant, except for an existing fast food restaurant and associated surface parking areas on the southwest corner of the project site. The project site is currently designated Medium Mixed-Use with less than 2.25 Floor Area Ratio (FAR) and less than 87 dwelling units per acre[1]. The project site is located within the Fair Oaks/Orange Grove Specific Plan Area and is designated Commercial Mixed-Use[2].

Surrounding uses adjacent to the project site include commercial retail buildings to the east and south, an auto center to the west, and residences to the east, north, and west.

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[1] City of Pasadena, *City of Pasadena Land Use Diagram*, November 14, 2016, https://www.cityofpasadena.net/wp-content/uploads/sites/30/Land-Use-Diagram-2016-11-14.pdf?v=1584653610006, accessed March 19, 2020.

[2] City of Pasadena, Fair Oaks/Orange Grove Specific Plan, January 29, 2002, https://www.cityofpasadena.net/planning/planning-division/community-planning/specific-plans/fair-oaks-orange-grove/, accessed March 19, 2020.

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PROJECT DESCRIPTION

The proposed project would involve demolishing the existing fast food restaurant and associated surface parking areas and constructing a three-story mixed-use building with retail and restaurant uses and 70 affordable housing units. The retail space would be approximately 7,500 square feet and the restaurants would be approximately 7,500 square feet. In addition, the proposed project would include 60 surface and subterranean parking spaces on site.

Project construction would occur over approximately 16 months, beginning in March 2021. Construction of the project would include the following phases: demolition, grading, building construction, and architectural coating. It is anticipated that the project would be completed and operational by July 2022.

FUNDAMENTALS OF SOUND AND ENVIRONMENTAL NOISE

Sound is mechanical energy transmitted by pressure waves in a compressible medium such as air, and is characterized by both its amplitude and frequency (or pitch). The human ear does not hear all frequencies equally. In particular, the ear deemphasizes low and very high frequencies. To better approximate the sensitivity of human hearing, the A-weighted decibel scale (dBA) has been developed. Decibels are based on the logarithmic scale. The logarithmic scale compresses the wide range in sound pressure levels to a more usable range of numbers in a manner similar to the Richter scale used to measure earthquakes. In terms of human response to noise, a sound 10 dBA higher than another is perceived to be twice as loud and 20 dBA higher is perceived to be four times as loud, and so forth. Everyday sounds normally range from 30 dBA (very quiet) to 100 dBA (very loud). On this scale, the human range of hearing extends from approximately 3 dBA to around 140 dBA.

Noise is generally defined as unwanted or excessive sound, which can vary in intensity by over one million times within the range of human hearing; therefore, a logarithmic scale, known as the decibel scale (dB), is used to quantify sound intensity. Noise can be generated by a number of sources, including mobile sources such as automobiles, trucks, and airplanes, and stationary sources such as construction sites, machinery, and industrial operations. Noise generated by mobile sources typically attenuates (is reduced) at a rate between 3 dBA and 4.5 dBA per doubling of distance. The rate depends on the ground surface and the number or type of objects between the noise source and the receiver. Hard and flat surfaces, such as concrete or asphalt, have an attenuation rate of 3 dBA per doubling of distance. Soft surfaces, such as uneven or vegetated terrain, have an attenuation rate of about 4.5 dBA per doubling of distance. Noise generated by stationary sources typically attenuates at a rate between 6 dBA and about 7.5 dBA per doubling of distance.

There are several metrics used to characterize community noise exposure, which fluctuate constantly over time. One such metric, the equivalent sound level (L_{eq}), represents a constant sound that, over the specified period, has the same sound energy as the time-varying sound. Noise exposure over a longer period is often evaluated based on the Day-Night Sound Level (L_{dn}). This is a measure of 24-hour noise levels that incorporates a 10-dBA penalty for sounds occurring between 10:00 p.m. and 7:00 a.m. The penalty is intended to reflect the increased human sensitivity to noises occurring during nighttime hours, particularly at times when people are sleeping and there are lower ambient noise conditions. Typical L_{dn} noise levels for light and medium density residential areas range from 55 dBA to 65 dBA. Similarly, Community Noise Equivalent Level (CNEL) is a measure of 24-hour noise levels that incorporates a 5-dBA penalty for sounds occurring between 7:00 p.m. and 10:00 p.m. and a 10-dBA penalty for sounds occurring

between 10:00 p.m. and 7:00 a.m. to account for noise sensitivity in the evening and nighttime, respectively.

FUNDAMENTALS OF ENVIRONMENTAL GROUNDBORNE VIBRATION

Sources of earth-borne vibrations include natural phenomena (earthquakes, volcanic eruptions, sea waves, landslides, etc.) or man-made causes (explosions, machinery, traffic, trains, construction equipment, etc.). Vibration sources may be continuous (e.g., factory machinery) or transient (e.g., explosions). Ground vibration consists of rapidly fluctuating motions or waves with an average motion of zero. Several different methods are typically used to quantify vibration amplitude. One is the peak particle velocity (PPV); another is the root mean square (RMS) velocity. The PPV is defined as the maximum instantaneous positive or negative peak of the vibration wave. The RMS velocity is defined as the average of the squared amplitude of the signal. The PPV and RMS vibration velocity amplitudes are used to evaluate human response to vibration.

Table 1, *Human Reaction and Damage to Buildings for Continuous or Frequent Intermittent Vibration Levels*, displays the reactions of people and the effects on buildings produced by continuous vibration levels. The annoyance levels shown in the table should be interpreted with care since vibration may be found to be annoying at much lower levels than those listed, depending on the level of activity or the sensitivity of the individual. To sensitive individuals, vibrations approaching the threshold of perception can be annoying. Low-level vibrations frequently cause irritating secondary vibration, such as a slight rattling of windows, doors, or stacked dishes. The rattling sound can give rise to exaggerated vibration complaints, even though there is very little risk of actual structural damage.

Table 1
Human Reaction and Damage to Buildings for Continuous or Frequent Intermittent Vibration Levels

Peak Particle Velocity (inches/second)	Approximate Vibration Velocity Level (VdB)	Human Reaction	Effect on Buildings
0.006–0.019	64–74	Range of threshold of perception.	Vibrations unlikely to cause damage of any type.
0.08	87	Vibrations readily perceptible.	Recommended upper level to which ruins and ancient monuments should be subjected.
0.1	92	Level at which continuous vibrations may begin to annoy people, particularly those involved in vibration sensitive activities.	Virtually no risk of architectural damage to normal buildings.
0.2	94	Vibrations may begin to annoy people in buildings.	Threshold at which there is a risk of architectural damage to normal dwellings.
0.4–0.6	98–104	Vibrations considered unpleasant by people subjected to continuous vibrations and unacceptable to some people walking on bridges.	Architectural damage and possibly minor structural damage.

Source: California Department of Transportation, *Transportation Related Earthborne Vibrations,* 2002.

Ground vibration can be a concern in instances where buildings shake and substantial rumblings occur. However, it is unusual for vibration from typical urban sources such as buses and heavy trucks to be perceptible. Common sources for groundborne vibration are planes, trains, and construction activities such as earth-moving which requires the use of heavy-duty earth moving equipment. For the purposes of this analysis, a PPV descriptor with units of inches per section (in/sec) is used to evaluate construction-generated vibration for building damage and human complaints.

EXISTING NOISE SETTING

Existing Ambient Noise Levels

The majority of the existing noise in the project area is generated from traffic along surrounding roadways. To estimate existing ambient noise levels in the project area, traffic noise was modeled with the Federal Highway Administration's (FHWA) RD-77-108 program. Traffic volumes along Fair Oaks Avenue and Orange Grove Boulevard were obtained from City of Pasadena Transportation Data Management System.[3] As the traffic data was collected in 2013 and 2017, a 3 percent annual growth rate was applied to the volumes to account for ambient growth in the area. The modeled results are shown in Table 2, *Existing Ambient Noise Levels*. Refer to Appendix A, *Noise Model Results* for noise modeling assumptions and results.

The traffic noise levels at 100 feet from centerline of the two major roadways surrounding the project site were representative of typical existing noise exposure within and immediately adjacent to the project site. As shown in Table 2, ambient noise levels in close vicinity of the project site range between 61.2 and 61.8 dBA L_{dn}.

Table 2
Existing Ambient Noise Levels

Roadway Segment	ADT[1]	L_{dn} at 100 Feet from Centerline of Roadway (dBA)[2]
Fair Oaks Avenue Between Orange Grove Boulevard and West Mountain Street	26,933	61.8
Orange Grove Boulevard Between Fair Oaks Avenue and Los Robles Avenue	18,954	61.2
ADT = average daily trips; L_{dn} = day-night sound level		
Notes: 1. ADT along Fair Oaks Avenue was collected in 2013. ADT along Orange Grove Boulevard was collected in 2017. A 3 percent annual growth rate was applied to both ADT values. 2. Traffic noise levels were calculated using the FHWA roadway noise prediction model. Refer to Appendix A, *Noise Model Results* for noise modeling assumptions and results.		
Source: City of Pasadena, Transportation Data Management System.		

The primary sources of stationary noise in the project vicinity are urban-related activities (i.e., mechanical equipment, parking areas, and pedestrians). The noise associated with these sources may represent a single-event noise occurrence, short-term, or long-term/continuous noise.

[3] City of Pasadena, Transportation Data Management System, https://pasadena.ms2soft.com/tcds/tsearch.asp?loc=Pasadena&mod=, accessed March 26, 2020.

REGULATORY SETTING

State of California

California Noise Control Act of 1973

Sections 46000 through 46080 of the California Health and Safety Code, known as the California Noise Control Act, find that excessive noise is a serious hazard to public health and welfare and that exposure to certain levels of noise can result in physiological, psychological, and economic damage. The act also finds that there is a continuous and increasing bombardment of noise in urban, suburban, and rural areas. The California Noise Control Act declares that the State of California has a responsibility to protect the health and welfare of its citizens by the control, prevention, and abatement of noise. It is the policy of the state to provide an environment for all Californians that is free from noise that jeopardizes their health or welfare.

California Noise Insulation Standards (CCR Title 24, Part 2, Chapter 2-35)

In 1974, the California Commission on Housing and Community Development adopted noise insulation standards for multi-family residential buildings (Title 24, Part 2, California Code of Regulations). Title 24 establishes standards for interior room noise (attributable to outside noise sources). The regulations also specify that acoustical studies must be prepared whenever a multi-family residential building or structure is proposed to be located near an existing or adopted freeway route, expressway, parkway, major street, thoroughfare, rail line, rapid transit line, or industrial noise source, and where such noise source or sources create an exterior CNEL (or L_{dn}) of 60 dBA or greater. Such acoustical analysis must demonstrate that the residence has been designed to limit intruding noise to an interior CNEL (or L_{dn}) of at least 45 dBA.

City of Pasadena

General Plan Noise Element

Table 3, *City of Pasadena Land Use Compatibility Matrix*, presents the City's Community Noise and Land Use Compatibility matrix and presents the land use compatibility chart for community noise adopted by the City through its General Plan Noise Element (City of Pasadena 2002). This table provides urban planners with a tool to gauge the compatibility of new land uses relative to existing and future exterior noise exposure levels. This table identifies clearly acceptable, normally acceptable, conditionally acceptable, and normally unacceptable exterior noise exposure levels for various land uses. A clearly acceptable designation assumes that buildings of standard construction would suffice. A conditionally acceptable designation means that new construction or development should be undertaken only after a detailed analysis of the noise reduction requirements for each land use is made and needed noise insulation features are incorporated into the design to reduce noise to normally acceptable levels. By comparison, a normally acceptable designation indicates that standard construction can likely occur with no special noise reduction requirements.

Table 3
City of Pasadena Land Use Compatibility Matrix

Land Use Category	Community Noise Exposure (L_{dn} or CNEL, dBA)			
	Clearly Acceptable	Normally Acceptable	Conditionally Acceptable	Normally Unacceptable
Residential – Low Density Single Family, Duplex, Mobile Homes	50 – 60	55 – 70	70 – 75	75 – 85
Residential – Multiple Family and Mixed Commercial/Residential Use	50 – 65	60 – 70	70 – 75	70 – 85
Transient Lodging – Motels, Hotels	50 – 65	60 – 70	70 – 80	80 – 85
Schools, Libraries, Churches, Hospitals, Nursing Homes	50 – 65	60 – 70	70 – 80	80 – 85
Auditoriums, Concert Halls, Amphitheaters	NA	50 – 70	65 – 85	NA
Sports Arenas, Outdoor Spectator Sports	NA	50 – 75	70 – 85	NA
Playgrounds, Neighborhood Parks	50 – 70	NA	67.5 – 75	72.5 – 85
Golf Courses, Riding Stables, Water Recreation, Cemeteries	50 – 75	NA	70 – 80	80 – 85
Office Buildings, Business Commercial and Professional	50 – 70	67.5 – 77.5	75 – 85	NA
Industrial, Manufacturing, Utilities, Agriculture	50 – 75	70 – 80	80 – 85	NA
L_{dn} = Day-Night Sound Level; CNEL = community noise equivalent level; dBA = A-weighted decibel scale; NA = not applicable				
Source: City of Pasadena, *City of Pasadena General Plan Noise Element*, Figure 1: Guidelines for Noise Compatible Land Use, December 2002.				

Municipal Code Noise Ordinance

The City of Pasadena regulates stationary source noise in Municipal Code Chapter 9.36[4] and through the compatibility standards in the City's General Plan Noise Element. Noise regulations are based on the increment of noise that a source generates above the ambient background noise level. Municipal Code Section 9.36.050 prohibits the generation of noise that exceeds the existing ambient noise at the property line of any property by more than 5 dBA, with adjustments made for steady audible tones, repeated impulsive noise, and noise occurring for limited time periods. Similarly, Section 9.36.090 prohibits machinery, equipment, and fans, and air conditioning units from generating noise that increases the ambient noise level by 5 dBA or more at the property line of the receiving property. Under the City's Municipal Code, ambient is defined as the actual measured ambient noise level.

Furthermore, through Municipal Code Section 9.36.070, the City of Pasadena limits construction activities within a residential district or within 500 feet therefrom to the hours from 7:00 a.m. to 7:00 p.m., Monday through Friday, and from 8:00 a.m. to 5:00 p.m. on Saturdays. Performance of construction and repair work is prohibited on Sundays and holidays. Municipal Code Section 9.36.080 prohibits noise from operation of any powered construction equipment from exceeding 85 dBA at a distance of 100 feet from such equipment.

NOISE SENSITIVE RECEPTORS

Noise-sensitive land uses are generally considered to include those uses where noise exposure could result in health-related risks to individuals, as well as places where quiet is an essential element of their intended purpose. Residential dwellings are of primary concern because of the potential for increased and prolonged exposure of individuals to both interior and exterior noise levels. Additional land uses such as parks, historic sites, cemeteries, and recreation areas are considered sensitive to increases in exterior

[4] City of Pasadena, *Code of Ordinances: Chapter 9.36, Noise Restrictions,* 2008.

noise levels. Schools, churches, hotels, libraries, and other places where low interior noise levels are essential are also considered noise-sensitive land uses. The nearest sensitive receptors to the project site are the residences approximately 20 feet to the east across Wheeler Lane.

CALIFORNIA ENVIRONMENTAL QUALITY ACT (CEQA) THRESHOLDS

The environmental analysis in this memorandum is patterned after the Initial Study Checklist recommended by the *CEQA Guidelines*. The issues presented in the Initial Study Checklist have been utilized as thresholds of significance in this section. Accordingly, a project may have a significant adverse impact related to noise and vibration if it would do any of the following:

- Generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies (refer to Impact NOI-1);

- Generation of excessive groundborne vibration or groundborne noise levels (refer to Impact NOI-2); and

- For a project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels (refer to Impact NOI-3).

IMPACT ANALYSIS

NOI-1 Generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?

Less Than Significant Impact. The City's General Plan Noise Element and Municipal Code Noise Ordinance contain the City's policies on noise. The Noise Ordinance and the Noise Element establish guidelines for controlling construction and operational noise in the city. For operational noise standards, the City identifies noise-sensitive land uses and noise sources with the intent of separating these uses. Noise-sensitive land uses are those that may be subject to stress and/or interference from excessive noise. Noise-sensitive land uses include public schools, hospitals, and institutional uses such as churches, museums, and private schools. Typically, residential uses are also considered noise-sensitive receptors. Industrial and commercial land uses are generally not considered sensitive to noise.

Construction Noise Impacts

Temporary increases in ambient noise levels as a result of the project would predominantly be associated with construction activities. Construction activities would occur over approximately 16 months and would include the following phases: demolition, grading, building construction, and architectural coating. Project construction would require concrete/industrial saws, rubber-tired dozers, and tractors/loaders/backhoes during demolition; graders, rubber-tired dozers, loaders, and tractors/loaders/backhoes during grading; cranes, forklifts, generator sets, tractors/loaders/backhoes, and welders during building construction; and air compressors during architectural coatings. Typical noise

levels generated by construction equipment are shown in Table 4, *Maximum Noise Levels Generated by Construction Equipment*. It should be noted that the noise levels identified in Table 4 are maximum sound levels (L_{max}), which are the highest individual sound occurring at an individual time period. Operating cycles for these types of construction equipment may involve one or two minutes of full power operation followed by three to four minutes at lower power settings. Other primary sources of acoustical disturbance would be due to random incidents, which would last less than one minute (such as dropping large pieces of equipment or the hydraulic movement of machinery lifts).

Table 4
Maximum Noise Levels Generated by Construction Equipment

Type of Equipment	Acoustical Use Factor[1]	L_{max} at 50 Feet (dBA)	L_{max} at 100 Feet (dBA)
Concrete Saw	20	90	84
Crane	16	81	75
Concrete Mixer Truck	40	79	73
Backhoe	40	78	72
Dozer	40	82	76
Excavator	40	81	75
Forklift	40	78	72
Paver	50	77	71
Roller	20	80	74
Tractor	40	84	78
Water Truck	40	80	74
Grader	40	85	79
General Industrial Equipment	50	85	79

Note:
1. Acoustical Use Factor (percent): Estimates the fraction of time each piece of construction equipment is operating at full power (i.e., its loudest condition) during a construction operation.

Source: Federal Highway Administration, *Roadway Construction Noise Model (FHWA-HEP-05-054)*, January 2006.

Sensitive receptors surrounding the project site include residences to the east, west, and north of the project site. These sensitive receptors may be exposed to elevated noise levels during project construction. However, the project would adhere to the City's Noise Ordinance governing hours of construction, noise levels generated by construction and mechanical equipment, and the allowed level of ambient noise (Municipal Code Chapter 9.36). In accordance with these regulations, construction noise would be limited to normal working hours (7:00 a.m. to 7:00 p.m. Monday through Friday, 8:00 a.m. to 5:00 p.m. on Saturday, in or within 500 feet of a residential area; construction activities are not allowed on Sundays or holidays). Municipal Code Section 9.36.080, *Construction Equipment*, prohibits any person to operate any powered construction equipment if the operation of such equipment emits noise at a level in excess of 85 dBA when measured within a radius of 100 feet from such equipment. Due to geometric spreading, these noise levels would diminish with distance from the construction site at a rate of approximately 6 dBA per doubling of distance; refer to Table 4.

As seen in Table 4, the loudest piece of equipment would operate at a maximum noise level of 84 dBA at 100 feet from the source. Therefore, construction noise levels would not exceed the City's Noise

Ordinance threshold of 85 dBA at 100 feet and the impact associated with construction noise would be considered less than significant.

Long-Term Operational Noise Impacts

Off-Site Mobile Noise

Future development generated by the proposed project would result in some additional traffic on adjacent roadways, thereby potentially increasing vehicular noise in the vicinity of existing and proposed land uses. The most prominent source of mobile traffic noise in the project vicinity is along Fair Oaks Avenue and Orange Grove Boulevard. Based on the City's General Plan Noise Element, Fair Oaks Avenue and Orange Grove Boulevard experience elevated regional traffic and increased noise levels (70 and 65 dBA CNEL, respectively) compared to other streets or roadways in the City. The project site is located partially within the 65 dBA CNEL roadway noise contour zone along Fair Oaks Avenue and Orange Grove Boulevard and the rest of the site is located within the 60 dBA CNEL roadway noise contour zone.

According to the *Transportation Impact Analysis Outside of CEQA Evaluation* prepared by City of Pasadena Department of Transportation (dated February 5, 2020), the proposed project would generate a maximum of 543 daily trips, including 37 AM peak hour trips and 47 PM peak hour trips.[5] The current average daily trips on roadways surrounding the project site range between 12,000 and 25,000.[6] As a worst-case scenario, assuming all project-generated daily trips occurring on the roadway with lowest average daily trips of 12,000, the proposed project would increase the daily trips in the project vicinity by 4.5 percent. The daily trips from the proposed project (4.5 percent) would represent a nominal percent increase in daily traffic compared to existing traffic conditions on the surrounding roadways. According to the California Department of Transportation (Caltrans), a doubling of traffic (100 percent increase) on a roadway would result in a perceptible increase in traffic noise levels (3 dBA).[7] As such, the project related increase in traffic volume along surrounding roadways would be nominal compared to existing traffic, as the project would increase daily trips by 4.5 percent and would not result in a perceptible increase traffic noise level (less than 100 percent). Thus, a less than significant impact would occur in this regard.

Stationary Noise

As stated above, the project proposes a mixed-use three-story building with 7,500 square feet retail space, 7,500 square feet restaurants, 70 affordable housing units, and 60 surface and subterranean parking spaces. Stationary noise sources associated with the project would include the operation of mechanical equipment, parking lot activities, and outdoor patio area activities.

[5] City of Pasadena Department of Transportation, *Transportation Impact Analysis Outside of CEQA Evaluation*, dated February 5, 2020.

[6] Phone conversation and email between John Bellas (Project Manager, Michael Baker International) and Conrad Viana (City of Pasadena Department of Transportation).

[7] California Department of Transportation, *Technical Noise Supplement to the Traffic Noise Analysis Protocol,* September 2013.

Mechanical Equipment Noise

Heating Ventilation and Air Conditioning (HVAC) units would be installed on the roof of the proposed building. Typically, mechanical equipment noise is 55 dBA at 50 feet from the source.[8] The nearest sensitive receptor/use to the project site is the residence located approximately 20 feet to the east of the project site. The proposed building would be located on the western portion of the project site, so the distance between the closest residence and the proposed building would be approximately 100 feet.

Noise has a decay rate due to distance attenuation, which is calculated based on the Inverse Square Law of sound propagation. Based upon the Inverse Square Law, sound levels decrease by 6 dBA for each doubling of distance from the source.[9] As a result, HVAC units noise would be 49 dBA at the nearest sensitive receptor and would not exceed the City's 70 dBA CNEL normally acceptable exterior noise compatibility standard for residential uses. In addition, the proposed HVAC units (55 dBA at 50 feet) would not generate noise levels in excess of 5 dBA over existing ambient noise levels (between 61.2 and 61.8 dBA L_{dn}) in the project vicinity in compliance with Section 9.36.090 (Machinery, Equipment, Fans, and Air Conditioning) of the City's Noise Ordinance. Thus, the proposed project would not result in noise impacts to nearby sensitive receptors from HVAC units, and stationary noise levels from the proposed HVAC units would comply with the City's noise compatibility standard and Noise Ordinance. Impacts in this regard would be less than significant.

Parking Lot Noise

The proposed project would include 60 surface and subterranean parking spaces. Estimates of the maximum noise levels associated with the parking lot activities attributed to the project are presented in Table 5, *Typical Noise Levels Generated by Parking Lots*.

Table 5
Maximum Noise Levels Generated by Parking Lots

Noise Source	Maximum Noise Levels at 50 Feet from Source
Car door slamming	61 dBA L_{eq}
Car starting	60 dBA L_{eq}
Car idling	53 dBA L_{eq}
Source: Kariel, H. G., *Noise in Rural Recreational Environments*, Canadian Acoustics 19(5), 3-10, 1991.	

As shown in Table 5, parking lot activities can result in noise levels up to 61 dBA at a distance of 50 feet. It is noted that parking lot noise are instantaneous noise levels compared to noise standards in the CNEL scale, which are averaged over time. As a result, actual noise levels over time resulting from parking lot activities would be far lower than what is identified in Table 5, which is lower than the existing ambient noise levels (between 61.2 and 61.8 dBA L_{dn}) in the project vicinity and would not exceed the City's 70 dBA CNEL normally acceptable exterior noise compatibility standard for residential uses. Therefore, parking

[8] Elliott H. Berger, Rick Neitzel, and Cynthia A. Kladden, *Noise Navigator Sound Level Database with Over 1700 Measurement Values*, July 6, 2010.

[9] Cyril M. Harris, *Noise Control in Buildings*, 1994.

lot noise associated with the project is not expected to exceed the City's noise standards and would not introduce a new noise source compared to existing conditions. Impacts would be less than significant in this regard.

Outdoor Gathering Area Noise

The project would include an optional rooftop terrace for the restaurants. This area has the potential to be accessed by groups of people intermittently. Noise generated by groups of people (i.e., crowds) is dependent on several factors including vocal effort, impulsiveness, and the random orientation of the crowd members. Crowd noise is estimated at 60 dBA at one meter (3.28 feet) away for raised normal speaking.[10] This noise level would have a +5 dBA adjustment for the impulsiveness of the noise source, and a -3 dBA adjustment for the random orientation of the crowd members.[11] Therefore, crowd noise would be approximately 62 dBA at one meter from the source (i.e., the rooftop terrace).

The closest sensitive receptor is the residence approximately 20 feet to the east of the project site and 150 feet northeast of the rooftop terrace. At a distance of 150 feet, crowd noise would be reduced to approximately 28.8 dBA, which would not exceed the City's 70 dBA CNEL normally acceptable exterior noise compatibility standard for residential uses. As such, the proposed outdoor terrace area would not generate noise levels that would exceed the City's noise standards at the closest sensitive receptors. Therefore, impacts would be less than significant.

Mitigation Measures: No mitigation required.

NOI-2 Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?

Less Than Significant Impact. Project construction can generate varying degrees of groundborne vibration, depending on the construction procedure and the construction equipment used. Operation of some heavy-duty construction equipment generates vibrations that spread through the ground and diminish in amplitude with distance from the source. The effect on buildings located in the vicinity of the construction site often varies depending on soil type, ground strata, and construction characteristics of the receiver building(s). The results from vibration can range from no perceptible effects at the lowest vibration levels, to low rumbling sounds and perceptible vibration at moderate levels, to slight damage at the highest levels. Groundborne vibrations from construction activities rarely reach levels that damage structures.

The Federal Transit Administration (FTA) has published standard vibration velocities for construction equipment operations. In general, the FTA architectural damage criterion for continuous vibrations (i.e., 0.20 inch/second) appears to be conservative. The types of construction vibration impact include human annoyance and building damage. Human annoyance occurs when construction vibration rises significantly above the threshold of human perception for extended periods of time. Building damage can be cosmetic or structural. Typical vibration produced by construction equipment is illustrated in Table 6, *Typical Vibration Levels for Construction Equipment*.

[10] M.J. Hayne, et al, *Prediction of Crowd Noise*, Acoustics, November 2006.
[11] Ibid.

Table 6
Typical Vibration Levels for Construction Equipment

Equipment	Approximate peak particle velocity at 25 feet (inches/second)[1]	Approximate peak particle velocity at 50 feet (inches/second)[1]
Large bulldozer	0.089	0.031
Loaded trucks	0.076	0.027
Small bulldozer	0.003	0.001
Jackhammer	0.035	0.012

Notes:
1. Calculated using the following formula:

$PPV_{equip} = PPV_{ref} \times (25/D)^{1.5}$

where: PPV (equip) = the peak particle velocity in in/sec of the equipment adjusted for the distance

PPV (ref) = the reference vibration level in in/sec from Table 7-4 of the FTA *Transit Noise and Vibration Impact Assessment Manual.*

D = the distance from the equipment to the receiver

Source: Federal Transit Administration, *Transit Noise and Vibration Impact Assessment Manual*, September 2018. Table 7-4 *Vibration Source Levels for Construction Equipment.*

Groundborne vibration decreases rapidly with distance. As indicated in Table 6, based on the FTA data, vibration velocities from typical heavy construction equipment operations that would be used during project construction range from 0.003 to 0.089 inch/second PPV at 25 feet from the source of activity. The nearest structures are commercial and residential buildings located to the east of the project site; however, the project would not utilize heavy-duty construction equipment with noticeable vibration levels (e.g., vibratory rollers, jackhammers, pile drivers, etc.) near off-site uses or nearby structures. Therefore, construction activities would not be capable of exceeding the 0.2 inch/second PPV significance threshold for vibration and a less than significant impact would occur in this regard.

Mitigation Measures: No mitigation is required.

NOI-3 For a project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels??

No Impact. The nearest public use airport to the project site is the San Gabriel Valley Airport (previously known as El Monte Airport) which lies approximately 8.4 miles to the southeast of the project site. This airport is open to the public for use and owned and operated by the County of Los Angeles.[12] According to the *Airport Influence Area of El Monte Airport*, the project site is not located within the San Gabriel Valley Airport CNEL contours. The project site is not in the vicinity of a private airstrip. Therefore, no impact related to airport land use compatibility would occur.

Mitigation Measures: No mitigation is required.

[12] Los Angeles County Airport Land Use Commission, *Los Angeles County Airport Land Use Plan,* December 1, 2004, http://planning.lacounty.gov/assets/upl/data/pd_alup.pdf, accessed March 19, 2020.

NATIONAL ENVIRONMENTAL POLICY ACT (NEPA) THRESHOLDS

In addition, consistency with U.S. Department of Housing and Development's (HUD) guidance on noise abatement and control is also analyzed in this memorandum. HUD requires that the environmental review record should contain one of the following:

- Documentation the proposed action is not within 1000 feet of a major roadway, 3,000 feet of a railroad, or 15 miles of a military or FAA- (Federal Aviation Administration) regulated civil airfield;

- If within those distances, documentation showing the noise level is Acceptable (at or below 65 DNL [Day/Night Noise Level]);

- If within those distances, documentation showing that there is an effective noise barrier (i.e., that provides sufficient protection); or

- Documentation showing the noise generated by the noise source(s) is Normally Unacceptable (66 – 75 DNL) and identifying noise attenuation requirements that will bring the interior noise level to 45 DNL and/or exterior noise level to 65 DNL.

Compliance with 24 CFR 50.4, 58.5, and 58.6 Laws and Authorities
Noise Control Act of 1972, as amended by the Quiet Communities Act of 1978; 24 CFR Part 51 Subpart B

No formal compliance steps or mitigation required. Short-term construction noise are temporary and have a short duration, resulting in periodic increases in the ambient noise environment. As discussed under Impact Statement NOI-1, construction of the project would comply with allowable construction hours between 7:00 a.m. and 7:00 p.m. on weekdays and between 8:00 a.m. and 5:00 p.m. on Saturdays, and construction noise levels would not exceed the City's Noise Ordinance threshold of 85 dBA at 100 feet. As discussed under Impact Statement NOI-2, vibration impacts from construction activities and operations would not exceed human annoyance or building damage threshold.

As discussed under Impact Statement NOI-1, based on traffic data from the *Transportation Impact Analysis Outside of CEQA Evaluation* prepared by City of Pasadena Department of Transportation (dated February 5, 2020), the project would not exceed noise standards pertaining to vehicle trips generated by project operations. Moreover, noise levels from stationary sources including mechanical equipment, parking lot activities, and outdoor patio area activities would not exceed noise standards.

The nearest public use airport to the project site is the San Gabriel Valley Airport (previously known as El Monte Airport) which lies approximately 8.4 miles to the southeast of the project site. As discussed under Impact Statement NOI-3, the project site is not located within the San Gabriel Valley Airport CNEL contours, and the project site is not in the vicinity of a private airstrip.

The proposed on-site residences would be located at the northwest corner of the project site, which would be approximately 50 feet from the centerline of Fair Oaks Avenue and 225 feet from the centerline of Orange Grove Boulevard. FHWA RD-77-108 program was used to model traffic noise levels at the proposed on-site residences under existing plus project condition and the modeled results are shown in Table 7, Noise Levels at Proposed On-Site Residence. Noise modeling assumptions and results are

included in Appendix A, *Noise Model Results*. As shown in Table 7, noise levels at the proposed on-site residences would not exceed HUD's exterior noise requirement of 65 dBA L_{dn}. According to the U.S. Environmental Protection Agency (EPA) *Protective Noise Levels*[13], typical buildings in warm climate could provide 24 dBA exterior to interior noise reduction with windows closed. Therefore, interior noise levels at the proposed on-site residences would not exceed HUD's interior noise requirement of 45 dBA L_{dn}.

Table 7
Noise Levels at Proposed On-Site Residence

Roadway Segment	Existing Plus Project ADT[1]	L_{dn} at 100 Feet from Centerline of Roadway (dBA)[2]	Exterior L_{dn} at Proposed On-Site Residences (dBA)[2]	Interior L_{dn} at Proposed On-Site Residences (dBA)[2, 3]
Fair Oaks Avenue Between Orange Grove Boulevard and West Mountain Street	27,476	61.9	64.9	40.9
Orange Grove Boulevard Between Fair Oaks Avenue and Los Robles Avenue	19,497	61.4	57.8	33.8

ADT = average daily trips; L_{dn} = day-night sound level

Notes:
1. ADT along Fair Oaks Avenue was collected in 2013. ADT along Orange Grove Boulevard was collected in 2017. A 3 percent annual growth rate was applied to both ADT values. Project-generated 543 daily trips were added to both segments.
2. Traffic noise levels were calculated using the FHWA roadway noise prediction model. Refer to Appendix A, *Noise Model Results* for noise modeling assumptions and results.
3. According to the EPA *Protective Noise Levels*, typical buildings in warm climate could provide 24 dBA exterior to interior noise reduction with windows closed.

Sources:
City of Pasadena, Transportation Data Management System.
City of Pasadena Department of Transportation, *Transportation Impact Analysis Outside of CEQA Evaluation*, dated February 5, 2020.

Therefore, no adverse effect would result from the proposed project, the proposed project would be consistent with HUD's guidance on noise abatement and control, and no formal compliance steps or mitigation are required.

[13] U.S. Environmental Protection Agency, *Protective Noise Levels*, November 1978.

REFERENCES

Documents

1. California Department of Transportation, *Technical Noise Supplement to the Traffic Noise Analysis Protocol,* September 2013.

2. California Department of Transportation, *Transportation and Construction Vibration Guidance Manual,* September 2013.

3. City of Pasadena, *City of Pasadena Land Use Diagram*, November 14, 2016, https://www.cityofpasadena.net/wp-content/uploads/sites/30/Land-Use-Diagram-2016-11-14.pdf?v=1584653610006, accessed March 19, 2020.

4. City of Pasadena, Fair Oaks/Orange Grove Specific Plan, January 29, 2002, https://www.cityofpasadena.net/planning/planning-division/community-planning/specific-plans/fair-oaks-orange-grove/, accessed March 19, 2020.

5. City of Pasadena, *City of Pasadena General Plan Noise Element*, December 2002, https://ww5.cityofpasadena.net/planning/wp-content/uploads/sites/56/2017/07/Pasadena-Noise-Element-Policy.pdf, accessed March 19, 2020.

6. City of Pasadena, *Code of Ordinances: Chapter 9.36, Noise Restrictions,* 2008.

7. City of Pasadena, Transportation Data Management System, https://pasadena.ms2soft.com/tcds/tsearch.asp?loc=Pasadena&mod=, accessed March 26, 2020.

8. City of Pasadena Department of Transportation, *Transportation Impact Analysis Outside of CEQA Evaluation*, dated February 5, 2020.

9. Cyril M. Harris, *Noise Control in Buildings*, 1994.

10. Elliott H. Berger, Rick Neitzel, and Cynthia A. Kladden, *Noise Navigator Sound Level Database with Over 1700 Measurement Values*, July 6, 2010.

11. Federal Highway Administration, *Roadway Construction Noise Model (FHWA-HEP-05-054)*, January 2006.

12. Federal Transit Administration, *Transit Noise and Vibration Impact Assessment Manual*, September 2018.

13. Kariel, H. G., *Noise in Rural Recreational Environments*, Canadian Acoustics 19(5), 3-10, 1991.

14. Los Angeles County Airport Land Use Commission, *Los Angeles County Airport Land Use Plan,* December 1, 2004, http://planning.lacounty.gov/assets/upl/data/pd_alup.pdf, accessed March 19, 2020.

15. U.S. Environmental Protection Agency (EPA), *Protective Noise Levels*, November 1978.

Websites / Programs

1. Google Earth, 2020.

2. Federal Highway Administration, *Roadway Noise Prediction Model* (FHWA-RD-77-108).

Appendix A
Noise Model Results

TRAFFIC NOISE LEVELS AND NOISE CONTOURS

Project Number: 177745
Project Name: Heritage Square South Project
Scenario: Existing

Background Information

Model Description: FHWA Highway Noise Prediction Model (FHWA-RD-77-108) with California Vehicle Noise (CALVENO) Emission Levels.
Source of Traffic Volumes: https://pasadena.ms2soft.com/tcds/tsearch.asp?loc=Pasadena&mod=
Community Noise Descriptor: L_{dn}: X CNEL:

Assumed 24-Hour Traffic Distribution:	Day	Evening	Night
Total ADT Volumes	77.50%	12.90%	9.60%
Medium-Duty Trucks	84.80%	4.90%	10.30%
Heavy-Duty Trucks	86.50%	2.70%	10.80%

Analysis Condition				Design		Vehicle Mix		Distance from Centerline of Roadway					
		Median	ADT[1]	Speed	Alpha	Medium	Heavy	Ldn at	Distance to Contour				Calc
Roadway, Segment	Lanes	Width	Volume	(mph)	Factor	Trucks	Trucks	100 Feet	70 Ldn	65 Ldn	60 Ldn	55 Ldn	Dist
Fair Oaks Avenue													
Orange Grove Boulevard to West Mountain Street	4	0	26,933	30	0.5	1.8%	0.7%	61.8	-	61	132	284	100
Orange Grove Boulevard													
Fair Oaks Avenue and Los Robles Avenue	4	8	18,954	35	0.5	1.8%	0.7%	61.2	-	56	121	260	100

[1] ADT along Fair Oaks Avenue was collected in 2013. ADT along Orange Grove Boulevard was collected in 2017. A 3% annual growth rate was applied to both ADT values.
"-" = contour is located within the roadway right-of-way.

TRAFFIC NOISE LEVELS AND NOISE CONTOURS

Project Number: 177745
Project Name: Heritage Square South Project
Scenario: Existing + Project

Background Information

Model Description: FHWA Highway Noise Prediction Model (FHWA-RD-77-108) with California Vehicle Noise (CALVENO) Emission Levels.
Source of Traffic Volumes: https://pasadena.ms2soft.com/tcds/tsearch.asp?loc=Pasadena&mod=
Community Noise Descriptor: L_{dn}: X CNEL:

Assumed 24-Hour Traffic Distribution:	Day	Evening	Night
Total ADT Volumes	77.50%	12.90%	9.60%
Medium-Duty Trucks	84.80%	4.90%	10.30%
Heavy-Duty Trucks	86.50%	2.70%	10.80%

Analysis Condition				Design		Vehicle Mix		Distance from Centerline of Roadway					
		Median	ADT[1]	Speed	Alpha	Medium	Heavy	Ldn at	Distance to Contour				Calc
Roadway, Segment	Lanes	Width	Volume	(mph)	Factor	Trucks	Trucks	100 Feet	70 Ldn	65 Ldn	60 Ldn	55 Ldn	Dist
Fair Oaks Avenue													
Orange Grove Boulevard to West Mountain Street	4	0	27,476	30	0.5	1.8%	0.7%	61.9	-	62	134	288	100
Orange Grove Boulevard													
Fair Oaks Avenue and Los Robles Avenue	4	8	19,497	35	0.5	1.8%	0.7%	61.4	-	57	123	265	100

[1] Project-generated 543 daily trips were added to both segments.
"-" = contour is located within the roadway right-of-way.

APPENDIX C:
AIR QUALITY TECHNICAL MEMORANDUM

Michael Baker INTERNATIONAL

We Make a Difference

MEMORANDUM

To: John Bellas, Michael Baker International
Brent Schleck, Michael Baker International

From: Eddie Torres, Michael Baker International
Zhe Chen, Michael Baker International

Date: March 31, 2020

Subject: Heritage Square South Project – Air Quality Technical Memorandum

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PURPOSE

The purpose of this technical memorandum is to evaluate potential short- and long-term air quality impacts resulting from the construction and operation of the proposed Heritage Square South Project (project), located in Pasadena, California.

PROJECT LOCATION

The project site is located at 710 to 738 North Fair Oaks Avenue and 19 to 25 East Orange Grove Boulevard in Pasadena, bound by Fair Oaks Avenue to the west, Orange Grove Boulevard to the south, Wheeler Lane to the east, and Heritage Square North Senior Apartments buildings to the north. Major transportation facilities in the vicinity of the proposed project site include Interstate 210 (Foothill Freeway) at 0.4 miles south of the site and 0.4 miles west of the site.

EXISTING SITE CONDITIONS

The project site is approximately 1.3 acres and currently vacant, except for an existing fast food restaurant and associated surface parking areas on the southwest corner of the project site. The project site is currently designated Medium Mixed-Use with less than 2.25 Floor Area Ratio (FAR) and less than 87 dwelling units per acre[1]. The project site is located within the Fair Oaks/Orange Grove Specific Plan Area and is designated Commercial Mixed-Use[2].

Surrounding uses adjacent to the project site include commercial retail buildings to the east and south, an auto center to the west, and residences to the east, north, and west.

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[1] City of Pasadena, *City of Pasadena Land Use Diagram*, November 14, 2016, https://www.cityofpasadena.net/wp-content/uploads/sites/30/Land-Use-Diagram-2016-11-14.pdf?v=1584653610006, accessed March 19, 2020.

[2] City of Pasadena, Fair Oaks/Orange Grove Specific Plan, January 29, 2002, https://www.cityofpasadena.net/planning/planning-division/community-planning/specific-plans/fair-oaks-orange-grove/, accessed March 19, 2020.

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PROJECT DESCRIPTION

The proposed project would involve demolishing the existing fast food restaurant and associated surface parking areas and constructing a three-story mixed-use building with retail and restaurant uses and 70 affordable housing units. The retail space would be approximately 7,500 square feet and the restaurants would be approximately 7,500 square feet. In addition, the proposed project would include 60 surface and subterranean parking spaces on site.

Project construction would occur over approximately 16 months, beginning in March 2021. Construction of the project would include the following phases: demolition, grading, building construction, and architectural coating. It is anticipated that the project would be completed and operational by July 2022.

CALIFORNIA ENVIRONMENTAL QUALITY ACT (CEQA) THRESHOLDS

The environmental analysis in this memorandum is patterned after the Initial Study Checklist recommended by the *CEQA Guidelines*, as amended. The issues presented in the Initial Study Checklist have been utilized as thresholds of significance in this section. Accordingly, a project may create a significant environmental impact if it causes one or more of the following to occur:

- Conflict with or obstruct implementation of the applicable air quality plan (refer to Impact AQ-1);
- Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is in nonattainment under an applicable Federal or State ambient air quality standard (refer to Impact AQ-2);
- Expose sensitive receptors to substantial pollutant concentrations (refer to Impact AQ-3); and
- Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people (refer to Impact AQ-4).

EXISTING SETTING

Local Ambient Air Quality

California Air Resources Board (CARB) monitors ambient air quality at approximately 250 air monitoring stations across the State. Air quality monitoring stations usually measure pollutant concentrations ten feet above ground level; therefore, air quality is often referred to in terms of ground-level concentrations. The project site is located within Source Receptor Area (SRA) 8, West San Gabriel Valley. The closest air monitoring station to the project site is the Pasadena Monitoring Station. Local air quality data from 2016 to 2018 is provided in Table 1, *Summary of Air Quality Data*. This table lists the monitored maximum concentrations and number of exceedances of Federal/State air quality standards for each year.

Table 1
Summary of Air Quality Data

Pollutant	California Standard	Federal Primary Standard	Year	Maximum Concentration[3]	Days (Samples) State/Federal Std. Exceeded
Ozone (O_3)[1] (1-hour)	0.09 ppm for 1 hour	NA[6]	2016 2017 2018	0.126 ppm 0.139 0.112	12/1 18/2 8/0
Ozone (O_3)[1] (8-hour)	0.070 ppm for 8 hours	0.070 ppm for 8 hours	2016 2017 2018	0.090 ppm 0.100 0.090	19/15 38/25 19/8
Carbon Monoxide (CO)[1] (1-hour)	20 ppm for 1 hour	35 ppm for 1 hour	2016 2017 2018	1.54 ppm 2.24 1.95	0/0 0/0 0/0
Nitrogen Dioxide (NO_2)[1]	0.18 ppm for 1 hour	0.100 ppm for 1 hour	2016 2017 2018	0.072 ppm 0.072 0.068	0/0 0/0 0/0
Fine Particulate Matter ($PM_{2.5}$)[1, 5]	No Separate Standard	35 µg/m^3 for 24 hours	2016 2017 2018	29.2 µg/m^3 22.8 32.5	0/0 0/0 0/0
Particulate Matter (PM_{10})[2, 4, 5]	50 µg/m^3 for 24 hours	150 µg/m^3 for 24 hours	2016 2017 2018	74.6 µg/m^3 96.2 81.2	NA/0 NA/0 31.8/0

ppm = parts per million; PM_{10} = particulate matter 10 microns in diameter or less; µg/m^3 = micrograms per cubic meter; $PM_{2.5}$ = particulate matter 2.5 microns in diameter or less; NA = not applicable.

Notes:
1. Data collected from the Pasadena Monitoring Station located at 752 South Wilson Avenue, Pasadena, California 91106.
2. Data collected from the Los Angeles-North Main Street Monitoring Station located at 1630 North Main Street, Los Angeles, California 90012.
3. Maximum concentration is measured over the same period as the California Standards.
4. PM_{10} exceedances are based on State thresholds established prior to amendments adopted on June 20, 2002.
5. PM_{10} and $PM_{2.5}$ exceedances are derived from the number of samples exceeded, not days.
6. The Federal standard was revoked in June 2005.

Sources:
California Air Resources Board, *ADAM Air Quality Data Statistics*, http://www.arb.ca.gov/adam/, accessed March 19, 2020.
California Air Resources Board, *AQMIS2: Air Quality Data*, https://www.arb.ca.gov/aqmis2/aqdselect.php, accessed March 19, 2020.

REGULATORY SETTING

South Coast Air Quality Management District

Air Quality Thresholds

Under the CEQA, the South Coast Air Quality Management District (SCAQMD) is an expert commenting agency on air quality within its jurisdiction or impacting its jurisdiction. Under the Federal Clean Air Act (FCAA), the SCAQMD has adopted Federal attainment plans for ozone (O_3) and particulate matter 10 microns in diameter or less (PM_{10}). The SCAQMD reviews projects to ensure that they would not: (1) cause or contribute to any new violation of any air quality standard; (2) increase the frequency or severity of any existing violation of any air quality standard; or (3) delay timely attainment of any air quality standard or any required interim emission reductions or other milestones of any Federal attainment plan.

The *CEQA Air Quality Handbook* also provides significance thresholds for both construction and operation of projects within the SCAQMD jurisdictional boundaries. If the SCAQMD thresholds are exceeded, a potentially significant impact could result. However, ultimately the lead agency determines the thresholds of significance for impacts. If a project proposes development in excess of the established thresholds, as outlined in Table 2, *South Coast Air Quality Management District Emissions Thresholds*, a significant air quality impact may occur and additional analysis is warranted to fully assess the significance of impacts.

Table 2
South Coast Air Quality Management District Emissions Thresholds

Phase	Pollutant (lbs/day)					
	ROG	NO_X	CO	SO_X	PM_{10}	$PM_{2.5}$
Construction	75	100	550	150	150	55
Operational	55	55	550	150	150	55
ROG = reactive organic gases; NO_X = nitrogen oxides; CO = carbon monoxide; SO_X = sulfur oxides; PM_{10} = particulate matter up to 10 microns; $PM_{2.5}$ = particulate matter up to 2.5 microns; lbs = pounds						
Source: South Coast Air Quality Management District, *CEQA Air Quality Handbook,* November 1993.						

Localized Significance Thresholds

Localized Significance Thresholds (LSTs) were developed in response to SCAQMD Governing Boards' Environmental Justice Enhancement Initiative (I-4). The SCAQMD provided the *Final Localized Significance Threshold Methodology* (dated July 2008) for guidance. The LST methodology assists lead agencies in analyzing localized impacts associated with project-specific level proposed projects. The SCAQMD provides the LST lookup tables for one-, two-, and five-acre projects emitting carbon monoxide (CO), nitrogen oxides (NO_X), PM_{10}, or particulate matter 2.5 microns in diameter or less ($PM_{2.5}$). The LST methodology and associated mass rates are not designed to evaluate localized impacts from mobile sources traveling over the roadways. The SCAQMD recommends that any project over five acres should perform air quality dispersion modeling to assess impacts to nearby sensitive receptors.

Cumulative Emissions Thresholds

The SCAQMD's *2016 Air Quality Management Plan* (2016 AQMP) was prepared to accommodate growth, meet State and Federal air quality standards, and minimize the fiscal impact that pollution control measures have on the local economy. According to the SCAQMD *CEQA Air Quality Handbook*, project-related emissions that fall below the established construction and operational thresholds should be considered less than significant unless there is pertinent information to the contrary. If a project exceeds these emission thresholds, the SCAQMD *CEQA Air Quality Handbook* states that the significance of a project's contribution to cumulative impacts should be determined based on whether the rate of growth in average daily trips exceeds the rate of growth in population.

City of Pasadena

Green City Action Plan

The City of Pasadena adopted the *Green City Action Plan*[3] in 2006, which identifies means to conserve energy and water, reduce waste, address global warming, tailor urban design, protect natural habitats, improve transportation options, and reduce risks to human health. The following actions help improve air quality and are applicable to the proposed project:

- **Action 8**: Adopt urban planning principles and practices that advance higher density, mixed use, walkable, bikeable and disabled accessible neighborhoods which coordinate land use and transportation with open space systems for recreation and ecological restoration.

- **Action 14**: Pass a law or implement a program that eliminates leaded gasoline (where it is still used); phases down sulfur levels in diesel and gasoline fuels, concurrent with using advanced emission controls on all buses, taxis, and public fleets to reduce particulate matter and smog-forming emissions from those fleets by fifty percent in seven years.

AIR QUALITY IMPACTS

Impact AQ-1: Would the project conflict with or obstruct implementation of the applicable air quality plan?

Less Than Significant Impact. The City of Pasadena is located within the South Coast Air Basin (Basin) at the base of San Gabriel mountains. The SCAQMD has jurisdiction in the Basin, which has a history of recorded air quality violations and is an area where both State and Federal ambient air quality standards are exceeded. Areas that meet ambient air quality standards are classified as attainment areas, while areas that do not meet these standards are classified as nonattainment areas. The SCAQMD is required, pursuant to the Federal Clean Air Act, to reduce emissions of the air pollutants for which the Basin is in nonattainment.

In order to reduce emissions, the SCAQMD adopted the 2016 AQMP which establishes a program of rules and regulations directed at reducing air pollutant emissions and achieving State and Federal air quality standards. The 2016 AQMP is a regional and multi-agency effort including the SCAQMD, CARB, the Southern California Association of Governments (SCAG), and the U.S. Environmental Protection Agency (EPA).

The 2016 AQMP pollutant control strategies are based on the latest scientific and technical information and planning assumptions, including the *2016-2040 Regional Transportation Plan/Sustainable Communities Strategy* (RTP/SCS), updated emission inventory methodologies for various source categories, and SCAG's latest growth forecasts. SCAG's latest growth forecasts were defined in consultation with local governments and with reference to local general plans. The SCAQMD considers projects that are consistent with the AQMP, which is intended to bring the Basin into attainment for all criteria pollutants, to also have less than significant cumulative impacts.

[3] City of Pasadena, *Green City Action Plan*, 2006, https://ww5.cityofpasadena.net/planning/wp-content/uploads/sites/56/2017/07/Green-City-Action-Plan.pdf, accessed March 19, 2020.

Criteria for determining consistency with the AQMP are defined by the following indicators:

Criterion 1:

With respect to the first criterion, SCAQMD methodologies require that an air quality analysis for a project include forecasts of project emissions in relation to contributing to air quality violations and delay of attainment.

a) *Would the project result in an increase in the frequency or severity of existing air quality violations?*

Since the consistency criteria identified under the first criterion pertains to pollutant concentrations, rather than to total regional emissions, an analysis of the project's pollutant emissions relative to localized pollutant concentrations is used as the basis for evaluating project consistency. As discussed in Impact Statement AQ-3 below, localized concentrations of CO, NO_X, and particulate matter (PM_{10} and $PM_{2.5}$) would be less than significant. Therefore, the proposed project would not result in an increase in the frequency or severity of existing air quality violations. Because reactive organic gasses (ROGs) are not a criteria pollutant, there is no ambient standard or localized threshold for ROGs. Due to the role ROGs play in ozone formation, it is classified as a precursor pollutant and only a regional emissions threshold has been established.

b) *Would the project cause or contribute to new air quality violations?*

As discussed below in Impact Statements AQ-2 and AQ-3, the proposed project would result in emissions that would be below the SCAQMD's thresholds for regional and localized emissions. Therefore, the proposed project would not have the potential to cause or affect a violation of the ambient air quality standards.

c) *Would the project delay timely attainment of air quality standards or the interim emissions reductions specified in the AQMP?*

The proposed project would result in less than significant impacts with regard to localized concentrations during project construction. As such, the proposed project would not delay the timely attainment of air quality standards or 2016 AQMP emissions reductions.

Criterion 2:

With respect to the second criterion for determining consistency with SCAQMD and SCAG air quality policies, it is important to recognize that air quality planning within the Basin focuses on attainment of ambient air quality standards at the earliest feasible date. Projections for achieving air quality goals are based on assumptions regarding population, housing, and growth trends. Thus, the SCAQMD's second criterion for determining project consistency focuses on whether or not the proposed project exceeds the assumptions utilized in preparing the forecasts presented in the 2016 AQMP. Determining whether or not a project exceeds the assumptions reflected in the 2016 AQMP involves the evaluation of the three criteria outlined below. The following discussion provides an analysis of each of these criteria.

a) *Would the project be consistent with the population, housing, and employment growth projections utilized in the preparation of the AQMP?*

A project is consistent with the 2016 AQMP in part if it is consistent with the population, housing, and employment assumptions that were used in the development of the 2016 AQMP. In the case of the 2016 AQMP, four sources of data form the basis for the projections of air pollutant emissions: the *City of Pasadena General Plan* (General Plan), the *Fair Oaks/Orange Grove Specific Plan* (Specific Plan), SCAG's regional growth forecast, and the SCAG RTP/SCS. The RTP/SCS also provides socioeconomic forecast projections of regional population growth.

The project proposes the construction of a mixed-use three-story building with 7,500 square feet retail space, 7,500 square feet restaurants, 70 affordable housing units, and 60 surface and subterranean parking spaces on a 1.3-acre site. The project site is designated in the General Plan as Medium Mixed-Use with less than 2.25 FAR and less than 87 dwelling units per acre, and Commercial Mixed-Use in the Specific Plan. The project would not differ from the current General Plan and Specific Plan Land Use and Zoning Designations. Therefore, the proposed project is considered consistent with the General Plan and Specific Plan, and is consistent with the types, intensity, and patterns of land use envisioned for the site vicinity. The population, housing, and employment forecasts, which are adopted by SCAG's Regional Council, are based on the local plans and policies applicable to the City. As the SCAQMD has incorporated these same projections into the 2016 AQMP, it can be concluded that the proposed project would be consistent with the projections.

b) *Would the project implement all feasible air quality mitigation measures?*

The proposed project would not require mitigation and would result in less than significant air quality impacts; refer to Impact Statements AQ-2 and AQ-3. As such, the proposed project meets this AQMP consistency criterion.

c) *Would the project be consistent with the land use planning strategies set forth in the AQMP?*

As discussed above, the project would be consistent with the land use envisioned in the General Plan and Specific Plan. Furthermore, the project would not cause SCAG's 2035 population forecast to be exceeded and the population, housing, and employment forecasts, which are adopted by SCAG's Regional Council, are based on the local plans and policies applicable to the City. Additionally, SCAQMD has incorporated these same projections into the 2016 AQMP. As such, the proposed project meets this AQMP consistency criterion.

In conclusion, the determination of 2016 AQMP consistency is primarily concerned with the long-term influence of a project on air quality in the Basin. The proposed project would not result in a long-term impact on the region's ability to meet State and Federal air quality standards. Also, the proposed project would be consistent with the goals and policies of the 2016 AQMP for control of fugitive dust. As discussed above, the proposed project's long-term influence would also be consistent with the SCAQMD and SCAG's goals and policies and is, therefore, considered consistent with the 2016 AQMP.

Mitigation Measures: No mitigation is required.

Impact AQ-2: Would the project result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable Federal or State ambient air quality standard?

Less Than Significant Impact.

Short-Term Construction

The project involves construction activities associated with demolition, grading, building construction, and architectural coating applications. The project would be constructed over approximately 16 months. Exhaust emission factors for typical diesel-powered heavy equipment are based on the California Emissions Estimator Model Version 2016.3.2 (CalEEMod) program defaults. Variables factored into estimating the total construction emissions include the level of activity, length of construction period, number of pieces and types of equipment in use, site characteristics, weather conditions, number of construction personnel, and the amount of materials to be transported on- or off-site. The analysis of daily construction emissions has been prepared using CalEEMod. Refer to Appendix A, *Air Quality Emissions Data*, for the CalEEMod outputs and results. Table 3, *Short-Term Construction Emissions*, presents the anticipated daily short-term construction emissions.

Table 3
Short-Term Construction Emissions

Emissions Source	Pollutant (pounds/day)[1]					
	ROG	NO_X	CO	SO_2	PM_{10}	$PM_{2.5}$
Year 1						
Construction Related Emissions[2]	2.13	30.62	15.70	0.06	3.61	1.89
Year 2						
Construction Related Emissions[2]	8.01	15.37	17.59	0.04	1.65	0.92
SCAQMD Thresholds	*75*	*100*	*550*	*150*	*150*	*55*
Is Threshold Exceeded?	***No***	***No***	***No***	***No***	***No***	***No***

Notes:
1. Emissions were calculated using CalEEMod, version 2016.3.2.
2. Modeling assumptions include compliance with SCAQMD Rule 403 which requires: properly maintain mobile and other construction equipment; replace ground cover in disturbed areas quickly; water exposed surfaces three times daily; cover stock piles with tarps; water all haul roads twice daily; and limit speeds on unpaved roads to 15 miles per hour.

Source: Refer to Appendix A, *Air Quality Emissions Data*, for detailed model input/output data.

Fugitive Dust Emissions

Construction activities are a source of fugitive dust emissions that may have a substantial, temporary impact on local air quality. In addition, fugitive dust may be a nuisance to those living and working in the project area. Fugitive dust emissions are associated with land clearing, ground excavation, cut-and-fill, and truck travel on unpaved roadways (including demolition as well as construction activities). Fugitive dust emissions vary substantially from day to day, depending on the level of activity, specific operations, and weather conditions. Fugitive dust from demolition, grading, and construction is expected to be short-term and would cease upon project completion. It should be noted that most of this material is inert

silicates, rather than the complex organic particulates released from combustion sources, which are more harmful to health.

Dust (larger than 10 microns) generated by such activities usually becomes more of a local nuisance than a serious health problem. Of particular health concern is the amount of PM_{10} (particulate matter smaller than 10 microns) generated as a part of fugitive dust emissions. PM_{10} poses a serious health hazard alone or in combination with other pollutants. $PM_{2.5}$ is mostly produced by mechanical processes. These include automobile tire wear, industrial processes such as cutting and grinding, and re-suspension of particles from the ground or road surfaces by wind and human activities such as construction or agriculture. $PM_{2.5}$ is mostly derived from combustion sources, such as automobiles, trucks, and other vehicle exhaust, as well as from stationary sources. These particles are either directly emitted or are formed in the atmosphere from the combustion of gases such as NO_X and sulfur oxides (SO_X) combining with ammonia. $PM_{2.5}$ components from material in the earth's crust, such as dust, are also present, with the amount varying in different locations.

Construction activities would comply with SCAQMD Rule 403, which requires that excessive fugitive dust emissions be controlled by regular watering or other dust prevention measures. Adherence to SCAQMD Rule 403 would greatly reduce PM_{10} and $PM_{2.5}$ concentrations. It should be noted that these reductions were applied in CalEEMod. As depicted in Table 3, total PM_{10} and $PM_{2.5}$ emissions would not exceed the SCAQMD thresholds during construction. Thus, construction-related air quality impacts from fugitive dust emissions would be less than significant.

Construction Equipment and Worker Vehicle Exhaust

Exhaust emissions (e.g., NO_x and CO) from construction activities include emissions associated with the transport of machinery and supplies to and from the project site, emissions produced on-site as the equipment is used, and emissions from trucks transporting materials to/from the site. As presented in Table 3, construction equipment and worker vehicle exhaust emissions would be below the established SCAQMD thresholds. Therefore, air quality impacts from equipment and vehicle exhaust emissions would be less than significant.

ROG Emissions

In addition to gaseous and particulate emissions, the application of asphalt and surface coatings creates ROG emissions, which are O_3 precursors. As required, all architectural coatings for the proposed project structures would comply with SCAQMD Regulation XI, Rule 1113 – Architectural Coating. Rule 1113 provides specifications on painting practices as well as regulates the ROG content of paint. ROG emissions associated with the proposed project would be less than significant; refer to Table 3.

Total Daily Construction Emissions

In accordance with the SCAQMD Guidelines, CalEEMod was utilized to model construction emissions for ROG, NO_X, CO, SO_X, PM_{10}, and $PM_{2.5}$. As indicated in Table 3, criteria pollutant emissions during construction of the proposed project would not exceed the SCAQMD significance thresholds. Thus, total construction related air emissions would be less than significant.

Asbestos

Asbestos is a term used for several types of naturally occurring fibrous minerals that are a human health hazard when airborne. The most common type of asbestos is chrysotile, but other types such as tremolite and actinolite are also found in California. Asbestos is classified as a known human carcinogen by State, Federal, and international agencies and was identified as a toxic air contaminant by the CARB in 1986.

Asbestos can be released from serpentinite and ultramafic rocks when the rock is broken or crushed. At the point of release, the asbestos fibers may become airborne, causing air quality and human health hazards. These rocks have been commonly used for unpaved gravel roads, landscaping, fill projects, and other improvement projects in some localities. Asbestos may be released to the atmosphere due to vehicular traffic on unpaved roads, during grading for development projects, and at quarry operations. All of these activities may have the effect of releasing potentially harmful asbestos into the air. Natural weathering and erosion processes can act on asbestos bearing rock and make it easier for asbestos fibers to become airborne if such rock is disturbed. According to the Department of Conservation Division of Mines and Geology, *A General Location Guide for Ultramafic Rocks in California – Areas More Likely to Contain Naturally Occurring Asbestos Report*[4], serpentinite and ultramafic rocks are not known to occur within the project area. Thus, there would be no impact in this regard.

Long-Term (Operational) Emissions

Two CalEEMod models have been conducted to calculate the long-term emissions from the operation of the existing fast food restaurant and associated surface parking and the proposed project, respectively. The net increase of total emissions represents the project-generated emissions. Emissions from each source are discussed in more detail below.

Mobile Source Emissions

Mobile sources are emissions from motor vehicles, including tailpipe and evaporative emissions. Depending upon the pollutant being discussed, the potential air quality impact may be of either regional or local concern. For example, ROG, NO_X, SO_X, PM_{10}, and $PM_{2.5}$ are all pollutants of regional concern (NO_X and ROG react with sunlight to form O_3 [photochemical smog], and wind currents readily transport SO_X, PM_{10}, and $PM_{2.5}$); however, CO tends to be a localized pollutant, dispersing rapidly at the source. Table 4, *Long-Term Operational Air Emissions*, presents the anticipated mobile source emissions. As shown in Table 4, emissions generated by vehicle traffic associated with the project would not exceed established SCAQMD thresholds. Impacts from mobile source air emissions would be less than significant.

[4] Department of Conservation Division of Mines and Geology, *A General Location Guide for Ultramafic Rocks in California – Areas More Likely to Contain Naturally Occurring Asbestos Report*, August 2000, https://ww3.arb.ca.gov/toxics/asbestos/ofr_2000-019.pdf, accessed March 19, 2020.

Table 4
Long-Term Operational Air Emissions

Emissions Source	Pollutant (lbs/day)[1]					
	ROG	NO_X	CO	SO_X	PM_{10}	$PM_{2.5}$
Existing Conditions Summer Emissions[2]						
Area Source Emissions	0.03	<0.01	<0.01	0.00	<0.01	<0.01
Energy Emissions	0.01	0.07	0.06	<0.01	0.01	0.01
Mobile Emissions[3]	0.45	2.25	5.65	0.02	1.75	0.48
Total Emissions[4]	**0.48**	**2.32**	**5.71**	**0.02**	**1.75**	**0.48**
Proposed Project Summer Emissions[2]						
Area Source Emissions	2.13	1.11	6.23	<0.01	0.12	0.12
Energy Emissions	0.07	0.66	0.47	<0.01	0.05	0.05
Mobile Emissions[3]	1.41	7.21	18.75	0.07	5.90	1.61
Total Emissions[4]	**3.61**	**8.98**	**25.46**	**0.08**	**6.07**	**1.78**
Net Increase of Total Emissions[4]	**3.13**	**6.65**	**19.75**	**0.06**	**4.31**	**1.30**
SCAQMD Threshold	*55*	*55*	*550*	*150*	*150*	*55*
Is Threshold Exceeded?	***No***	***No***	***No***	***No***	***No***	***No***

Notes:
1. Emissions were calculated using CalEEMod, version 2016.3.2.
2. Summer emissions represent the worst-case scenario for long-term operational emissions; refer to Appendix A.
3. The mobile source emissions were calculated using the trip generation data provided in the City of Pasadena Department of Transportation, *Transportation Impact Analysis Outside of CEQA Evaluation*, dated February 5, 2020.
4. The numbers may be slightly off due to rounding.

Source: Refer to Appendix A, *Air Quality Emissions Data*, for detailed model input/output data.

Area Source Emissions

Area source emissions would be generated from consumer products, architectural coating, and landscaping. As shown in Table 4, area source emissions from the proposed project would not exceed SCAQMD thresholds for ROG, NO_X, CO, SO_X, PM_{10}, or $PM_{2.5}$.

Energy Source Emissions

Energy source emissions would be generated as a result of electricity and natural gas (non-hearth) usage associated with the proposed project. The primary use of electricity and natural gas by the project would be for space heating and cooling, water heating, ventilation, lighting, appliances, and electronics. As shown in Table 4, energy source emissions from the proposed project would not exceed SCAQMD thresholds for ROG, NO_X, CO, SO_X, PM_{10}, or $PM_{2.5}$.

Air Quality Health Impacts

Adverse health effects induced by criteria pollutant emissions are highly dependent on a multitude of interconnected variables (e.g., cumulative concentrations, local meteorology and atmospheric conditions, and the number and character of exposed individual [e.g., age, gender]). In particular, ozone precursors ROGs and NO_x affect air quality on a regional scale. Health effects related to ozone are therefore the product of emissions generated by numerous sources throughout a region. Existing models have limited sensitivity to small changes in criteria pollutant concentrations, and, as such, translating project-

generated criteria pollutants to specific health effects or additional days of nonattainment would produce meaningless results. In other words, the project's less than significant increases in regional air pollution from criteria air pollutants would have nominal or negligible impacts on human health.

As noted in the Brief of Amicus Curiae by the SCAQMD (April 6, 2015) for the *Sierra Club vs. County of Fresno*,[5] SCAQMD acknowledged it would be impossible to quantify health impacts of criteria pollutants for various reasons including modeling limitations as well as where in the atmosphere air pollutants interact and form. Further, as noted in the Brief of Amicus Curiae by the San Joaquin Valley Air Pollution Control District (SJVAPCD) (April 13, 2015) for the *Sierra Club vs. County of Fresno*,[6] SJVAPCD has acknowledged that currently available modeling tools are not equipped to provide a meaningful analysis of the correlation between an individual development project's air emissions and specific human health impacts.

The SCAQMD acknowledges that health effects quantification from ozone, as an example is correlated with the increases in ambient level of ozone in the air (concentration) that an individual person breathes. SCAQMD's Brief of Amicus Curiae states that it would take a large amount of additional emissions to cause a modeled increase in ambient ozone levels over the entire region. The SCAQMD states that based on their own modeling in the SCAQMD's *2012 Air Quality Management Plan*, a reduction of 432 tons (864,000 pounds) per day of NO_X and a reduction of 187 tons (374,000 pounds) per day of VOCs would reduce ozone levels at highest monitored site by only nine parts per billion. As such, the SCAQMD concludes that it is not currently possible to accurately quantify ozone-related health impacts caused by NO_X or VOC emissions from relatively small projects (defined as projects with regional scope) due to photochemistry and regional model limitations. As such, for the purpose of this analysis, since the project would not exceed SCAQMD thresholds for construction and operational air emissions, the project would have a less than significant impact for air quality health impacts as well.

Cumulative Conclusion

With respect to the proposed project's construction-related air quality emissions and cumulative Basin-wide conditions, the SCAQMD has developed strategies to reduce criteria pollutant emissions outlined in the 2016 AQMP pursuant to FCAA mandates. As such, the proposed project would comply with SCAQMD Rule 403 requirements and the adopted 2016 AQMP emissions control measures. Rule 403 requires that fugitive dust be controlled with the best available control measures in order to reduce dust so that it does not remain visible in the atmosphere beyond the property line of the proposed project. Per SCAQMD rules and mandates, as well as the CEQA requirement that significant impacts be mitigated to the extent feasible, these same requirements (i.e., Rule 403 compliance, the implementation of all feasible mitigation measures, and compliance with adopted 2016 AQMP emissions control measures) would also be imposed on construction projects throughout the Basin, which would include related projects.

As discussed previously, the proposed project would not result in short- or long-term air quality impacts, as emissions would not exceed the SCAQMD adopted construction or operational thresholds. Additionally, adherence to SCAQMD rules and regulations would alleviate potential impacts related to

[5] South Coast Air Quality Management District, *Application of the South Coast Air Quality Management District for Leave to File Brief of Amicus Curiae in Support of Neither Party and Brief of Amicus Curiae. In the Supreme Court of California. Sierra Club, Revive the San Joaquin, and League of Women Voters of Fresno v. County of Fresno*, 2014.

[6] San Joaquin Valley Air Pollution Control District, *Application for Leave to File Brief of Amicus Curiae Brief of San Joaquin Valley Unified Air Pollution Control District in Support of Defendant and Respondent, County of Fresno and Real Party In Interest and Respondent, Friant Ranch, L.P. In the Supreme Court of California. Sierra Club, Revive the San Joaquin, and League of Women Voters of Fresno v. County of Fresno*, 2014.

cumulative conditions on a project-by-project basis. Emission reduction technology, strategies, and plans are constantly being developed. As a result, the proposed project would not contribute a cumulatively considerable net increase of any nonattainment criteria pollutant. Therefore, the project's incremental operational impacts would be less than cumulatively considerable, and impacts in this regard are less than significant.

Mitigation Measures: No mitigation is required.

Impact AQ-3: Would the project expose sensitive receptors to substantial pollutant concentrations?

Less Than Significant Impact. Sensitive receptors are defined as facilities or land uses that include members of the population that are particularly sensitive to the effects of air pollutants, such as children, the elderly, and people with illnesses. Examples of these sensitive receptors are residences, schools, hospitals, and daycare centers. CARB has identified the following groups of individuals as the most likely to be affected by air pollution: the elderly over 65, children under 14, athletes, and persons with cardiovascular and chronic respiratory diseases such as asthma, emphysema, and bronchitis.

The closest sensitive receptor is the residences located approximately 20 feet to the east of the project site. In order to identify impacts to sensitive receptors, the SCAQMD recommends addressing LSTs for construction and operations impacts (area sources only). The CO hotspot analysis, following the LST analysis, addresses localized mobile source impacts.

Localized Significance Thresholds

LSTs were developed in response to SCAQMD Governing Boards' Environmental Justice Enhancement Initiative (I-4). The SCAQMD provided the Final Localized Significance Threshold Methodology (dated June 2003 [revised 2008])[7] for guidance. The LST methodology assists lead agencies in analyzing localized air quality impacts. The SCAQMD provides the LST screening lookup tables for one, two, and five-acre projects emitting CO, NO_X, $PM_{2.5}$, or PM_{10}. The LST methodology and associated mass rates are not designed to evaluate localized impacts from mobile sources traveling over the roadways. The SCAQMD recommends that any project over five acres should perform air quality dispersion modeling to assess impacts to nearby sensitive receptors. The project is in SRA 8 (West San Gabriel Valley).

Construction

Because CalEEMod calculates construction emissions based on the number of equipment hours and the maximum daily soil disturbance activity possible for each piece of equipment, Table 5, *Grading Equipment Rates*, is used to determine the maximum daily disturbed acreage for comparison to LSTs.

[7] South Coast Air Quality Management District, *Final Localized Significance Threshold Methodology*, July 2008.

Table 5
Grading Equipment Rates

Construction Phase	Equipment Type	Equipment Quantity	Acres Disturbed per 8-Hour Day	Operating Hours per Day	Acres Disturbed per Day
Grading	Tractors	1	0.5	7	0.5
	Dozers	1	0.5	6	0.5
	Graders	1	0.5	6	0.5
				Total Acres Disturbed per Day	**1.5**[1]

Notes:
1. The total acres disturbed per day calculated from the number of equipment hours and the maximum daily soil disturbance activity possible for each piece of equipment (1.5 acres).

Source: South Coast Air Quality Management District, *Final Localized Significance Threshold Methodology*, July 2008.

Based on the equipment list provided by the project applicant, the project during the grading phase would disturb up to 1.5 acres per day. Therefore, as a worst-case scenario, the LST thresholds for two acres is used for the construction LST analysis. The nearest sensitive uses are approximately 6 meters (i.e. 20 feet) to the east of the project site. According to SCAQMD LST Methodology, projects with boundaries located closer than 25 meters to the nearest receptor should use the LSTs for receptors located at 25 meters. Therefore, the LST value for 2 acres and 25 meters was conservatively adopted. Table 6, *Localized Significance of Construction Emissions*, shows the localized construction-related emissions. It is noted that the localized emissions presented in Table 6 are less than those in Table 3 because localized emissions include only on-site site preparation emissions (i.e., from construction equipment and fugitive dust). As seen in Table 6, emissions would not exceed the LSTs for SRA 8. Construction LST impacts would be less than significant in this regard.

Table 6
Localized Significance of Construction Emissions

Maximum Emissions	Pollutant (pounds/day)			
	NO_X	CO	PM_{10}	$PM_{2.5}$
Maximum Daily Emissions (on-site)	19.70	14.49	2.34	1.51
Localized Significance Threshold	98	812	6	4
Thresholds Exceeded?	***No***	***No***	***No***	***No***

Note:
1. The Localized Significance Threshold was determined using Appendix C of the SCAQMD *Final Localized Significant Threshold Methodology* guidance document for pollutants NO_X, CO, PM_{10}, and $PM_{2.5}$. The Localized Significance Threshold was based on the anticipated daily acreage disturbance for construction (the thresholds for 2 acres was used), the distance to sensitive receptors (25 meters), and the source receptor area (SRA 8).

Operations

According to the SCAQMD localized significance threshold methodology, LSTs would apply to the operational phase of a proposed project if the project includes stationary sources or attracts mobile sources that may spend extended periods queuing and idling at the site (e.g., warehouse or transfer facilities). The proposed project does not include such uses. Thus, due to the lack of such emissions, no

long-term localized significance threshold analysis is necessary. Operational LST impacts would be less than significant in this regard.

Carbon Monoxide Hotspots

CO emissions are a function of vehicle idling time, meteorological conditions, and traffic flow. Under certain extreme meteorological conditions, CO concentrations near a congested roadway or intersection may reach unhealthful levels (i.e., adversely affecting residents, school children, hospital patients, the elderly, etc.).

The SCAQMD requires a quantified assessment of CO hotspots when a project increases the volume-to-capacity ratio (also called the intersection capacity utilization) by 0.02 (two percent) for any intersection with an existing level of service LOS D or worse. Because traffic congestion is highest at intersections where vehicles queue and are subject to reduced speeds, these hot spots are typically produced at intersections.

The Basin is designated as an attainment/maintenance area for the Federal CO standards and an attainment area for State standards. There has been a decline in CO emissions even though vehicle miles traveled on U.S. urban and rural roads have increased. Nationwide estimated anthropogenic CO emissions have decreased 68 percent between 1990 and 2014. In 2014, mobile sources accounted for 82 percent of the nation's total anthropogenic CO emissions.[8] CO emissions have continued to decline since this time. The Basin was re-designated as attainment in 2007, and is no longer addressed in the SCAQMD's AQMP. Three major control programs have contributed to the reduced per-vehicle CO emissions: exhaust standards, cleaner burning fuels, and motor vehicle inspection/maintenance programs.

A detailed CO analysis was conducted in the Federal Attainment Plan for Carbon Monoxide (CO Plan) for the SCAQMD's *2003 Air Quality Management Plan*, which is the most recent AQMP that addresses CO concentrations. The locations selected for microscale modeling in the CO Plan are worst-case intersections in the Basin, and would likely experience the highest CO concentrations. Thus, CO analysis within the CO Plan is utilized in a comparison to the proposed project, since it represents a worst-case scenario with heavy traffic volumes within the Basin.

Of these locations, the Wilshire Boulevard/Veteran Avenue intersection in Los Angeles County experienced the highest CO concentration (4.6 parts per million [ppm]), which is well below the 35-ppm 1-hr CO Federal standard. The Wilshire Boulevard/Veteran Avenue intersection is one of the most congested intersections in Southern California with an ADT volume of approximately 100,000 vehicles per day. As the CO hotspots were not experienced at the Wilshire Boulevard/Veteran Avenue intersection, it can be reasonably inferred that CO hotspots would not be experienced at any intersections within the City of Pasadena near the project site due to the comparatively low volume of traffic (a maximum of 37 AM peak hour trips and 47 PM peak hour trips)[9] that would occur as a result of project implementation. Therefore, impacts would be less than significant in this regard.

Mitigation Measures: No mitigation is required.

[8] United States Environmental Protection Agency, *Carbon Monoxide Emissions*, https://cfpub.epa.gov/roe/indicator_pdf.cfm?i=10, accessed March 19, 2020.

[9] City of Pasadena Department of Transportation, *Transportation Impact Analysis Outside of CEQA Evaluation*, dated February 5, 2020.

Impact AQ-4: Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?

Less Than Significant Impact. According to the SCAQMD *CEQA Air Quality Handbook*, land uses associated with odor complaints typically include agricultural uses, wastewater treatment plants, food processing plants, chemical plants, composting, refineries, landfills, dairies, and fiberglass molding. The proposed project does not include any uses identified by the SCAQMD as being associated with odors.

Construction activities associated with the project may generate detectable odors from heavy-duty equipment exhaust and architectural coatings. However, construction-related odors would be short-term in nature and cease upon project completion. In addition, the project would be required to comply with the California Code of Regulations, Title 13, Sections 2449(d)(3) and 2485, which minimizes the idling time of construction equipment either by shutting it off when not in use or by reducing the time of idling to no more than five minutes. This would further reduce the detectable odors from heavy-duty equipment exhaust. The project would also comply with the SCAQMD Regulation XI, *Rule 1113 – Architectural Coating*, which would minimize odor impacts from ROG emissions during architectural coating. Any impacts to existing adjacent land uses would be short-term and are less than significant.

Mitigation Measures: No mitigation is required.

NATIONAL ENVIRONMENTAL POLICY ACT (NEPA) THRESHOLDS

Consistency with U.S. Department of Housing and Development's (HUD) guidance on air quality is also analyzed in this memorandum. HUD requires that the environmental review record should contain one of the following:

- A determination that the project does not include new construction or conversion of land use facilitating the development of public, commercial, or industrial facilities or five or more dwelling units;

- Documentation that the project's county or air quality management district is not in nonattainment or maintenance status for any criteria pollutants;

- Evidence that estimated emissions levels for the project do not exceed de minimis emissions levels for the nonattainment or maintenance level pollutants; or

- A determination that the project can be brought into compliance with the State Implementation Plan (SIP) through modification or mitigation, including documentation on how the project can be brought into compliance.

Compliance with 24 CFR 50.4, 58.5, and 58.6 Laws and Authorities
Clean Air Act, as amended, particularly section 176(c) & (d); 40 CFR Parts 6, 51, 93

No formal compliance steps or mitigation required. The project site is located in the South Coast Air Basin. The Basin is designated extreme nonattainment area for O_3 and moderate nonattainment area for $PM_{2.5}$. Per guidelines set forth by HUD, because the proposed project site is in a nonattainment area for O_3 and $PM_{2.5}$, conformity with the SIP must be demonstrated. A project is shown to conform with the SIP

if its criteria pollutant emissions remain below the local air district's significance thresholds and it is consistent with the local AQMP.

As previously discussed under Impact Statements AQ-2 and AQ-3, the project's criteria pollutant emissions during short-term construction and long-term operations would remain below the SCAQMD localized or regional thresholds of significance for all criteria pollutants.

In the past, the EPA has also required that an action's annual emissions are evaluated against 10 percent of the region's nonattainment or maintenance pollutants to determine if the action's emissions are regionally significant. On March 24, 2010, the EPA removed this requirement from their General Conformity Rule[10]. Since the project-generated construction and operational emissions would not exceed the SCAQMD thresholds of significance, the de minimis levels established within 40 CFR Section 93.153 would also not be exceeded. Therefore, the proposed project conforms with the SIP.

The City of Pasadena is subject to the SCAQMD's 2016 AQMP. Additionally, the proposed project is located within the Los Angeles County subregion of the SCAG 2016-2040 RTP/SCS, which governs population growth. The City's General Plan is consistent with the 2016-2040 RTP/SCS, and since the 2016-2040 RTP/SCS is consistent with the 2016 AQMP, growth under the General Plan is consistent with the 2016 AQMP. As discussed under Impact Statement AQ-1, no changes to the General Plan land use designation are proposed. Therefore, the proposed project is considered consistent with the General Plan, and is consistent with the types, intensity, and patterns of land use envisioned for the site vicinity in the SCAG's Growth Management Chapter of the Regional Comprehensive Plan. The population, housing, and employment forecasts, which are adopted by SCAG's Regional Council, are based on the local plans and policies applicable to the City. Additionally, as the SCAQMD has incorporated these same projections into the 2016 AQMP, it can be concluded that the proposed project would be consistent with the projections.

Therefore, no adverse effect would result from the proposed project, the proposed project would be consistent with HUD's guidance on air quality, and no formal compliance steps or mitigation are required.

[10] United States Environmental Protection Agency, *Revisions to the General Conformity Regulations*, March 24, 2010, https://www.epa.gov/sites/production/files/2016-03/documents/20100324rule.pdf, accessed March 19, 2020.

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2. City of Pasadena, *Fair Oaks/Orange Grove Specific Plan*, January 29, 2002, https://www.cityofpasadena.net/planning/planning-division/community-planning/specific-plans/fair-oaks-orange-grove/, accessed March 19, 2020.

3. City of Pasadena, *Green City Action Plan*, 2006, https://ww5.cityofpasadena.net/planning/wp-content/uploads/sites/56/2017/07/Green-City-Action-Plan.pdf, accessed March 19, 2020.

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6. South Coast Air Quality Management District, *Application of the South Coast Air Quality Management District for Leave to File Brief of Amicus Curiae in Support of Neither Party and Brief of Amicus Curiae. In the Supreme Court of California. Sierra Club, Revive the San Joaquin, and League of Women Voters of Fresno v. County of Fresno*, 2014.

7. San Joaquin Valley Air Pollution Control District, *Application for Leave to File Brief of Amicus Curiae Brief of San Joaquin Valley Unified Air Pollution Control District in Support of Defendant and Respondent, County of Fresno and Real Party In Interest and Respondent, Friant Ranch, L.P. In the Supreme Court of California. Sierra Club, Revive the San Joaquin, and League of Women Voters of Fresno v. County of Fresno, 2014.*

8. Southern California Association of Governments, *The 2016-2040 Regional Transportation Plan/Sustainable Communities Strategy*, adopted April 2016.

9. South Coast Air Quality Management District, *Final 2016 Air Quality Management Plan*, March 2017.

10. South Coast Air Quality Management District, *CEQA Air Quality Handbook,* November 1993.

11. South Coast Air Quality Management District, *SCAQMD Air Quality Significance Thresholds*, March 2015.

12. South Coast Air Quality Management District, *Final Localized Significance Threshold Methodology*, July 2008.

13. United States Environmental Protection Agency, *Carbon Monoxide Emissions*, https://cfpub.epa.gov/roe/indicator_pdf.cfm?i=10, accessed by March 19, 2020.

14. United States Environmental Protection Agency, *Revisions to the General Conformity Regulations*, March 24, 2010, https://www.epa.gov/sites/production/files/2016-03/documents/20100324rule.pdf, accessed March 19, 2020.

Websites / Programs

1. Google Earth, 2020.

2. South Coast Air Quality Management District, California Emissions Estimator Model (CalEEMod), version 2016.3.2.

Appendix A
Air Quality Emissions Data

Existing Conditions

South Coast AQMD Air District, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Fast Food Restaurant w/o Drive Thru	1.12	1000sqft	0.03	1,122.00	0
Parking Lot	20.00	Space	0.18	8,000.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	31
Climate Zone	12			**Operational Year**	2022
Utility Company	Pasadena Water & Power				
CO2 Intensity (lb/MWhr)	1664.14	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use -

Construction Phase -

Grading -

Architectural Coating -

Vehicle Trips - adjust trip generation accounting for walk-in and pass-by trips, so primary trip is 100%

Area Coating -

Construction Off-road Equipment Mitigation -

Area Mitigation -

Table Name	Column Name	Default Value	New Value
tblVehicleTrips	DV_TP	37.00	0.00
tblVehicleTrips	PB_TP	12.00	0.00
tblVehicleTrips	PR_TP	51.00	100.00
tblVehicleTrips	ST_TR	696.00	241.83
tblVehicleTrips	SU_TR	500.00	241.83
tblVehicleTrips	WD_TR	716.00	241.83

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2020	2.7719	8.9694	8.0314	0.0133	0.8645	0.5232	1.3326	0.4434	0.4814	0.8899	0.0000	1,261.6770	1,261.6770	0.3598	0.0000	1,267.1818
Maximum	**2.7719**	**8.9694**	**8.0314**	**0.0133**	**0.8645**	**0.5232**	**1.3326**	**0.4434**	**0.4814**	**0.8899**	**0.0000**	**1,261.6770**	**1,261.6770**	**0.3598**	**0.0000**	**1,267.1818**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2020	2.7719	8.9694	8.0314	0.0133	0.8645	0.5232	1.3326	0.4434	0.4814	0.8899	0.0000	1,261.6770	1,261.6770	0.3598	0.0000	1,267.1818
Maximum	**2.7719**	**8.9694**	**8.0314**	**0.0133**	**0.8645**	**0.5232**	**1.3326**	**0.4434**	**0.4814**	**0.8899**	**0.0000**	**1,261.6770**	**1,261.6770**	**0.3598**	**0.0000**	**1,267.1818**

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

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.0287	2.0000e-005	2.1600e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005		4.6200e-003	4.6200e-003	1.0000e-005		4.9300e-003
Energy	7.6500e-003	0.0695	0.0584	4.2000e-004		5.2900e-003	5.2900e-003		5.2900e-003	5.2900e-003		83.4529	83.4529	1.6000e-003	1.5300e-003	83.9489
Mobile	0.4478	2.2539	5.6533	0.0212	1.7301	0.0162	1.7463	0.4629	0.0151	0.4780		2,163.1443	2,163.1443	0.1012		2,165.6742
Total	**0.4842**	**2.3234**	**5.7139**	**0.0217**	**1.7301**	**0.0215**	**1.7516**	**0.4629**	**0.0204**	**0.4833**		**2,246.6019**	**2,246.6019**	**0.1028**	**1.5300e-003**	**2,249.6280**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.0287	2.0000e-005	2.1600e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005		4.6200e-003	4.6200e-003	1.0000e-005		4.9300e-003
Energy	7.6500e-003	0.0695	0.0584	4.2000e-004		5.2900e-003	5.2900e-003		5.2900e-003	5.2900e-003		83.4529	83.4529	1.6000e-003	1.5300e-003	83.9489
Mobile	0.4478	2.2539	5.6533	0.0212	1.7301	0.0162	1.7463	0.4629	0.0151	0.4780		2,163.1443	2,163.1443	0.1012		2,165.6742
Total	**0.4842**	**2.3234**	**5.7139**	**0.0217**	**1.7301**	**0.0215**	**1.7516**	**0.4629**	**0.0204**	**0.4833**		**2,246.6019**	**2,246.6019**	**0.1028**	**1.5300e-003**	**2,249.6280**

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

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	3/19/2020	4/1/2020	5	10	
2	Site Preparation	Site Preparation	4/2/2020	4/2/2020	5	1	
3	Grading	Grading	4/3/2020	4/6/2020	5	2	
4	Building Construction	Building Construction	4/7/2020	8/24/2020	5	100	
5	Paving	Paving	8/25/2020	8/31/2020	5	5	
6	Architectural Coating	Architectural Coating	9/1/2020	9/7/2020	5	5	

Acres of Grading (Site Preparation Phase): 0.5

Acres of Grading (Grading Phase): 0

Acres of Paving: 0.18

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 1,683; Non-Residential Outdoor: 561; Striped Parking Area: 480

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Architectural Coating	Air Compressors	1	6.00	78	0.48
Paving	Cement and Mortar Mixers	4	6.00	9	0.56
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Grading	Concrete/Industrial Saws	1	8.00	81	0.73
Building Construction	Cranes	1	4.00	231	0.29
Building Construction	Forklifts	2	6.00	89	0.20
Site Preparation	Graders	1	8.00	187	0.41
Paving	Pavers	1	7.00	130	0.42
Paving	Rollers	1	7.00	80	0.38

Demolition	Rubber Tired Dozers	1	1.00	247	0.40
Grading	Rubber Tired Dozers	1	1.00	247	0.40
Building Construction	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Demolition	Tractors/Loaders/Backhoes	2	6.00	97	0.37
Grading	Tractors/Loaders/Backhoes	2	6.00	97	0.37
Paving	Tractors/Loaders/Backhoes	1	7.00	97	0.37
Site Preparation	Tractors/Loaders/Backhoes	1	8.00	97	0.37

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Architectural Coating	1	1.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	5	4.00	1.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Demolition	4	10.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Grading	4	10.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Paving	7	18.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	2	5.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Demolition - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.8674	7.8729	7.6226	0.0120		0.4672	0.4672		0.4457	0.4457		1,147.2352	1,147.2352	0.2169		1,152.6578
Total	**0.8674**	**7.8729**	**7.6226**	**0.0120**		**0.4672**	**0.4672**		**0.4457**	**0.4457**		**1,147.2352**	**1,147.2352**	**0.2169**		**1,152.6578**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0452	0.0304	0.4088	1.1500e-003	0.1118	8.5000e-004	0.1126	0.0296	7.8000e-004	0.0304		114.4418	114.4418	3.2900e-003		114.5240
Total	**0.0452**	**0.0304**	**0.4088**	**1.1500e-003**	**0.1118**	**8.5000e-004**	**0.1126**	**0.0296**	**7.8000e-004**	**0.0304**		**114.4418**	**114.4418**	**3.2900e-003**		**114.5240**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.8674	7.8729	7.6226	0.0120		0.4672	0.4672		0.4457	0.4457	0.0000	1,147.2352	1,147.2352	0.2169		1,152.6578
Total	**0.8674**	**7.8729**	**7.6226**	**0.0120**		**0.4672**	**0.4672**		**0.4457**	**0.4457**	**0.0000**	**1,147.2352**	**1,147.2352**	**0.2169**		**1,152.6578**

Mitigated Construction Off-Site

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

Category	lb/day											lb/day				
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0452	0.0304	0.4088	1.1500e-003	0.1118	8.5000e-004	0.1126	0.0296	7.8000e-004	0.0304		114.4418	114.4418	3.2900e-003		114.5240
Total	**0.0452**	**0.0304**	**0.4088**	**1.1500e-003**	**0.1118**	**8.5000e-004**	**0.1126**	**0.0296**	**7.8000e-004**	**0.0304**		**114.4418**	**114.4418**	**3.2900e-003**		**114.5240**

3.3 Site Preparation - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.5303	0.0000	0.5303	0.0573	0.0000	0.0573			0.0000			0.0000
Off-Road	0.6853	8.4307	4.0942	9.7400e-003		0.3353	0.3353		0.3085	0.3085		943.4872	943.4872	0.3051		951.1158
Total	**0.6853**	**8.4307**	**4.0942**	**9.7400e-003**	**0.5303**	**0.3353**	**0.8656**	**0.0573**	**0.3085**	**0.3658**		**943.4872**	**943.4872**	**0.3051**		**951.1158**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0226	0.0152	0.2044	5.7000e-004	0.0559	4.2000e-004	0.0563	0.0148	3.9000e-004	0.0152		57.2209	57.2209	1.6500e-003		57.2620

Total	**0.0226**	**0.0152**	**0.2044**	**5.7000e-004**	**0.0559**	**4.2000e-004**	**0.0563**	**0.0148**	**3.9000e-004**	**0.0152**		**57.2209**	**57.2209**	**1.6500e-003**		**57.2620**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.5303	0.0000	0.5303	0.0573	0.0000	0.0573			0.0000			0.0000
Off-Road	0.6853	8.4307	4.0942	9.7400e-003		0.3353	0.3353		0.3085	0.3085	0.0000	943.4872	943.4872	0.3051		951.1158
Total	**0.6853**	**8.4307**	**4.0942**	**9.7400e-003**	**0.5303**	**0.3353**	**0.8656**	**0.0573**	**0.3085**	**0.3658**	**0.0000**	**943.4872**	**943.4872**	**0.3051**		**951.1158**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0226	0.0152	0.2044	5.7000e-004	0.0559	4.2000e-004	0.0563	0.0148	3.9000e-004	0.0152		57.2209	57.2209	1.6500e-003		57.2620
Total	**0.0226**	**0.0152**	**0.2044**	**5.7000e-004**	**0.0559**	**4.2000e-004**	**0.0563**	**0.0148**	**3.9000e-004**	**0.0152**		**57.2209**	**57.2209**	**1.6500e-003**		**57.2620**

3.4 Grading - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.7528	0.0000	0.7528	0.4138	0.0000	0.4138			0.0000			0.0000
Off-Road	0.8674	7.8729	7.6226	0.0120		0.4672	0.4672		0.4457	0.4457		1,147.2352	1,147.2352	0.2169		1,152.6578
Total	**0.8674**	**7.8729**	**7.6226**	**0.0120**	**0.7528**	**0.4672**	**1.2200**	**0.4138**	**0.4457**	**0.8595**		**1,147.2352**	**1,147.2352**	**0.2169**		**1,152.6578**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0452	0.0304	0.4088	1.1500e-003	0.1118	8.5000e-004	0.1126	0.0296	7.8000e-004	0.0304		114.4418	114.4418	3.2900e-003		114.5240
Total	**0.0452**	**0.0304**	**0.4088**	**1.1500e-003**	**0.1118**	**8.5000e-004**	**0.1126**	**0.0296**	**7.8000e-004**	**0.0304**		**114.4418**	**114.4418**	**3.2900e-003**		**114.5240**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.7528	0.0000	0.7528	0.4138	0.0000	0.4138			0.0000			0.0000
Off-Road	0.8674	7.8729	7.6226	0.0120		0.4672	0.4672		0.4457	0.4457	0.0000	1,147.2352	1,147.2352	0.2169		1,152.6578

Total	**0.8674**	**7.8729**	**7.6226**	**0.0120**	**0.7528**	**0.4672**	**1.2200**	**0.4138**	**0.4457**	**0.8595**	**0.0000**	**1,147.2352**	**1,147.2352**	**0.2169**		**1,152.6578**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0452	0.0304	0.4088	1.1500e-003	0.1118	8.5000e-004	0.1126	0.0296	7.8000e-004	0.0304		114.4418	114.4418	3.2900e-003		114.5240
Total	**0.0452**	**0.0304**	**0.4088**	**1.1500e-003**	**0.1118**	**8.5000e-004**	**0.1126**	**0.0296**	**7.8000e-004**	**0.0304**		**114.4418**	**114.4418**	**3.2900e-003**		**114.5240**

3.5 Building Construction - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.8617	8.8523	7.3875	0.0114		0.5224	0.5224		0.4806	0.4806		1,102.9781	1,102.9781	0.3567		1,111.8962
Total	**0.8617**	**8.8523**	**7.3875**	**0.0114**		**0.5224**	**0.5224**		**0.4806**	**0.4806**		**1,102.9781**	**1,102.9781**	**0.3567**		**1,111.8962**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	3.2800e-003	0.1049	0.0250	2.6000e-004	6.4000e-003	5.2000e-004	6.9200e-003	1.8400e-003	5.0000e-004	2.3400e-003		27.4449	27.4449	1.7200e-003		27.4879
Worker	0.0181	0.0122	0.1635	4.6000e-004	0.0447	3.4000e-004	0.0451	0.0119	3.1000e-004	0.0122		45.7767	45.7767	1.3200e-003		45.8096
Total	**0.0214**	**0.1171**	**0.1885**	**7.2000e-004**	**0.0511**	**8.6000e-004**	**0.0520**	**0.0137**	**8.1000e-004**	**0.0145**		**73.2216**	**73.2216**	**3.0400e-003**		**73.2975**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.8617	8.8523	7.3875	0.0114		0.5224	0.5224		0.4806	0.4806	0.0000	1,102.9781	1,102.9781	0.3567		1,111.8962
Total	**0.8617**	**8.8523**	**7.3875**	**0.0114**		**0.5224**	**0.5224**		**0.4806**	**0.4806**	**0.0000**	**1,102.9781**	**1,102.9781**	**0.3567**		**1,111.8962**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	3.2800e-003	0.1049	0.0250	2.6000e-004	6.4000e-003	5.2000e-004	6.9200e-003	1.8400e-003	5.0000e-004	2.3400e-003		27.4449	27.4449	1.7200e-003		27.4879

Worker	0.0181	0.0122	0.1635	4.6000e-004	0.0447	3.4000e-004	0.0451	0.0119	3.1000e-004	0.0122		45.7767	45.7767	1.3200e-003		45.8096
Total	**0.0214**	**0.1171**	**0.1885**	**7.2000e-004**	**0.0511**	**8.6000e-004**	**0.0520**	**0.0137**	**8.1000e-004**	**0.0145**		**73.2216**	**73.2216**	**3.0400e-003**		**73.2975**

3.6 Paving - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.7716	7.2266	7.1128	0.0113		0.3950	0.3950		0.3669	0.3669		1,035.3926	1,035.3926	0.3016		1,042.9323
Paving	0.0943					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**0.8659**	**7.2266**	**7.1128**	**0.0113**		**0.3950**	**0.3950**		**0.3669**	**0.3669**		**1,035.3926**	**1,035.3926**	**0.3016**		**1,042.9323**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0814	0.0547	0.7359	2.0700e-003	0.2012	1.5300e-003	0.2027	0.0534	1.4100e-003	0.0548		205.9951	205.9951	5.9200e-003		206.1432
Total	**0.0814**	**0.0547**	**0.7359**	**2.0700e-003**	**0.2012**	**1.5300e-003**	**0.2027**	**0.0534**	**1.4100e-003**	**0.0548**		**205.9951**	**205.9951**	**5.9200e-003**		**206.1432**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.7716	7.2266	7.1128	0.0113		0.3950	0.3950		0.3669	0.3669	0.0000	1,035.3926	1,035.3926	0.3016		1,042.9323
Paving	0.0943					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**0.8659**	**7.2266**	**7.1128**	**0.0113**		**0.3950**	**0.3950**		**0.3669**	**0.3669**	**0.0000**	**1,035.3926**	**1,035.3926**	**0.3016**		**1,042.9323**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0814	0.0547	0.7359	2.0700e-003	0.2012	1.5300e-003	0.2027	0.0534	1.4100e-003	0.0548		205.9951	205.9951	5.9200e-003		206.1432
Total	**0.0814**	**0.0547**	**0.7359**	**2.0700e-003**	**0.2012**	**1.5300e-003**	**0.2027**	**0.0534**	**1.4100e-003**	**0.0548**		**205.9951**	**205.9951**	**5.9200e-003**		**206.1432**

3.7 Architectural Coating - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	2.5252					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000

Off-Road	0.2422	1.6838	1.8314	2.9700e-003		0.1109	0.1109		0.1109	0.1109		281.4481	281.4481	0.0218		281.9928
Total	**2.7673**	**1.6838**	**1.8314**	**2.9700e-003**		**0.1109**	**0.1109**		**0.1109**	**0.1109**		**281.4481**	**281.4481**	**0.0218**		**281.9928**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	4.5200e-003	3.0400e-003	0.0409	1.1000e-004	0.0112	8.0000e-005	0.0113	2.9600e-003	8.0000e-005	3.0400e-003		11.4442	11.4442	3.3000e-004		11.4524
Total	**4.5200e-003**	**3.0400e-003**	**0.0409**	**1.1000e-004**	**0.0112**	**8.0000e-005**	**0.0113**	**2.9600e-003**	**8.0000e-005**	**3.0400e-003**		**11.4442**	**11.4442**	**3.3000e-004**		**11.4524**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	2.5252					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2422	1.6838	1.8314	2.9700e-003		0.1109	0.1109		0.1109	0.1109	0.0000	281.4481	281.4481	0.0218		281.9928
Total	**2.7673**	**1.6838**	**1.8314**	**2.9700e-003**		**0.1109**	**0.1109**		**0.1109**	**0.1109**	**0.0000**	**281.4481**	**281.4481**	**0.0218**		**281.9928**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	4.5200e-003	3.0400e-003	0.0409	1.1000e-004	0.0112	8.0000e-005	0.0113	2.9600e-003	8.0000e-005	3.0400e-003		11.4442	11.4442	3.3000e-004		11.4524
Total	**4.5200e-003**	**3.0400e-003**	**0.0409**	**1.1000e-004**	**0.0112**	**8.0000e-005**	**0.0113**	**2.9600e-003**	**8.0000e-005**	**3.0400e-003**		**11.4442**	**11.4442**	**3.3000e-004**		**11.4524**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.4478	2.2539	5.6533	0.0212	1.7301	0.0162	1.7463	0.4629	0.0151	0.4780		2,163.1443	2,163.1443	0.1012		2,165.6742
Unmitigated	0.4478	2.2539	5.6533	0.0212	1.7301	0.0162	1.7463	0.4629	0.0151	0.4780		2,163.1443	2,163.1443	0.1012		2,165.6742

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Fast Food Restaurant w/o Drive Thru	271.33	271.33	271.33	813,629	813,629
Parking Lot	0.00	0.00	0.00		

Total	271.33	271.33	271.33	813,629	813,629

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Fast Food Restaurant w/o Drive Thru	16.60	8.40	6.90	1.50	79.50	19.00	100	0	0
Parking Lot	16.60	8.40	6.90	0.00	0.00	0.00	0	0	0

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Fast Food Restaurant w/o Drive Thru	0.549559	0.042893	0.201564	0.118533	0.015569	0.005846	0.021394	0.034255	0.002099	0.001828	0.004855	0.000709	0.000896
Parking Lot	0.549559	0.042893	0.201564	0.118533	0.015569	0.005846	0.021394	0.034255	0.002099	0.001828	0.004855	0.000709	0.000896

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	7.6500e-003	0.0695	0.0584	4.2000e-004		5.2900e-003	5.2900e-003		5.2900e-003	5.2900e-003		83.4529	83.4529	1.6000e-003	1.5300e-003	83.9489
NaturalGas Unmitigated	7.6500e-003	0.0695	0.0584	4.2000e-004		5.2900e-003	5.2900e-003		5.2900e-003	5.2900e-003		83.4529	83.4529	1.6000e-003	1.5300e-003	83.9489

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Fast Food Restaurant w/o Drive Thru	709.35	7.6500e-003	0.0695	0.0584	4.2000e-004		5.2900e-003	5.2900e-003		5.2900e-003	5.2900e-003		83.4529	83.4529	1.6000e-003	1.5300e-003	83.9489
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		**7.6500e-003**	**0.0695**	**0.0584**	**4.2000e-004**		**5.2900e-003**	**5.2900e-003**		**5.2900e-003**	**5.2900e-003**		**83.4529**	**83.4529**	**1.6000e-003**	**1.5300e-003**	**83.9489**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Fast Food Restaurant w/o Drive Thru	0.70935	7.6500e-003	0.0695	0.0584	4.2000e-004		5.2900e-003	5.2900e-003		5.2900e-003	5.2900e-003		83.4529	83.4529	1.6000e-003	1.5300e-003	83.9489
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		**7.6500e-003**	**0.0695**	**0.0584**	**4.2000e-004**		**5.2900e-003**	**5.2900e-003**		**5.2900e-003**	**5.2900e-003**		**83.4529**	**83.4529**	**1.6000e-003**	**1.5300e-003**	**83.9489**

6.0 Area Detail

6.1 Mitigation Measures Area

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

Category	lb/day										lb/day					
Mitigated	0.0287	2.0000e-005	2.1600e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005		4.6200e-003	4.6200e-003	1.0000e-005		4.9300e-003
Unmitigated	0.0287	2.0000e-005	2.1600e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005		4.6200e-003	4.6200e-003	1.0000e-005		4.9300e-003

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	3.4600e-003					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.0251					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	2.0000e-004	2.0000e-005	2.1600e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005		4.6200e-003	4.6200e-003	1.0000e-005		4.9300e-003
Total	**0.0287**	**2.0000e-005**	**2.1600e-003**	**0.0000**		**1.0000e-005**	**1.0000e-005**		**1.0000e-005**	**1.0000e-005**		**4.6200e-003**	**4.6200e-003**	**1.0000e-005**		**4.9300e-003**

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	3.4600e-003					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.0251					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	2.0000e-004	2.0000e-005	2.1600e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005		4.6200e-003	4.6200e-003	1.0000e-005		4.9300e-003

Total	**0.0287**	**2.0000e-005**	**2.1600e-003**	**0.0000**		**1.0000e-005**	**1.0000e-005**		**1.0000e-005**	**1.0000e-005**		**4.6200e-003**	**4.6200e-003**	**1.0000e-005**		**4.9300e-003**

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

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

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

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

Boilers

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

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Existing Conditions

South Coast AQMD Air District, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Fast Food Restaurant w/o Drive Thru	1.12	1000sqft	0.03	1,122.00	0
Parking Lot	20.00	Space	0.18	8,000.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	31
Climate Zone	12			**Operational Year**	2022
Utility Company	Pasadena Water & Power				
CO2 Intensity (lb/MWhr)	1664.14	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use -

Construction Phase -

Grading -

Architectural Coating -

Vehicle Trips - adjust trip generation accounting for walk-in and pass-by trips, so primary trip is 100%

Area Coating -

Construction Off-road Equipment Mitigation -

Area Mitigation -

Table Name	Column Name	Default Value	New Value
tblVehicleTrips	DV_TP	37.00	0.00
tblVehicleTrips	PB_TP	12.00	0.00
tblVehicleTrips	PR_TP	51.00	100.00
tblVehicleTrips	ST_TR	696.00	241.83
tblVehicleTrips	SU_TR	500.00	241.83
tblVehicleTrips	WD_TR	716.00	241.83

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2020	2.7723	8.9705	7.9907	0.0132	0.8645	0.5232	1.3326	0.4434	0.4814	0.8899	0.0000	1,254.2717	1,254.2717	0.3598	0.0000	1,259.7710
Maximum	**2.7723**	**8.9705**	**7.9907**	**0.0132**	**0.8645**	**0.5232**	**1.3326**	**0.4434**	**0.4814**	**0.8899**	**0.0000**	**1,254.2717**	**1,254.2717**	**0.3598**	**0.0000**	**1,259.7710**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2020	2.7723	8.9705	7.9907	0.0132	0.8645	0.5232	1.3326	0.4434	0.4814	0.8899	0.0000	1,254.2717	1,254.2717	0.3598	0.0000	1,259.7710
Maximum	**2.7723**	**8.9705**	**7.9907**	**0.0132**	**0.8645**	**0.5232**	**1.3326**	**0.4434**	**0.4814**	**0.8899**	**0.0000**	**1,254.2717**	**1,254.2717**	**0.3598**	**0.0000**	**1,259.7710**

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

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.0287	2.0000e-005	2.1600e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005		4.6200e-003	4.6200e-003	1.0000e-005		4.9300e-003
Energy	7.6500e-003	0.0695	0.0584	4.2000e-004		5.2900e-003	5.2900e-003		5.2900e-003	5.2900e-003		83.4529	83.4529	1.6000e-003	1.5300e-003	83.9489
Mobile	0.4250	2.2921	5.3077	0.0201	1.7301	0.0163	1.7464	0.4629	0.0152	0.4781		2,048.1562	2,048.1562	0.1015		2,050.6925
Total	**0.4614**	**2.3616**	**5.3683**	**0.0205**	**1.7301**	**0.0216**	**1.7517**	**0.4629**	**0.0205**	**0.4834**		**2,131.6137**	**2,131.6137**	**0.1031**	**1.5300e-003**	**2,134.6462**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.0287	2.0000e-005	2.1600e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005		4.6200e-003	4.6200e-003	1.0000e-005		4.9300e-003
Energy	7.6500e-003	0.0695	0.0584	4.2000e-004		5.2900e-003	5.2900e-003		5.2900e-003	5.2900e-003		83.4529	83.4529	1.6000e-003	1.5300e-003	83.9489
Mobile	0.4250	2.2921	5.3077	0.0201	1.7301	0.0163	1.7464	0.4629	0.0152	0.4781		2,048.1562	2,048.1562	0.1015		2,050.6925
Total	**0.4614**	**2.3616**	**5.3683**	**0.0205**	**1.7301**	**0.0216**	**1.7517**	**0.4629**	**0.0205**	**0.4834**		**2,131.6137**	**2,131.6137**	**0.1031**	**1.5300e-003**	**2,134.6462**

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

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	3/19/2020	4/1/2020	5	10	
2	Site Preparation	Site Preparation	4/2/2020	4/2/2020	5	1	
3	Grading	Grading	4/3/2020	4/6/2020	5	2	
4	Building Construction	Building Construction	4/7/2020	8/24/2020	5	100	
5	Paving	Paving	8/25/2020	8/31/2020	5	5	
6	Architectural Coating	Architectural Coating	9/1/2020	9/7/2020	5	5	

Acres of Grading (Site Preparation Phase): 0.5

Acres of Grading (Grading Phase): 0

Acres of Paving: 0.18

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 1,683; Non-Residential Outdoor: 561; Striped Parking Area: 480

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Architectural Coating	Air Compressors	1	6.00	78	0.48
Paving	Cement and Mortar Mixers	4	6.00	9	0.56
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Grading	Concrete/Industrial Saws	1	8.00	81	0.73
Building Construction	Cranes	1	4.00	231	0.29
Building Construction	Forklifts	2	6.00	89	0.20
Site Preparation	Graders	1	8.00	187	0.41
Paving	Pavers	1	7.00	130	0.42
Paving	Rollers	1	7.00	80	0.38

Demolition	Rubber Tired Dozers	1	1.00	247	0.40
Grading	Rubber Tired Dozers	1	1.00	247	0.40
Building Construction	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Demolition	Tractors/Loaders/Backhoes	2	6.00	97	0.37
Grading	Tractors/Loaders/Backhoes	2	6.00	97	0.37
Paving	Tractors/Loaders/Backhoes	1	7.00	97	0.37
Site Preparation	Tractors/Loaders/Backhoes	1	8.00	97	0.37

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Architectural Coating	1	1.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	5	4.00	1.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Demolition	4	10.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Grading	4	10.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Paving	7	18.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	2	5.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Demolition - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.8674	7.8729	7.6226	0.0120		0.4672	0.4672		0.4457	0.4457		1,147.2352	1,147.2352	0.2169		1,152.6578
Total	**0.8674**	**7.8729**	**7.6226**	**0.0120**		**0.4672**	**0.4672**		**0.4457**	**0.4457**		**1,147.2352**	**1,147.2352**	**0.2169**		**1,152.6578**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0494	0.0333	0.3681	1.0700e-003	0.1118	8.5000e-004	0.1126	0.0296	7.8000e-004	0.0304		107.0365	107.0365	3.0700e-003		107.1132
Total	**0.0494**	**0.0333**	**0.3681**	**1.0700e-003**	**0.1118**	**8.5000e-004**	**0.1126**	**0.0296**	**7.8000e-004**	**0.0304**		**107.0365**	**107.0365**	**3.0700e-003**		**107.1132**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.8674	7.8729	7.6226	0.0120		0.4672	0.4672		0.4457	0.4457	0.0000	1,147.2352	1,147.2352	0.2169		1,152.6578
Total	**0.8674**	**7.8729**	**7.6226**	**0.0120**		**0.4672**	**0.4672**		**0.4457**	**0.4457**	**0.0000**	**1,147.2352**	**1,147.2352**	**0.2169**		**1,152.6578**

Mitigated Construction Off-Site

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

Category	lb/day											lb/day				
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0494	0.0333	0.3681	1.0700e-003	0.1118	8.5000e-004	0.1126	0.0296	7.8000e-004	0.0304		107.0365	107.0365	3.0700e-003		107.1132
Total	**0.0494**	**0.0333**	**0.3681**	**1.0700e-003**	**0.1118**	**8.5000e-004**	**0.1126**	**0.0296**	**7.8000e-004**	**0.0304**		**107.0365**	**107.0365**	**3.0700e-003**		**107.1132**

3.3 Site Preparation - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.5303	0.0000	0.5303	0.0573	0.0000	0.0573			0.0000			0.0000
Off-Road	0.6853	8.4307	4.0942	9.7400e-003		0.3353	0.3353		0.3085	0.3085		943.4872	943.4872	0.3051		951.1158
Total	**0.6853**	**8.4307**	**4.0942**	**9.7400e-003**	**0.5303**	**0.3353**	**0.8656**	**0.0573**	**0.3085**	**0.3658**		**943.4872**	**943.4872**	**0.3051**		**951.1158**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0247	0.0167	0.1840	5.4000e-004	0.0559	4.2000e-004	0.0563	0.0148	3.9000e-004	0.0152		53.5183	53.5183	1.5300e-003		53.5566

Total	**0.0247**	**0.0167**	**0.1840**	**5.4000e-004**	**0.0559**	**4.2000e-004**	**0.0563**	**0.0148**	**3.9000e-004**	**0.0152**		**53.5183**	**53.5183**	**1.5300e-003**		**53.5566**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.5303	0.0000	0.5303	0.0573	0.0000	0.0573			0.0000			0.0000
Off-Road	0.6853	8.4307	4.0942	9.7400e-003		0.3353	0.3353		0.3085	0.3085	0.0000	943.4872	943.4872	0.3051		951.1158
Total	**0.6853**	**8.4307**	**4.0942**	**9.7400e-003**	**0.5303**	**0.3353**	**0.8656**	**0.0573**	**0.3085**	**0.3658**	**0.0000**	**943.4872**	**943.4872**	**0.3051**		**951.1158**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0247	0.0167	0.1840	5.4000e-004	0.0559	4.2000e-004	0.0563	0.0148	3.9000e-004	0.0152		53.5183	53.5183	1.5300e-003		53.5566
Total	**0.0247**	**0.0167**	**0.1840**	**5.4000e-004**	**0.0559**	**4.2000e-004**	**0.0563**	**0.0148**	**3.9000e-004**	**0.0152**		**53.5183**	**53.5183**	**1.5300e-003**		**53.5566**

3.4 Grading - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.7528	0.0000	0.7528	0.4138	0.0000	0.4138			0.0000			0.0000
Off-Road	0.8674	7.8729	7.6226	0.0120		0.4672	0.4672		0.4457	0.4457		1,147.2352	1,147.2352	0.2169		1,152.6578
Total	**0.8674**	**7.8729**	**7.6226**	**0.0120**	**0.7528**	**0.4672**	**1.2200**	**0.4138**	**0.4457**	**0.8595**		**1,147.2352**	**1,147.2352**	**0.2169**		**1,152.6578**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0494	0.0333	0.3681	1.0700e-003	0.1118	8.5000e-004	0.1126	0.0296	7.8000e-004	0.0304		107.0365	107.0365	3.0700e-003		107.1132
Total	**0.0494**	**0.0333**	**0.3681**	**1.0700e-003**	**0.1118**	**8.5000e-004**	**0.1126**	**0.0296**	**7.8000e-004**	**0.0304**		**107.0365**	**107.0365**	**3.0700e-003**		**107.1132**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.7528	0.0000	0.7528	0.4138	0.0000	0.4138			0.0000			0.0000
Off-Road	0.8674	7.8729	7.6226	0.0120		0.4672	0.4672		0.4457	0.4457	0.0000	1,147.2352	1,147.2352	0.2169		1,152.6578

Total	**0.8674**	**7.8729**	**7.6226**	**0.0120**	**0.7528**	**0.4672**	**1.2200**	**0.4138**	**0.4457**	**0.8595**	**0.0000**	**1,147.2352**	**1,147.2352**	**0.2169**		**1,152.6578**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0494	0.0333	0.3681	1.0700e-003	0.1118	8.5000e-004	0.1126	0.0296	7.8000e-004	0.0304		107.0365	107.0365	3.0700e-003		107.1132
Total	**0.0494**	**0.0333**	**0.3681**	**1.0700e-003**	**0.1118**	**8.5000e-004**	**0.1126**	**0.0296**	**7.8000e-004**	**0.0304**		**107.0365**	**107.0365**	**3.0700e-003**		**107.1132**

3.5 Building Construction - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.8617	8.8523	7.3875	0.0114		0.5224	0.5224		0.4806	0.4806		1,102.9781	1,102.9781	0.3567		1,111.8962
Total	**0.8617**	**8.8523**	**7.3875**	**0.0114**		**0.5224**	**0.5224**		**0.4806**	**0.4806**		**1,102.9781**	**1,102.9781**	**0.3567**		**1,111.8962**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	3.4400e-003	0.1048	0.0279	2.5000e-004	6.4000e-003	5.3000e-004	6.9300e-003	1.8400e-003	5.0000e-004	2.3500e-003		26.6513	26.6513	1.8500e-003		26.6976
Worker	0.0197	0.0133	0.1472	4.3000e-004	0.0447	3.4000e-004	0.0451	0.0119	3.1000e-004	0.0122		42.8146	42.8146	1.2300e-003		42.8453
Total	**0.0232**	**0.1182**	**0.1751**	**6.8000e-004**	**0.0511**	**8.7000e-004**	**0.0520**	**0.0137**	**8.1000e-004**	**0.0145**		**69.4659**	**69.4659**	**3.0800e-003**		**69.5429**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.8617	8.8523	7.3875	0.0114		0.5224	0.5224		0.4806	0.4806	0.0000	1,102.9781	1,102.9781	0.3567		1,111.8962
Total	**0.8617**	**8.8523**	**7.3875**	**0.0114**		**0.5224**	**0.5224**		**0.4806**	**0.4806**	**0.0000**	**1,102.9781**	**1,102.9781**	**0.3567**		**1,111.8962**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	3.4400e-003	0.1048	0.0279	2.5000e-004	6.4000e-003	5.3000e-004	6.9300e-003	1.8400e-003	5.0000e-004	2.3500e-003		26.6513	26.6513	1.8500e-003		26.6976

Worker	0.0197	0.0133	0.1472	4.3000e-004	0.0447	3.4000e-004	0.0451	0.0119	3.1000e-004	0.0122		42.8146	42.8146	1.2300e-003		42.8453
Total	**0.0232**	**0.1182**	**0.1751**	**6.8000e-004**	**0.0511**	**8.7000e-004**	**0.0520**	**0.0137**	**8.1000e-004**	**0.0145**		**69.4659**	**69.4659**	**3.0800e-003**		**69.5429**

3.6 Paving - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.7716	7.2266	7.1128	0.0113		0.3950	0.3950		0.3669	0.3669		1,035.3926	1,035.3926	0.3016		1,042.9323
Paving	0.0943					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**0.8659**	**7.2266**	**7.1128**	**0.0113**		**0.3950**	**0.3950**		**0.3669**	**0.3669**		**1,035.3926**	**1,035.3926**	**0.3016**		**1,042.9323**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0888	0.0599	0.6626	1.9300e-003	0.2012	1.5300e-003	0.2027	0.0534	1.4100e-003	0.0548		192.6657	192.6657	5.5300e-003		192.8038
Total	**0.0888**	**0.0599**	**0.6626**	**1.9300e-003**	**0.2012**	**1.5300e-003**	**0.2027**	**0.0534**	**1.4100e-003**	**0.0548**		**192.6657**	**192.6657**	**5.5300e-003**		**192.8038**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.7716	7.2266	7.1128	0.0113		0.3950	0.3950		0.3669	0.3669	0.0000	1,035.3926	1,035.3926	0.3016		1,042.9323
Paving	0.0943					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**0.8659**	**7.2266**	**7.1128**	**0.0113**		**0.3950**	**0.3950**		**0.3669**	**0.3669**	**0.0000**	**1,035.3926**	**1,035.3926**	**0.3016**		**1,042.9323**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0888	0.0599	0.6626	1.9300e-003	0.2012	1.5300e-003	0.2027	0.0534	1.4100e-003	0.0548		192.6657	192.6657	5.5300e-003		192.8038
Total	**0.0888**	**0.0599**	**0.6626**	**1.9300e-003**	**0.2012**	**1.5300e-003**	**0.2027**	**0.0534**	**1.4100e-003**	**0.0548**		**192.6657**	**192.6657**	**5.5300e-003**		**192.8038**

3.7 Architectural Coating - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	2.5252					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000

Off-Road	0.2422	1.6838	1.8314	2.9700e-003		0.1109	0.1109		0.1109	0.1109		281.4481	281.4481	0.0218		281.9928
Total	**2.7673**	**1.6838**	**1.8314**	**2.9700e-003**		**0.1109**	**0.1109**		**0.1109**	**0.1109**		**281.4481**	**281.4481**	**0.0218**		**281.9928**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	4.9300e-003	3.3300e-003	0.0368	1.1000e-004	0.0112	8.0000e-005	0.0113	2.9600e-003	8.0000e-005	3.0400e-003		10.7037	10.7037	3.1000e-004		10.7113
Total	**4.9300e-003**	**3.3300e-003**	**0.0368**	**1.1000e-004**	**0.0112**	**8.0000e-005**	**0.0113**	**2.9600e-003**	**8.0000e-005**	**3.0400e-003**		**10.7037**	**10.7037**	**3.1000e-004**		**10.7113**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	2.5252					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2422	1.6838	1.8314	2.9700e-003		0.1109	0.1109		0.1109	0.1109	0.0000	281.4481	281.4481	0.0218		281.9928
Total	**2.7673**	**1.6838**	**1.8314**	**2.9700e-003**		**0.1109**	**0.1109**		**0.1109**	**0.1109**	**0.0000**	**281.4481**	**281.4481**	**0.0218**		**281.9928**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	4.9300e-003	3.3300e-003	0.0368	1.1000e-004	0.0112	8.0000e-005	0.0113	2.9600e-003	8.0000e-005	3.0400e-003		10.7037	10.7037	3.1000e-004		10.7113
Total	**4.9300e-003**	**3.3300e-003**	**0.0368**	**1.1000e-004**	**0.0112**	**8.0000e-005**	**0.0113**	**2.9600e-003**	**8.0000e-005**	**3.0400e-003**		**10.7037**	**10.7037**	**3.1000e-004**		**10.7113**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.4250	2.2921	5.3077	0.0201	1.7301	0.0163	1.7464	0.4629	0.0152	0.4781		2,048.1562	2,048.1562	0.1015		2,050.6925
Unmitigated	0.4250	2.2921	5.3077	0.0201	1.7301	0.0163	1.7464	0.4629	0.0152	0.4781		2,048.1562	2,048.1562	0.1015		2,050.6925

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Fast Food Restaurant w/o Drive Thru	271.33	271.33	271.33	813,629	813,629
Parking Lot	0.00	0.00	0.00		

Total	271.33	271.33	271.33	813,629	813,629

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Fast Food Restaurant w/o Drive Thru	16.60	8.40	6.90	1.50	79.50	19.00	100	0	0
Parking Lot	16.60	8.40	6.90	0.00	0.00	0.00	0	0	0

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Fast Food Restaurant w/o Drive Thru	0.549559	0.042893	0.201564	0.118533	0.015569	0.005846	0.021394	0.034255	0.002099	0.001828	0.004855	0.000709	0.000896
Parking Lot	0.549559	0.042893	0.201564	0.118533	0.015569	0.005846	0.021394	0.034255	0.002099	0.001828	0.004855	0.000709	0.000896

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	7.6500e-003	0.0695	0.0584	4.2000e-004		5.2900e-003	5.2900e-003		5.2900e-003	5.2900e-003		83.4529	83.4529	1.6000e-003	1.5300e-003	83.9489
NaturalGas Unmitigated	7.6500e-003	0.0695	0.0584	4.2000e-004		5.2900e-003	5.2900e-003		5.2900e-003	5.2900e-003		83.4529	83.4529	1.6000e-003	1.5300e-003	83.9489

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Fast Food Restaurant w/o Drive Thru	709.35	7.6500e-003	0.0695	0.0584	4.2000e-004		5.2900e-003	5.2900e-003		5.2900e-003	5.2900e-003		83.4529	83.4529	1.6000e-003	1.5300e-003	83.9489
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		**7.6500e-003**	**0.0695**	**0.0584**	**4.2000e-004**		**5.2900e-003**	**5.2900e-003**		**5.2900e-003**	**5.2900e-003**		**83.4529**	**83.4529**	**1.6000e-003**	**1.5300e-003**	**83.9489**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Fast Food Restaurant w/o Drive Thru	0.70935	7.6500e-003	0.0695	0.0584	4.2000e-004		5.2900e-003	5.2900e-003		5.2900e-003	5.2900e-003		83.4529	83.4529	1.6000e-003	1.5300e-003	83.9489
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		**7.6500e-003**	**0.0695**	**0.0584**	**4.2000e-004**		**5.2900e-003**	**5.2900e-003**		**5.2900e-003**	**5.2900e-003**		**83.4529**	**83.4529**	**1.6000e-003**	**1.5300e-003**	**83.9489**

6.0 Area Detail

6.1 Mitigation Measures Area

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

Category	lb/day										lb/day					
Mitigated	0.0287	2.0000e-005	2.1600e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005		4.6200e-003	4.6200e-003	1.0000e-005		4.9300e-003
Unmitigated	0.0287	2.0000e-005	2.1600e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005		4.6200e-003	4.6200e-003	1.0000e-005		4.9300e-003

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	3.4600e-003					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.0251					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	2.0000e-004	2.0000e-005	2.1600e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005		4.6200e-003	4.6200e-003	1.0000e-005		4.9300e-003
Total	**0.0287**	**2.0000e-005**	**2.1600e-003**	**0.0000**		**1.0000e-005**	**1.0000e-005**		**1.0000e-005**	**1.0000e-005**		**4.6200e-003**	**4.6200e-003**	**1.0000e-005**		**4.9300e-003**

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	3.4600e-003					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.0251					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	2.0000e-004	2.0000e-005	2.1600e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005		4.6200e-003	4.6200e-003	1.0000e-005		4.9300e-003

Total	**0.0287**	**2.0000e-005**	**2.1600e-003**	**0.0000**		**1.0000e-005**	**1.0000e-005**		**1.0000e-005**	**1.0000e-005**		**4.6200e-003**	**4.6200e-003**	**1.0000e-005**		**4.9300e-003**

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

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

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

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

Boilers

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

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Heritage Square South

South Coast AQMD Air District, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Apartments Low Rise	70.00	Dwelling Unit	0.42	70,000.00	200
Regional Shopping Center	7.50	1000sqft	0.17	7,500.00	0
High Turnover (Sit Down Restaurant)	7.50	1000sqft	0.17	7,500.00	0
Parking Lot	60.00	Space	0.54	24,000.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	31
Climate Zone	12			**Operational Year**	2022
Utility Company	Pasadena Water & Power				
CO2 Intensity (lb/MWhr)	1664.14	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - total project site area 1.3 acres

Construction Phase - construction schedule provided by project applicant

Grading - grading area equals site area of 1.3 ares; export estimated by project applicant

Demolition -

Architectural Coating - SCAQMD Rule 1113 - Low VOC coatings

Vehicle Trips - adjust trip generation accounting for walk-in, transit, and pass-by trips, so primary trip is 100%

Area Coating - SCAQMD Rule 1113 - low VOC coatings

Construction Off-road Equipment Mitigation - SCAQMD Rule 403

Area Mitigation - SCAQMD Rule 445 - no wood-burning devices in new development

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	EF_Nonresidential_Exterior	100.00	50.00
tblArchitecturalCoating	EF_Nonresidential_Interior	100.00	50.00
tblArchitecturalCoating	EF_Parking	100.00	50.00
tblAreaCoating	Area_EF_Nonresidential_Exterior	100	50
tblAreaCoating	Area_EF_Nonresidential_Interior	100	50
tblAreaCoating	Area_EF_Parking	100	50
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	15
tblConstructionPhase	NumDays	10.00	88.00
tblConstructionPhase	NumDays	200.00	293.00
tblConstructionPhase	NumDays	20.00	15.00
tblConstructionPhase	NumDays	4.00	49.00
tblConstructionPhase	PhaseEndDate	2/7/2022	6/14/2022
tblConstructionPhase	PhaseEndDate	1/10/2022	7/12/2022
tblConstructionPhase	PhaseEndDate	3/26/2021	3/21/2021
tblConstructionPhase	PhaseEndDate	4/5/2021	5/27/2021
tblConstructionPhase	PhaseStartDate	1/25/2022	2/11/2022
tblConstructionPhase	PhaseStartDate	4/6/2021	5/28/2021
tblConstructionPhase	PhaseStartDate	3/31/2021	3/22/2021
tblGrading	AcresOfGrading	18.38	1.30
tblGrading	MaterialExported	0.00	25,200.00
tblLandUse	LotAcreage	4.38	0.42
tblVehicleTrips	DV_TP	11.00	0.00
tblVehicleTrips	DV_TP	20.00	0.00
tblVehicleTrips	DV_TP	35.00	0.00
tblVehicleTrips	PB_TP	3.00	0.00
tblVehicleTrips	PB_TP	43.00	0.00
tblVehicleTrips	PB_TP	11.00	0.00

tblVehicleTrips	PR_TP	86.00	100.00
tblVehicleTrips	PR_TP	37.00	100.00
tblVehicleTrips	PR_TP	54.00	100.00
tblVehicleTrips	ST_TR	7.16	2.15
tblVehicleTrips	ST_TR	158.37	65.23
tblVehicleTrips	ST_TR	49.97	23.26
tblVehicleTrips	SU_TR	6.07	2.15
tblVehicleTrips	SU_TR	131.84	65.23
tblVehicleTrips	SU_TR	25.24	23.26
tblVehicleTrips	WD_TR	6.59	2.15
tblVehicleTrips	WD_TR	127.15	65.23
tblVehicleTrips	WD_TR	42.70	23.26

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2021	2.1301	30.6162	15.7026	0.0643	5.8156	1.0422	6.5046	2.8261	0.9727	3.4618	0.0000	6,786.4114	6,786.4114	0.7996	0.0000	6,806.4025
2022	8.0079	15.3744	17.5915	0.0370	0.9726	0.6792	1.6519	0.2600	0.6586	0.9186	0.0000	3,504.5756	3,504.5756	0.4104	0.0000	3,514.8357
Maximum	**8.0079**	**30.6162**	**17.5915**	**0.0643**	**5.8156**	**1.0422**	**6.5046**	**2.8261**	**0.9727**	**3.4618**	**0.0000**	**6,786.4114**	**6,786.4114**	**0.7996**	**0.0000**	**6,806.4025**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2021	2.1301	30.6162	15.7026	0.0643	2.9181	1.0422	3.6071	1.2558	0.9727	1.8915	0.0000	6,786.4114	6,786.4114	0.7996	0.0000	6,806.4025
2022	8.0079	15.3744	17.5915	0.0370	0.9726	0.6792	1.6519	0.2600	0.6586	0.9186	0.0000	3,504.5756	3,504.5756	0.4104	0.0000	3,514.8357
Maximum	**8.0079**	**30.6162**	**17.5915**	**0.0643**	**2.9181**	**1.0422**	**3.6071**	**1.2558**	**0.9727**	**1.8915**	**0.0000**	**6,786.4114**	**6,786.4114**	**0.7996**	**0.0000**	**6,806.4025**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**42.68**	**0.00**	**35.52**	**50.88**	**0.00**	**35.85**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	20.3493	1.5191	41.3876	0.0911		5.3792	5.3792		5.3792	5.3792	655.6843	1,270.4151	1,926.0994	1.9655	0.0445	1,988.4976
Energy	0.0738	0.6587	0.4743	4.0200e-003		0.0510	0.0510		0.0510	0.0510		804.9781	804.9781	0.0154	0.0148	809.7617
Mobile	1.4101	7.2057	18.7535	0.0712	5.8447	0.0541	5.8988	1.5638	0.0505	1.6143		7,251.7646	7,251.7646	0.3341		7,260.1157
Total	**21.8332**	**9.3835**	**60.6154**	**0.1664**	**5.8447**	**5.4842**	**11.3289**	**1.5638**	**5.4806**	**7.0444**	**655.6843**	**9,327.1578**	**9,982.8420**	**2.3149**	**0.0593**	**10,058.3751**

Mitigated Operational

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

Category	lb/day										lb/day					
Area	2.1291	1.1118	6.2337	6.9800e-003		0.1165	0.1165		0.1165	0.1165	0.0000	1,344.5327	1,344.5327	0.0357	0.0245	1,352.7126
Energy	0.0738	0.6587	0.4743	4.0200e-003		0.0510	0.0510		0.0510	0.0510		804.9781	804.9781	0.0154	0.0148	809.7617
Mobile	1.4101	7.2057	18.7535	0.0712	5.8447	0.0541	5.8988	1.5638	0.0505	1.6143		7,251.7646	7,251.7646	0.3341		7,260.1157
Total	**3.6129**	**8.9762**	**25.4615**	**0.0822**	**5.8447**	**0.2215**	**6.0662**	**1.5638**	**0.2179**	**1.7817**	**0.0000**	**9,401.2754**	**9,401.2754**	**0.3851**	**0.0392**	**9,422.5900**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**83.45**	**4.34**	**58.00**	**50.57**	**0.00**	**95.96**	**46.45**	**0.00**	**96.02**	**74.71**	**100.00**	**-0.79**	**5.83**	**83.36**	**33.82**	**6.32**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	3/1/2021	3/21/2021	5	15	
2	Grading	Grading	3/22/2021	5/27/2021	5	49	
3	Building Construction	Building Construction	5/28/2021	7/12/2022	5	293	
4	Architectural Coating	Architectural Coating	2/11/2022	6/14/2022	5	88	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 1.3

Acres of Paving: 0.54

Residential Indoor: 141,750; Residential Outdoor: 47,250; Non-Residential Indoor: 22,500; Non-Residential Outdoor: 7,500; Striped

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Architectural Coating	Air Compressors	1	6.00	78	0.48
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Cranes	1	6.00	231	0.29

Building Construction	Forklifts	1	6.00	89	0.20
Demolition	Rubber Tired Dozers	1	8.00	247	0.40
Grading	Rubber Tired Dozers	1	6.00	247	0.40
Building Construction	Tractors/Loaders/Backhoes	1	6.00	97	0.37
Demolition	Tractors/Loaders/Backhoes	3	8.00	97	0.37
Grading	Tractors/Loaders/Backhoes	1	7.00	97	0.37
Grading	Graders	1	6.00	187	0.41
Building Construction	Welders	3	8.00	46	0.45

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	5	13.00	0.00	5.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Grading	3	8.00	0.00	3,150.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	7	66.00	14.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	13.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Replace Ground Cover

Water Exposed Area

Reduce Vehicle Speed on Unpaved Roads

3.2 Demolition - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.0736	0.0000	0.0736	0.0112	0.0000	0.0112			0.0000			0.0000
Off-Road	1.9930	19.6966	14.4925	0.0241		1.0409	1.0409		0.9715	0.9715		2,322.7171	2,322.7171	0.5940		2,337.5658

Total	**1.9930**	**19.6966**	**14.4925**	**0.0241**	**0.0736**	**1.0409**	**1.1145**	**0.0112**	**0.9715**	**0.9826**		**2,322.7171**	**2,322.7171**	**0.5940**		**2,337.5658**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	2.4200e-003	0.0843	0.0179	2.6000e-004	5.8200e-003	2.6000e-004	6.0900e-003	1.6000e-003	2.5000e-004	1.8500e-003		27.6513	27.6513	1.8400e-003		27.6974
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0549	0.0356	0.4897	1.4400e-003	0.1453	1.0700e-003	0.1464	0.0385	9.9000e-004	0.0395		143.9624	143.9624	3.8700e-003		144.0592
Total	**0.0573**	**0.1199**	**0.5076**	**1.7000e-003**	**0.1511**	**1.3300e-003**	**0.1525**	**0.0401**	**1.2400e-003**	**0.0414**		**171.6138**	**171.6138**	**5.7100e-003**		**171.7567**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.0273	0.0000	0.0273	4.1300e-003	0.0000	4.1300e-003			0.0000			0.0000
Off-Road	1.9930	19.6966	14.4925	0.0241		1.0409	1.0409		0.9715	0.9715	0.0000	2,322.7171	2,322.7171	0.5940		2,337.5658
Total	**1.9930**	**19.6966**	**14.4925**	**0.0241**	**0.0273**	**1.0409**	**1.0682**	**4.1300e-003**	**0.9715**	**0.9756**	**0.0000**	**2,322.7171**	**2,322.7171**	**0.5940**		**2,337.5658**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	2.4200e-003	0.0843	0.0179	2.6000e-004	5.8200e-003	2.6000e-004	6.0900e-003	1.6000e-003	2.5000e-004	1.8500e-003		27.6513	27.6513	1.8400e-003		27.6974
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0549	0.0356	0.4897	1.4400e-003	0.1453	1.0700e-003	0.1464	0.0385	9.9000e-004	0.0395		143.9624	143.9624	3.8700e-003		144.0592
Total	**0.0573**	**0.1199**	**0.5076**	**1.7000e-003**	**0.1511**	**1.3300e-003**	**0.1525**	**0.0401**	**1.2400e-003**	**0.0414**		**171.6138**	**171.6138**	**5.7100e-003**		**171.7567**

3.3 Grading - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					4.6029	0.0000	4.6029	2.4945	0.0000	2.4945			0.0000			0.0000
Off-Road	1.2884	14.3307	6.3314	0.0141		0.6379	0.6379		0.5869	0.5869		1,365.0648	1,365.0648	0.4415		1,376.1020
Total	**1.2884**	**14.3307**	**6.3314**	**0.0141**	**4.6029**	**0.6379**	**5.2408**	**2.4945**	**0.5869**	**3.0814**		**1,365.0648**	**1,365.0648**	**0.4415**		**1,376.1020**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.4665	16.2636	3.4427	0.0493	1.1233	0.0504	1.1737	0.3079	0.0482	0.3561		5,332.7543	5,332.7543	0.3558		5,341.6486
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000

Worker	0.0338	0.0219	0.3014	8.9000e-004	0.0894	6.6000e-004	0.0901	0.0237	6.1000e-004	0.0243		88.5923	88.5923	2.3800e-003		88.6518
Total	**0.5002**	**16.2855**	**3.7440**	**0.0502**	**1.2127**	**0.0511**	**1.2638**	**0.3316**	**0.0488**	**0.3804**		**5,421.3466**	**5,421.3466**	**0.3582**		**5,430.3005**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					1.7054	0.0000	1.7054	0.9242	0.0000	0.9242			0.0000			0.0000
Off-Road	1.2884	14.3307	6.3314	0.0141		0.6379	0.6379		0.5869	0.5869	0.0000	1,365.0648	1,365.0648	0.4415		1,376.1020
Total	**1.2884**	**14.3307**	**6.3314**	**0.0141**	**1.7054**	**0.6379**	**2.3433**	**0.9242**	**0.5869**	**1.5111**	**0.0000**	**1,365.0648**	**1,365.0648**	**0.4415**		**1,376.1020**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.4665	16.2636	3.4427	0.0493	1.1233	0.0504	1.1737	0.3079	0.0482	0.3561		5,332.7543	5,332.7543	0.3558		5,341.6486
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0338	0.0219	0.3014	8.9000e-004	0.0894	6.6000e-004	0.0901	0.0237	6.1000e-004	0.0243		88.5923	88.5923	2.3800e-003		88.6518
Total	**0.5002**	**16.2855**	**3.7440**	**0.0502**	**1.2127**	**0.0511**	**1.2638**	**0.3316**	**0.0488**	**0.3804**		**5,421.3466**	**5,421.3466**	**0.3582**		**5,430.3005**

3.4 Building Construction - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.8125	13.6361	12.8994	0.0221		0.6843	0.6843		0.6608	0.6608		2,001.2200	2,001.2200	0.3573		2,010.1517
Total	**1.8125**	**13.6361**	**12.8994**	**0.0221**		**0.6843**	**0.6843**		**0.6608**	**0.6608**		**2,001.2200**	**2,001.2200**	**0.3573**		**2,010.1517**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0390	1.3353	0.3169	3.5700e-003	0.0896	2.6900e-003	0.0923	0.0258	2.5700e-003	0.0284		381.4139	381.4139	0.0231		381.9907
Worker	0.2786	0.1807	2.4864	7.3400e-003	0.7377	5.4300e-003	0.7432	0.1957	5.0000e-003	0.2007		730.8862	730.8862	0.0197		731.3776
Total	**0.3176**	**1.5160**	**2.8032**	**0.0109**	**0.8273**	**8.1200e-003**	**0.8354**	**0.2215**	**7.5700e-003**	**0.2290**		**1,112.3000**	**1,112.3000**	**0.0427**		**1,113.3682**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.8125	13.6361	12.8994	0.0221		0.6843	0.6843		0.6608	0.6608	0.0000	2,001.2200	2,001.2200	0.3573		2,010.1517

Total	**1.8125**	**13.6361**	**12.8994**	**0.0221**		**0.6843**	**0.6843**		**0.6608**	**0.6608**	**0.0000**	**2,001.2200**	**2,001.2200**	**0.3573**		**2,010.1517**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0390	1.3353	0.3169	3.5700e-003	0.0896	2.6900e-003	0.0923	0.0258	2.5700e-003	0.0284		381.4139	381.4139	0.0231		381.9907
Worker	0.2786	0.1807	2.4864	7.3400e-003	0.7377	5.4300e-003	0.7432	0.1957	5.0000e-003	0.2007		730.8862	730.8862	0.0197		731.3776
Total	**0.3176**	**1.5160**	**2.8032**	**0.0109**	**0.8273**	**8.1200e-003**	**0.8354**	**0.2215**	**7.5700e-003**	**0.2290**		**1,112.3000**	**1,112.3000**	**0.0427**		**1,113.3682**

3.4 Building Construction - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.6487	12.5031	12.7264	0.0221		0.5889	0.5889		0.5689	0.5689		2,001.5429	2,001.5429	0.3486		2,010.2581
Total	**1.6487**	**12.5031**	**12.7264**	**0.0221**		**0.5889**	**0.5889**		**0.5689**	**0.5689**		**2,001.5429**	**2,001.5429**	**0.3486**		**2,010.2581**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0365	1.2675	0.2995	3.5400e-003	0.0896	2.3300e-003	0.0919	0.0258	2.2300e-003	0.0280		378.0828	378.0828	0.0222		378.6381
Worker	0.2613	0.1632	2.2991	7.0700e-003	0.7377	5.2800e-003	0.7430	0.1957	4.8600e-003	0.2005		704.6978	704.6978	0.0178		705.1419
Total	**0.2979**	**1.4307**	**2.5986**	**0.0106**	**0.8273**	**7.6100e-003**	**0.8349**	**0.2215**	**7.0900e-003**	**0.2285**		**1,082.7806**	**1,082.7806**	**0.0400**		**1,083.7799**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.6487	12.5031	12.7264	0.0221		0.5889	0.5889		0.5689	0.5689	0.0000	2,001.5429	2,001.5429	0.3486		2,010.2581
Total	**1.6487**	**12.5031**	**12.7264**	**0.0221**		**0.5889**	**0.5889**		**0.5689**	**0.5689**	**0.0000**	**2,001.5429**	**2,001.5429**	**0.3486**		**2,010.2581**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000

Vendor	0.0365	1.2675	0.2995	3.5400e-003	0.0896	2.3300e-003	0.0919	0.0258	2.2300e-003	0.0280		378.0828	378.0828	0.0222		378.6381
Worker	0.2613	0.1632	2.2991	7.0700e-003	0.7377	5.2800e-003	0.7430	0.1957	4.8600e-003	0.2005		704.6978	704.6978	0.0178		705.1419
Total	**0.2979**	**1.4307**	**2.5986**	**0.0106**	**0.8273**	**7.6100e-003**	**0.8349**	**0.2215**	**7.0900e-003**	**0.2285**		**1,082.7806**	**1,082.7806**	**0.0400**		**1,083.7799**

3.5 Architectural Coating - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	5.8053					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2045	1.4085	1.8136	2.9700e-003		0.0817	0.0817		0.0817	0.0817		281.4481	281.4481	0.0183		281.9062
Total	**6.0099**	**1.4085**	**1.8136**	**2.9700e-003**		**0.0817**	**0.0817**		**0.0817**	**0.0817**		**281.4481**	**281.4481**	**0.0183**		**281.9062**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0515	0.0322	0.4529	1.3900e-003	0.1453	1.0400e-003	0.1464	0.0385	9.6000e-004	0.0395		138.8041	138.8041	3.5000e-003		138.8916
Total	**0.0515**	**0.0322**	**0.4529**	**1.3900e-003**	**0.1453**	**1.0400e-003**	**0.1464**	**0.0385**	**9.6000e-004**	**0.0395**		**138.8041**	**138.8041**	**3.5000e-003**		**138.8916**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	5.8053					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2045	1.4085	1.8136	2.9700e-003		0.0817	0.0817		0.0817	0.0817	0.0000	281.4481	281.4481	0.0183		281.9062
Total	**6.0099**	**1.4085**	**1.8136**	**2.9700e-003**		**0.0817**	**0.0817**		**0.0817**	**0.0817**	**0.0000**	**281.4481**	**281.4481**	**0.0183**		**281.9062**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0515	0.0322	0.4529	1.3900e-003	0.1453	1.0400e-003	0.1464	0.0385	9.6000e-004	0.0395		138.8041	138.8041	3.5000e-003		138.8916
Total	**0.0515**	**0.0322**	**0.4529**	**1.3900e-003**	**0.1453**	**1.0400e-003**	**0.1464**	**0.0385**	**9.6000e-004**	**0.0395**		**138.8041**	**138.8041**	**3.5000e-003**		**138.8916**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	1.4101	7.2057	18.7535	0.0712	5.8447	0.0541	5.8988	1.5638	0.0505	1.6143		7,251.7646	7,251.7646	0.3341		7,260.1157
Unmitigated	1.4101	7.2057	18.7535	0.0712	5.8447	0.0541	5.8988	1.5638	0.0505	1.6143		7,251.7646	7,251.7646	0.3341		7,260.1157

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Apartments Low Rise	150.50	150.50	150.50	579,287	579,287
High Turnover (Sit Down Restaurant)	489.23	489.23	489.23	1,569,222	1,569,222
Parking Lot	0.00	0.00	0.00		
Regional Shopping Center	174.45	174.45	174.45	600,175	600,175
Total	814.18	814.18	814.18	2,748,684	2,748,684

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Apartments Low Rise	14.70	5.90	8.70	40.20	19.20	40.60	100	0	0
High Turnover (Sit Down	16.60	8.40	6.90	8.50	72.50	19.00	100	0	0
Parking Lot	16.60	8.40	6.90	0.00	0.00	0.00	0	0	0
Regional Shopping Center	16.60	8.40	6.90	16.30	64.70	19.00	100	0	0

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Apartments Low Rise	0.549559	0.042893	0.201564	0.118533	0.015569	0.005846	0.021394	0.034255	0.002099	0.001828	0.004855	0.000709	0.000896
High Turnover (Sit Down Restaurant)	0.549559	0.042893	0.201564	0.118533	0.015569	0.005846	0.021394	0.034255	0.002099	0.001828	0.004855	0.000709	0.000896
Parking Lot	0.549559	0.042893	0.201564	0.118533	0.015569	0.005846	0.021394	0.034255	0.002099	0.001828	0.004855	0.000709	0.000896
Regional Shopping Center	0.549559	0.042893	0.201564	0.118533	0.015569	0.005846	0.021394	0.034255	0.002099	0.001828	0.004855	0.000709	0.000896

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.0738	0.6587	0.4743	4.0200e-003		0.0510	0.0510		0.0510	0.0510		804.9781	804.9781	0.0154	0.0148	809.7617
NaturalGas Unmitigated	0.0738	0.6587	0.4743	4.0200e-003		0.0510	0.0510		0.0510	0.0510		804.9781	804.9781	0.0154	0.0148	809.7617

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Apartments Low Rise	2066.97	0.0223	0.1905	0.0811	1.2200e-003		0.0154	0.0154		0.0154	0.0154		243.1731	243.1731	4.6600e-003	4.4600e-003	244.6182
High Turnover (Sit Down Restaurant)	4741.64	0.0511	0.4649	0.3905	2.7900e-003		0.0353	0.0353		0.0353	0.0353		557.8405	557.8405	0.0107	0.0102	561.1554
Parking Lot	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
Regional Shopping Center	33.6986	3.6000e-004	3.3000e-003	2.7800e-003	2.0000e-005		2.5000e-004	2.5000e-004		2.5000e-004	2.5000e-004		3.9645	3.9645	8.0000e-005	7.0000e-005	3.9881
Total		**0.0738**	**0.6587**	**0.4743**	**4.0300e-003**		**0.0510**	**0.0510**		**0.0510**	**0.0510**		**804.9781**	**804.9781**	**0.0154**	**0.0148**	**809.7617**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Apartments Low Rise	2.06697	0.0223	0.1905	0.0811	1.2200e-003		0.0154	0.0154		0.0154	0.0154		243.1731	243.1731	4.6600e-003	4.4600e-003	244.6182
High Turnover (Sit Down Restaurant)	4.74164	0.0511	0.4649	0.3905	2.7900e-003		0.0353	0.0353		0.0353	0.0353		557.8405	557.8405	0.0107	0.0102	561.1554
Parking Lot	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
Regional Shopping Center	0.0336986	3.6000e-004	3.3000e-003	2.7800e-003	2.0000e-005		2.5000e-004	2.5000e-004		2.5000e-004	2.5000e-004		3.9645	3.9645	8.0000e-005	7.0000e-005	3.9881
Total		**0.0738**	**0.6587**	**0.4743**	**4.0300e-003**		**0.0510**	**0.0510**		**0.0510**	**0.0510**		**804.9781**	**804.9781**	**0.0154**	**0.0148**	**809.7617**

6.0 Area Detail

6.1 Mitigation Measures Area

Use only Natural Gas Hearths

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	2.1291	1.1118	6.2337	6.9800e-003		0.1165	0.1165		0.1165	0.1165	0.0000	1,344.5327	1,344.5327	0.0357	0.0245	1,352.7126
Unmitigated	20.3493	1.5191	41.3876	0.0911		5.3792	5.3792		5.3792	5.3792	655.6843	1,270.4151	1,926.0994	1.9655	0.0445	1,988.4976

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.1400					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	1.6915					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	18.3425	1.4524	35.5986	0.0908		5.3472	5.3472		5.3472	5.3472	655.6843	1,260.0000	1,915.6843	1.9554	0.0445	1,977.8307
Landscaping	0.1753	0.0668	5.7890	3.1000e-004		0.0320	0.0320		0.0320	0.0320		10.4151	10.4151	0.0101		10.6670
Total	**20.3493**	**1.5191**	**41.3876**	**0.0911**		**5.3792**	**5.3792**		**5.3792**	**5.3792**	**655.6843**	**1,270.4151**	**1,926.0994**	**1.9655**	**0.0445**	**1,988.4976**

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.1400					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	1.6915					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	0.1223	1.0451	0.4447	6.6700e-003		0.0845	0.0845		0.0845	0.0845	0.0000	1,334.1177	1,334.1177	0.0256	0.0245	1,342.0456
Landscaping	0.1753	0.0668	5.7890	3.1000e-004		0.0320	0.0320		0.0320	0.0320		10.4151	10.4151	0.0101		10.6670
Total	**2.1291**	**1.1118**	**6.2337**	**6.9800e-003**		**0.1165**	**0.1165**		**0.1165**	**0.1165**	**0.0000**	**1,344.5327**	**1,344.5327**	**0.0357**	**0.0245**	**1,352.7126**

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

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

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

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

Boilers

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

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Heritage Square South - South Coast AQMD Air District, Winter

Heritage Square South

South Coast AQMD Air District, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Apartments Low Rise	70.00	Dwelling Unit	0.42	70,000.00	200
Regional Shopping Center	7.50	1000sqft	0.17	7,500.00	0
High Turnover (Sit Down Restaurant)	7.50	1000sqft	0.17	7,500.00	0
Parking Lot	60.00	Space	0.54	24,000.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	31
Climate Zone	12			**Operational Year**	2022
Utility Company	Pasadena Water & Power				
CO2 Intensity (lb/MWhr)	1664.14	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - total project site area 1.3 acres

Construction Phase - construction schedule provided by project applicant

Grading - grading area equals site area of 1.3 ares; export estimated by project applicant

Demolition -

Architectural Coating - SCAQMD Rule 1113 - Low VOC coatings

Vehicle Trips - adjust trip generation accounting for walk-in, transit, and pass-by trips, so primary trip is 100%

Area Coating - SCAQMD Rule 1113 - low VOC coatings

Construction Off-road Equipment Mitigation - SCAQMD Rule 403

Area Mitigation - SCAQMD Rule 445 - no wood-burning devices in new development

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	EF_Nonresidential_Exterior	100.00	50.00
tblArchitecturalCoating	EF_Nonresidential_Interior	100.00	50.00
tblArchitecturalCoating	EF_Parking	100.00	50.00
tblAreaCoating	Area_EF_Nonresidential_Exterior	100	50
tblAreaCoating	Area_EF_Nonresidential_Interior	100	50
tblAreaCoating	Area_EF_Parking	100	50
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	15
tblConstructionPhase	NumDays	10.00	88.00
tblConstructionPhase	NumDays	200.00	293.00
tblConstructionPhase	NumDays	20.00	15.00
tblConstructionPhase	NumDays	4.00	49.00
tblConstructionPhase	PhaseEndDate	2/7/2022	6/14/2022
tblConstructionPhase	PhaseEndDate	1/10/2022	7/12/2022
tblConstructionPhase	PhaseEndDate	3/26/2021	3/21/2021
tblConstructionPhase	PhaseEndDate	4/5/2021	5/27/2021
tblConstructionPhase	PhaseStartDate	1/25/2022	2/11/2022
tblConstructionPhase	PhaseStartDate	4/6/2021	5/28/2021
tblConstructionPhase	PhaseStartDate	3/31/2021	3/22/2021
tblGrading	AcresOfGrading	18.38	1.30
tblGrading	MaterialExported	0.00	25,200.00
tblLandUse	LotAcreage	4.38	0.42
tblVehicleTrips	DV_TP	11.00	0.00
tblVehicleTrips	DV_TP	20.00	0.00
tblVehicleTrips	DV_TP	35.00	0.00
tblVehicleTrips	PB_TP	3.00	0.00
tblVehicleTrips	PB_TP	43.00	0.00
tblVehicleTrips	PB_TP	11.00	0.00

tblVehicleTrips	PR_TP	86.00	100.00
tblVehicleTrips	PR_TP	37.00	100.00
tblVehicleTrips	PR_TP	54.00	100.00
tblVehicleTrips	ST_TR	7.16	2.15
tblVehicleTrips	ST_TR	158.37	65.23
tblVehicleTrips	ST_TR	49.97	23.26
tblVehicleTrips	SU_TR	6.07	2.15
tblVehicleTrips	SU_TR	131.84	65.23
tblVehicleTrips	SU_TR	25.24	23.26
tblVehicleTrips	WD_TR	6.59	2.15
tblVehicleTrips	WD_TR	127.15	65.23
tblVehicleTrips	WD_TR	42.70	23.26

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2021	2.1579	30.8117	15.4883	0.0633	5.8156	1.0422	6.5054	2.8261	0.9727	3.4625	0.0000	6,682.0310	6,682.0310	0.8145	0.0000	6,702.3937
2022	8.0397	15.3877	17.3439	0.0364	0.9726	0.6793	1.6520	0.2600	0.6587	0.9187	0.0000	3,438.9067	3,438.9067	0.4106	0.0000	3,449.1710
Maximum	**8.0397**	**30.8117**	**17.3439**	**0.0633**	**5.8156**	**1.0422**	**6.5054**	**2.8261**	**0.9727**	**3.4625**	**0.0000**	**6,682.0310**	**6,682.0310**	**0.8145**	**0.0000**	**6,702.3937**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2021	2.1579	30.8117	15.4883	0.0633	2.9181	1.0422	3.6079	1.2558	0.9727	1.8922	0.0000	6,682.0310	6,682.0310	0.8145	0.0000	6,702.3937
2022	8.0397	15.3877	17.3439	0.0364	0.9726	0.6793	1.6520	0.2600	0.6587	0.9187	0.0000	3,438.9067	3,438.9067	0.4106	0.0000	3,449.1710
Maximum	**8.0397**	**30.8117**	**17.3439**	**0.0633**	**2.9181**	**1.0422**	**3.6079**	**1.2558**	**0.9727**	**1.8922**	**0.0000**	**6,682.0310**	**6,682.0310**	**0.8145**	**0.0000**	**6,702.3937**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**42.68**	**0.00**	**35.52**	**50.88**	**0.00**	**35.84**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	20.3493	1.5191	41.3876	0.0911		5.3792	5.3792		5.3792	5.3792	655.6843	1,270.4151	1,926.0994	1.9655	0.0445	1,988.4976
Energy	0.0738	0.6587	0.4743	4.0200e-003		0.0510	0.0510		0.0510	0.0510		804.9781	804.9781	0.0154	0.0148	809.7617
Mobile	1.3396	7.3452	17.5165	0.0674	5.8447	0.0544	5.8991	1.5638	0.0508	1.6146		6,868.7887	6,868.7887	0.3339		6,877.1356
Total	**21.7627**	**9.5230**	**59.3784**	**0.1626**	**5.8447**	**5.4845**	**11.3292**	**1.5638**	**5.4809**	**7.0447**	**655.6843**	**8,944.1818**	**9,599.8661**	**2.3148**	**0.0593**	**9,675.3949**

Mitigated Operational

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

Category	lb/day										lb/day					
Area	2.1291	1.1118	6.2337	6.9800e-003		0.1165	0.1165		0.1165	0.1165	0.0000	1,344.5327	1,344.5327	0.0357	0.0245	1,352.7126
Energy	0.0738	0.6587	0.4743	4.0200e-003		0.0510	0.0510		0.0510	0.0510		804.9781	804.9781	0.0154	0.0148	809.7617
Mobile	1.3396	7.3452	17.5165	0.0674	5.8447	0.0544	5.8991	1.5638	0.0508	1.6146		6,868.7887	6,868.7887	0.3339		6,877.1356
Total	**3.5424**	**9.1157**	**24.2245**	**0.0784**	**5.8447**	**0.2218**	**6.0665**	**1.5638**	**0.2182**	**1.7820**	**0.0000**	**9,018.2995**	**9,018.2995**	**0.3850**	**0.0392**	**9,039.6099**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**83.72**	**4.28**	**59.20**	**51.76**	**0.00**	**95.96**	**46.45**	**0.00**	**96.02**	**74.70**	**100.00**	**-0.83**	**6.06**	**83.37**	**33.82**	**6.57**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	3/1/2021	3/21/2021	5	15	
2	Grading	Grading	3/22/2021	5/27/2021	5	49	
3	Building Construction	Building Construction	5/28/2021	7/12/2022	5	293	
4	Architectural Coating	Architectural Coating	2/11/2022	6/14/2022	5	88	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 1.3

Acres of Paving: 0.54

Residential Indoor: 141,750; Residential Outdoor: 47,250; Non-Residential Indoor: 22,500; Non-Residential Outdoor: 7,500; Striped

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Architectural Coating	Air Compressors	1	6.00	78	0.48
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Cranes	1	6.00	231	0.29

Building Construction	Forklifts	1	6.00	89	0.20
Demolition	Rubber Tired Dozers	1	8.00	247	0.40
Grading	Rubber Tired Dozers	1	6.00	247	0.40
Building Construction	Tractors/Loaders/Backhoes	1	6.00	97	0.37
Demolition	Tractors/Loaders/Backhoes	3	8.00	97	0.37
Grading	Tractors/Loaders/Backhoes	1	7.00	97	0.37
Grading	Graders	1	6.00	187	0.41
Building Construction	Welders	3	8.00	46	0.45

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	5	13.00	0.00	5.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Grading	3	8.00	0.00	3,150.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	7	66.00	14.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	13.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Replace Ground Cover

Water Exposed Area

Reduce Vehicle Speed on Unpaved Roads

3.2 Demolition - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.0736	0.0000	0.0736	0.0112	0.0000	0.0112			0.0000			0.0000
Off-Road	1.9930	19.6966	14.4925	0.0241		1.0409	1.0409		0.9715	0.9715		2,322.7171	2,322.7171	0.5940		2,337.5658

Total	**1.9930**	**19.6966**	**14.4925**	**0.0241**	**0.0736**	**1.0409**	**1.1145**	**0.0112**	**0.9715**	**0.9826**		**2,322.7171**	**2,322.7171**	**0.5940**		**2,337.5658**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	2.4900e-003	0.0853	0.0192	2.5000e-004	5.8200e-003	2.7000e-004	6.0900e-003	1.6000e-003	2.5000e-004	1.8500e-003		27.1398	27.1398	1.9200e-003		27.1879
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0600	0.0390	0.4401	1.3500e-003	0.1453	1.0700e-003	0.1464	0.0385	9.9000e-004	0.0395		134.6368	134.6368	3.6100e-003		134.7270
Total	**0.0624**	**0.1243**	**0.4593**	**1.6000e-003**	**0.1511**	**1.3400e-003**	**0.1525**	**0.0401**	**1.2400e-003**	**0.0414**		**161.7767**	**161.7767**	**5.5300e-003**		**161.9149**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.0273	0.0000	0.0273	4.1300e-003	0.0000	4.1300e-003			0.0000			0.0000
Off-Road	1.9930	19.6966	14.4925	0.0241		1.0409	1.0409		0.9715	0.9715	0.0000	2,322.7171	2,322.7171	0.5940		2,337.5658
Total	**1.9930**	**19.6966**	**14.4925**	**0.0241**	**0.0273**	**1.0409**	**1.0682**	**4.1300e-003**	**0.9715**	**0.9756**	**0.0000**	**2,322.7171**	**2,322.7171**	**0.5940**		**2,337.5658**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	2.4900e-003	0.0853	0.0192	2.5000e-004	5.8200e-003	2.7000e-004	6.0900e-003	1.6000e-003	2.5000e-004	1.8500e-003		27.1398	27.1398	1.9200e-003		27.1879
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0600	0.0390	0.4401	1.3500e-003	0.1453	1.0700e-003	0.1464	0.0385	9.9000e-004	0.0395		134.6368	134.6368	3.6100e-003		134.7270
Total	**0.0624**	**0.1243**	**0.4593**	**1.6000e-003**	**0.1511**	**1.3400e-003**	**0.1525**	**0.0401**	**1.2400e-003**	**0.0414**		**161.7767**	**161.7767**	**5.5300e-003**		**161.9149**

3.3 Grading - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					4.6029	0.0000	4.6029	2.4945	0.0000	2.4945			0.0000			0.0000
Off-Road	1.2884	14.3307	6.3314	0.0141		0.6379	0.6379		0.5869	0.5869		1,365.0648	1,365.0648	0.4415		1,376.1020
Total	**1.2884**	**14.3307**	**6.3314**	**0.0141**	**4.6029**	**0.6379**	**5.2408**	**2.4945**	**0.5869**	**3.0814**		**1,365.0648**	**1,365.0648**	**0.4415**		**1,376.1020**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.4798	16.4570	3.6957	0.0484	1.1233	0.0512	1.1745	0.3079	0.0490	0.3568		5,234.1128	5,234.1128	0.3708		5,243.3827
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000

Worker	0.0369	0.0240	0.2708	8.3000e-004	0.0894	6.6000e-004	0.0901	0.0237	6.1000e-004	0.0243		82.8534	82.8534	2.2200e-003		82.9089
Total	**0.5166**	**16.4809**	**3.9666**	**0.0492**	**1.2127**	**0.0518**	**1.2646**	**0.3316**	**0.0496**	**0.3811**		**5,316.9662**	**5,316.9662**	**0.3730**		**5,326.2917**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					1.7054	0.0000	1.7054	0.9242	0.0000	0.9242			0.0000			0.0000
Off-Road	1.2884	14.3307	6.3314	0.0141		0.6379	0.6379		0.5869	0.5869	0.0000	1,365.0648	1,365.0648	0.4415		1,376.1020
Total	**1.2884**	**14.3307**	**6.3314**	**0.0141**	**1.7054**	**0.6379**	**2.3433**	**0.9242**	**0.5869**	**1.5111**	**0.0000**	**1,365.0648**	**1,365.0648**	**0.4415**		**1,376.1020**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.4798	16.4570	3.6957	0.0484	1.1233	0.0512	1.1745	0.3079	0.0490	0.3568		5,234.1128	5,234.1128	0.3708		5,243.3827
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0369	0.0240	0.2708	8.3000e-004	0.0894	6.6000e-004	0.0901	0.0237	6.1000e-004	0.0243		82.8534	82.8534	2.2200e-003		82.9089
Total	**0.5166**	**16.4809**	**3.9666**	**0.0492**	**1.2127**	**0.0518**	**1.2646**	**0.3316**	**0.0496**	**0.3811**		**5,316.9662**	**5,316.9662**	**0.3730**		**5,326.2917**

3.4 Building Construction - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.8125	13.6361	12.8994	0.0221		0.6843	0.6843		0.6608	0.6608		2,001.2200	2,001.2200	0.3573		2,010.1517
Total	**1.8125**	**13.6361**	**12.8994**	**0.0221**		**0.6843**	**0.6843**		**0.6608**	**0.6608**		**2,001.2200**	**2,001.2200**	**0.3573**		**2,010.1517**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0410	1.3310	0.3546	3.4700e-003	0.0896	2.7700e-003	0.0924	0.0258	2.6500e-003	0.0285		370.3703	370.3703	0.0248		370.9898
Worker	0.3044	0.1978	2.2344	6.8600e-003	0.7377	5.4300e-003	0.7432	0.1957	5.0000e-003	0.2007		683.5408	683.5408	0.0183		683.9988
Total	**0.3454**	**1.5288**	**2.5889**	**0.0103**	**0.8273**	**8.2000e-003**	**0.8355**	**0.2215**	**7.6500e-003**	**0.2291**		**1,053.9111**	**1,053.9111**	**0.0431**		**1,054.9886**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.8125	13.6361	12.8994	0.0221		0.6843	0.6843		0.6608	0.6608	0.0000	2,001.2200	2,001.2200	0.3573		2,010.1517

Total	**1.8125**	**13.6361**	**12.8994**	**0.0221**		**0.6843**	**0.6843**		**0.6608**	**0.6608**	**0.0000**	**2,001.2200**	**2,001.2200**	**0.3573**		**2,010.1517**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0410	1.3310	0.3546	3.4700e-003	0.0896	2.7700e-003	0.0924	0.0258	2.6500e-003	0.0285		370.3703	370.3703	0.0248		370.9898
Worker	0.3044	0.1978	2.2344	6.8600e-003	0.7377	5.4300e-003	0.7432	0.1957	5.0000e-003	0.2007		683.5408	683.5408	0.0183		683.9988
Total	**0.3454**	**1.5288**	**2.5889**	**0.0103**	**0.8273**	**8.2000e-003**	**0.8355**	**0.2215**	**7.6500e-003**	**0.2291**		**1,053.9111**	**1,053.9111**	**0.0431**		**1,054.9886**

3.4 Building Construction - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.6487	12.5031	12.7264	0.0221		0.5889	0.5889		0.5689	0.5689		2,001.5429	2,001.5429	0.3486		2,010.2581
Total	**1.6487**	**12.5031**	**12.7264**	**0.0221**		**0.5889**	**0.5889**		**0.5689**	**0.5689**		**2,001.5429**	**2,001.5429**	**0.3486**		**2,010.2581**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0385	1.2624	0.3353	3.4400e-003	0.0896	2.4100e-003	0.0920	0.0258	2.3000e-003	0.0281		367.0719	367.0719	0.0238		367.6679
Worker	0.2863	0.1786	2.0623	6.6100e-003	0.7377	5.2800e-003	0.7430	0.1957	4.8600e-003	0.2005		659.0341	659.0341	0.0165		659.4477
Total	**0.3247**	**1.4410**	**2.3976**	**0.0101**	**0.8273**	**7.6900e-003**	**0.8350**	**0.2215**	**7.1600e-003**	**0.2286**		**1,026.1060**	**1,026.1060**	**0.0404**		**1,027.1156**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.6487	12.5031	12.7264	0.0221		0.5889	0.5889		0.5689	0.5689	0.0000	2,001.5429	2,001.5429	0.3486		2,010.2581
Total	**1.6487**	**12.5031**	**12.7264**	**0.0221**		**0.5889**	**0.5889**		**0.5689**	**0.5689**	**0.0000**	**2,001.5429**	**2,001.5429**	**0.3486**		**2,010.2581**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000

Vendor	0.0385	1.2624	0.3353	3.4400e-003	0.0896	2.4100e-003	0.0920	0.0258	2.3000e-003	0.0281		367.0719	367.0719	0.0238		367.6679
Worker	0.2863	0.1786	2.0623	6.6100e-003	0.7377	5.2800e-003	0.7430	0.1957	4.8600e-003	0.2005		659.0341	659.0341	0.0165		659.4477
Total	**0.3247**	**1.4410**	**2.3976**	**0.0101**	**0.8273**	**7.6900e-003**	**0.8350**	**0.2215**	**7.1600e-003**	**0.2286**		**1,026.1060**	**1,026.1060**	**0.0404**		**1,027.1156**

3.5 Architectural Coating - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	5.8053					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2045	1.4085	1.8136	2.9700e-003		0.0817	0.0817		0.0817	0.0817		281.4481	281.4481	0.0183		281.9062
Total	**6.0099**	**1.4085**	**1.8136**	**2.9700e-003**		**0.0817**	**0.0817**		**0.0817**	**0.0817**		**281.4481**	**281.4481**	**0.0183**		**281.9062**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0564	0.0352	0.4062	1.3000e-003	0.1453	1.0400e-003	0.1464	0.0385	9.6000e-004	0.0395		129.8098	129.8098	3.2600e-003		129.8912
Total	**0.0564**	**0.0352**	**0.4062**	**1.3000e-003**	**0.1453**	**1.0400e-003**	**0.1464**	**0.0385**	**9.6000e-004**	**0.0395**		**129.8098**	**129.8098**	**3.2600e-003**		**129.8912**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	5.8053					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2045	1.4085	1.8136	2.9700e-003		0.0817	0.0817		0.0817	0.0817	0.0000	281.4481	281.4481	0.0183		281.9062
Total	**6.0099**	**1.4085**	**1.8136**	**2.9700e-003**		**0.0817**	**0.0817**		**0.0817**	**0.0817**	**0.0000**	**281.4481**	**281.4481**	**0.0183**		**281.9062**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0564	0.0352	0.4062	1.3000e-003	0.1453	1.0400e-003	0.1464	0.0385	9.6000e-004	0.0395		129.8098	129.8098	3.2600e-003		129.8912
Total	**0.0564**	**0.0352**	**0.4062**	**1.3000e-003**	**0.1453**	**1.0400e-003**	**0.1464**	**0.0385**	**9.6000e-004**	**0.0395**		**129.8098**	**129.8098**	**3.2600e-003**		**129.8912**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	1.3396	7.3452	17.5165	0.0674	5.8447	0.0544	5.8991	1.5638	0.0508	1.6146		6,868.7887	6,868.7887	0.3339		6,877.1356
Unmitigated	1.3396	7.3452	17.5165	0.0674	5.8447	0.0544	5.8991	1.5638	0.0508	1.6146		6,868.7887	6,868.7887	0.3339		6,877.1356

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Apartments Low Rise	150.50	150.50	150.50	579,287	579,287
High Turnover (Sit Down Restaurant)	489.23	489.23	489.23	1,569,222	1,569,222
Parking Lot	0.00	0.00	0.00		
Regional Shopping Center	174.45	174.45	174.45	600,175	600,175
Total	814.18	814.18	814.18	2,748,684	2,748,684

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Apartments Low Rise	14.70	5.90	8.70	40.20	19.20	40.60	100	0	0
High Turnover (Sit Down	16.60	8.40	6.90	8.50	72.50	19.00	100	0	0
Parking Lot	16.60	8.40	6.90	0.00	0.00	0.00	0	0	0
Regional Shopping Center	16.60	8.40	6.90	16.30	64.70	19.00	100	0	0

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Apartments Low Rise	0.549559	0.042893	0.201564	0.118533	0.015569	0.005846	0.021394	0.034255	0.002099	0.001828	0.004855	0.000709	0.000896
High Turnover (Sit Down Restaurant)	0.549559	0.042893	0.201564	0.118533	0.015569	0.005846	0.021394	0.034255	0.002099	0.001828	0.004855	0.000709	0.000896
Parking Lot	0.549559	0.042893	0.201564	0.118533	0.015569	0.005846	0.021394	0.034255	0.002099	0.001828	0.004855	0.000709	0.000896
Regional Shopping Center	0.549559	0.042893	0.201564	0.118533	0.015569	0.005846	0.021394	0.034255	0.002099	0.001828	0.004855	0.000709	0.000896

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.0738	0.6587	0.4743	4.0200e-003		0.0510	0.0510		0.0510	0.0510		804.9781	804.9781	0.0154	0.0148	809.7617
NaturalGas Unmitigated	0.0738	0.6587	0.4743	4.0200e-003		0.0510	0.0510		0.0510	0.0510		804.9781	804.9781	0.0154	0.0148	809.7617

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Apartments Low Rise	2066.97	0.0223	0.1905	0.0811	1.2200e-003		0.0154	0.0154		0.0154	0.0154		243.1731	243.1731	4.6600e-003	4.4600e-003	244.6182
High Turnover (Sit Down Restaurant)	4741.64	0.0511	0.4649	0.3905	2.7900e-003		0.0353	0.0353		0.0353	0.0353		557.8405	557.8405	0.0107	0.0102	561.1554
Parking Lot	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
Regional Shopping Center	33.6986	3.6000e-004	3.3000e-003	2.7800e-003	2.0000e-005		2.5000e-004	2.5000e-004		2.5000e-004	2.5000e-004		3.9645	3.9645	8.0000e-005	7.0000e-005	3.9881
Total		**0.0738**	**0.6587**	**0.4743**	**4.0300e-003**		**0.0510**	**0.0510**		**0.0510**	**0.0510**		**804.9781**	**804.9781**	**0.0154**	**0.0148**	**809.7617**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Apartments Low Rise	2.06697	0.0223	0.1905	0.0811	1.2200e-003		0.0154	0.0154		0.0154	0.0154		243.1731	243.1731	4.6600e-003	4.4600e-003	244.6182
High Turnover (Sit Down Restaurant)	4.74164	0.0511	0.4649	0.3905	2.7900e-003		0.0353	0.0353		0.0353	0.0353		557.8405	557.8405	0.0107	0.0102	561.1554
Parking Lot	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
Regional Shopping Center	0.0336986	3.6000e-004	3.3000e-003	2.7800e-003	2.0000e-005		2.5000e-004	2.5000e-004		2.5000e-004	2.5000e-004		3.9645	3.9645	8.0000e-005	7.0000e-005	3.9881
Total		**0.0738**	**0.6587**	**0.4743**	**4.0300e-003**		**0.0510**	**0.0510**		**0.0510**	**0.0510**		**804.9781**	**804.9781**	**0.0154**	**0.0148**	**809.7617**

6.0 Area Detail

6.1 Mitigation Measures Area

Use only Natural Gas Hearths

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	2.1291	1.1118	6.2337	6.9800e-003		0.1165	0.1165		0.1165	0.1165	0.0000	1,344.5327	1,344.5327	0.0357	0.0245	1,352.7126
Unmitigated	20.3493	1.5191	41.3876	0.0911		5.3792	5.3792		5.3792	5.3792	655.6843	1,270.4151	1,926.0994	1.9655	0.0445	1,988.4976

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.1400					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	1.6915					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	18.3425	1.4524	35.5986	0.0908		5.3472	5.3472		5.3472	5.3472	655.6843	1,260.0000	1,915.6843	1.9554	0.0445	1,977.8307
Landscaping	0.1753	0.0668	5.7890	3.1000e-004		0.0320	0.0320		0.0320	0.0320		10.4151	10.4151	0.0101		10.6670
Total	**20.3493**	**1.5191**	**41.3876**	**0.0911**		**5.3792**	**5.3792**		**5.3792**	**5.3792**	**655.6843**	**1,270.4151**	**1,926.0994**	**1.9655**	**0.0445**	**1,988.4976**

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.1400					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	1.6915					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	0.1223	1.0451	0.4447	6.6700e-003		0.0845	0.0845		0.0845	0.0845	0.0000	1,334.1177	1,334.1177	0.0256	0.0245	1,342.0456
Landscaping	0.1753	0.0668	5.7890	3.1000e-004		0.0320	0.0320		0.0320	0.0320		10.4151	10.4151	0.0101		10.6670
Total	**2.1291**	**1.1118**	**6.2337**	**6.9800e-003**		**0.1165**	**0.1165**		**0.1165**	**0.1165**	**0.0000**	**1,344.5327**	**1,344.5327**	**0.0357**	**0.0245**	**1,352.7126**

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

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

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

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

Boilers

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

User Defined Equipment

Equipment Type	Number

11.0 Vegetation