ATTACHMENT E

Addendum to Certified EIR with Appendices

Addendum to the Certified EIR For The 16, E California Project SCH# 2008101002

Prepared for:

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FOR THE 16 E. CALIFORNIA PROJECT
SCH# 2008101002

I. INTRODUCTION

This document was prepared pursuant to the California Environmental Quality Act (CEQA) (Public Resources Code §§ 21000, *et seq*.) and CEQA Guidelines (California Code of Regulations, Title 14, §§ 15000, *et seq*.). The City of Pasadena ("City") prepared this addendum to the Certified Environmental Impact Report (EIR) for the 16 E. California Project ("Certified EIR") to evaluate the potential environmental effects of project modifications proposed for the 16 E. California Project ("Original Project"), now called the 590 Fair Oaks Avenue Medical Office Building Project ("Revised Project"). The project applicant is 590 Fair Oaks Development, LLC.

The Original Project evaluated in the Certified EIR consists of demolition of three existing buildings and associated surface parking areas to develop a four-story, 45-foot high office building with 255 parking spaces located within a two-level subterranean parking garage. The Original Project includes 113,200 gross square feet of office floor area, representing a net increase of 106,200 gross square feet of floor area compared to existing conditions on the site. The ground floor of the approved office building would include a large, centrally located lobby. Office spaces in various configurations would be dispersed throughout the building on the ground floor. The upper floors (levels two through four) would include smaller lobby spaces of approximately 215 square feet with the remainder of the floors occupied by office space. The City of Pasadena is the lead agency for the Certified EIR.

In August 2009, the Original Project was approved via a Minor Conditional Use Permit to allow demolition of three commercial buildings and a surface parking lot to facilitate the construction of a four-story, 113,200 square-foot office building with 255 parking spaces provided within a two-level subterranean parking garage. Vehicular access to the project site included a right-in only driveway from South Fair Oaks Avenue, and right-in and right-out driveway access off of Edmonson Alley. In addition, a resolution was adopted for the Original Project certifying the Environmental Impact Report (EIR) (State Clearinghouse No. 2008101002) and adopting corresponding EIR Findings, a Statement of Overriding Considerations, and a Mitigation Monitoring and Reporting Program.

The applicant is proposing changes to the project. This Addendum was prepared pursuant to CEQA Guidelines § 15164(a) which allows a lead agency to prepare an addendum to a previously certified EIR if some changes or additions to the previously certified EIR are necessary but none of the conditions described in CEQA Guidelines § 15162 requiring preparation of a subsequent EIR are present. CEQA Guidelines § 15162 states that no subsequent EIR shall be prepared unless one or more of the following occurs:

- Substantial changes are proposed in the project which will require major revisions of the previous EIR due to the involvement of new significant environmental effects or a substantial increase in the severity of previously identified significant effects;

- Substantial changes occur with respect to the circumstances under which the project is undertaken which will require major revisions of the previous EIR due to the involvement of new significant environmental effects or a substantial increase in the severity of previously identified significant effects;

- New information of substantial importance, which was not known and could not have been known with the exercise of reasonable diligence at the time the previous EIR was certified as complete, shows any of the following:

    - The project will have one or more significant effects not discussed in the previous EIR;

    - Significant effects previously examined will be substantially more severe than shown in the previous EIR;

    - Mitigation measures or alternatives previously found not to be feasible would in fact be feasible and would substantially reduce one or more significant effects of the project, but the project proponents decline to adopt the mitigation measure or alternative;

    - Mitigation measures or alternatives which are considerably different from those analyzed in the previous EIR would substantially reduce one or more significant effects on the environment, but project proponents decline to adopt the mitigation measure or alternative.

Public Resources Code ("PRC") § 21166 provides that unless one or more of the conditions set forth are met, no subsequent or supplemental environmental impact report is required.

This Addendum describes the proposed modifications to the 16 E. California Project ("Original Project") and provides a comparison of the potential environmental effects associated with those modifications to the impacts of the approved project as identified in the Certified EIR for each of the environmental issue areas evaluated in the Certified EIR. The analysis demonstrates that the proposed modifications evaluated in the Addendum would not result in conditions meeting the criteria set forth in CEQA Guidelines § 15162. Therefore, pursuant to PRC § 21166 and CEQA Guidelines § 15162, preparation of a subsequent EIR is not required.

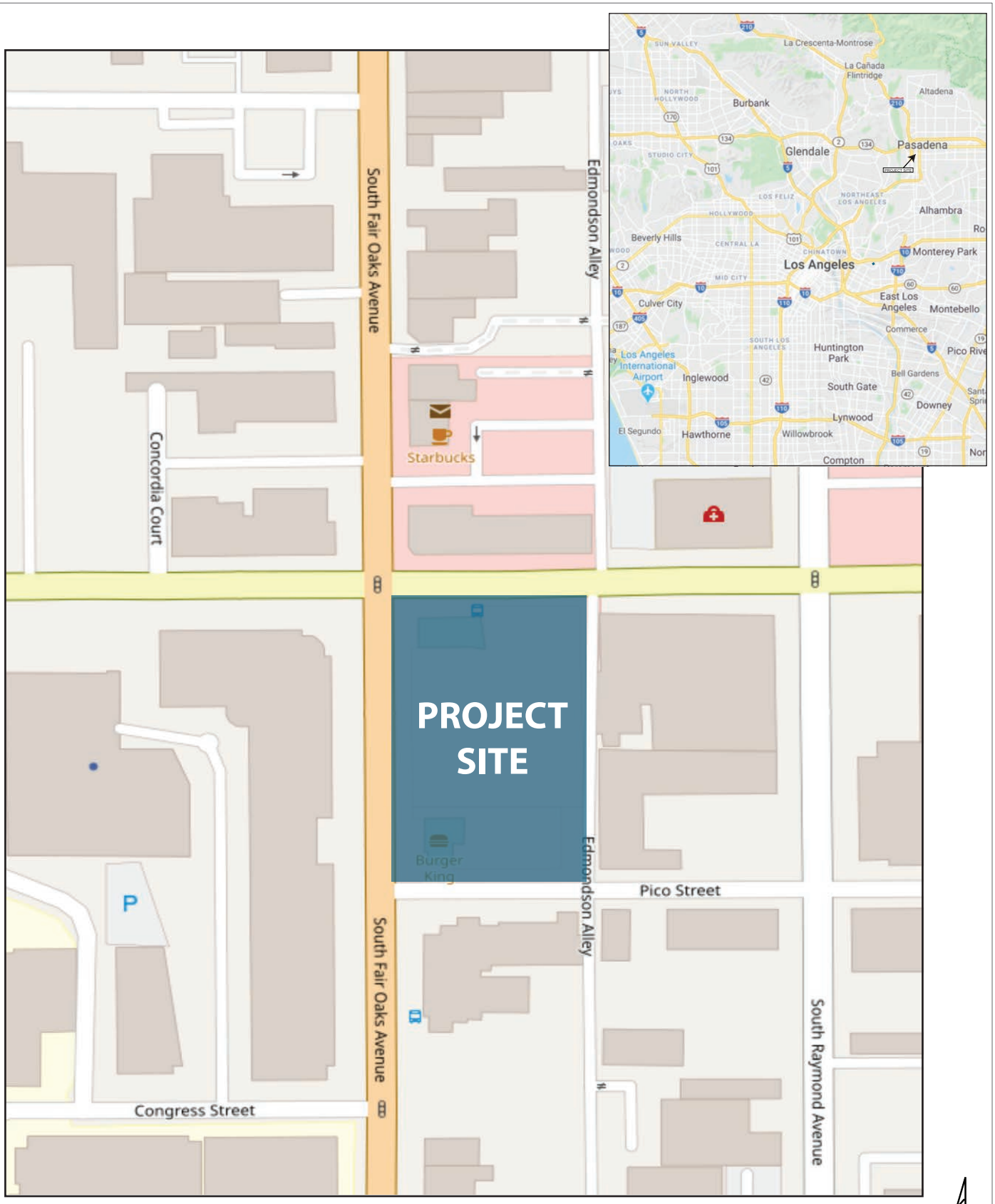
II. PROJECT DESCRIPTION

1. ORIGINAL PROJECT DESCRIPTION

As shown in Figure 1, Regional Vicinity and Project Location Map, the Project Site is located at 16 East California Boulevard, bordered by South Fair Oaks Avenue to the west and East California Boulevard to the north. The Project Site consists of five contiguous parcels (AINs: 5720-001-001, -002, -003, -004 and -005), with a total site size of approximately 42,090 square feet (0.96 acres). The northern terminus of the Pasadena Freeway (I-110), located approximately 0.6 miles southeast of the site, transitions into South Arroyo Parkway, which is located approximately 0.2 miles east of the site. The Project Site is bounded by California Boulevard to the north, Edmondson Alley to the east, commercial uses to the south, and Fair Oaks Avenue to the west. Figure 2 provides an aerial photograph of the Project Site. The site is within the IG-SP2 (Industrial General, South Fair Oaks Specific Plan) zoning district. The Project Site is currently improved with two, one-story commercial buildings totaling 4,780 square feet and a surface parking lot.

The Original Project proposed demolition of the existing buildings and clearing of the entire site in order to develop a four-story, 45-foot high office building with 255 parking spaces located within a two-level subterranean parking garage. The building would also include architectural features and screening that would extend an additional 14 feet to provide building continuity, attractive design, and screening for mechanical equipment. The Original Project included 113,200 gross square feet of office floor area, which would result in a net increase of 106,200 gross square feet of floor area when compared to existing conditions.

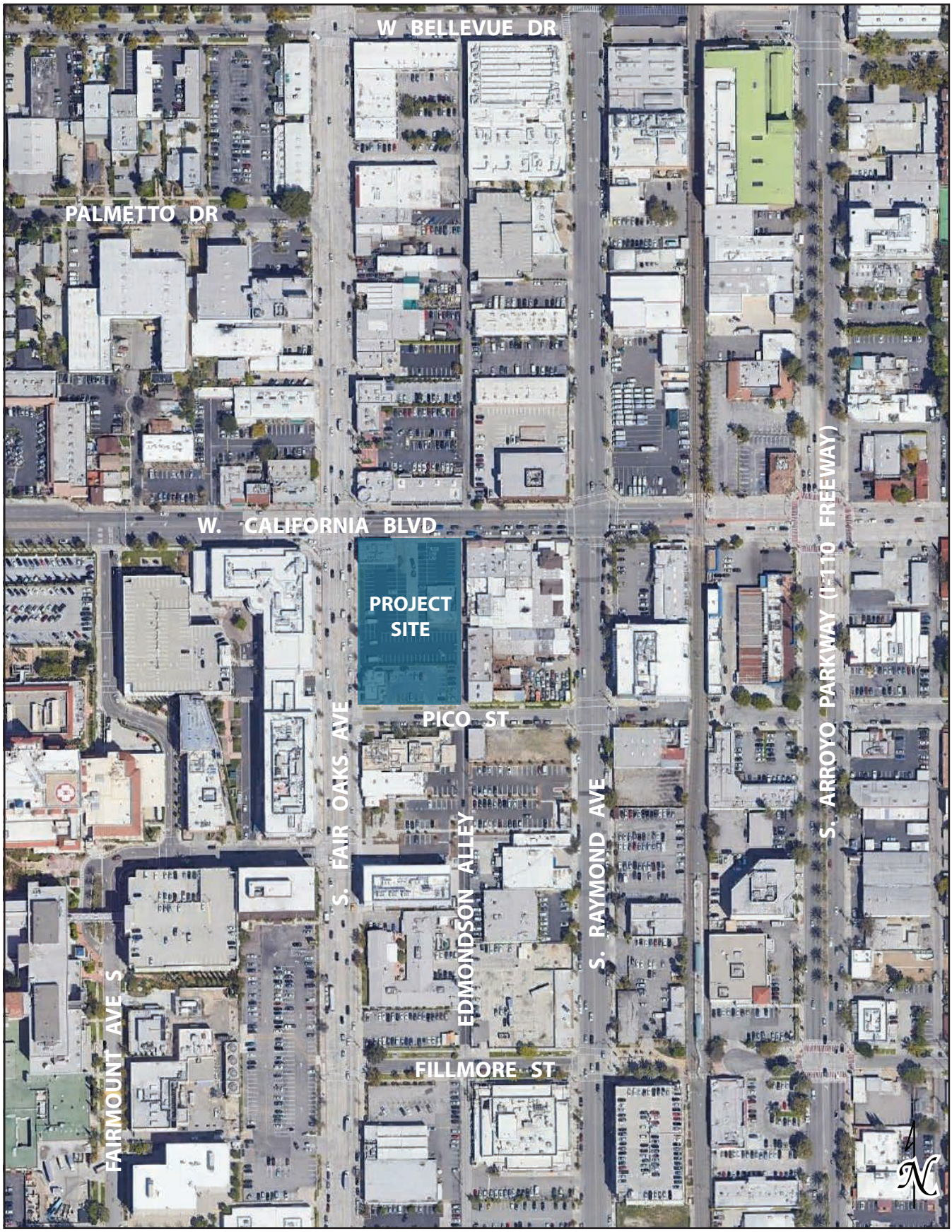
The Original Project includes a plaza at the corner of Fair Oaks Avenue and California Boulevard with frontage on both streets which would feature landscaping, including large mature trees, decorative paving, seating areas and a water feature. A smaller courtyard would be located in the southern-central portion of the site and would feature several trees and seating areas. Overall, the open space proposed as part of the Original Project would total approximately 5,500 square feet, including a 4,000 square-foot plaza at the Corner of California Boulevard and Fair Oaks Avenue, and a 1,500 square-foot courtyard to the south of the lobby, which would exceed the Specific Plan requirement that a minimum 300-square-foot open space area be provided with a minimum dimension of 15 feet. Vehicular access to the site would be provided via an ingress-only driveway from Fair Oaks. Access to the site would also be provided via Edmondson Alley from either California Boulevard to the north or Pico Street to the south. A loading area would be located along the ingress driveway from Fair Oaks Avenue with egress from Edmondson Alley. The main pedestrian access to the site would be from California Boulevard, with secondary pedestrian access to the site provided along the south side of the building, with the building entryway serving as a transition between the public plaza and the courtyard along the south side of the building. See Figure 3, Original Project Site Plan for an overview of the Original Project. The Planning Commission approved the 16 E. California Project (the “Original Project”) as described above in August 2009.



Project Site

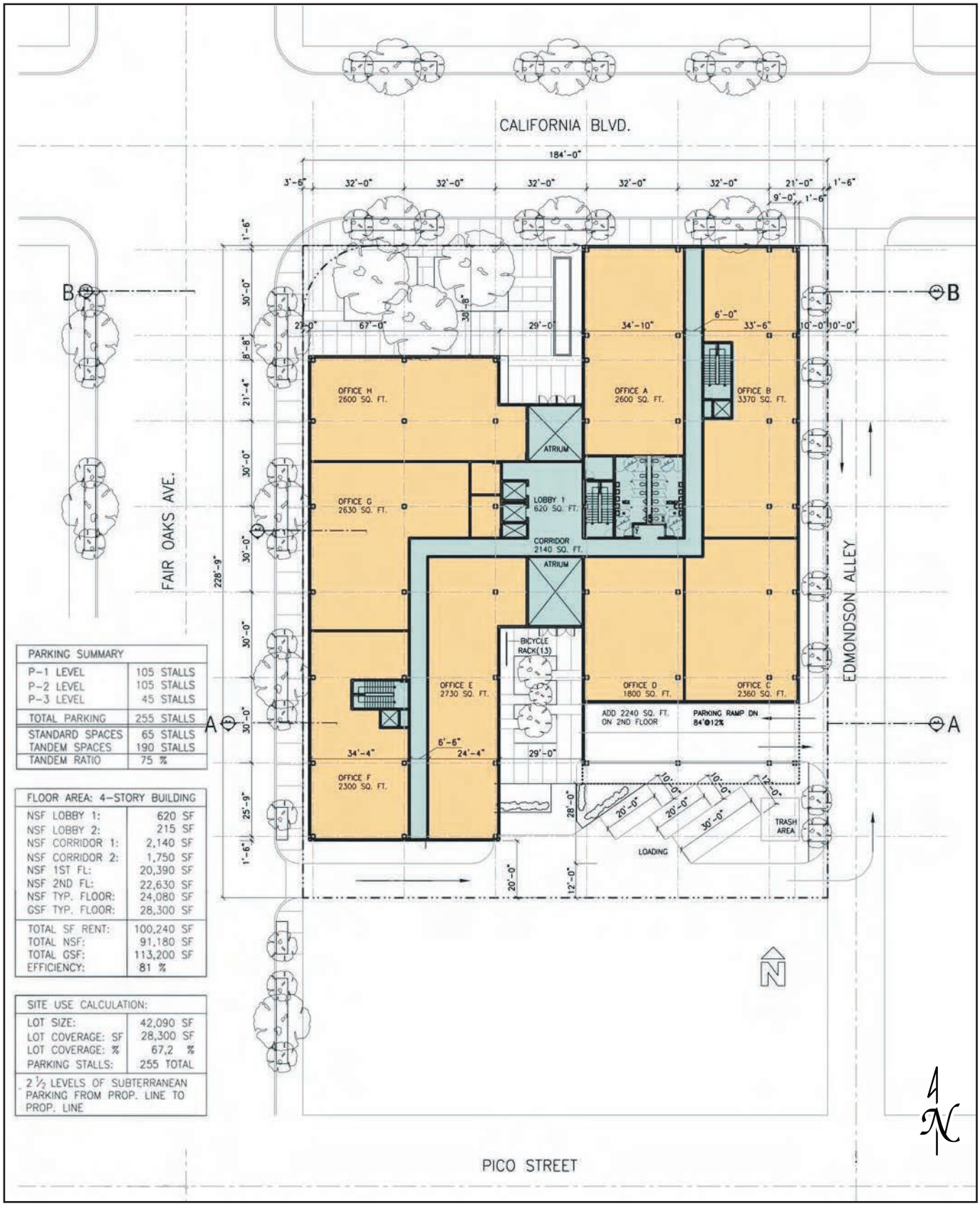
Source: Google Earth and Open Street Maps, July 2020.

Figure 1
Regional Vicinity and Project Location Map



Source: Google Earth, September 2020.

Figure 2
Aerial View of the Project Site



PARKING SUMMARY	
P-1 LEVEL	105 STALLS
P-2 LEVEL	105 STALLS
P-3 LEVEL	45 STALLS
TOTAL PARKING	255 STALLS
STANDARD SPACES	65 STALLS
TANDEM SPACES	190 STALLS
TANDEM RATIO	75 %

FLOOR AREA: 4-STORY BUILDING	
NSF LOBBY 1:	620 SF
NSF LOBBY 2:	215 SF
NSF CORRIDOR 1:	2,140 SF
NSF CORRIDOR 2:	1,750 SF
NSF 1ST FL:	20,390 SF
NSF 2ND FL:	22,630 SF
NSF TYP. FLOOR:	24,080 SF
GSF TYP. FLOOR:	28,300 SF
TOTAL SF RENT:	100,240 SF
TOTAL NSF:	91,180 SF
TOTAL GSF:	113,200 SF
EFFICIENCY:	81 %

SITE USE CALCULATION:	
LOT SIZE:	42,090 SF
LOT COVERAGE: SF	28,300 SF
LOT COVERAGE: %	67.2 %
PARKING STALLS:	255 TOTAL
2 ½ LEVELS OF SUBTERRANEAN PARKING FROM PROP. LINE TO PROP. LINE	

Source: AC Martin Partners, Inc. 2008.

Figure 3
Original Project Site Plan

2. DESCRIPTION OF THE PROPOSED MODIFICATIONS TO THE PROJECT

Changes in Circumstances Under Which the Project is Undertaken

After the City approved the Original Project, the property owner revised the plans and proposed project for the Project Site.

A. Proposed Project Modifications (the "Revised Project")

The Revised Project includes construction of an approximately 99,996 square-foot (sf), four-story medical office/office building (approximately 80,000 sf patient-medical service area and 19,996 sf of non-patient medical office area) with a two-level subterranean parking garage with 212 on-site parking spaces. Vehicular ingress and egress to the Project Site would be provided from South Fair Oaks Avenue. Ride-share drop-off, trash collection, and deliveries would occur off of Edmondson Alley, with vehicular access provided from both California Boulevard and Pico Street. Pedestrian access to the site would be provided from entrances on South Fair Oaks Avenue and Edmondson Alley, with secured tenant pedestrian access to the site also provided along the south side of the building. The Revised Project includes 16,112 square feet of open space including 2,570 square feet of landscaping and 13,552 square feet of hardscape areas. Plans for the Revised Project are shown in Figures 4 through 19. This development would comprise the "Revised Project."

Specifically, the Revised Project proposes demolition of the two existing buildings (2,800 square feet and 4,200 square feet) and clearing of the entire site in order to develop a four-story, 62-foot high office building along with an additional 12 feet to provide screening for mechanical equipment. The Revised Project would include 99,996 gross square feet of medical office/office floor area, a net increase of approximately 92,996 gross square feet of floor area when compared to existing conditions.

i) Discretionary Actions

Approval of some or all of the discretionary actions listed below would be required to permit construction of the Revised Project.

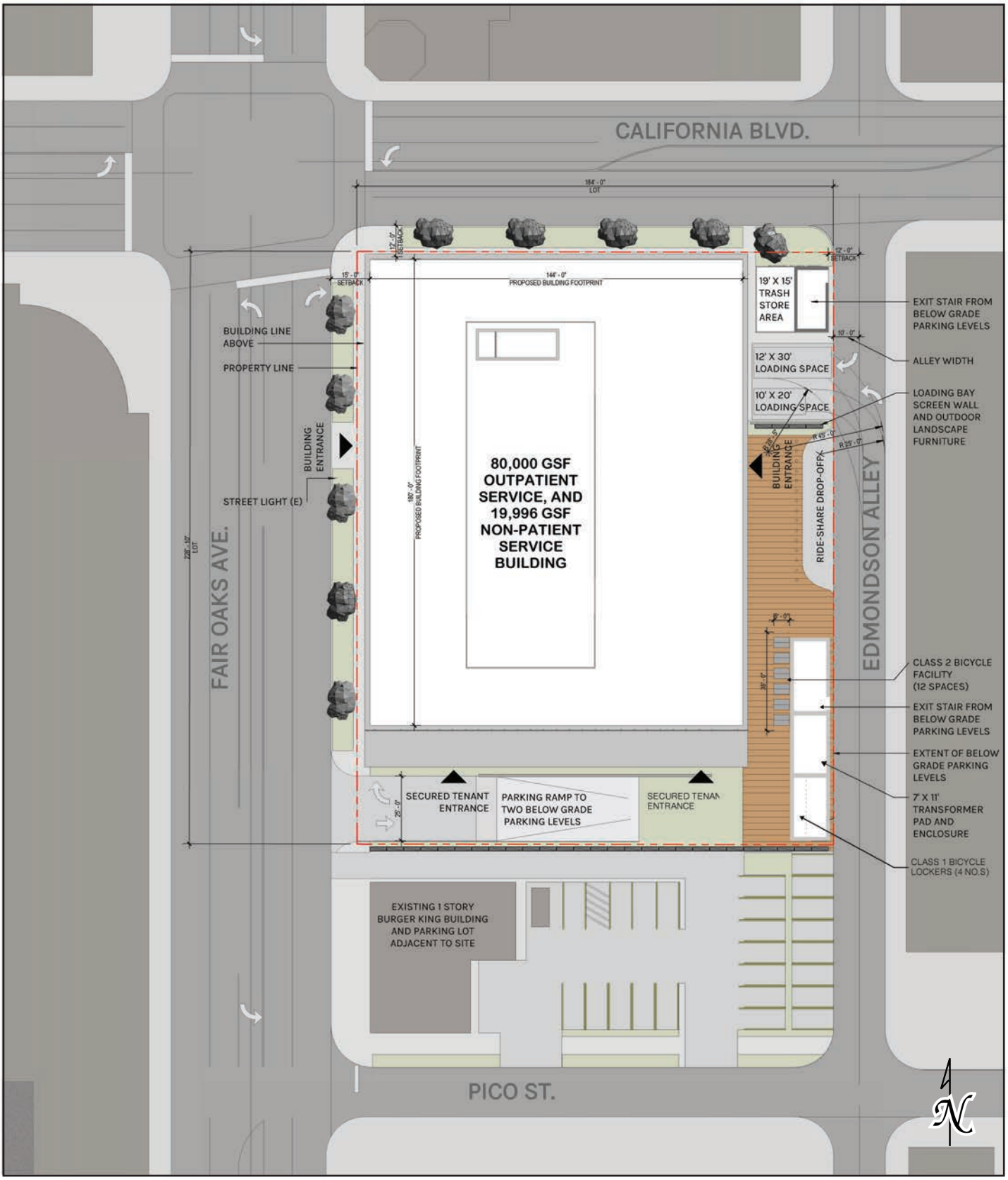
1. Conditional Use Permit to allow new construction in exceedance of 75,000 square feet within the South Fair Oaks Specific Plan;

2. Minor Conditional Use Permit to allow shared parking;

3. Minor Conditional Use Permit to allow tandem and triple stacked parking;

4. Text Amendment to the South Fair Oaks Specific Plan to allow a maximum height of 62 feet along South Fair Oaks Avenue south of East California Boulevard; and

5. Zoning Code Amendment to allow a maximum height of 62 feet along South Fair Oaks Avenue south of East California Boulevard.



Source: Smith Group, January 2021.

Figure 4
Revised Project Site Plan

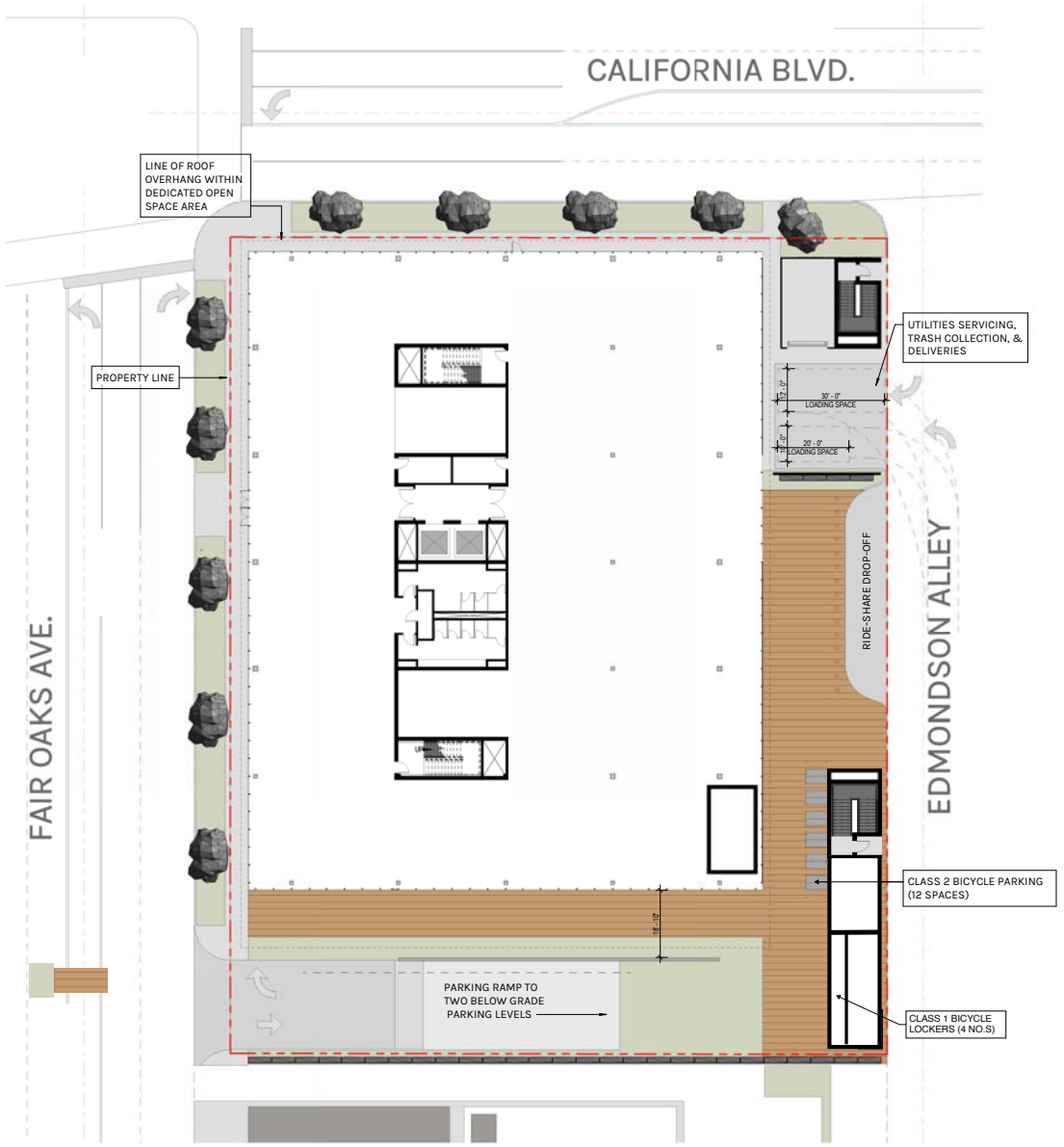
OPEN SPACE REQUIREMENT:

PURSUANT TO CITY OF PASADENA ZONING CODE SECTION OF 17.35.040 – SP – 2 GENERAL DEVELOPMENT STANDARDS

THERE SHALL BE AN OPEN SPACE AREA OF 300 SQUARE FEET WITH A MINIMUM DIMENSION OF 15 FEET. IT MAY BE COVERED BY A ROOF STRUCTURE BUT NO PORTION OF IT MAY BE ENCLOSED.

THE PROPOSED PROJECT HAS PROVIDED AN OPEN SPACE AREA OF 14,000 SQUARE FEET CONSISTING OF 2,570 SQUARE FEET OF LANDSCAPING AND 13,552 SQUARE FEET OF HARDSCAPE AREAS.

4 YOUNG CREPE MYRTLES 4" IN DIAMETER EXIST ON SITE.



TOTAL AREA INSIDE OF PROPERTY LINE

- **LANDSCAPE - 2,570 SF**
- **HARDSCAPE - PAVERS : 6,415 SF**
- **HARDSCAPE - SIDEWALK 2,744 SF**
- **PARKING ACCESS - RAMP, DROP-OFF, LOADING : 4,393 SF**

Source: Smith Group, January 2021.

Figure 5
Revised Project Landscape Plan

102 STALLS

(65) 9' X 18' STALLS, (2) 8'-10" X 18' STALLS, (1) 8'-6" X 18' STALL
(34) 9' X 18' TANDEM / TRIPLE STACKED STALLS

PARKING REQUIREMENT:

PURSUANT TO CITY OF PASADENA ZONING CODE SECTION 17.46.040, A MEDICAL OFFICE LAND USE REQUIRES FOUR PARKING SPACES PER 1,000 GROSS SQUARE FEET OF FLOOR AREA.

THE TOTAL REQUIRED NUMBER OF PARKING STALL CALCULATION FOR THE TOTAL MEDICAL OFFICE BUILDING FLOOR AREA OF 99,996 WITH A 20% CREDIT FOR PROXIMITY TO PUBLIC TRANSPORTATION (DEL MAR METRO STATION) IS AS FOLLOWS:

400 TOTAL NUMBER OF STALLS
99,996 SF x 4/1000 = 399.98

80 TOTAL NUMBER OF STALL REDUCTION
400 x .20 = 80

320 TOTAL NUMBER OF STALLS REQUIRED
400 – 80 = 320

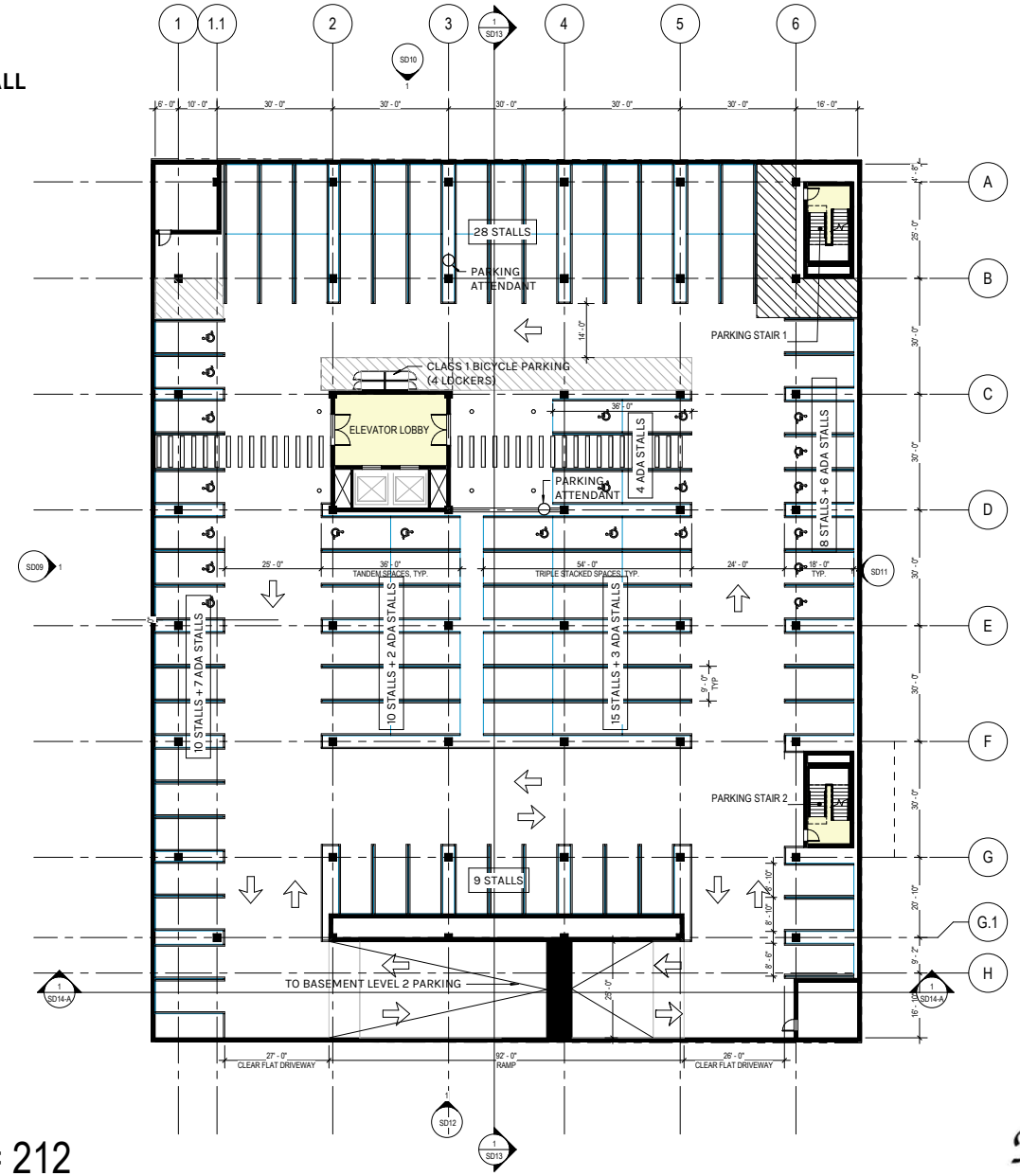
212 TOTAL NUMBER OF ON SITE STALLS PROVIDED

136 TOTAL NUMBER OF OFF SITE STALLS REQUIRED
320 – 212 = 108

A CONDITIONAL USE PERMIT HAS BEEN FILED FOR ALLOWING 108 CARS TO BE PARKED ON AN ADJACENT OFF-SITE PARKING LOCATION.

22 TOTAL NUMBER OF ADA STALLS REQUIRED
212 X .10 = 21.2

TOTAL PARKING STALLS ON 2 LEVELS = 212



Source: Smith Group, January 2021.

Figure 6
Revised Project Parking Level 1

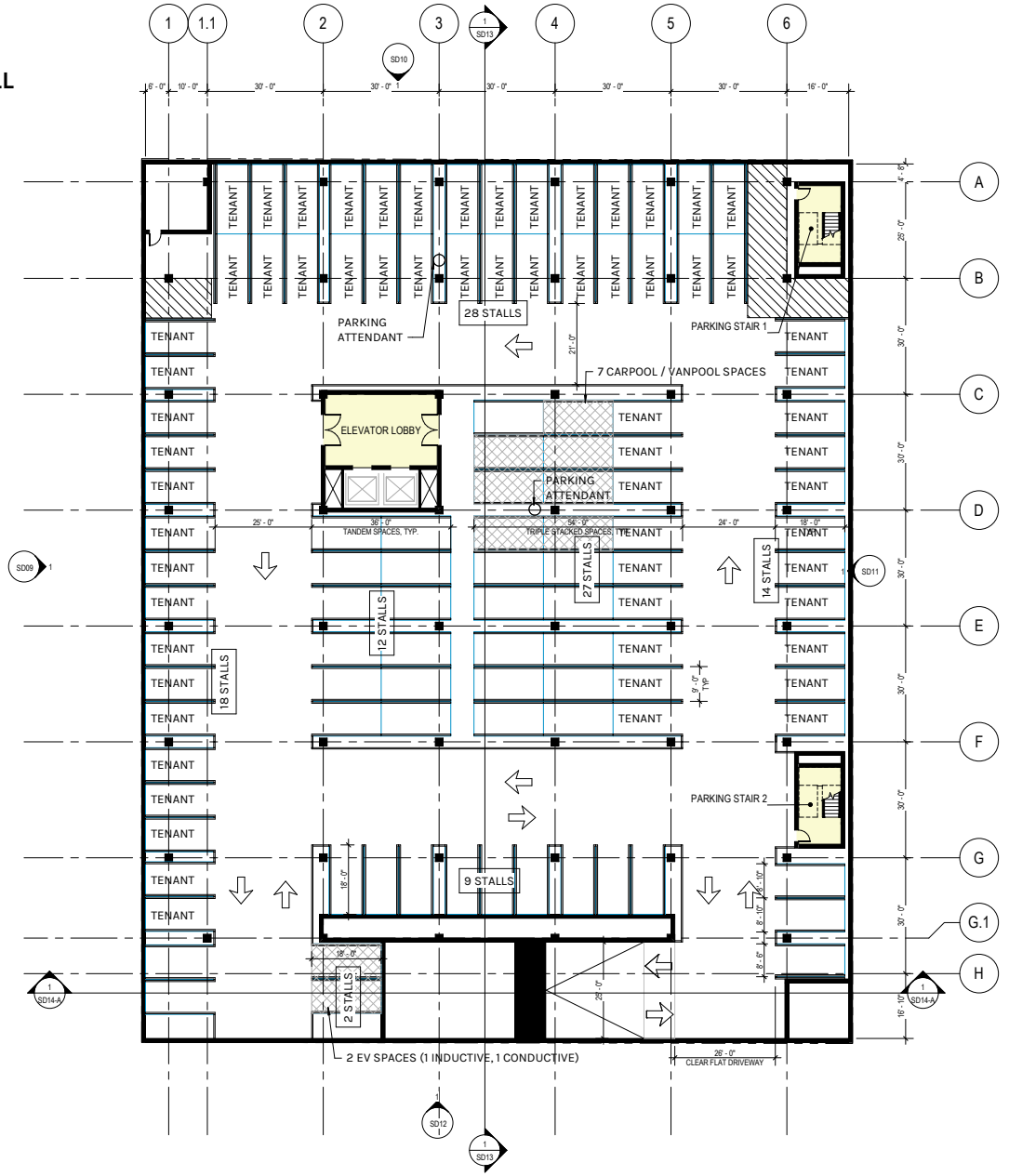
110 STALLS

(69) 9' x 18' STALLS, (2) 8'-10" X 18' STALLS, (1) 8'-6" X 18' STALL
(38) 9' 18' TANDEM STALLS

PARKING REQUIREMENT:

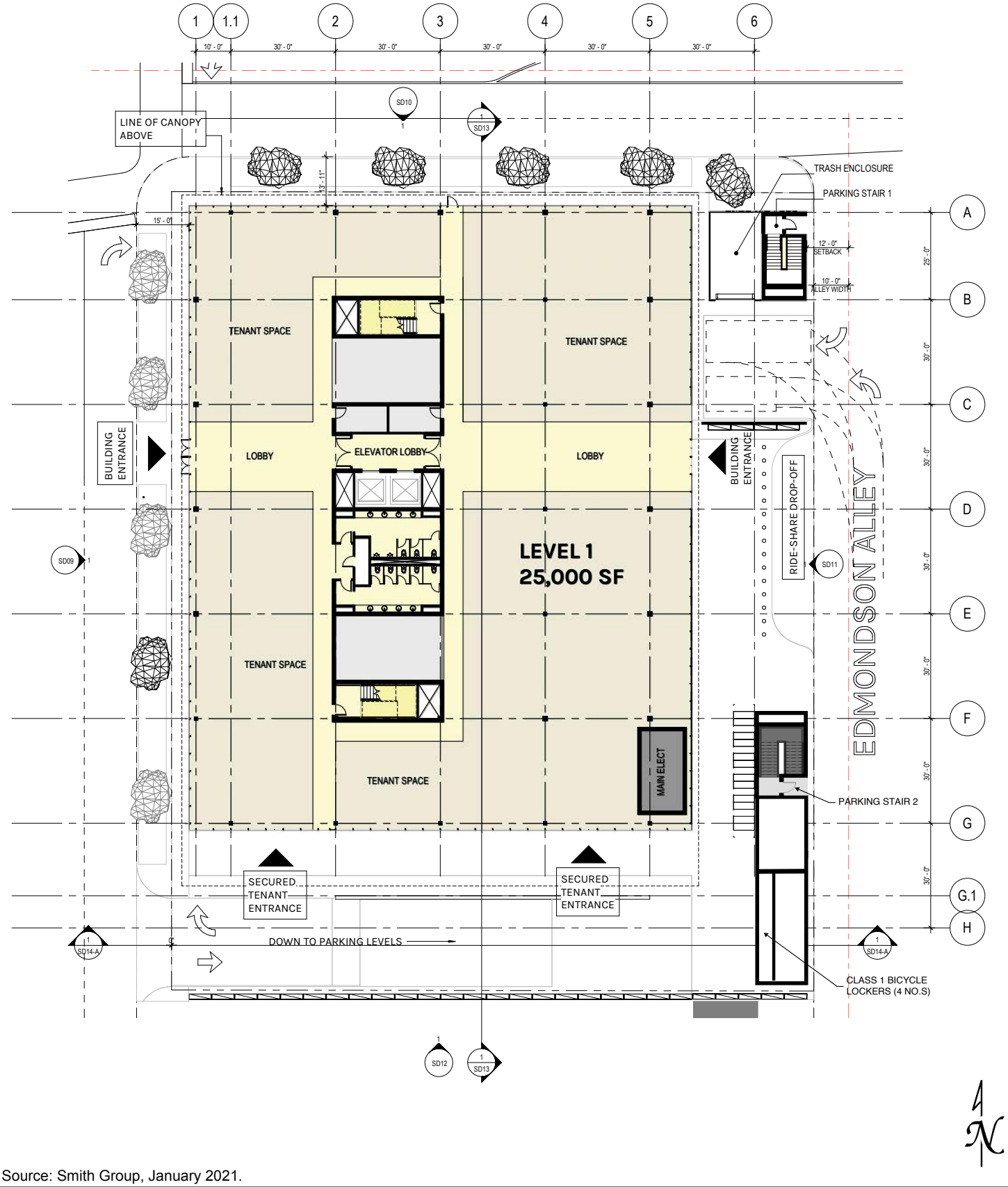
256 TOTAL NUMBER CUSTOMER PARKING
320 X .80 = 256

64 TOTAL NUMBER EMPLOYEE/TENANT PARKING
320 - 256 = 64



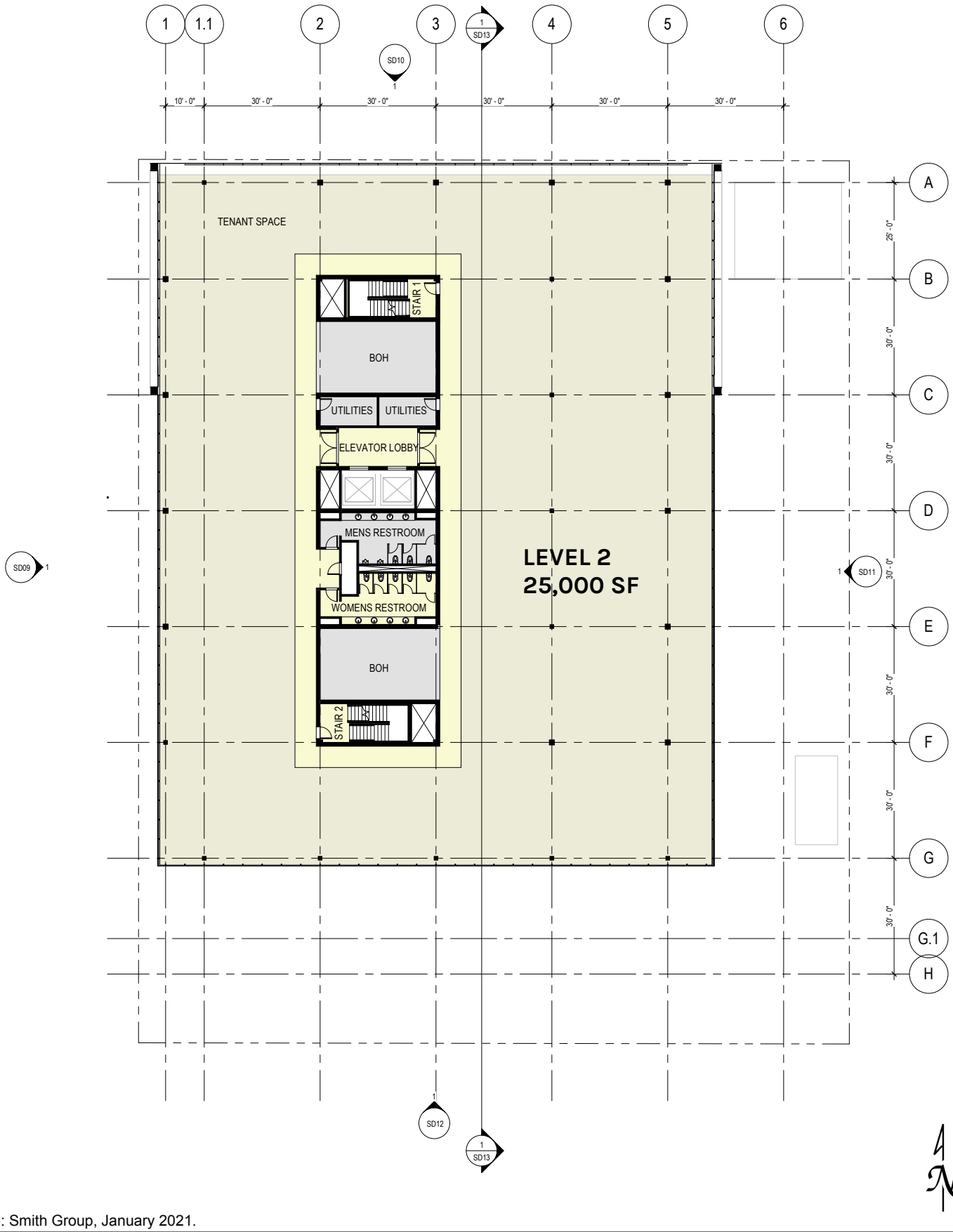
Source: Smith Group, January 2021.

Figure 7
Revised Project Parking Level 2



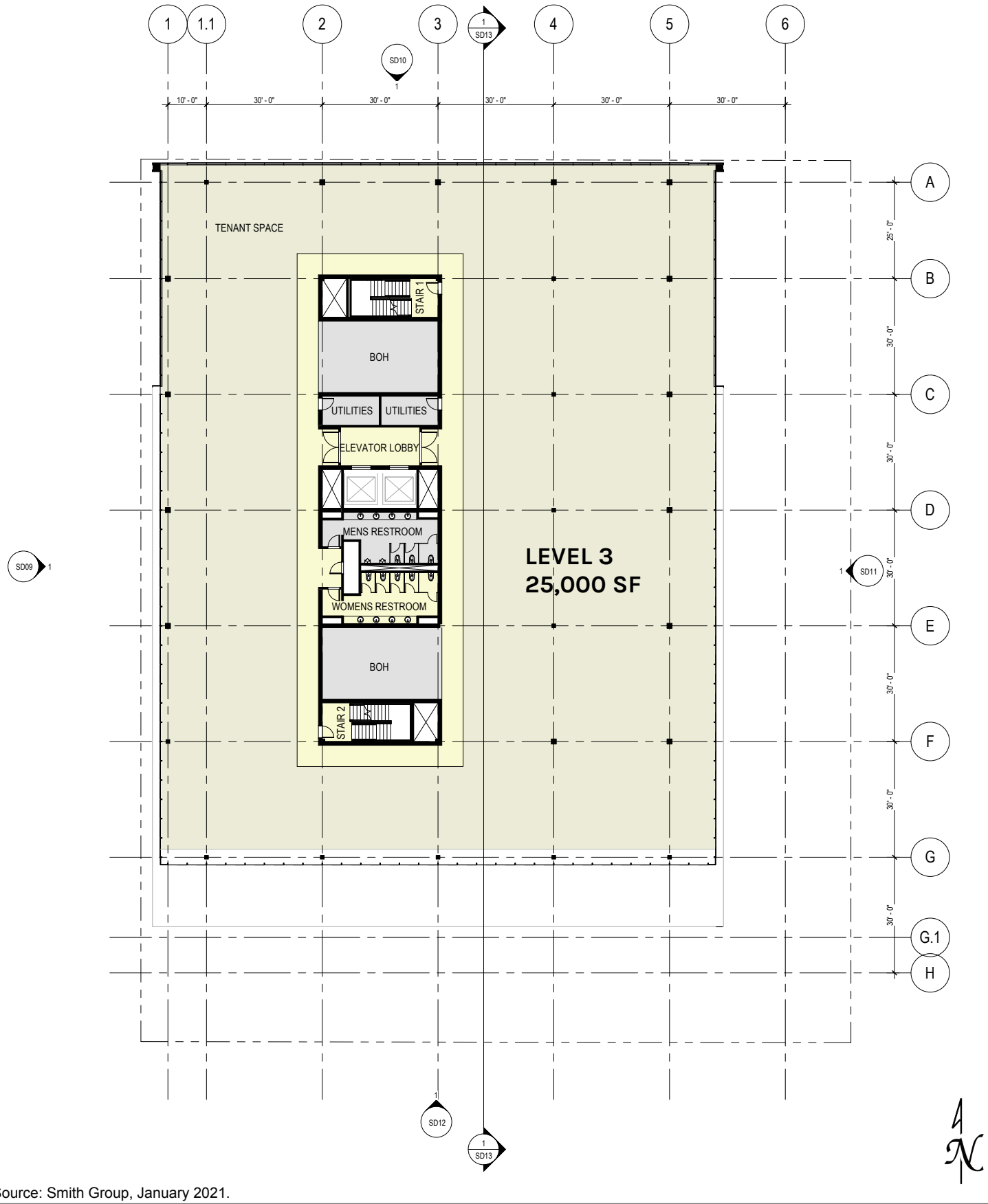
Source: Smith Group, January 2021.

Figure 8
Revised Project Floor Plan Level 1



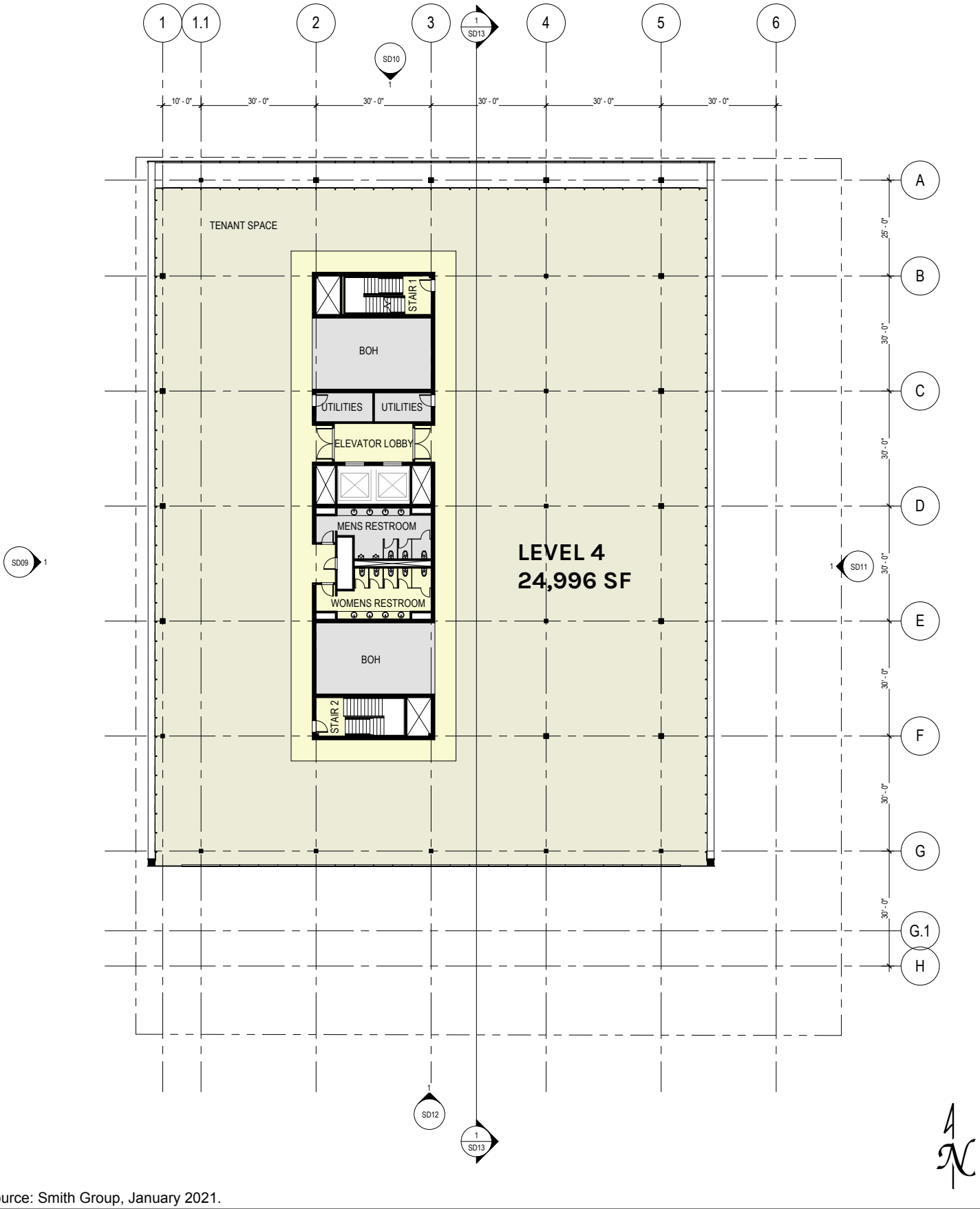
Source: Smith Group, January 2021.

Figure 9
Revised Project Floor Plan Level 2



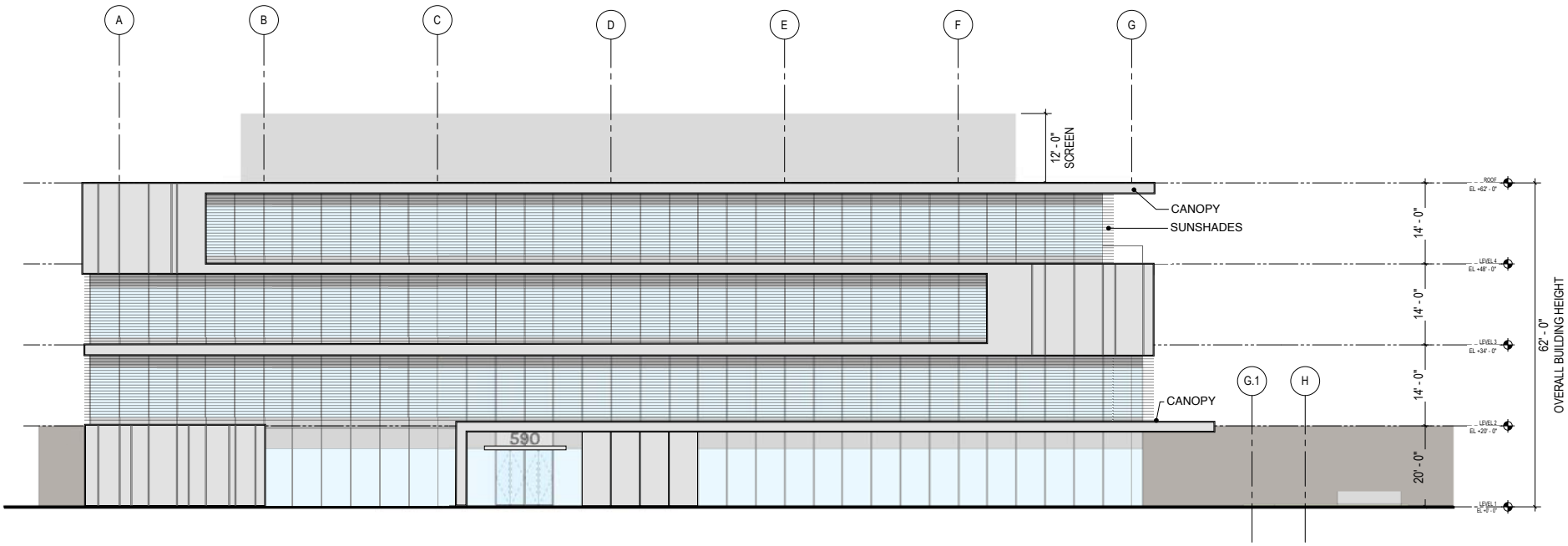
Source: Smith Group, January 2021.

Figure 10
Revised Project Floor Plan Level 3



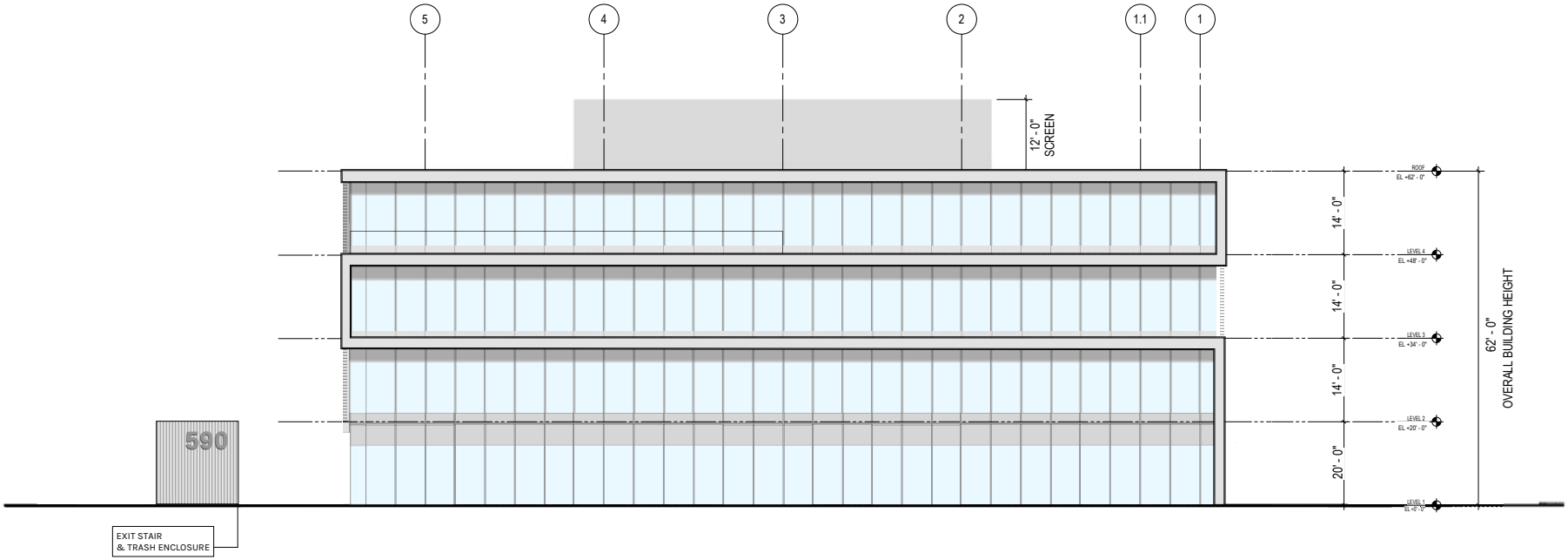
Source: Smith Group, January 2021.

Figure 11
Revised Project Floor Plan Level 4



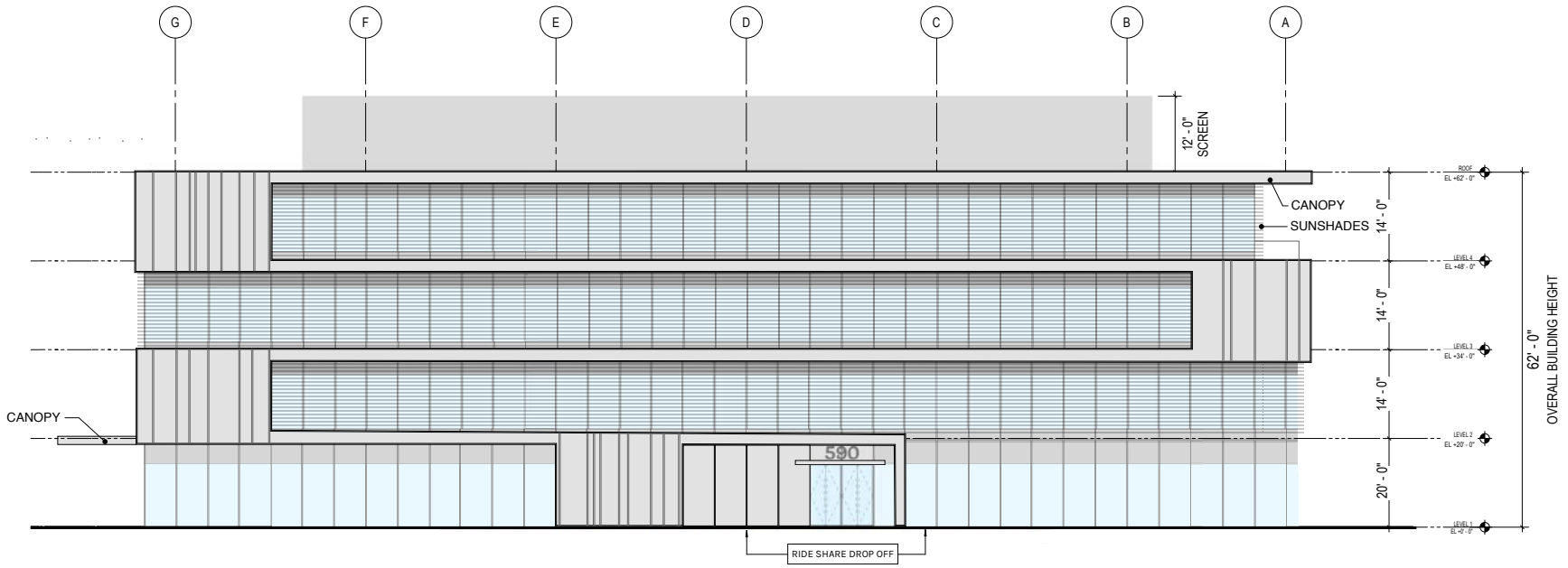
Source: Smith Group, January 2021.

Figure 12
Revised Project Elevation West



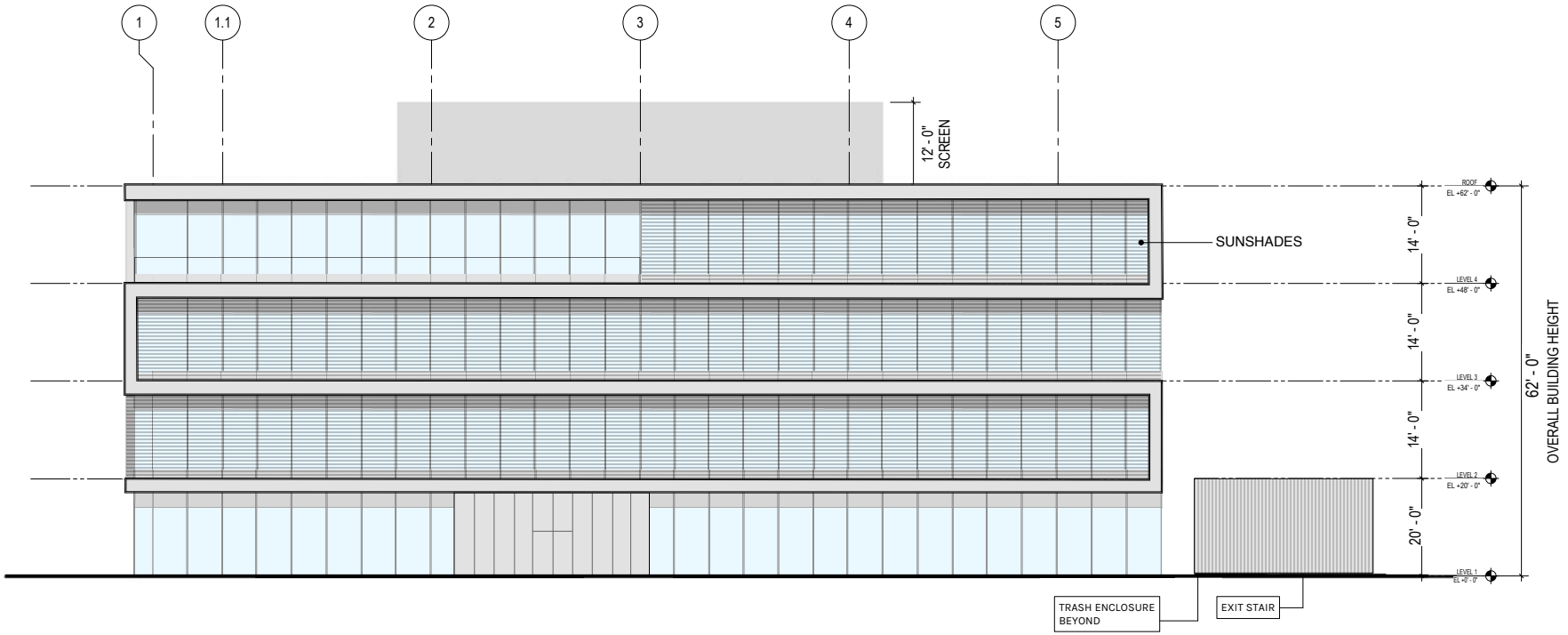
Source: Smith Group, January 2021.

Figure 13
Revised Project Elevation North



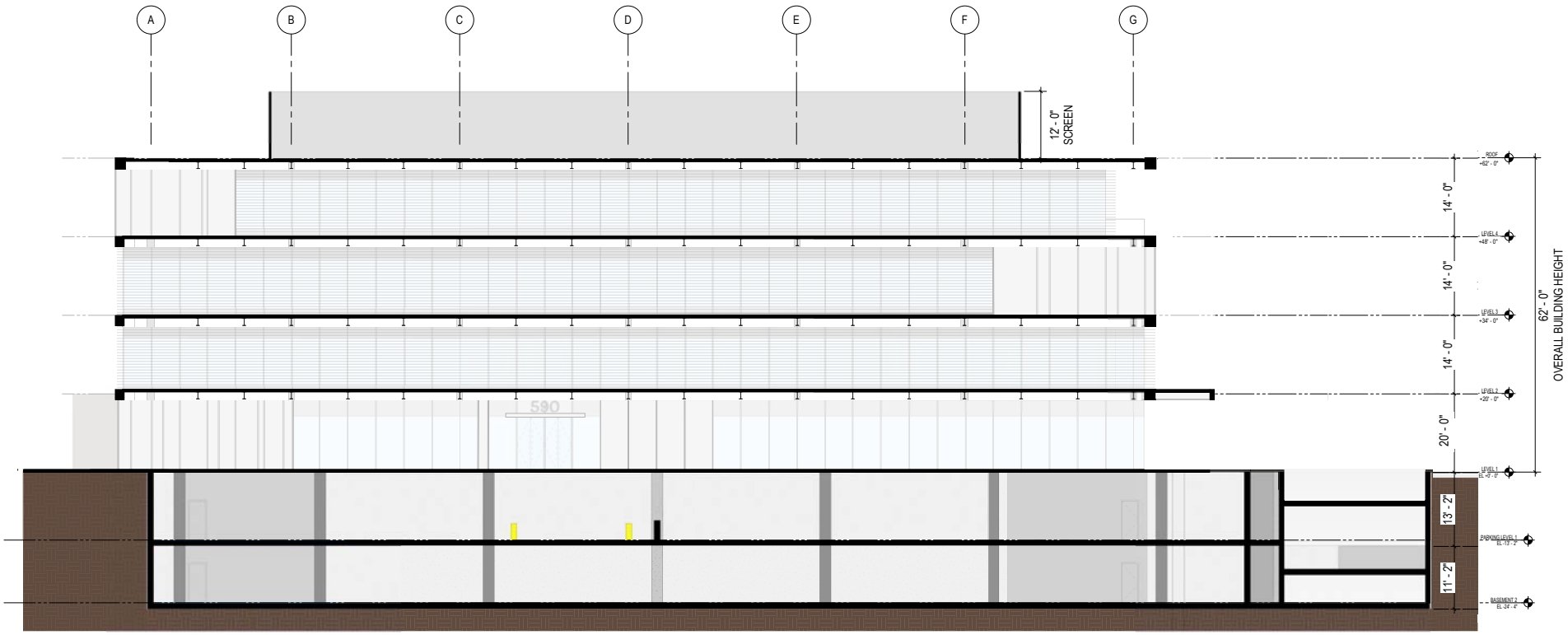
Source: Smith Group, January 2021.

Figure 14
Revised Project Elevation East



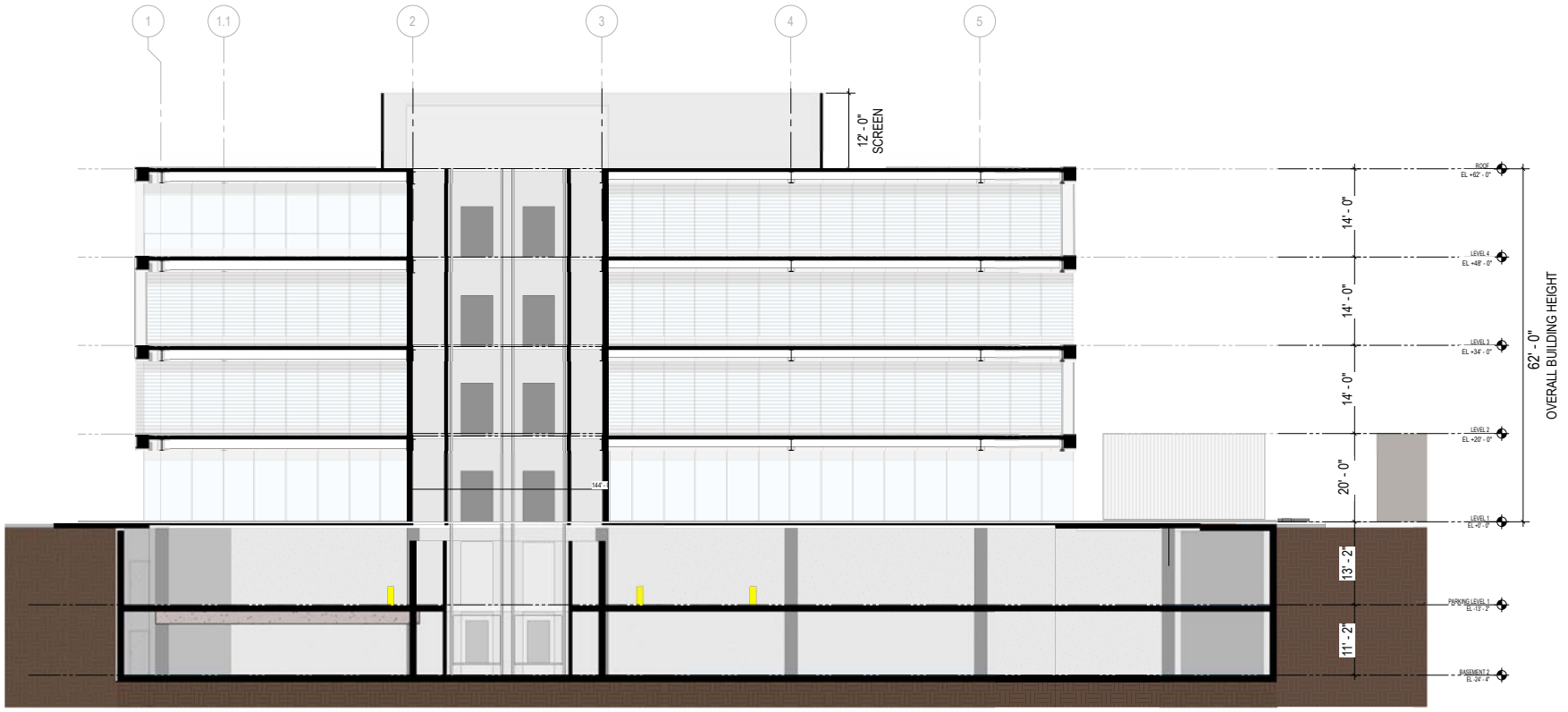
Source: Smith Group, January 2021.

Figure 15
Revised Project Elevation South



Source: Smith Group, January 2021.

Figure 16
Revised Project Section North/South



Source: Smith Group, January 2021.

Figure 17
Revised Project Section East/West

Source: Smith Group, January 2021.

Figure 18
Revised Project Rendering Fair Oaks & California

Source: Smith Group, January 2021.

Figure 19
Revised Project Rendering Fair Oaks Avenue

III. ENVIRONMENTAL ANALYSIS

In accordance with Section 15063 of the State CEQA Guidelines, an Initial Study and a Notice of Preparation (NOP) were prepared and distributed to responsible agencies, affected agencies, and other interested parties on October 1, 2008. The Initial Study determined that the Original Project would not have the potential to result in significant impacts related to aesthetics, agricultural resources, biological resources, energy, geology and soils, hydrology and water quality, land use and planning, mineral resources, population and housing, public services, recreation, utilities including wastewater and solid waste. Thus, the Certified EIR evaluated the topics the Initial Study determined could be significantly impacted as a result of the Original Project: Air Quality (Section IV.A), Cultural Resources (Historic Resources and Archaeological and Paleontological Resources, Section IV.B), Noise (Section IV.C), Transportation (Section IV.D), Hazardous Materials (Section IV.E), and Water Supply (Section IV.F). The analysis which follows addresses each of the environmental issues listed in Appendix G, Environmental Checklist Form, of the CEQA Guidelines (Title 14, Division 6, Chapter 3). The Initial Study was included as an Appendix to the Certified EIR and is incorporated by reference when topics from the Initial Study are discussed below. For each issue, the analysis summarizes the conclusions of the Certified EIR with respect to the impacts of the Original Project. The impacts of the Original Project provide the point of comparison with the impacts of the Revised Project. The analysis then compares the level of impacts of the Revised Project to the impacts of the Original Project as evaluated in the Certified EIR. The analysis then concludes whether the impacts of the Revised Project are the same, higher, or lower than the Original Project. From this conclusion, the analysis determines whether the Revised Project would result in any effects that would meet the criteria set forth in CEQA Guidelines § 15162.

The Certified EIR was adopted by the City in August 2009. Subsequently, the threshold questions contained in Appendix G, Environmental Checklist Form, of the CEQA Guidelines (Title 14, Division 6, Chapter 3) were updated and revised. The most recent updates became effective on December 28, 2018. Accordingly, this Addendum utilizes the updated Appendix G threshold questions. Where the updates result in a difference between the analysis contained in the Certified EIR and this Addendum (for example, the relocation of the analysis of impacts to paleontological resources from the Cultural Resources Section to the Geology and Soils Section), the difference is described under the applicable analysis section.

The analysis presented in the following sections demonstrates that the Revised Project would not result in new significant impacts or substantial increase in the severity of previously identified impacts.

1. AESTHETICS

A. Original Project

An analysis of potential impacts related to aesthetics was included in the Initial Study to the Certified EIR.

The Initial Study of the Certified EIR finds that the Original Project would not result in significant impacts related to aesthetics. The replacement of existing commercial development with new commercial development would be visually prominent; however, the surrounding area is already urbanized and the Original Project includes consistent design and landscaping to make the site visually appealing. The Certified EIR concludes that the proposed development would be compatible with surrounding land uses in terms of both height and massing and that redevelopment of the site is expected to improve its visual quality and benefit the aesthetic character of the surrounding area. Scenic resources would not be affected by the Original Project, as the Project Site is not in an area that offers notable views of the San Gabriel Mountains or views of the Arroyo Seco, the San Rafael Hills, Eaton Canyon, or Old Town Pasadena. The Certified EIR concludes that the Original Project would not in any way obstruct the views of any of these scenic resources. Additionally, the Project Site is not located within the viewshed of an Official State Scenic Highway, Los Angeles County Scenic Highway, or local scenic highway. The Certified EIR finds that, since the Original Project replaces commercial uses with other commercial uses, nighttime illumination would not substantially increase over current levels with redevelopment of the site and the lighting characteristics of the Original Project would be similar to other commercial developments in the surrounding area of the City. Furthermore, no light-sensitive receptors (i.e., residential uses) are located adjacent to the site, therefore, no impacts to light sensitive receptors would occur. The Certified EIR determined that impacts related to aesthetics would be less than significant.

B. Revised Project

The Revised Project proposes the same land use (office building) as the Original Project; however, the Revised Project would be 62 feet tall with an additional 12 feet of architectural screening on the roof, or approximately 15 feet taller than the Original Project. At 62 feet, the Revised Project would exceed the 45-foot height limit of the Project Site's zoning. Surrounding uses include three- to five-story medical office buildings and one- and two-story commercial buildings. As such, the four-story Revised Project would be similar to the three- to five-story medical office buildings in the surrounding area in terms of both height and massing. Similar to the Original Project, the Revised Project would include landscaped open space areas and publicly accessible pedestrian entrances which would serve to activate the street frontage. Overall, similar to the Original Project, redevelopment of the site with the Revised Project is expected to improve its visual quality and benefit the aesthetic character of the surrounding area. Thus, the Revised Project would not substantially degrade the existing visual character or quality of the site and its surroundings. Even with the increased height of 62 feet, the Revised Project building does not

have the potential to block scenic resources, as no such resources exist on or in the vicinity of the Project Site, same as the Original Project. The Revised Project would include the same nighttime lighting sources as the Original Project. Impacts of the Revised Project with respect to aesthetics, views, and light and glare would be the similar to the Original Project. Consequently, the Revised Project would not cause a new significant impact or substantial increase in the severity of previously identified impacts with respect to aesthetics, views, or light and glare.

The following CEQA Guidelines Appendix G Checklist question has been added since the EIR was Certified for the Original Project, and this is analyzed on its own as it pertains to potential impacts from the Revised Project.

c. *Would the project in non-urbanized areas, substantially degrade the existing visual character or quality of public views of the site and its surroundings? (Public views are those that are experienced from a publicly accessible vantage point.) If the project is in an urbanized area, would the project conflict with applicable zoning and other regulations governing scenic quality*?

Less than Significant Impact. The Project Site is located in a fully urbanized setting in the City of Pasadena; therefore, the applicable threshold with respect to the Revised Project is conflict with applicable zoning and other regulations governing scenic quality.

The Project Site is zoned IG-SP-2 (Industry, General, South Fair Oaks Specific Plan), which indicates the site is within an industrial district (IG) and subject to the South Fair Oaks Specific Plan Overlay District (SP2). The proposed 'Office – Administrative Business Professional' use is an allowed land use in this district. The Project Site is currently developed with two, one-story commercial buildings totaling 7,000 square feet and a surface parking lot. The Revised Project would construct a new four-story medical office/office building with a maximum height of 62 feet with an additional 12 feet of architectural screening on the roof (see Figures 12 through 15, Revised Project Elevations). As mentioned above, the Certified EIR did not include a similar analysis of zoning consistency because that was not part of the Initial Study checklist at the time the Initial Study for the Certified EIR was prepared. However, the Revised Project's consistency with the Site's zoning and other scenic quality regulations is discussed below.

i) Zoning Consistency

The Project Site is zoned IG-SP-2 (Industry, General, South Fair Oaks Specific Plan). The Industry, General zone allows for uses including medical offices and therefore, the proposed use is allowed by the zone.

The Project Site is within a quarter mile of the Metro L (Gold Line) Fillmore Station and falls within a TOD area that is subject to the City's TOD standards. The TOD standards do not govern scenic quality and therefore are not applicable to this impact analysis.

The South Fair Oaks Specific Plan does not have a maximum allowable building area, thus the Revised Project's proposed approximately 99,996 gross square feet would be consistent with the allowable intensity for the site.

The maximum allowable building height for the project site is 45 feet. Per Section 17.40.060.D.2.a of the Zoning Code, the appurtenances may exceed the maximum allowable height by up to 15 feet, provided the total footprint of all appurtenances does not exceed 25 percent of the roof area. The Design Commission has the authority to increase this to 20 feet, if the Design Commission finds that the additional height provides an improved architectural design (e.g., towers or other architectural features). The Revised Project's proposed office building would be up to four stories tall, approximately 62 feet high, and would also include architectural features and screening that may go up to an additional 12 feet to provide screening for mechanical equipment. The Revised Project would not be consistent with the maximum allowed building height for the Project Site. Thus, a Text Amendment to the South Fair Oaks Specific Plan and Zoning Code Amendment to allow a maximum height of 62 feet for parcels that abut South Fair Oaks Avenue, south of East California Boulevard is proposed. Section 17.40.060 of the Zoning Code, which pertains to height maximums, does not discuss scenic quality. However, as discussed above, uses surrounding the Project Site include three- to five-story medical office buildings and one- and two-story commercial buildings. As such, the four-story Revised Project would be similar to the three- to five-story medical office buildings in the surrounding area in terms of both height and massing. Similar to the Original Project, the Revised Project would include landscaped open space areas and publicly accessible pedestrian entrances which would serve to activate the street frontage. Overall, similar to the Original Project, redevelopment of the site with the Revised Project is expected to improve its visual quality and benefit the scenic quality of the surrounding area. Additionally, the requested additional height of the Revised Project above the zoning code maximum height would not result in impacts related to scenic views or scenic highways, as no such resources are present at the Project Site or within the vicinity. The Revised Project would not create a new source of substantial light or glare. Thus, it can be concluded that the additional requested height associated with the Revised Project would not conflict with applicable zoning or other regulations governing scenic quality. Accordingly, the Revised Project would have less than significant impacts with respect to aesthetics and, consequently, would not represent a new significant impact or substantial increase in the severity of previously identified impacts with respect to aesthetics.

C. Mitigation Measures

No mitigation measures were required for aesthetics in the Initial Study of the Certified EIR; no mitigation measures are required for the Revised Project.

2. AGRICULTURE AND FORESTRY RESOURCES

A. Original Project

The Initial Study of the Certified EIR finds that the project site is not designated as prime agricultural land and is not zoned "agricultural" and that the Original Project would not result in any potentially significant impacts to agricultural resources.

B. Revised Project

The Revised Project would be developed on the same project site as evaluated in the Initial Study of the Certified EIR. Accordingly, the Revised Project would not impact agricultural resources and, consequently, would not represent a new significant impact or substantial increase in the severity of previously identified impacts with respect to agricultural resources.

C. Mitigation Measures

No mitigation measures were required for agriculture and forestry resources in the Initial Study of the Certified EIR; no mitigation measures are required for the Revised Project.

3. AIR QUALITY

A. Original Project

The Certified EIR finds that construction activities associated with the Original Project would not exceed the South Coast Air Quality Management District (SCAQMD) daily significance thresholds for particulate matter less than 10 microns in diameter (PM10), particulate matter less than 2.5 microns in diameter (PM2.5), carbon monoxide (CO), volatile organic compounds (VOC), or sulfur oxides (SO_x). However, construction nitrogen oxide (NO_x) emissions associated with the Original Project were found to exceed SCAQMD daily significance thresholds, even after implementation of Mitigation Measures A-1 through A-5 (see Appendix A to this Addendum). Thus, construction emissions would result in a significant unavoidable short-term regional air quality impact.

The Certified EIR finds that during the operational phase, the Original Project would not result in regional criteria pollutant emissions that exceed the applicable SCAQMD thresholds; therefore, associated impacts would be less than significant. In addition, no significant impacts related to local CO concentrations would occur for the Original Project and using CO as a benchmark pollutant for assessing local area air quality impacts from post-construction, motor vehicle operation would result in a less than significant impact as well. The Certified EIR finds that development of the Original Project would be consistent with the air quality polices set forth in the SCAQMD's AQMP and that impacts related to consistency with applicable plans and policies would be less than significant.

The Certified EIR finds that the potential impacts from Original Project TAC emissions would be less than significant. Additionally, by complying with industry standard odor control practices, SCAQMD Rule 402

(Nuisance), and SCAQMD best available control technology guidelines, potential operational impacts that could result from any potential odor source associated with the Original Project would be less than significant.

B. Revised Project

The air quality impacts of the Revised Project have been evaluated in an Air Quality, Global Climate Change and Energy Impact Analysis prepared by EcoTierra Inc., dated January 2021 ("AQ GHG Energy Analysis"), which is included as Appendix B to this Addendum. The findings of the air quality analysis are summarized below.

i) Construction-Source Emissions

As shown in Table 1, Construction-Related Regional Pollutant Emissions, and Table 2, Local Construction Emissions at the Nearest Receptors, construction-source emissions associated with the Revised Project would not exceed applicable regional or local thresholds of significance established by the South Coast Air Quality Management District (SCAQMD). As discussed in the AQ GHG Energy Analysis, the Revised Project would comply with all applicable SCAQMD construction-source emission reduction rules and guidelines. Revised Project construction source emissions would not cause or substantively contribute to violation of the California Ambient Air Quality Standards (CAAQS) or National Ambient Air Quality Standards (NAAQS) or result in toxic air contaminant (TAC)-related impacts (refer to Appendix B of this Addendum for detailed discussion).

Established requirements addressing construction equipment operations, and construction material use, storage, and disposal requirements act to minimize odor impacts that may result from construction activities associated with the Revised Project. Moreover, construction-source odor emissions would be temporary, short-term, and intermittent in nature and would not result in persistent impacts that would affect substantial numbers of people. Potential construction-source odor impacts associated with the Revised Project are therefore considered less than significant.

Table 1
Construction-Related Regional Pollutant Emissions

Activity		Pollutant Emissions (pounds/day)					
		ROG	NOx	CO	SO_2	PM10	PM2.5
Demolition	On-Site[1]	0.80	7.25	7.57	0.01	0.68	0.43
	Off-Site[2]	0.07	0.89	0.60	0.00	0.17	0.05
	Subtotal	0.87	8.14	8.17	0.02	0.85	0.48
Site Preparation	On-Site[1]	0.42	4.05	5.53	0.01	0.28	0.21
	Off-Site[2]	1.32	41.93	10.03	0.12	2.92	0.89
	Subtotal	1.74	45.98	15.56	0.12	3.20	1.10
Building Construction	On-Site[1]	0.78	7.99	7.26	0.01	0.45	0.41
	Off-Site[2]	0.46	3.74	4.22	0.02	0.16	0.32
	Subtotal	1.24	11.72	11.48	0.03	0.61	0.73
Paving	On-Site[1]	0.61	5.50	7.02	0.01	0.26	0.25
	Off-Site[2]	0.07	0.04	0.62	0.00	0.20	0.05
	Subtotal	0.68	5.55	7.64	0.01	0.47	0.30
Architectural Coating	On-Site[1]	49.79	1.30	1.81	0.00	0.07	0.07
	Off-Site[2]	0.06	0.04	0.55	0.00	0.18	0.05
	Subtotal	49.85	1.34	2.36	0.00	0.25	0.12
Total for overlapping phases[3]		**51.76**	**18.61**	**21.48**	**0.05**	**1.33**	**1.16**
SCAQMD Thresholds		**75**	**100**	**550**	**150**	**150**	**55**
Exceeds Thresholds?		**No**	**No**	**No**	**No**	**No**	**No**

Notes:
(1) On-site emissions from equipment operated on-site that is not operated on public roads. On-site demolition and site preparation PM-10 and PM-2.5 emissions show mitigated values for fugitive dust for compliance with SCAQMD Rule 403.
(2) Off-site emissions from equipment operated on public roads.
(3) Construction, painting, and paving phases may overlap.

Source: CalEEMod Version 2016.3.2.

Table 2
Local Construction Emissions at the Nearest Receptors

Activity	On-Site Pollutant Emissions (pounds/day)			
	NOx	CO	PM10	PM2.5
Demolition	7.25	7.57	0.68	0.43
Site Preparation	4.05	5.53	0.28	0.21
Building Construction	7.99	7.26	0.45	0.41
Paving	5.50	7.02	0.26	0.25
Architectural Coating	1.30	1.81	0.07	0.07
SCAQMD Thresholds[1]	**81**	**1,158**	**27**	**7**
Exceeds Threshold?	**No**	**No**	**No**	**No**

Notes:
(1) The nearest sensitive receptor is the existing single-family detached residential dwelling unit located north of California Blvd and west of Concordia Ct, approximately 452 feet (137.8 meters) northwest of the project boundary; therefore, the 100-meter threshold was used.
Note: The project will disturb up to a maximum of 1.5 acres a day during demolition (see Table 7).

Source: Calculated from CalEEMod and SCAQMD's Mass Rate Look-up Tables for 1 acre, at a distance of 100 m in SRA 8 West San Gabriel Valley.

ii) Operational-Source Emissions

As shown in Table 3, Regional Operational Pollutant Emissions, Revised Project operational-sourced emissions would not exceed applicable regional thresholds of significance established by the SCAQMD. According to SCAQMD Localized Significant Thresholds (LSTs) methodology, LSTs would apply to the operational phase of a project, if the project includes stationary sources, or attracts mobile sources (such as heavy-duty trucks) that may spend long periods queuing and idling at the site; such as industrial warehouse/transfer facilities. The Revised Project consists of a medical office/office building, and does not include such uses. Therefore, due the lack of stationary source emissions, no long-term localized significance threshold analysis is warranted. Additionally, project-related trips would not cause or result in CO concentrations exceeding applicable state and/or federal standards (CO "hotspots). Revised Project operational-source emissions would therefore not adversely affect sensitive receptors within the vicinity of the site.

Table 3
Regional Operational Pollutant Emissions

	Pollutant Emissions (tons/year)					
Activity	**ROG**	**NOx**	**CO**	**SO2**	**PM10**	**PM2.5**
Area Sources[1]	2.16	0.00	0.04	0.00	0.00	0.00
Energy Usage[2]	0.03	0.28	0.23	0.00	0.02	0.02
Mobile Sources[3]	3.52	14.54	43.47	0.16	13.44	3.68
Total Emissions	**5.70**	**14.82**	**43.74**	**0.16**	**13.46**	**3.70**
SCAQMD Thresholds	**55**	**55**	**550**	**150**	**150**	**55**
Exceeds Threshold?	**No**	**No**	**No**	**No**	**No**	**No**

Notes:
(1) Area sources consist of emissions from consumer products, architectural coatings, and landscaping equipment.
(2) Energy usage consists of emissions from generation of electricity and on-site natural gas usage.
(3) Mobile sources consist of emissions from vehicles and road dust.

Source: CalEEMod Version 2016.3.2. Daily Emissions (see Appendix B for daily emissions).

The Revised Project's emissions are less than SCAQMD regional thresholds and would not result in a significant cumulative impact. The Revised Project does not propose any uses or activities that would result in potentially significant operational-source toxic air contaminants or odor impacts. Potential operational-source odor impacts are therefore considered less than significant.

C. Mitigation Measures

The Certified EIR for the Original Project required the following air quality mitigation measures:

A-1: Contractors shall implement a fugitive dust control program pursuant to the provisions of SCAQMD Rule 403.

A-2: All construction equipment shall be properly tuned and maintained in accordance with manufacturer's specifications.

A-3: Contractors shall maintain and operate construction equipment so as to minimize exhaust emissions.

A-4: Electricity from power poles rather than temporary diesel- or gasoline-powered generators shall be used to the extent feasible.

A-5: All construction vehicles shall be prohibited from idling in excess of ten minutes, both on- and off-site.

The air quality analysis for the Revised Project (see Appendix B) found impacts less than significant without mitigation and thus, mitigation measures, including Mitigation Measures A-1 through A-5 from the Certified EIR, are not required for the Revised Project. However, to the extent that Mitigation Measures A-1 through A-5 represent regulatory requirements, such requirements still apply to the Revised Project, including compliance with SCAQMD Rule 403.

D. Air Quality Conclusion

The Revised Project would have reduced construction-related air quality impacts compared to the impacts identified in the Certified EIR; the Revised Project would result in less than significant construction-related impacts without mitigation, whereas the Certified EIR identified significant, unavoidable construction-related impacts even after implementation of mitigation. Consequently, the Revised Project would not result in a new significant impact or substantial increase in the severity of previously identified impacts with respect to air quality.

4. BIOLOGICAL RESOURCES

A. Original Project

The Certified EIR finds that the Project Site did not support any state or federally listed threatened or endangered species nor any special status flora or fauna. The site did not support any native plant communities and as such did not support any sensitive or otherwise special status upland or wetland plant communities. The Certified EIR finds that the Project Site exhibited no potential for supporting either special status species or vegetation communities. The Certified EIR finds that no impacts to biological resources would occur as a result of the Original Project.

B. Revised Project

The Revised Project would be developed on the same Project Site as evaluated in the Certified EIR. The Project Site remains as a developed lot in a fully urbanized area that is devoid of native vegetation communities. Accordingly, the Revised Project would not impact biological resources and, consequently,

would not represent a new significant impact or substantial increase in the severity of previously identified impacts with respect to biological resources.

C. Mitigation Measures

No mitigation measures were required for biological resources in the Initial Study of the Certified EIR; no mitigation measures are required for the Revised Project.

5. CULTURAL RESOURCES

A. Original Project

i) Historical Resources

The Certified EIR finds that based on a historic survey, the pole-mounted sign and the wall-mounted sign located at 592 S. Fair Oaks have each been identified as potential historic resources. However, the building with which they are associated, Monty's Steak House, is a common and undistinguished example of a vernacular modern commercial building and was found ineligible. The Certified EIR finds that historic significance and current appearance of the signs within their local context shall be recorded through HABS level III documentation prior to the removal and relocation as part of the Original Project. The Certified EIR includes two mitigation measures (B-1 and B-2, see Appendix A to this Addendum) related to the relocation of the signs and implementation of a HABS photography plan; the Certified EIR finds that implementation of Mitigation Measures B-1 and B-2 would ensure that impacts to these historic resources would be reduced to a less than significant level.

ii) Archaeological and Paleontological Resources

The Certified EIR finds that although the Project Site has been previously disturbed through grading and/or development, there is potential to directly or indirectly destroy a unique paleontological resource or unique geologic feature. The Certified EIR requires implementation of Mitigation Measures B-3 through B-8 (see below and Appendix A to this Addendum) to reduce potential impacts related to paleontological resources or unique geologic features to less than significant levels.

The Certified EIR finds that results of the records search at the CHRIS-SCCIC indicate that no prehistoric archaeological sites were identified on or within a one-half mile radius of the Project Site, and that because the Project Site has been intensely urbanized and developed for over 100 years, it is likely that surficial and buried archaeological resources (both prehistoric and historic period resources) that may have existed prior to the disturbances are likely to have been displaced. Thus, the Certified EIR finds that impacts to archaeological resources are considered less than significant. However, the Certified EIR recommends Mitigation Measures B-9 through B-11 (see below and Appendix A to this Addendum) are implemented in the event that archaeological resources are accidentally encountered during implementation of the Original Project.

The Certified EIR finds that results of the Sacred Lands File search and the records search at the CHIRS-SCCIC failed to indicate Native American resources on or adjacent to the Project Site. Nonetheless, in response to correspondence from Sam Dunlap, Tribal Secretary of the Gabrielino Tongva Nation, the Certified EIR includes Mitigation Measure B-10 (see below and Appendix A to this Addendum), which includes Native American consultation if Native American resources are accidentally encountered during project implementation. The Certified EIR finds that Mitigation Measures B-9 through B-11 would reduce potentially significant impacts to less than significant levels.

B. Revised Project

i) Historical Resources

The Revised Project would be developed on the same Project Site as evaluated in the Certified EIR. The Monty's Steakhouse building has been subsequently demolished since the certification of the Original EIR and mitigation measures, B-1 and B-2, listed below have been fulfilled and are no longer applicable to the Revised Project. The Revised Project would, consequently, not represent a new significant impact or substantial increase in the severity of previously identified impacts with respect to cultural resources.

ii) Archaeological and Paleontological Resources

The Revised Project would be developed on the same Project Site as evaluated in the Certified EIR. Accordingly, the Revised Project would not be expected to impact archaeological or paleontological resources. The same mitigation measures that would be applicable to the Original Project, listed below and in Appendix A to this Addendum, would continue to be applicable to the Revised Project. The Revised Project would, consequently, not represent a new significant impact or substantial increase in the severity of previously identified impacts with respect to cultural resources.

C. Mitigation Measures

The Certified EIR for the Original Project required the following cultural resources mitigation measures:

B-1: Recordation and Photography. Prior to removal and relocation of the two signs, a pole-mounted sign and a wall-mounted sign presently situated at 592 S. Fair Oaks, a Historic American Buildings Survey (HABS) level III recordation shall be prepared. The signage shall be documented in large format black-and-white photographs and written narrative in accordance with HABS requirements. Completion of the HABS level III recordation of the existing signs on the project site should be implemented prior to their removal and before commencement of construction activities. This documentation shall be prepared by a qualified architectural historian or historic architect and a photographer experienced in Historic American Building Survey (HABS) photography. The building's exterior showing the signs in place, as well as the property setting and contextual views shall be documented. Original archival prints shall be submitted to the California Office of Historic Preservation, the City of Pasadena Planning and Development Department and the Pasadena Public Library.

B-2: Signage Relocation. To assist the general public and interested parties in understanding the history of neon signage in Pasadena and to make these historic resources available to the public, the neon and metal signage of the circa 1951-1953 pole-mounted sign located at 592 S. Fair Oaks Avenue shall be preserved on site (if feasible) and, if it cannot be preserved on site, it is preferred that it remain in the City and be exhibited in a suitable location in public view. The wall mounted sign (circa 1961) may be donated to a suitable off-site repository or collection, preferably one located either within Pasadena or another location within the Los Angeles metropolitan area, such as the Museum of Neon Art in Los Angeles, which will ensure the continued preservation of the signage. To reduce potential damage to the signs during their relocation, the applicant shall obtain the services of a qualified conservator experienced in the removal and conservation of neon signage and who shall prepare and implement a relocation plan. Prior to the issuance of a demolition permit and any permits for the relocation of the signs, the relocation plan shall be reviewed by City of Pasadena Design & Historic Preservation staff. The signs may be temporarily relocated in an effort to protect their integrity if deemed necessary and with the approval of City Historic Preservation staff.

B-3: A qualified paleontologist shall attend a pre-grade meeting and develop a paleontological monitoring program to cover excavations in the event they occur into the older Quaternary Alluvium. A qualified paleontologist is defined as a paleontologist meeting the criteria established by the Society for Vertebrate Paleontology. If excavation into Quaternary Alluvium occurs, monitoring shall consist of visually inspecting fresh exposures of rock for larger fossil remains and, where appropriate, collecting wet or dry screened sediment samples of promising horizons for smaller fossil remains. If it is determined that excavation will not encounter Quaternary Alluvium, no further measures need be taken. The frequency of monitoring inspections shall be based on the rate of excavation and grading activities, the materials being excavated, and if found, the abundance and type of fossils encountered.

B-4: If a fossil is found, the paleontologist shall be allowed to temporarily divert or redirect grading and excavation activities in the area of the exposed fossil to facilitate evaluation and, if necessary, salvage.

B-5: At the paleontologist's discretion and to reduce any construction delay, the grading and excavation contractor shall assist in removing rock samples for initial processing.

B-6: Any fossils encountered and recovered shall be prepared to the point of identification and catalogued before they are donated to their final repository.

B-7: Any fossils collected shall be donated to a public, non-profit institution with a research interest in the materials, such as the Natural History Museum of Los Angeles County. Accompanying notes, maps, and photographs shall also be filed at the repository.

B-8: If fossils are found following completion of the above tasks the paleontologist shall prepare a report summarizing the results of the monitoring and salvaging efforts, the methodology used in these efforts, as well as a description of the fossils collected and their significance. The report shall be submitted by the Project Applicant to the lead agency, the Natural History Museum of Los Angeles County, and representatives of other appropriate or concerned agencies to signify the satisfactory completion of the Project and required mitigation measures.

B-9: If archaeological resources are encountered during project implementation, an archaeologist meeting the Secretary of the Interior's Professional Qualification Standards (the "Archaeologist") shall be immediately notified and retained by the Project Applicant and approved by the City to oversee and carryout the mitigation measures stipulated in this EIR.

B-10: If archaeological resources are encountered during project implementation, the qualified archaeologist should coordinate with the Project Applicant as to the immediate treatment of the find until a proper site visit and evaluation is made by the archaeologist. The archaeologist shall be allowed to temporarily divert or redirect grading or excavation activities in the vicinity in order to make an evaluation of the find and determine appropriate treatment. Treatment will include the goals of preservation where practicable and public interpretation of historic and archaeological resources. All cultural resources recovered will be documented on California Department of Parks and Recreation Site Forms to be filed with the CHRIS-SCCIC. The archaeologist shall prepare a final report about the find to be filed with Project Applicant, the City, and the CHRIS-SCCIC, as required by the California Office of Historic Preservation. The report shall include documentation and interpretation of resources recovered. Interpretation will include full evaluation of the eligibility with respect to the National and California Register of Historic Places and CEQA. The report shall also include all specialists' reports as appendices. The Lead Agency shall designate repositories in the event that significant resources are recovered. The archaeologist shall also determine the need for archaeological and Native American monitoring for any ground-disturbing activities thereafter. If a need is warranted, the archaeologist will develop a monitoring program in coordination with a Native American representative (if there is potential to encounter prehistoric or Native American resources), the Project Applicant, and the City. The monitoring program will also include a treatment plan for any additional resources encountered and a final report on findings.

B-11: If human remains are encountered unexpectedly during construction excavation and grading activities, State Health and Safety Code Section 7050.5 requires that no further disturbance shall occur until the County Coroner has made the necessary findings as to origin and disposition pursuant to PRC Section 5097.98. If the remains are determined to be of Native American descent, the coroner has 24 hours to notify the NAHC. The NAHC will then identify the person(s) thought to be the Most Likely Descendent of the deceased Native

American, who will then help determine what course of action should be taken in dealing with the remains. Preservation of the remains in place or Project design alternatives shall be considered as possible courses of action by the Project Applicant, the City, and the Most Likely Descendent.

Monty's Steakhouse has been demolished subsequently since the certification of the Original EIR. Mitigation Measures B-1 and B-2 from the Certified EIR have been fulfilled and are not applicable to the Revised Project; Mitigation Measures B-3 through B-11 from the Certified EIR shall be implemented by the Revised Project.

6. ENERGY

A. Original Project

The Initial Study of the Certified EIR found that the Original Project does not conflict with the 1983 adopted Energy Element of the General Plan and would comply with the energy standards in the California Energy Code, Part 6 of the California Building Standards Code (Title 24). The Certified EIR also finds that the Original Project would not create a high enough demand for energy to require development of new energy sources and would not use energy in a wasteful or inefficient manner. Thus, impacts related to energy would be less than significant.

B. Revised Project

The potential energy impacts of the Revised Project have been evaluated in an Air Quality, Global Climate Change and Energy Impact Analysis prepared by EcoTierra Inc., dated January 2021 ("AQ GHG Energy Analysis"), which is included as Appendix B to this Addendum. The findings of the energy analysis are summarized below.

Electricity

Electricity would be provided to the project by Pasadena Department of Water and Power (PWP). PWP provides electricity to more than 65,000 customers within Pasadena. PWP also delivers water to almost 38,000 households and businesses in Pasadena and adjacent communities in the San Gabriel Valley.[1] PWP derives electricity from varied energy resources including: fossil fuels, hydroelectric generators, nuclear power plants, geothermal power plants, solar power generation, and wind farms.

The 2018 PWP Power Mix has renewable energy at 45 percent of the overall energy resources, of which biomass and waste is at 13 percent, geothermal is at two percent, small hydroelectric is at six percent, solar energy is at 10 percent, and wind power is at 14 percent; other energy sources include coal at 33

[1] *Pasadena Water and Power, About PWP, Who We Are, website: https://ww5.cityofpasadena.net/water-and-power/whoweare/ accessed September 2020.*

percent, large hydroelectric at 3 percent, natural gas at seven percent, nuclear at six percent and unspecified sources at six percent.

Natural Gas

Natural gas would be provided to the project by Southern California Gas (SoCalGas). The following summary of natural gas resources and service providers, delivery systems, and associated regulation is excerpted from information provided by the California Public Utilities Commission (CPUC).

The CPUC regulates natural gas utility service for approximately 10.8 million customers that receive natural gas from Pacific Gas and Electric (PG&E), Southern California Gas (SoCalGas), San Diego Gas & Electric (SDG&E), Southwest Gas, and several smaller investor-owned natural gas utilities. The CPUC also regulates independent storage operators Lodi Gas Storage, Wild Goose Storage, Central Valley Storage and Gill Ranch Storage.

The vast majority of California's natural gas customers are residential and small commercial customers, referred to as "core" customers. Larger volume gas customers, like electric generators and industrial customers, are called "noncore" customers. Although very small in number relative to core customers, noncore customers consume about 65 percent of the natural gas delivered by the state's natural gas utilities, while core customers consume about 35 percent.

The PUC regulates the California utilities' natural gas rates and natural gas services, including in-state transportation over the utilities' transmission and distribution pipeline systems, storage, procurement, metering, and billing.

Most of the natural gas used in California comes from out-of-state natural gas basins. In 2017, for example, California utility customers received 38 percent of their natural gas supply from basins located in the U.S. Southwest, 27 percent from Canada, 27 percent from the U.S. Rocky Mountain area, and 8 percent from production located in California."[2]

Petroleum-Based Fuels

The project would attract additional vehicle trips with resulting consumption of energy resources, predominantly gasoline and diesel fuel. Gasoline (and other vehicle fuels) are commercially-provided commodities and would be available to the project patrons and employees via commercial outlets.

[2] *California Public Utilities Commission, Natural Gas and California, website: http://www.cpuc.ca.gov/natural_gas/, accessed December 2020.*

The most recent data available shows the transportation sector emits 41 percent of the total greenhouse gases in the state (2017)[3] and about 84 percent of smog-forming oxides of nitrogen (NOx) (2016)[4]. In 2019, petroleum products accounted for about 91 percent of the total U.S. transportation sector energy use.[5]

i) Construction Impacts

Electricity

During construction of the Revised Project, electricity would be consumed to supply and convey water for dust control and, on a limited basis, may be used to power lighting, electronic equipment, and other construction activities necessitating electrical power. Electricity would be supplied to the Project Site by PWP and would be obtained from the existing electrical lines that connect to the Project Site. This electricity demand at any given time would vary throughout the construction period based on the construction activities being performed, and would cease upon completion of construction. When not in use, electric equipment would be powered off so as to avoid unnecessary energy consumption.

Construction of the Revised Project is anticipated to begin no sooner than August 2021 and be completed in one phase over 18 to 24 months. Staging of construction vehicles and equipment will occur on-site.

Based on the 2017 National Construction Estimator, Richard Pray (2017)[6], the typical power cost per 1,000 square feet of building construction per month is estimated to be $2.32. The Revised Project would develop the site with a total of 99,996 square feet (100 thousand square foot (TSF)) of medical office/office uses. As shown in Table 4, Project Construction Power Cost and Electricity Usage, the total power cost of the on-site electricity usage during the construction of the Revised Project is estimated to be approximately $4,176 to $5,568, where the lower estimate represents an 18-month construction period and the higher dollar amount estimates a 24-month construction period.

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[3] *California Air Resources Board (CARB), 2019 Edition, California Greenhouse Gas Emission Inventory: 2000 – 2017, website: https://ww3.arb.ca.gov/cc/inventory/pubs/reports/2000_2017/ghg_inventory_trends_00-17.pdf accessed September 2020.*

[4] *CARB, 2016 SIP Emission Projection Data, website: https://www.arb.ca.gov/app/emsinv/2017/emseic1_query.php?F_DIV=-4&F_YR=2012&F_SEASON=A&SP=SIP105ADJ&F_AREA=CA accessed September 2020.*

[5] *US Energy Information Administration, Use of Energy in the United States Explained: Energy Use for Transportation, website: https://www.eia.gov/energyexplained/?page=us_energy_transportation accessed September 2020.*

[6] *Pray, Richard, 2017 National Construction Estimator, Carlsbad: Craftsman Book Company, 2017.*

Table 4
Project Construction Power Cost and Electricity Usage

Power Cost (per 1,000 square foot of building per month of construction)	Total Building Size (1,000 Square Foot)	Construction Duration (months)	Total Project Construction Power Cost
$2.32	100.00	18-24	$4,176 - $5,568

Although Title 24 requirements typically apply to energy usage for buildings, construction equipment would also comply with Title 24 requirements where applicable. Therefore, construction of the Revised Project would not result in the wasteful, inefficient, or unnecessary consumption of electricity. Accordingly, impacts would be less than significant and no mitigation measures would be required.

Natural Gas

Construction activities, including the construction of new buildings and facilities, typically do not involve the consumption of natural gas. Thus, there would be no demand generated by construction. Therefore, construction of the Revised Project would not result in the wasteful, inefficient, or unnecessary consumption of natural gas. Accordingly, impacts would be less than significant and no mitigation measures would be required.

Petroleum-Based Fuels

Construction Equipment Fuel Estimates

Fuel consumed by construction equipment would be the primary energy resource expended over the course of Revised Project construction, as gasoline and diesel fuel would be required to power on- and off-road vehicles associated with worker transportation, equipment (dozers, loaders, excavators, forklifts, etc.), delivery vehicles, and hauling trucks. Fuel consumed by construction equipment was evaluated with the following assumptions:

- Construction schedule of 18 to 24 months;
- All construction equipment was assumed to run on diesel fuel;
- Typical daily use of 8 hours, with some equipment operating from approximately 1 to 8 hours;
- Aggregate fuel consumption rate for all equipment was estimated at 18.5 horsepower hour per gallon (hp-hr/gal) (from CARB's 2017 Emissions Factors Tables and fuel consumption rate factors as shown in Table D-21 of the Moyer Guidelines: (https://www.arb.ca.gov/msprog/moyer/guidelines/2017gl/2017_gl_appendix_d.pdf);
- Diesel fuel would be the responsibility of the equipment operators/contractors and would be sources within the region;

- Revised Project construction represents a "single-event" for diesel fuel demand and would not require on-going or permanent commitment of diesel fuel resources during long term operation.

Using the CalEEMod data input for the air quality and greenhouse gas analyses (see Appendix B to this Addendum), the Revised Project's construction phase would consume electricity and fossil fuels as a single energy demand, that is, once construction is completed their use would cease. CARB's 2017 Emissions Factors Tables show that on average aggregate fuel consumption (gasoline and diesel fuel) would be approximately 18.5 hp-hr/gal. Table 5, Construction Equipment Fuel Consumption Estimates, shows the results of the analysis of construction equipment. As presented in Table 5, Revised Project construction activities would consume an estimated 25,432 gallons of diesel fuel.

Table 5
Construction Equipment Fuel Consumption Estimates

Phase	Number of Days	Off Road Equipment Type	Amount	Usage Hours	Horse Power	Load Factor	HP hrs per day	Total Fuel Consumption (gal diesel fuel)[1]
Demolition	10	Concrete/Industrial Saws	1	8	81	0.73	473.04	256
	10	Rubber Tired Dozers	1	1	247	0.4	99	53
	10	Tractors/Loaders/ Backhoes	2	6	97	0.37	431	233
Site Preparation	30	Excavators	1	8	158	0.38	480	779
	30	Tractors/Loaders/ Backhoes	1	8	97	0.37	287	466
Building Construction	350	Cranes	1	8	231	0.29	536	10,139
	350	Forklifts	2	7	89	0.2	249	4,715
	350	Tractors/Loaders/ Backhoes	2	6	97	0.37	431	8,148
Paving	10	Cement and Mortar Mixers	4	6	9	0.56	121	65
	10	Pavers	1	7	130	0.42	382	207
	10	Rollers	1	7	80	0.38	213	115
	10	Tractors/Loaders/ Backhoes	1	7	97	0.37	251	136
Architectural Coating	10	Air Compressors	1	6	78	0.48	225	121
CONSTRUCTION FUEL DEMAND (gallons of diesel fuel)								**25,432**

Notes:
(1) Using Carl Moyer Guidelines Table D-21 Fuel consumption rate factors (bhp-hr/gal) for engines less than 750 hp.
Source: https://www.arb.ca.gov/msprog/moyer/guidelines/2017gl/2017_gl_appendix_d.pdf

Revised Project construction would represent a "single-event" diesel fuel demand and would not require on-going or permanent commitment of diesel fuel resources for this purpose. The Revised Project would comply with CARB's anti-idling regulations as well as the In-Use Off-Road Diesel-Fueled Fleets regulation. Although these regulations are intended to reduce criteria pollutant emissions, compliance

with the anti-idling and emissions regulations would also result in efficient use of construction-related energy.

Construction Worker, Vendor, and Hauling Fuel Estimates

It is assumed that all construction worker trips are from light duty autos (LDA) along area roadways. With respect to estimated vehicle miles traveled (VMT), the construction worker trips would generate an estimated 430,563 VMT. Data regarding project related construction worker trips were based on CalEEMod 2016.3.2 model defaults. Vehicle fuel efficiencies for construction workers were estimated in the air quality and greenhouse gas analyses (see Appendix B to this Addendum) using information generated using CARB's EMFAC model. An aggregate fuel efficiency of 30.13 miles per gallon (mpg) was used to calculate vehicle miles traveled for construction worker trips. Table 6, Construction Worker Fuel Consumption Estimates, shows that an estimated 14,290 gallons of fuel would be consumed for construction worker trips.

Table 6
Construction Worker Fuel Consumption Estimates

Phase	Number of Days	Worker Trips/Day	Trip Length (miles)	Vehicle Miles Traveled	Average Vehicle Fuel Economy (mpg)	Estimated Fuel Consumption (gallons)
Demolition	10	10	14.7	1,470	30.13	49
Site Preparation	30	5	14.7	2,205	30.13	73
Building Construction	350	82	14.7	421,890	30.13	14,002
Paving	10	18	14.7	2,646	30.13	88
Architectural Coating	10	16	14.7	2,352	30.13	78
Total Construction Worker Fuel Consumption						**14,290**

Notes:
(1) Assumptions for the worker trip length and vehicle miles traveled are consistent with CalEEMod 2016.3.2 defaults.

Table 4, Construction Vendor Fuel Consumption Estimates (MHD Trucks), and Table 5, Construction Hauling Fuel Consumption Estimates (HHD Trucks), show the estimated fuel consumption for vendor and hauling during building construction and architectural coating. With respect to estimated VMT, the vendor and hauling trips would generate an estimated 176,840 VMT. Data regarding project related construction worker trips were based on CalEEMod 2016.3.2 model defaults (see Appendix B to this Addendum).

For the architectural coatings it is assumed that the contractors would be responsible for bringing coatings and equipment with them in their light duty vehicles. Therefore, vendors delivering construction material or hauling debris from the site during grading would use medium to heavy duty vehicles with an average fuel consumption of 8.93 mpg. Tables 7 and 8 show that an estimated 23,546 gallons of fuel would be consumed for vendor and hauling trips.

Table 7
Construction Vendor Fuel Consumption Estimates (MHD Trucks)[1]

Phase	Number of Days	Vendor Trips/Day	Trip Length (miles)	Vehicle Miles Traveled	Average Vehicle Fuel Economy (mpg)	Estimated Fuel Consumption (gallons)
Demolition	10	0	6.9	0	8.93	0
Site Preparation	30	0	6.9	0	8.93	0
Building Construction	350	36	6.9	86,940	8.93	9,736
Paving	10	0	6.9	0	8.93	0
Architectural Coating	10	0	6.9	0	8.93	0
Total Construction Worker Fuel Consumption						**9,736**

Notes:
(1) Assumptions for the vendor trip length and vehicle miles traveled are consistent with CalEEMod 2016.3.2 defaults.

Table 8
Construction Hauling Fuel Consumption Estimates (HHD Trucks)[1]

Phase	Number of Days	Hauling Trips	Trip Length (miles)	Vehicle Miles Traveled	Average Vehicle Fuel Economy (mpg)	Estimated Fuel Consumption (gallons)
Demolition	10	32	20	640	6.51	98
Site Preparation	30	4,463	20	89,260	6.51	13,711
Building Construction	350	0	20	0	6.51	0
Paving	10	0	20	0	6.51	0
Architectural Coating	10	0	20	0	6.51	0
Total Construction Worker Fuel Consumption						**13,810**

Notes:
(1) Assumptions for the hauling trip length and vehicle miles traveled are consistent with CalEEMod 2016.3.2 defaults.

Construction Impact Summary

Construction equipment used over the approximately 18- to 24-month construction phase would conform to CARB regulations and California emissions standards and is evidence of related fuel efficiencies. There are no unusual project characteristics or construction processes that would require the use of equipment that would be more energy intensive than is used for comparable activities; or equipment that would not conform to current emissions standards (and related fuel efficiencies). Equipment employed in construction of the project would therefore not result in inefficient, wasteful, or unnecessary consumption of fuel.

The Revised Project would utilize construction contractors which practice compliance with applicable CARB regulation regarding retrofitting, repowering, or replacement of diesel off-road construction equipment. Additionally, CARB has adopted the Airborne Toxic Control Measure to limit heavy-duty diesel motor vehicle idling in order to reduce public exposure to diesel particulate matter and other Toxic Air Contaminants. Compliance with these measures would result in a more efficient use of

construction-related energy and would minimize or eliminate wasteful or unnecessary consumption of energy. Idling restrictions and the use of newer engines and equipment would result in less fuel combustion and energy consumption. Additionally, California Code of Regulations Title 13, Motor Vehicles, section 2449(d)(3) Idling, limits idling times of construction vehicles to no more than five minutes, thereby minimizing or eliminating unnecessary and wasteful consumption of fuel due to unproductive idling of construction equipment. Enforcement of idling limitations is realized through periodic site inspections conducted by County building officials, and/or in response to citizen complaints. Therefore, construction of the Revised Project would not result in the wasteful, inefficient, or unnecessary consumption of petroleum-based fuels. Accordingly, impacts would be less than significant and no mitigation measures would be required.

ii) Operational Impacts

Energy consumption in support of or related to project operations would include facilities energy demands (energy consumed by building operations and site maintenance activities) and transportation energy demands (energy consumed by employee and patron vehicles accessing the Project Site).

Facility Energy Demands (Electricity and Natural Gas)

Building operation and site maintenance (including landscape maintenance) would result in the consumption of electricity (provided by PWP) and natural gas (provided by SoCalGas). The annual natural gas and electricity demands were provided per the CalEEMod output from the air quality and greenhouse gas analyses (see Appendix B to this Addendum) and in Table 9, Project Annual Operational Energy Demand Summary.

Table 9
Project Annual Operational Energy Demand Summary[1]

Natural Gas Demand	kBTU/year
Medical Office Building	590,83.0
General Office	148,080.0
Enclosed Parking with Elevator	0.0
Total	**738,919**
Electricity Demand	**kWh/year**
Medical Office Building	814,239.0
General Office	204,070.0
Enclosed Parking with Elevator	423,436.0
Total	**1,441,745**

Notes:
(1) Taken from the CalEEMod 2016.3.2 annual output (Appendix C of the AQ GHG Energy Analysis). Includes reductions for compliance with 2019 Title 24 Standards.

The Revised Project would be required to comply with the most recent State Energy Conservation Standards contained in Title 24 of the CCR standards, which is a set of prescriptive standards establishing mandatory maximum energy consumption levels for buildings. Along with CALGreen requirements, these standards include minimum energy efficiency requirements related to building envelope, mechanical systems (e.g., HVAC and water heating systems), indoor and outdoor lighting, and

illuminated signs. Specifically, as required by current Title 24 and CALGreen standards, the Revised Project would include installation of energy efficient heating and cooling systems, appliances (e.g., Energy Star®), equipment, and control systems, low-flow water-use fixtures, and energy-efficient pumps and motors for waste and storm water conveyance, fire water, and domestic water, reducing water consumption and water heating fuel (natural gas). Therefore, operation of the Revised Project would not result in the wasteful, inefficient, or unnecessary consumption of electricity or natural gas. Accordingly, impacts would be less than significant and no mitigation measures would be required.

Petroleum-Based Fuels

Transportation Fuel Consumption

During operation, Project-related traffic would result in the consumption of petroleum-based fuels related to vehicular travel to and from the Project Site by residents and visitors. Using the CalEEMod output from the air quality and greenhouse gas analyses (see Appendix B to this Addendum), an average trip for autos and light trucks was assumed to be 16.6 miles and an average trip for 3- and 4-axle trucks was assumed to be 6.9 miles.[7] To present a worst-case scenario, it was assumed that vehicles would operate 365 days per year rather than the more likely 253 days (excluding weekends and up to 8 holidays). Table 10, Estimated Vehicle Operations Fuel Consumption, shows the estimated annual fuel consumption for all classes of vehicles from autos to heavy-heavy trucks. The proposed project would generate 2,378 trips per day and 7,753daily VMT. The vehicle fleet mix was used from the CalEEMod output. Table 10 shows that an estimated 428,426 gallons of fuel would be consumed per year for the operation of the Revised Project.

During Project operations, vehicles travelling to and from the Project Site are assumed to comply with CAFE fuel economy standards. Project-related vehicle trips would also comply with Pavley and Low Carbon Fuel Standards, which are designed to reduce vehicle GHG emissions but would also result in fuel savings in addition to CAFE standards. Therefore, operation of the Revised Project would not result in the wasteful, inefficient, or unnecessary consumption of petroleum-based fuels. Accordingly, impacts would be less than significant and no mitigation measures would be required.

[7] *Distance based on VMT data from TIA.*

Table 10
Estimated Vehicle Operations Fuel Consumption

Vehicle Type	Vehicle Mix	Number of Trips	Average Trip (miles)[1]	Daily VMT	Average Fuel Economy (mpg)	Total Gallons per Day	Total Annual Fuel Consumption (gallons)
Light Auto	Automobile	1,298	16.6	21,547	28.57	190.80	69,642
Light Truck	Automobile	106	16.6	1,767	14.08	31.75	11,590
Light Truck	Automobile	488	16.6	8,104	14.08	145.61	53,147
Medium Truck	Automobile	28	16.6	471	8.5	14.02	5,117
Light Heavy Truck	2-Axle Truck	37	16.6	606	8.5	18.03	6,583
Light Heavy Truck 10,000 lbs +	2-Axle Truck	15	16.6	102	8.5	7.32	2,670
Medium Heavy Truck	3-Axle Truck	49	16.6	336	5.85	34.93	12,749
Heavy Heavy Truck	4-Axle Truck	7	16.6	51	5.85	5.35	1,952
Total		2,378	--	7,753[2]	11.74	447.81	--
						Total Annual Fuel Consumption	**163,450**

Notes:
(1) Based on the size of the Project Site and relative location trips were assumed to be local rather than regional.
(2) Based on the VMT data reported in the Revised Project's TIA (See Appendix D to this Addendum).

iii) Plan Consistency

Regarding the State's Energy Plan and compliance with Title 24 CCR energy efficiency standards, the applicant is required to comply with the California Green Building Standard Code requirements for energy efficient buildings and appliances as well as utility energy efficiency programs implemented by PWP and Southern California Gas Company.

Regarding Pavley (AB 1493) regulations, an individual project does not have the ability to comply or conflict with these regulations because they are intended for agencies and their adoption of procedures and protocols for reporting and certifying GHG emission reductions from mobile sources.

Regarding the State's Renewable Energy Portfolio Standards, the Revised Project would be required to meet or exceed the energy standards established in the California Green Building Standards Code, Title 24, Part 11 (CALGreen). CalGreen Standards require that new buildings reduce water consumption, employ building commissioning to increase building system efficiencies, divert construction waste from landfills, and install low pollutant-emitting finish materials.

As discussed in the AQ GHG Energy Analysis, which is included as Appendix B to this Addendum, the Revised Project would be consistent with the applicable strategies of the City of Pasadena's Pasadena Climate Action Plan (CAP). As shown in the CAP Checklist, the project incorporated all six of the mandatory sustainable development actions, one energy efficiency and conservation action, three sustainable mobility and land use actions, and one urban greening action; for a total of 11 points.

Therefore, the proposed project will not result in substantial emissions of greenhouse gases and will not conflict with the City of Pasadena CAP. Impacts are considered to be less than significant. The CAP Checklist is provided as Appendix C to the AQ GHG Energy Analysis (Appendix B to this Addendum).

Therefore, the Revised Project would not conflict with or obstruct state or local plans for renewable energy or energy efficiency. Accordingly, impacts would be less than significant and no mitigation measures would be required. The Revised Project would not represent a new significant impact or substantial increase in the severity of previously identified impacts.

C. Mitigation Measures

No mitigation measures were required for energy in the Initial Study of the Certified EIR; no mitigation measures are required for the Revised Project.

7. GEOLOGY AND SOILS

A. Original Project

The Initial Study to the Certified EIR finds that development on the Project Site would not expose people or structures to potentially adverse effects or otherwise result in significant impacts with respect to: surface fault rupture; seismicity and ground shaking; liquefaction and seismic settlement; landslides; liquefaction or unstable geologic units or soils; and subsidence. The Certified EIR finds that there are no unique geological features within the Project Site, and that project foundations and grading activities can be safely conducted using conventional grading equipment and techniques. The Certified EIR thus finds that the impacts of the Original Project would be less than significant with regard to these issues.

B. Revised Project

The Revised Project would be developed on the same Project Site as evaluated in the Certified EIR, and like the Original Project would also develop a four-story building above two floors of subterranean parking. Thus, impacts of grading and construction activities associated with the Revised Project would be the same as the Original Project. The Revised Project would, consequently, not represent a new significant impact or substantial increase in the severity of previously identified impacts with respect to geology and soils.

C. Mitigation Measures

No mitigation measures were required for geology and soils in the Initial Study of the Certified EIR; no mitigation measures are required for the Revised Project.

8. GREENHOUSE GAS EMISSIONS

A. Original Project

The Certified EIR included an analysis of potential impacts related to greenhouse gas (GHG) emissions within the Air Quality section of the EIR (Section IV.A). The Certified EIR found that the construction-related GHG emissions for the project would total 20,355 MTCO2e (678.5 MTCO2e/year when amortized over 30 years [per SCAQMD current methodology]) and the operational emissions for the project would total 2,906 MTCO2e/year; for an overall GHG emissions total of 3,584.5 MTCO2e/year. The Certified EIR finds that the Original Project would not result in significant impacts related to the generation of GHG emissions.

B. Revised Project

The potential GHG impacts of the Revised Project have been evaluated in an Air Quality, Global Climate Change and Energy Impact Analysis prepared by EcoTierra Inc., dated January 2021 ("AQ GHG Energy Analysis"), which is included as Appendix B to this Addendum.

The GHG emissions for the Revised Project have been calculated using CalEEMod Version 2016.3.2. Table 11 which shows that the Revised Project's total emissions (with incorporation of regulatory requirements) would be 2,351.76 MTCO2e per year.

Table 11
Project-Related Greenhouse Gas Emissions With Incorporation of Regulation

Category	Greenhouse Gas Emissions (Metric Tons/Year)					
	Bio-CO2	**NonBio-CO_2**	**CO_2**	**CH_4**	**N_2O**	**CO_2e**
Area Sources[1]	0.00	0.01	0.00	0.00	0.00	0.01
Energy Usage[2]	0.00	1,127.72	1,127.72	0.02	0.00	1,129.60
Mobile Sources[3]	0.00	1,176.16	1,176.16	0.05	0.00	1,177.51
Waste[4]	44.68	0.00	44.68	2.64	0.00	110.68
Water[5]	44.68	118.71	44.68	2.64	0.01	110.68
Construction[6]	0.00	22.10	22.10	0.00	0.00	22.17
Total Emissions	48.12	2,271.96	2,271.08	3.06	0.01	**2,351**
					SCAQMD Draft GHG Threshold for All Land Uses	**3,000**
					Exceeds Threshold?	**No**

Notes:
(1) Area sources consist of GHG emissions from consumer products, architectural coatings, and landscape equipment.
(2) Energy usage consist of GHG emissions from electricity (2019 Title 24 Standards applied) and natural gas usage.
(3) Mobile sources consist of GHG emissions from vehicles (based on VMT data for weekdays and ITE trip generation rates for weekends).
(4) Solid waste includes the CO_2 and CH_4 emissions created from the solid waste placed in landfills (AB341 applied).
(5) Water includes GHG emissions from electricity used for transport of water and processing of wastewater (CalGreen standards applied).
(6) Construction GHG emissions CO2e based on a 30 year amortization rate.
Source: CalEEMod Version 2016.3.2 for Opening Year 2023.

The Revised Project would have the potential to conflict with any applicable plan, policy or regulation of an agency adopted for the purpose of reducing the emissions of greenhouse gases.

The City of Pasadena adopted the Pasadena Climate Action Plan (CAP) on March 5, 2018. The purpose of the 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 the California Environmental Quality Act (CEQA) Guidelines Section 15183.5. The Climate Action Plan Consistency Checklist is intended to be a tool for new development projects to demonstrate consistency with Pasadena's CAP, which is a qualified greenhouse gas (GHG) emissions reduction plan in accordance with California Environmental Quality Act (CEQA) Guidelines Section 15183.5. This Checklist has been developed as part of the CAP implementation and monitoring process and will support the achievement of individual CAP measures as well as Pasadena's overall GHG reduction goals. In addition, this Checklist furthers Pasadena's sustainability goals and policies that encourage sustainable development and aim to conserve and reduce the consumption of resources, such as energy and water, among others.

The project was required to complete the Checklist (included in Appendix C to the AQ GHG Energy Analysis, which is included in Appendix B to this Addendum). As shown in the CAP Checklist, the project incorporated all six of the mandatory sustainable development actions, one energy efficiency and conservation action, three sustainable mobility and land use actions, and one urban greening action; for a total of 11 points. Therefore, the proposed project will not result in substantial emissions of greenhouse gases and will not conflict with the City of Pasadena CAP. Impacts are considered to be less than significant. The CAP Checklist is provided as Appendix C to the AQ GHG Energy Analysis (Appendix B to this Addendum). The CAP Checklist is provided as Appendix C to the AQ GHG Energy Analysis (Appendix B to this Addendum).

Thus, the Revised Project would not result in substantial emissions of greenhouse gases and would not conflict with the City of Pasadena CAP. Impacts are considered to be less than significant with mitigation. The Revised Project would not represent a new significant impact or substantial increase in the severity of previously identified impacts.

C. Mitigation Measures

No mitigation measures were required for greenhouse gas emissions in the Certified EIR (analyzed as part of Air Quality in Certified EIR Section IV.A); no mitigation measures are required for the Revised Project.

9. HAZARDS AND HAZARDOUS MATERIALS

A. Original Project

The Certified EIR finds that due to the site's historical uses which include commercial, light industrial, manufacturing and storage uses, asbestos containing materials (ACMs), lead-based paint (LBP), underground and former above ground storage tanks, and contaminated soils could pose potential health risks to construction workers during demolition and construction of the Original Project. The Certified EIR finds that these potential impacts could be mitigated to less than significant levels through implementation of Mitigation Measures E-1 through E-4 (see below and Appendix A to this Addendum).

The Certified EIR finds that construction of the proposed Project would involve the temporary use of hazardous substances in the form of paint, adhesives, surface coatings and other finishing materials, and cleaning agents, fuels, and oils, all of which would be used, stored, and disposed of in accordance with applicable laws and regulations and manufacturers' instructions. Therefore, the Certified EIR finds that impacts from the use of these hazardous substances during construction of the proposed Project would be less than significant.

The Certified EIR finds that operation of office uses such as those proposed by the Original Project would not create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials.

Thus, with implementation of Mitigation Measures E-1 through E-4, the Certified EIR finds that impacts associated with hazards or hazardous materials would be less than significant.

B. Revised Project

The Revised Project would be developed on the same Project Site as evaluated in the Certified EIR and would be subject to the same mitigation measures and regulatory compliance identified in the Certified EIR. The mitigation measures listed in the Certified EIR are included below and as Appendix A to this Addendum. Impacts of demolition and construction activities associated with the Revised Project would be the same as the Original Project. Impacts associated with hazardous materials use during operation of the Revised Project would be similar to the Original Project, though the Revised Project specifically proposes medical office and office uses whereas the Original Project proposed general office use. Although operation of the Revised Project could include the handling of hazardous substances specific to medical activities, as with the Original Project such material would be handled in compliance with manufacturer's specifications and applicable standards and regulations. In addition, Goal H-1 in the Safety Element of the City's General Plan seeks to reduce the potential for hazardous contamination in the City, and Program H-1.1 of the Safety Element requires that all users, producers, and transporters of hazardous materials and wastes to clearly identify the materials that they store, use, or transport, and to notify the appropriate City, County, State and Federal agencies in the event of a violation.

Thus, during construction of the Revised Project, all known and unknown hazardous materials would be properly removed, handled and disposed of in accordance with applicable regulations and implementation of the prescribed mitigation measures. During construction and operation, hazardous materials would be identified in accordance with applicable disclosure laws, as necessary, for storage, use, or transport. The appropriate City, County, State and Federal agencies would be notified in the event of a violation of any applicable hazardous materials disclosure law/regulation in accordance with Goal H-1 and Program H-1.1. Impacts regarding hazardous materials due to construction and operations of the Revised Project would be less than significant. The Revised Project would, consequently, not represent a new significant impact or substantial increase in the severity of previously identified impacts with respect to hazardous materials.

C. Mitigation Measures

The Certified EIR for the Original Project required the following hazards and hazardous materials mitigation measures:

E-1: Prior to the issuance of demolition permits, the Applicant shall submit to the City a comprehensive pre-demolition asbestos survey in accordance with SCAQMD Rule 1403. The survey shall be reviewed and approved by the City of Pasadena Building and Safety Division. All identified ACM shall be removed and disposed of by a registered Cal-OSHA-certified asbestos abatement contractor prior to any disturbance of the material, and the Applicant shall submit documentary proof of such handling to the City.

E-2: Prior to issuance of demolition permits, the Applicant shall submit to the City of Pasadena Building and Safety Division a lead-based paint survey for all existing buildings located on the project site. All identified lead-based paint shall be handled and disposed of pursuant to OSHA regulations, and the Applicant shall submit documentary proof of such handling to the City.

E-3: Prior to initiating grading on the site the Applicant shall inform contractor of the potential for discovery of underground storage tanks (USTs), as well as former above ground storage tanks, or remnants thereof, in the subsurface. In the event USTs or former above ground storage tanks are encountered, work in the immediate area shall be halted and the Pasadena Fire Department shall be contacted to ensure that proper procedures are established and followed for their removal. A qualified environmental consultant shall be contacted to evaluate the soil conditions in the area surrounding the tanks. Work in the area shall only continue with authorization from the Pasadena Fire Department.

E-4: Prior to initiation of excavation and grading activities, the Applicant shall retain a qualified environmental consultant to prepare a soils management plan, which will be submitted to the City of Pasadena Building and Safety Division for review and approval. The soils management plan shall be implemented during excavation and grading activities at the site

to ensure that any contaminated soils are properly disposed of off-site. The plan shall include but not necessarily be limited to the following:

- A qualified environmental consultant shall be present at all times during digging or grading activities to monitor compliance with the soils management plan and to actively monitor the soils and excavations for evidence of contamination.

- Any soil encountered during future excavation or grading activities that appears to have been affected by hydrocarbon or any other contamination shall be evaluated, based upon appropriate laboratory analysis, by a qualified environmental consultant prior to offsite disposal at a licensed facility.

- Soils in the southwestern corner of the site near Boring Location B-1, as identified in the Phase I and Limited Phase II ESA, shall be segregated and analyzed prior to off-site disposal. Identified contamination shall be removed to the extent practicable. This may require over-excavation in this area and further analysis of this soil to determine the extent of soil contamination.

- All detectable contaminated soils shall be properly handled and transported to an appropriately licensed disposal facility.

As the Revised Project would be developed on the same Project Site as evaluated in the Certified EIR, the Revised would be subject to the same mitigation measures and regulatory compliance identified in the Certified EIR. Thus, Mitigation Measures E-1 through E-4 from the Certified EIR shall be implemented by the Revised Project and impacts would be less than significant.

10. HYDROLOGY AND WATER QUALITY

A. Original Project

The Initial Study to the Certified EIR finds that the compliance with the applicable regulatory requirements related to water quality would ensure that the Original Project would not violate any water quality standards or waste discharge requirements, and would have less than significant impacts. As the Original Project would not install any groundwater wells, and would not otherwise directly withdraw any groundwater, and because groundwater is below the proposed depth of excavation for the Original Project, the Certified EIR finds that impacts to groundwater would be less than significant. The Certified EIR finds that the Original Project would not result in significant erosion or siltation impacts from changes to drainage patterns, and would not have the potential to alter drainage patterns or increase runoff that would result in flooding.

The Certified EIR finds that although the Project Site is less than one acre in size, the City may require the Original Project to submit to the SWRCB a Notice of Intent (NOI) to comply with the State's General Construction Activity Storm Water Permit. This NOI would include a Storm Water Pollution Prevention

Plan (SWPPP) that outlines the Best Management Practices (BMPs) that would be incorporated during construction. The Certified EIR finds that compliance with the applicable regulatory requirements would ensure that construction of the Original Project would result in less than significant water quality impacts.

B. Revised Project

Under the Revised Project, construction activities associated with the proposed development would have a similar potential to result in impacts related to degradation of water quality as the Original Project. The Revised Project would be developed on the same Project Site as evaluated in the Certified EIR, and like the Original Project would also develop a four-story building above two floors of subterranean parking, with a similar sized footprint and lot coverage (the Original Project would have 62.7 percent lot coverage and the Revised Project would have 64 percent lot coverage). As discussed in the Initial Study to Certified EIR and summarized above, although the Project Site is less than one acre in size, construction activities associated with the Revised Project may be required to meet the requirements for storm water quality contained in the Los Angeles County Municipal Separate Storm Sewer System (MS4) Discharges within the Coastal Watersheds of Los Angeles County Permit (the "Los Angeles County MS4 Permit"), which controls the quality of runoff entering municipal storm drains in the County. Section VI.D.8, of this Permit, Development Construction Program, requires Permittees (which include the City of Pasadena) to enforce implementation of Best Management Practices (BMPs), including, without limitation, approval of an Erosion and Sediment Control Plan (ESCP) for all construction activities within their jurisdiction. Accordingly, the construction contractor for the Revised Project development to implement BMPs that would meet or exceed local, State, and Federal mandated guidelines for storm water treatment to control erosion and to protect the quality of surface water runoff during the construction period. BMPs utilized could include, without limitation, disposing of waste in accordance with all applicable laws and regulations; cleaning up leaks, drips, and spills immediately; conducting street sweeping during construction activities; limiting the amount of soil exposed at any given time; covering trucks; keeping construction equipment in good working order; and installing sediment filters during construction activities.

The SWPPP would contain BMPs to minimize primarily construction-related water quality impacts, but also contains some structural BMPs built into the Revised Project for ongoing water quality purposes over the life of the Project. In addition, the proposed Project would be subject to the provisions of the Low Impact Development (LID) requirements of the MS4 Permit, designed to mitigate the impacts of increases in runoff and stormwater pollution as close to the source as possible. LID comprises a set of site design approaches and BMPs that promote the use of natural systems for infiltration, evapotranspiration and use of stormwater. The Revised Project would be required to incorporate LID standards and practices to encourage the beneficial use of rain water and urban runoff; reduce stormwater runoff, promote rainwater harvesting; and provide increased groundwater recharge.

Consequently, the Revised Project would not represent a new significant impact or substantial increase in the severity of previously identified impacts with respect to hydrology and water quality.

C. Mitigation Measures

No mitigation measures were required for hydrology and water quality in the Initial Study of the Certified EIR; no mitigation measures are required for the Revised Project.

11. LAND USE AND PLANNING

A. Original Project

The Initial Study to the Certified EIR finds that the Original Project would not physically divide an established community. The Certified EIR also finds that the Original Project would be consistent with applicable land use policies and regulations set forth in applicable plans including the City's General Plan, the South Fair Oaks Specific Plan, the City of Pasadena Municipal Code, which includes the Zoning Code, and regional plans including the Los Angeles County Congestion Management Plan (CMP), the South Coast Air Quality Management District's (SCAQMD) Air Quality Management Plan (AQMP), and the Southern California Association of Governments' (SCAG) Regional Comprehensive Plan & Guide (RCPG), Regional Transportation Plan (RTP), and Growth Vision Report. The Certified EIR finds that the Original Project would not conflict with an applicable habitat conservation plan (HCP) or natural community conservation plan (NCCP) as no such plans exist within the City of Pasadena. Therefore, the Initial Study to the Certified EIR found that the Original Project would result in less that significant impacts related to land use and planning.

B. Revised Project

The Revised Project includes a similar land use as the Original Project (medical office and general office use compared to general office use) that would be compatible with surrounding office, medical, commercial, and industrial uses. However, the Revised Project proposes a building height of 62 feet plus an additional 12 feet of screening on the roof. The maximum allowable building height for the project site is 45 feet. Per Section 17.40.060.D.2.a of the Zoning Code, the appurtenances may exceed the maximum allowable height by up to 15 feet, provided the total footprint of all appurtenances does not exceed 25 percent of the roof area. The Design Commission has the authority to increase this to 20 feet, if the Design Commission finds that the additional height provides an improved architectural design (e.g., towers or other architectural features). The Revised Project would not be consistent with the maximum allowed building height for the Project Site. Thus, a Text Amendment to the South Fair Oaks Specific Plan and Zoning Code Amendment to allow a maximum height of 62 feet for parcels that abut South Fair Oaks Avenue, south of East California Boulevard is proposed. With approval of the requested Text Amendment to the South Fair Oaks Specific Plan and Zoning Code Amendments, the Revised Project would have a less than significant impact with respect to conflicts with applicable land use plans and policies. Consequently, the Revised Project would not represent a new significant impact or substantial increase in the severity of previously identified impacts with respect to land use.

C. Mitigation Measures

No mitigation measures were required for land use and planning in the Initial Study of the Certified EIR; no mitigation measures are required for the Revised Project.

12. MINERAL RESOURCES

A. Original Project

The Initial Study to the Certified EIR finds that the Project Site is not within an area which may contain mineral resources and there are no locally important mineral-resource recovery sites delineated by the City of Pasadena Land Use Element of the Comprehensive General Plan or the 1999 "Aggregate Resources in the Los Angeles Metropolitan Area" map published by the California Department of Conservation, Division of Mines and Geology. Thus, the Certified EIR finds that no impact to mineral resources would result from the Original Project.

B. Revised Project

The Revised Project would be developed on the same Project Site as evaluated in the Certified EIR. Impacts of the Revised Project would be the same as the Original Project. The Revised Project would, consequently, not represent a new significant impact or substantial increase in the severity of previously identified impacts with respect to mineral resources.

C. Mitigation Measures

No mitigation measures were required for mineral resources in the Initial Study of the Certified EIR; no mitigation measures are required for the Revised Project.

13. NOISE

A. Original Project

The Certified EIR finds that noise impacts from construction of the Original Project would be less than significant at the nearest noise-sensitive receptors (the nearest single-family residential uses along Concordia Court, the hospital use on Fairmount Avenue, and the residences along Pico Street); however, construction related noise could exceed ambient noise at the nearby office and commercial/retail uses and as such the Certified EIR recommended Mitigation Measures C-1 through C-4 to minimize and reduce the adverse but less than significant construction related noise at nearby office and commercial/retail uses. The Certified EIR finds that during operation, the Original Project would have less-than-significant impacts on neighboring noise-sensitive receptor locations, project-specific noise sources including off-site roadway noise, on-site mechanical equipment, and loading and parking facilities. No mitigation measures are required during project operations as no significant impacts would occur.

B. Revised Project

The noise impacts of the Revised Project have been evaluated in a Noise Impact Analysis prepared by EcoTierra Inc., dated January 2021 ("Noise Impact Analysis"), which is included as Appendix C to this Addendum. The findings of the analysis are summarized below.

i) Construction Noise

According to Section 9.36.070 of the Pasadena Municipal Code (PMC), noise from construction activity is prohibited within 500 feet of a residential district from 7:00 PM to 7:00 AM on weekdays, 5:00 PM to 8:00 AM on Saturday, or anytime on Sundays and holidays. In addition, PMC Section 9.26.080 prohibits the operation of powered construction equipment if such equipment emits noise at a level in excess of 85 dBA when measured within a radius of 100 feet from the source.

The State of California defines sensitive receptors as those land uses that require serenity or are otherwise adversely affected by noise events or conditions. Schools, libraries, churches, hospitals, single and multiple-family residential, including transient lodging, motels and hotel uses make up the majority of these areas. The closest receptors to the Project Site include: the residential use located northwest of the site, north of California Blvd and west of Concordia Ct, the Cal Oaks II Pharmacy/UCLA Health medical facility on the western side of Fair Oaks Ave, directly across from the western boundary of the project site, and the Huntington MRI Center, located east of Fair Oaks Ave, south of Pico Street, to the south of the Project Site.

Short-term noise impacts could occur during construction activities from either the noise impacts created from the transport of workers and movement of construction materials to and from the Project Site, or from the noise generated onsite during: demolition, ground clearing/excavation, building, and paving activities.

Construction noise levels would vary significantly based upon the size and topographical features of the active construction zone, duration of the work day, and types of equipment employed (see Table 4, Typical Construction Equipment Noise Levels, in Appendix C to this Addendum). Typical 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. Although there would be a relatively high single event noise exposure potential, resulting in potential short-term intermittent annoyances, the effect in long-term ambient noise levels would be small when averaged over longer time. The project vicinity is already exposed to a maximum noise level of 83.2 dBA as shown in Table 12, Existing Noise Level Measurements (dBA), below.

Construction noise associated with the Revised Project was calculated utilizing methodology presented in the FTA Transit Noise and Vibration Impact Assessment Manual (2018) together with several key construction parameters including: distance to each sensitive receiver, equipment usage, percent usage factor, and baseline parameters for the Project Site (see Appendix C of the Noise Impact Analysis for details). Distances to receptors were based on the acoustical center of the proposed construction

activity. Construction noise levels were calculated for each phase. To be conservative, the noise generated by each piece of equipment was added together for each phase of construction; however, it is unlikely (and unrealistic) that every piece of equipment would be used at the same time, at the same distance from the receptor, for each phase of construction.

Noise measurements were taken at three (3) locations in the Project Site vicinity to establish existing noise levels. The results of the noise level measurements are provided below in Table 12, Existing Noise Level Measurements (dBA). The dominant noise source in the area was traffic, with secondary noise from pedestrians, birds, and low-altitude aircraft. As shown in Table 12, receptors in the project vicinity are subject to average noise levels ranging from 60.8 dBA leq to 71.7 dBA leq, with maximum noise levels reaching as high as 83.2 dBA at commercial/medical uses directly across from the project, on the western side of South Fair Oaks Avenue.

Table 12
Existing Noise Level Measurements (dBA)

Site Location	Description	L_{eq}	L_{MAX}	L_{MIN}
NM 1	On the sidewalk adjacent to the residential receptor located northwest of the site, north of California Blvd and west of Concordia Ct.	60.8	76.7	50.8
NM 2	On the sidewalk adjacent to Cal Oaks II Pharmacy/UCLA Health on the western side of Fair Oaks Ave, directly across from the western boundary of the project site.	71.7	83.2	57.7
NM 3	On the sidewalk adjacent to Huntington MRI Center, east of Fair Oaks Ave, south of Pico St, to the south of the project site.	69.0	82.7	53.3

Construction noise levels are compared to the existing ambient noise level. As shown in Table 13, Estimated Construction Noise Levels at Sensitive Receptors, during demolition of the existing uses on the Project Site, the modeled construction noise levels could reach 73.3 dBA L_{eq} at the façade of the nearest medical office receptor (NM2) located west of the project site, up to 63.3 dBA L_{eq} at the façade of the nearest residential receptor (NM1) to the northwest, and up to 70.6 dBA L_{eq} at the façade of the medical office receptor (NM3) to the south of the site.

As shown in Table 13, during demolition of the existing uses on the Project Site, the modeled construction noise levels could reach 73.3 dBA L_{eq} at the façade of the nearest medical office receptor (NM2) located west of the Project Site, up to 63.3 dBA L_{eq} at the façade of the nearest residential receptor (NM1) to the northwest, and up to 70.6 dBA L_{eq} at the façade of the medical office receptor (NM3) to the south of the site.

Table 13
Estimated Construction Noise Levels at Sensitive Receptors

Construction Phase	Receptor Location	Existing Ambient Noise Levels (dBA Leq)[1]	Construction Noise Levels at Receptor Locations (dBA Leq)[2]	Increase Over Ambient (dBA)
Demolition	Northwest (NM1)	60.8	63.3	2.5
	West (NM2)	71.7	73.3	1.6
	South (NM3)	69.0	70.6	1.6
Site Preparation	Northwest (NM1)	60.8	58.1	-2.7
	West (NM2)	71.7	68.1	-3.6
	South (NM3)	69.0	65.4	-3.6
Building Construction	Northwest (NM1)	60.8	57.2	-3.6
	West (NM2)	71.7	67.2	-4.5
	South (NM3)	69.0	64.5	-4.5
Paving	Northwest (NM1)	60.8	61.5	0.7
	West (NM2)	71.7	71.5	-0.2
	South (NM3)	69.0	68.8	-0.2
Architectural Coating	Northwest (NM1)	60.8	52.6	-8.2
	West (NM2)	71.7	59.9	-11.8
	South (NM3)	69.0	59.9	-9.1

Notes:
1 Noise measurement locations are shown on Figure 3, Noise Monitoring Locations, of the Noise Impact Analysis, included as Appendix C to this document.
2 Construction noise calculated in Tables A, B, and C in Appendix C of the Noise Impact Analysis.
Source: EcoTierra Consulting, Inc. July 2020.

The construction noise levels would not exceed 85 dBA at the closest receptors (NM1, NM2, and NM3) and would not exceed 85 dBA at a distance of 100 feet from the source. Impacts related to construction noise would be further minimized with adherence to the above Municipal Ordinances and implementation of the best management practice measures (BMPs) (listed in Appendix C, Noise Impact Analysis). Impacts from construction noise associated with the Revised Project would be less than significant, and thus, mitigation measures, including Mitigation Measures C-1 through C-4 from the Certified EIR, are not required for the Revised Project. However, to the extent that Mitigation Measures C-1 through C-4 represent regulatory requirements, such requirements still apply to the Revised Project as regulatory requirements rather than Project-specific mitigation measures.

ii) Groundborne Vibration

The City of Pasadena does not have an adopted significant threshold to assess vibration impacts during construction. Based on the FTA vibration criteria, the vibration level at which there is a risk of architectural damage is based on the FTA structural damage criteria (0.12 in/sec for historic structures, 0.2 in/sec for typical wood-framed buildings, or 0.5 in/sec for reinforced concrete, steel, or timber). The City of Pasadena does not consider annoyance from construction vibration a significant impact. Significant impacts would only occur for building damage and/or if the vibrations would interfere with the use of sensitive receptors.

Construction Vibration

Construction activities can produce vibration that may be felt by adjacent uses. The construction of the Revised Project would not require the use of equipment such as pile drivers, which are known to generate substantial construction vibration levels. The highest degree of groundborne vibration would be generated during the paving construction phase due to the operation of a vibratory roller. Based on the Federal Transit Administration (FTA) data (see Table 1 of Appendix C), vibration velocities from vibratory roller operations are estimated to be approximately 0.1980 inch-per-second PPV at 26 feet from the source of activity.[8] As such, structures located greater than 26 feet from vibratory roller operations would not experience groundborne vibration above the FTA significance thresholds (i.e. 0.2 inch-per-second PPV for wood-framed structures). The nearest vibration-sensitive receptor would be the mixed commercial/medical use to the west (which contains several surgical units within the building), across Fair Oaks Avenue, located approximately 93 feet from western edge of the Project Site boundary. At this distance, the vibration felt at the building façade would be approximately 0.029 inches-per-second, which is far less than 0.2 inches-per-second; therefore, construction-related vibration would not be felt within the building and would not interfere with surgical procedures. The Huntington MRI Center is located approximately 130 feet from the southern boundary of the Project Site. As this distance, the vibration felt at the building façade would be 0.018 in/sec PPV; which is well below even the 0.2 in/sec vibration threshold for wood-framed buildings, and would not interfere with the operation of MRI equipment.

The nearest existing structure to the Project Site is the Burger King located approximately 15 feet from the southern boundary. According to the FTA's Transit Noise and Vibration Impact Assessment, the vibration criteria for potential structural damage to FTA Building Category I – Reinforced-concrete, steel, or timber (no plaster) is 0.5 in/sec PPV. At a distance of 15 feet, the vibration level from a vibratory roller would be 0.452 in/sec PPV. Therefore, no structural damage due to vibration is anticipated and impacts would be less than significant in this regard.

Operational Vibration

As the Revised Project consists of a proposed medical office/office building, the project does not include any significant sources of operational vibration; no impacts are anticipated.

iii) Operational Noise

Parking Noise

The proposed parking areas have the potential to generate noise due to cars entering and exiting, engines accelerating, braking, car alarms, squealing tires, and other general activities associated with people using the parking areas (i.e., talking, opening/closing doors, etc.). Noise levels within the parking areas would fluctuate with the amount of automobile and human activity. Activity levels would be

[8] *Federal Transit Administration, Transit Noise and Vibration Impact Assessment Manual, September 2018.*

highest in the early morning and evening when the largest number of people would enter and exit. However, these events would occur at low exiting and entering speeds, which would not generate high noise levels. During these times, the noise levels can range from 44 to 63 dBA Leq[9]. As the Revised Project's parking area would be fully enclosed on all sides except the driveway area and located in the subterranean levels of the Project Site, noise generated from within the parking area would not adversely affect off-site sensitive receptors. Chapter 9.36, of the PMC establishes exterior noise standards by land use and the maximum duration of time that the noise standards may be exceeded without being considered a nuisance punishable by law. As such, the City's Noise Ordinance prohibits any "unnecessary, excessive, or annoying noises" in the City. The Noise Ordinance does not control traffic noise, but applies to all noise sources located on private property. Therefore, through project design, and compliance with existing PMC regulations, noise impacts associated with parking would be less than significant and no mitigation measures are required.

Stationary Noise Sources

As part of the Revised Project, HVAC units and exhaust fans are anticipated to be installed for the proposed use. As shown in Figures 12 through 15 of this Addendum, there will be a 12 feet tall screen located on the roof of the building; therefore, the noise generated by any HVAC equipment located behind that screen would be sufficiently attenuated, as the line-of-sight to the equipment would be completely blocked. Furthermore, the design of all mechanical equipment would be required to comply with the regulations. According to Section 9.36.050 of the PMC, the City generally limits intrusive noises from exceeding the ambient level at the property line by more than 5 dB, with adjustments made for steady audible tones, impulsive noise, and noise emitted for limited durations. The Revised Project is required to comply with the PMC; therefore, impacts related to stationary noise sources are considered to be less than significant.

Traffic Noise

For off-site Revised Project-generated noise, increases in ambient noise along affected roadways due to project generated vehicle traffic is considered to be audible if there would be a 3 dBA or greater CNEL noise increase. [10]

Noise impacts related to vehicular traffic were modeled using a version of the Federal Highway Administration (FHWA) Traffic Noise Prediction Model (FHWA-RD-77-108), as modified for CNEL and the "Calveno" energy curves. The existing and existing plus project average daily traffic (ADT) were calculated from the PM peak hour volumes given in the Non-CEQA TIA. FHWA calculation spreadsheets are included in Appendix C.

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[9] *Source: Gordon Bricken & Associates, 1996. Estimates are based on actual noise measurements taken at various parking lots.*

[10] *FTA Highway Traffic Noise: Analysis and Abatement Guidance, page 9.*

The calculated noise levels in Table 14, Project-Related Increase in Traffic Noise, below, show that there would be a marginal increase in noise due to the increase of project-related traffic on roadways in the project vicinity. The highest increase in traffic noise would be 0.4 dB at the road segments of Raymond Avenue south of California Boulevard, California Boulevard w/o Pasadena Avenue, and at Glenarm Street west of Raymond Avenue.

Table 14
Project-Related Increase in Traffic Noise

Road Segments	Existing		Existing Plus Project		
	ADT	dB CNEL*	ADT	Total dB CNEL*	Project-Specific Increase
St. John Avenue					
s/o California Blvd	14,200	69.2	14,380	69.3	0.1
Pasadena Avenue					
n/o California Blvd	26,960	72.0	27,310	72.1	0.1
Fair Oaks Avenue					
n/o Del Mar Blvd	6,040	65.5	6,130	65.6	0.1
n/o California Blvd	8,590	67.0	8,760	67.1	0.1
s/o California Blvd	11,000	68.1	11,430	68.3	0.2
n/o of Glenarm St	11,760	68.4	12,000	68.5	0.1
s/o of Glenarm St	11,780	68.4	11,870	68.4	0.0
Raymond Avenue					
n/o California Blvd	4,880	64.6	4,880	64.6	0.0
s/o California Blvd	4,180	63.9	4,530	64.3	0.4
n/o of Glenarm St	1,900	60.5	1,900	60.5	0.0
Arroyo Parkway					
n/o California Blvd	8,110	66.8	8,110	66.8	0.0
s/o California Blvd	9,340	67.4	9,520	67.5	0.1
Del Mar Boulevard					
w/o Fair Oaks Avenue	11,580	68.3	11,580	68.3	0.0
e/o Fair Oaks Avenue	7,650	66.5	7,740	66.6	0.1
California Boulevard					
w/o St. John Avenue	6,100	65.6	6,190	65.6	0.0
w/o Pasadena Avenue	3,170	62.7	3,430	63.1	0.4
w/o Fair Oaks Avenue	7,350	66.4	7,960	66.7	0.3
w/o Raymond Avenue	7,310	66.3	7,440	66.4	0.1
w/o Arroyo Pkwy	4,700	64.4	4,840	64.5	0.1
e/o Arroyo Pkwy	5,220	64.9	5,390	65.0	0.1
Glenarm Street					
w/o Fair Oaks Avenue	2,640	61.9	2,730	62.1	0.2
w/o Raymond Avenue	4,400	64.1	4,830	64.5	0.4
e/o Raymond Avenue	8,840	67.2	9,270	67.4	0.2

*Noise levels at 50 feet from the roadway centerline. The uniform distance of 50 feet allows for direct comparisons of potential increases or decreases in noise levels based upon various traffic scenarios; however, at this distance, no specific noise standard necessarily applies.

As the project-related increase in traffic noise does not exceed 3 dBA, the project would not contribute to an audible permanent increase in ambient noise levels in the project vicinity. Therefore, impacts would be less than significant.

Airport Noise

The nearest airport is Bob Hope Airport (Hollywood Burbank airport), located approximately 12 miles northwest of the Project Site. The Project Site falls well outside the 65 dBA noise contour[11] and is not considered as a source that contributes to the ambient noise levels on the Project Site. Impacts are less than significant.

Based on the analysis above and in the Noise Impact Analysis in Appendix C, the Revised Project would not represent a new significant impact or substantial increase in the severity of previously identified impacts with respect to noise.

C. Mitigation Measures

The Certified EIR for the Original Project required the following noise mitigation measures:

C-1: Construction activities shall be limited to the following hours in accordance with the City's Municipal Code:

- From 7:00 A.M. to 7:00 P.M. Monday through Friday;
- From 8:00 A.M. to 5:00 P.M. on Saturday;
- Construction shall not occur on Sundays and Holidays.

C-2: Noise-generating construction equipment operated at the project site shall be equipped with effective noise control devices, (i.e., mufflers, lagging, and/or motor enclosures). All equipment shall be properly maintained to assure that no additional noise, due to worn or improperly maintained parts, would be generated.

C-3: Engine idling from construction equipment such as bulldozers and haul trucks shall be limited, to the extent feasible.

C-4: To the extent feasible, construction activities shall be scheduled so as to avoid operating several pieces of heavy equipment simultaneously, which causes high noise levels.

The noise analysis for the Revised Project (see Appendix C) found impacts less than significant without mitigation and thus, Mitigation Measures C-1 through C-4 from the Certified EIR are not required for the Revised Project. However, to the extent that Mitigation Measures C-1 through C-4 represent regulatory

[11] *Source: https://hollywoodburbankairport.com/wp-content/uploads/2019/04/BUR-NCP-Revision-032816-Final-Revised-Part-1_compressed.pdf*

requirements, such requirements still apply to the Revised Project as regulatory requirements rather than Project-specific mitigation measures.

14. POPULATION AND HOUSING

A. Original Project

The Initial Study to the Certified EIR finds that construction of the Original Project would not result in significant impacts related to population or housing. The Original Project does not propose the development of new residential units and thus, the Original Project would not directly generate an increase in the residential population in the area. The Certified EIR finds that while the Original Project would increase employment, this increase would be well within the employment projections set by the SCAG for the City of Pasadena and implementation of the Original Project would have a less than significant impact regarding direct or indirect population growth. Furthermore, the Project Site does not contain any existing dwelling units and therefore, the Original Project would not displace any residents or dwelling units, and no impacts would occur.

B. Revised Project

Employment growth associated with the Revised Project would be less than the Original Project because the Revised Project would be smaller than the Original Project in overall office square footage. Impacts of the Revised Project related to population and housing would therefore be slightly reduced compared to the Original Project. Consequently, the Revised Project would not represent a new significant impact or substantial increase in the severity of previously identified impacts with respect to population and housing.

C. Mitigation Measures

No mitigation measures were required for population and housing in the Initial Study of the Certified EIR; no mitigation measures are required for the Revised Project.

15. PUBLIC SERVICES

A. Original Project

The Initial Study to the Certified EIR finds that the Original Project would generate increased demand for fire protection services that would be reduced to less than significant levels through compliance with required fire protection design measures such as fire sprinklers and alarms as required. The Certified EIR finds that the Original Project would not substantially increase demand for library services and as such impacts to libraries would be less than significant. The Certified EIR finds that payment of the required park impact fee for non-residential use based on the amount of square feet proposed by the Original Project would fully mitigate potential impacts to park facilities and impacts on parks would be less than significant.

The Certified EIR finds that the Original Project could nominally increase demand for police services due to the increased employee population, but that the Original Project would not result in a need to alter existing or construct new police protection facilities, the construction of which could result in significant impacts on the physical environment. Thus, the Certified EIR finds that impacts regarding police protection services and facilities would be less than significant.

The Certified EIR finds that school services would not be directly affected by implementation of the Original Project and that in accordance with California Government Code Sections 53080 and 65995, payment of statutory developer fees would provide full and complete mitigation for purposes of CEQA. Therefore, the Certified EIR finds that potential impacts on schools are considered less than significant.

The Certified EIR finds that since the Original Project is consistent with the General Plan and zoning designation for the site, the demand for public facilities has been accounted for in the City's planning process. Revenue to the City in terms of impact fees, increased property taxes (and additional sales tax), and development fees will ensure that adequate levels of service are maintained. The Certified EIR finds that the Original Project would not substantially increase demand for any City services or substantially degrade any public facility and as such, impacts would be less than significant.

B. Revised Project

Demand for fire protection, library, school, and police protection services associated with the Revised Project would be the same or slightly less than the Original Project because the Revised Project is smaller in overall square footage by approximately 13,000 square feet and may have a lower on-site employee population than the Original Project. Consequently, the Revised Project would not result in a new significant impact or substantial increase in the severity of previously identified impacts with respect to public services.

C. Mitigation Measures

No mitigation measures were required for public services in the Initial Study of the Certified EIR; no mitigation measures are required for the Revised Project.

16. RECREATION

A. Original Project

The Initial Study to the Certified EIR finds that the use of existing neighborhood and regional parks is not expected to substantially increase as a result of the Original Project, and would not require the construction or expansion of facilities. Therefore, the Certified EIR finds that impacts on parks or recreational facilities would be less than significant.

B. Revised Project

Demand for recreation facilities and services associated with the Revised Project would be the same or slightly less than the Original Project because the Revised Project is 13,000 square feet smaller and thus could have a lower on-site employee population than the Original Project. Consequently, the Revised Project would not result in a new significant impact or substantial increase in the severity of previously identified impacts.

C. Mitigation Measures

No mitigation measures were required for recreation in the Initial Study of the Certified EIR; no mitigation measures are required for the Revised Project.

17. TRANSPORTATION

A. Original Project

The Certified EIR finds that traffic associated with the buildout of the Original Project would result in the generation of 1,246 weekday daily trips, including 175 weekday A.M. peak hour trips, and 169 P.M. peak hour trips. Applying a 10 percent credit for Transportation Demand Management (TDM) and a credit for a previous land use (6,525 sf restaurant) and for the active commercial land uses (based on 2008 driveway counts), the total net trip generation for the Original Project would be 253 daily trips, including 113 additional A.M. peak hour tips and 40 additional P.M. peak hour trips. Per significance criteria established by the City of Pasadena Department of Transportation in place at the time, the Certified EIR found that the Original Project is expected to increase daily traffic on Pico Street, west of Raymond Avenue by 8.4 percent which would be a significant impact requiring mitigation based on the City's street segment significance criteria. To reduce the significant impact on Pico Street, the Certified EIR requires implementation of Mitigation Measure D-1 (see below and Appendix A to this Addendum) which requires that the applicant provide a contribution to the citywide traffic monitoring program to purchase and install two traffic monitoring stations on Pico Street. Since this mitigation would not have a quantifiable decrease on the Original Project's traffic impact, impacts would remain significant and unavoidable on Pico Street. The City adopted a Statement of Overriding Considerations with regard to this impact for the Original Project.

The Certified EIR found that, based upon the level of trip generation associated with the Original Project, no Congestion Management Plan (CMP) freeway segments or arterials would be significantly impacted. The Certified EIR also found that the Original Project would have less than significant impacts with respect to access.

B. Revised Project

The potential transportation impacts of the Revised Project have been evaluated in the Transportation Impact Analysis prepared by the Pasadena Department of Transportation, dated October 30, 2020, which is included as Appendix D to this Addendum. The findings of the report are summarized below.

In 2013, California Senate Bill (SB) 743 was signed, with the intent to "more appropriately balance the needs of congestion management with statewide goals related to infill development, promotion of public health through active transportation, and reduction of greenhouse gas emissions." When implemented, "traffic congestion shall not be considered a significant impact on the environment" within California Environmental Quality Act (CEQA) transportation analysis. SB 743 required the Governor's Office of Planning and Research (OPR) to identify new metrics for identifying and mitigating transportation impacts within CEQA. For land use projects, OPR identified Vehicle Miles Traveled (VMT) per capita, VMT per employee, and net VMT as new metrics for transportation analysis.

The City of Pasadena adopted corresponding transportation impact significance thresholds in 2014, including VMT/capita, VT/capita, proximity to quality transit and bicycle facilities, and pedestrian accessibility. At the statewide level, regulatory changes to the CEQA Guidelines that implement SB 743 were approved on December 28, 2018. OPR released a December 2018 Technical Advisory that contains recommendations regarding assessment of VMT, thresholds of significance, and mitigation measures. Statewide implementation occurred on July 1, 2020.

Thus, since certification of the EIR for the Original Project, the methodology used to determine CEQA impacts related to transportation have changed. Whereas the Original EIR analyzed impacts based on criteria such as intersection level of service, average daily traffic volumes, and peak-hour trips, the CEQA Guidelines now state that vehicle miles traveled is the most appropriate measure of transportation impacts. Thus, the Revised Project has been analyzed against the most current thresholds established in the City's Transportation Impact Analysis Guidelines.

Project analyses conducted by Pasadena Department of Transportation 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 pedestrian, bike, and transit facilities if the project is within a quarter mile of those facilities.

The Transportation Impact Analysis finds that buildout of the Revised Project would result in 20.7 vehicle miles traveled (VMT) per capita, which is below the threshold of significance of 22.6 VMT. The Transportation Impact Analysis determined that the Revised Project would have a vehicle trips (VT) per capita of 2.1, below the threshold of 2.8 VT. Table 4 in Appendix D summarizes the analyses of the Revised Project's potential impacts on the transportation system using the calibrated TDF model.

Table 4 in Appendix D also shows that the Revised Project would not have a significant impact with respect to Proximity and Quality of Bicycle Network, Proximity and Quality of Transit Network, or Pedestrian Accessibility, as the Revised Project would not exceed the established significance criteria. Specifically, the Revised Project would not significantly decrease the existing service population within a quarter mile of Level 1 & 2 bicycle or transit facilities and the Revised Project would not decrease the Citywide Pedestrian Accessibility score.

Thus, as further explained in Appendix D, using the City's Transportation Demand Model, the City of Pasadena Department of Transportation found that the Revised Project does not exceed any of the CEQA metrics outlined in the City's guidelines. Furthermore, no mitigation measures are required as part of the less than significant conclusion of the Transportation Impact Analysis. Additionally, as the Transportation Impact Analysis did not identify any potential impacts associated with the Revised Project, Mitigation Measure D-1 from the Certified EIR would not be required to be implemented by the Revised Project. There would be no new significant impacts and no increase in previously identified impacts under the Revised Project.

Mitigation Measures

The Certified EIR for the Original Project required the following transportation mitigation measure:

D-1: Pico Street between Raymond Avenue and Edmondson Alley – In order to address increased traffic volumes on Pico Street associated with the proposed project the applicant shall provide a contribution to the citywide traffic monitoring program to purchase and install two traffic monitoring stations on Pico Street.

The transportation analysis for the Revised Project (see Appendix D) found impacts less than significant without mitigation and thus, Mitigation Measure D-1 from the Certified EIR is not required for the Revised Project.

18. TRIBAL CULTURAL RESOURCES

A. Original Project

The Certified EIR include an analysis of potential impacts related to tribal cultural resources as part of Cultural Resources – Archaeological and Paleontological Resources Section (IV.B.2). Since Certification of the EIR, CEQA Guidelines Appendix G was revised to include tribal cultural resources as a stand-alone impact issue area, separate from Cultural Resources.

a. Would the project cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is:

i) Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code section 5020.1(k), or

ii) A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1. In applying the criteria set forth in subdivision (c) of Public Resource Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe?

As part of the EIR analysis for the Original Project, a Sacred Lands File (SLF) records search was commissioned for the site through the Native American Heritage Commission (NAHC) on October 27, 2008. On November 11, 2008 NAHC responded, "The SLF failed to indicate the presence of Native American cultural resources in the immediate project area." The letter included a list of five Native American groups affiliated with the project vicinity. On November 12, 2008 letters of inquiry were sent via certified mail to the listed contacts. The letters included a project description and location map and requested information the contacts may have about the potential for the Original Project to affect Native American or prehistoric resources. On February 15, 2009, PCR received one response from Sam Dunlap, Tribal Secretary of the Gabrielino Tongva Nation. Per Mr. Dunlap, the project site is in close proximity (1 mile east) of Arroyo Seco River which was exploited prehistorically for its food and water resources. This suggests that the project site has an "increased potential" to contain buried prehistoric or Native American resources. Mr. Dunlap also mentioned that a Native American burial was encountered several feet below the ground surface approximately 1.5 miles southwest of the project site along Arroyo Seco River. Mr. Dunlap's response letter and PCR's follow-up phone call log can be found in Appendix C-2 of the Certified EIR. No responses from any of the other Native American individuals or organizations were received. In response to correspondence from Sam Dunlap, Tribal Secretary of the Gabrielino Tongva Nation, the Certified EIR includes Mitigation Measure B-10 (see above, under Cultural Resources, below, and Appendix A to this Addendum), which includes Native American consultation if Native American resources are accidentally encountered during project implementation. The Certified EIR finds that Mitigation Measures B-9 through B-11 would reduce potentially significant impacts related to tribal cultural resources to less than significant levels.

B. Revised Project

Assembly Bill 52 ("AB 52"), signed into law on September 25, 2014, requires lead agencies to evaluate a project's potential to impact Tribal Cultural Resources ("TCR") and establishes a formal notification and, if requested, consultation process for California Native American Tribes as part of CEQA. TCR includes sites, features, places, cultural landscapes, sacred places, and objects with cultural value to a California Native American Tribe that are eligible for inclusion in the California Register or included in a local register of historical resources. AB 52 also gives lead agencies the discretion to determine, supported by substantial evidence, whether a resource qualifies as a TCR. Consultation is required upon request by a California Native American tribe that has previously requested that the City provide it with notice of such projects, and that is traditionally and culturally affiliated with the geographic area of a project. Under Public Resources Code Section 21080.3.1(b), tribal consultation is to occur prior to the release of a negative declaration, mitigated negative declaration, or environmental impact report for a project. This requirement was met for the Approved Project as part of the Certified when the City sent letters of inquiry were sent via certified mail on November 12, 2008 to the listed contacts of the tribes identified by NAHC. This condition was further met by engaging in consultation with Sam Dunlap, Tribal Secretary of the Gabrielino Tongva Nation, and incorporation of Mitigation Measures B-9 through B-11 to avoid potential impacts to tribal cultural resources. The requirements of Section 21080.3.1(b) do not apply to an addendum. Moreover, the Revised Project would be located on the same Project Site and would not involve deeper excavations or excavation of areas other than those included under the Original Project. Accordingly, new or additional consultation with regard to Tribal Cultural Resources is neither required nor relevant for the Revised Project and there would be no changes to the Project that would have the potential to alter the impact determinations with regard to tribal cultural resources as compared to the Original Project. As with the Original Project, the Revised Project could potentially encounter tribal cultural resources significant to the Gabrielino Tongva Nation. Accordingly, as with the Original Project, the Revised Project would require implementation of Mitigation Measures B-9 through B-11 with regard to the potential for encountering tribal cultural resources during construction. There would be no new significant impacts or an increase in previously identified impacts under the Revised Project.

C. Mitigation Measures

The Certified EIR for the Original Project required the mitigation measures, which are applicable to tribal cultural resources, in the cultural resources section (IV.B) of the Certified EIR:

B-9: If archaeological resources are encountered during project implementation, an archaeologist meeting the Secretary of the Interior's Professional Qualification Standards (the "Archaeologist") shall be immediately notified and retained by the Project Applicant and approved by the City to oversee and carryout the mitigation measures stipulated in this EIR.

B-10: If archaeological resources are encountered during project implementation, the qualified archaeologist should coordinate with the Project Applicant as to the immediate treatment of the find until a proper site visit and evaluation is made by the archaeologist. The archaeologist shall be allowed to temporarily divert or redirect grading or excavation

activities in the vicinity in order to make an evaluation of the find and determine appropriate treatment. Treatment will include the goals of preservation where practicable and public interpretation of historic and archaeological resources. All cultural resources recovered will be documented on California Department of Parks and Recreation Site Forms to be filed with the CHRIS-SCCIC. The archaeologist shall prepare a final report about the find to be filed with Project Applicant, the City, and the CHRIS-SCCIC, as required by the California Office of Historic Preservation. The report shall include documentation and interpretation of resources recovered. Interpretation will include full evaluation of the eligibility with respect to the National and California Register of Historic Places and CEQA. The report shall also include all specialists' reports as appendices. The Lead Agency shall designate repositories in the event that significant resources are recovered. The archaeologist shall also determine the need for archaeological and Native American monitoring for any ground-disturbing activities thereafter. If a need is warranted, the archaeologist will develop a monitoring program in coordination with a Native American representative (if there is potential to encounter prehistoric or Native American resources), the Project Applicant, and the City. The monitoring program will also include a treatment plan for any additional resources encountered and a final report on findings.

B-11: If human remains are encountered unexpectedly during construction excavation and grading activities, State Health and Safety Code Section 7050.5 requires that no further disturbance shall occur until the County Coroner has made the necessary findings as to origin and disposition pursuant to PRC Section 5097.98. If the remains are determined to be of Native American descent, the coroner has 24 hours to notify the NAHC. The NAHC will then identify the person(s) thought to be the Most Likely Descendent of the deceased Native American, who will then help determine what course of action should be taken in dealing with the remains. Preservation of the remains in place or Project design alternatives shall be considered as possible courses of action by the Project Applicant, the City, and the Most Likely Descendent.

Mitigation Measures B-9 through B-11 from the Certified EIR shall be implemented by the Revised Project.

19. UTILITIES AND SERVICE SYSTEMS

A. Original Project

The Initial Study of the Certified EIR finds that the Original Project would generate an increase in wastewater when compared to existing conditions in the form of domestic sewage, but would not exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board, and would have no associated impacts. The Certified EIR also finds that the Original Project would result in an increase in water demand by the project when compared to existing conditions, but that the PWP has indicated that it can serve water to the project and the Original Project would not cause significant

environmental effects. Overall, as existing water and wastewater facilities are available to serve the Project Site and no new water or wastewater treatment facilities or expansion of existing facilities would be required with Original Project implementation, the Certified EIR finds less than significant impacts would occur in this regard.

Regarding stormwater, the Initial Study of the Certified EIR finds that drainage patterns under the Original Project would be similar to the existing site conditions and would not require or result in the construction of new stormwater drainage facilities or expansion of existing facilities. The Certified EIR finds that less than significant impacts would occur in this regard.

The Initial Study of the Certified EIR finds that the Original Project would have less than significant impacts regarding the capacity of the region-wide landfills and would be in compliance with applicable federal, state, and local statutes and regulations related to solid waste and impacts would be less than significant.

The Certified EIR finds that the Original Project would generate increased demand for water services that would be within the capacity of available infrastructure, but includes water conservation mitigation measures to ensure that impacts would be less than significant. Mitigation Measures F-1 and F-2, as listed in the Certified EIR, are listed below and included as Appendix A to this Addendum.

B. Revised Project

The potential water and wastewater impacts of the Revised Project have been evaluated in two Utility Infrastructure Technical Reports prepared by KPFF, dated June 30, 2020, which are included as Appendix E (Water), and Appendix F (Wastewater) to this Addendum. The findings of these reports are summarized below.

i) Water

Construction

Water demand for construction of the Revised Project would be required for dust control, cleaning of equipment, excavation/export, removal and re-compaction, etc. Based on a review of construction projects of similar size and duration, a conservative estimate of construction water use ranges from 1,000 to 2,000 gallons per day (gpd). Considering temporary construction water use would be substantially less than the existing water consumption at the Project Site, it is anticipated that the existing water infrastructure would meet the limited and temporary water demand associated with construction of the Revised Project. Impacts on water infrastructure due to construction activity would therefore be less than significant.

The Project would require construction of new, on-site water distribution lines to serve the new building. Construction impacts associated with the installation of water distribution lines would primarily involve trenching in order to place the water distribution lines below surface and would be limited to on-site water distribution, and minor off-site work associated with connections to the public

main. Prior to ground disturbance, Project contractors would coordinate with PWP to identify the locations and depth of all lines. Further, PWP would be notified in advance of proposed ground disturbance activities to avoid water lines and disruption of water service. Therefore, Revised Project impacts on water associated with construction activities would be less than significant.

Operation

Infrastructure Capacity

When analyzing the Revised Project for infrastructure capacity, the projected demands for both fire suppression and domestic water are considered. Although domestic water demand is the Project's main contributor to water consumption, fire flow demands have a much greater instantaneous impact on infrastructure, and therefore are the primary means for analyzing infrastructure capacity. See Exhibit 1 of the Water Infrastructure Report (see Appendix E to this Addendum) stating the ability of PWP to serve the Revised Project.

Fire Water Demand

The Revised Project would incorporate a fire sprinkler suppression system to reduce or eliminate the public hydrant demands, which would be subject to Pasadena Fire Department (PFD) review and approval during the design and permitting of the Revised Project. Fire flow requirements are determined by the Pasadena Fire Department according to Table B105.2 of the 2016 California Fire Code. Assuming Type IIA construction and fully sprinklered building, the maximum fire flow demand for the building is 4,500 gallons per minute with a residual pressure of 20 pounds per square inch.

Domestic Water Demand

Water consumption estimates for the existing conditions and previous approved Original Project were prepared based on 175 percent of the City of LA Bureau of Sanitation sewerage generation factors for commercial categories. The Revised Project proposes to connect to the existing main lines with laterals that would be adequately sized to simultaneously accommodate fire demand and domestic demand. In addition, the services would include backflows and be metered separately per City requirements.

Table 15 below provides a comparison between the existing condition, Original Project, and the Revised Project. As shown in Table 15 above, the estimated water consumption for the Revised Project results in an additional 32,835 gpd compared with the existing condition, and an additional 10,693 gpd compared with the Original Project.

Table 15
Water Generation Comparison

Description	Average Daily Water Demand (gpd)
Existing Conditions	498
Original Project	22,640
Revised Project	33,333
Net Difference Between Revised Project and Existing Conditions	**32,835**
Net Difference Between Revised Project and Original Project	**10,693**

Notes:
The average daily flow based on City of Los Angeles sewer generation factors.
Source: KPFF Consulting Engineers, June 30, 2020.

PWP, as a public water service provider, is required to prepare and periodically update an Urban Water Management Plan to plan and provide for water supplies to serve existing and projected demands. The 2015 UWMP prepared by PWP accounts for existing development within the City, as well as projected growth through the year 2040. Additionally, under the provisions of Senate Bill 610, PWP is required to prepare a comprehensive water supply assessment (WSA) for every new development "project" (as defined by Section 10912 of the Water Code) within its service area that reaches certain thresholds. The types of projects that are subject to the requirements of Senate Bill 610 tend to be larger projects that may or may not have been included within the growth projections of the 2015 UWMP. The WSAs for such projects would evaluate the quality and reliability of existing and projected water supplies, as well as alternative sources of water supply and measures to secure alternative sources if needed. The Revised Project does not meet the criteria for a WSA.

Furthermore, through PWP's 2015 UWMP process the City will meet all new demand for water due to projected population growth to the year of 2040, through a combination of water conservation and water recycling. These plans outline the creation of sustainable sources of water for the City of Pasadena to reduce dependence on imported supplies. PWP is planning to achieve these goals by expanding its water conservation program. To increase recycled water use, PWP is expanding the recycled water distribution system to provide water for irrigation, industrial use, and groundwater recharge.

A service request letter was sent to PWP to determine if there is sufficient capacity to serve the Project Site. Based on the response from PWP (see Exhibit 1 of Appendix E to this Addendum), it is understood that PWP would be able to supply the water demands of the Project and impacts related to water services would be less than significant.

ii) Wastewater

Construction

Construction activities for the Revised Project would result in a temporary decrease in wastewater generation as a result of the cessation of the existing uses. Wastewater generation would occur incrementally throughout construction of the Revised Project as a result of construction workers on-site.

However, such use would be temporary and nominal when compared with the wastewater generated by the Revised Project. In addition, construction workers would typically utilize portable restrooms, which would not contribute wastewater flows to the City's wastewater system. Thus, wastewater generation from the Revised Project construction activities is not anticipated to cause a measurable increase in wastewater flows. Therefore, impacts associated with construction-period wastewater generation would be less than significant.

The Revised Project would require construction of new sewer laterals to serve the new building. Construction impacts associated with wastewater infrastructure would primarily be confined to trenching for miscellaneous utility lines and connections to public infrastructure. Installation of wastewater infrastructure would be limited to on-site wastewater distribution, and minor off-site work associated with connections to the public main. Although no upgrades to the public main are anticipated, minor off-site work is required in order to connect to the public main. Therefore, as part of the Revised Project, a construction management plan would be implemented to reduce any temporary pedestrian and traffic impacts during construction, including maintaining two lanes of travel and ensuring safe pedestrian access and adequate emergency vehicle access. Overall, when considering impacts resulting from the installation of any required wastewater infrastructure, all impacts are of a relatively short-term duration (i.e., months) and would cease to occur once the installation is complete. Therefore, Revised Project impacts on wastewater associated with construction activities would be less than significant.

Operation

The Revised Project would generate approximately 25,000 gallons per day (gpd) of wastewater (see Table 3 in Appendix F to this Addendum). Similar to the Original Project, the City of Los Angeles Bureau of Sanitation Sewerage Generation Factors were used to determine the estimated sewer generation. As shown in Table 16 below, the estimated wastewater generated by the Revised Project would be 25,000 gpd, which represents a net increase of approximately 8,020 gpd in comparison with the Original Project, and a net increase of 24,626 gpd when compared to the existing conditions. Despite the reduction of gross square feet of building, the sewer generation factor has been modified to accurately represent the building usage which resulted in this net increase.

Table 16
Wastewater Generation Comparison

Description	Average Daily Wastewater Generation (gpd)
Existing Conditions	374
Original Project	16,980
Revised Project	25,000
Net Difference Between Revised Project and Existing Conditions	**24,626**
Net Difference Between Revised Project and Original Project	**8,020**

Notes:
The average daily flow based on City of Los Angeles sewer generation factors.
Source: KPFF Consulting Engineers, June 30, 2020.

Sanitary sewer service to the Project Site is provided by the City of Pasadena. Based on available record data, there is an 8-inch sewer main running west-east along East California Blvd, and an 8-inch sewer main running north-south along South Fair Oaks Avenue. And there is one active 4-inch sewer lateral serving the Project Site. A service request letter was sent to City of Pasadena to determine if there is sufficient capacity to serve the Project Site. Please refer to Exhibit 5 in Appendix F to this Addendum for a Will Serve Letter from City of Pasadena confirming sanitary sewer services.

Per the City of Pasadena Master Sewer Plan Project no. KJ 0485010, 8-inch and smaller sewer pipes must be designed to flow at levels not exceeding half full (d/D= 0.50) during peak conditions. The Revised Project would be designed in accordance with City requirements for new projects regarding wastewater flows. Based on the above analysis, impacts regarding wastewater would be less than significant.

iii) Solid Waste

Solid waste associated with the Revised Project would be reduced compared to the Original Project because the Revised Project would be smaller in overall square footage than the Original Project. The Revised Project would be required to comply with applicable federal, state, and local statutes and regulations related to solid waste and impacts would be less than significant. Consequently, the Revised Project would not represent a new significant impact or substantial increase in the severity of previously identified impacts.

C. Mitigation Measures

The Certified EIR for the Original Project required the following water mitigation measures:

F-1: The water usage of the proposed building to be retained shall be reduced by 20 percent, in accordance with section 14.90.050 of the Pasadena Municipal Code. In order to demonstrate this reduction, the Applicant must submit a water-conservation plan for review and approval by the Planning Division. This plan is also subject to review and approval by the City's Water and Power Department and the Building Division before the issuance of a building permit. The plan must demonstrate the ability to limit water consumption to 80 percent of its originally anticipated amount. The project's irrigation and plumbing plans are also required to comply with the approved water-conservation plan. For this project, the original amount is 22,640 gallons/day and the required 20 percent reduction is 4,528 gallons/day. Plumbing permits required in order to complete this reduction shall be finalized prior to certificate of occupancy.

F-2: The Applicant shall submit a detailed landscape plan that proposes the planting of "California Friendly" plants and the use of high efficiency irrigation technology. Landscape and irrigation plans shall be submitted for review with each phase of the project and shall be reviewed by the Design Commission in combination with the building plans.

The water analysis for the Revised Project (see Appendix E) found impacts less than significant without mitigation and thus, Mitigation Measures F-1 and F-2 from the Certified EIR are not required for the Revised Project.

20. WILDFIRE

A. Original Project

Potential impacts related to emergency evacuation and wildfire were discussed in the Initial Study to the Certified EIR as part of Section 10, Hazards and Hazardous Materials (see Questions g and h, specifically). However, since Certification of the EIR, the CEQA Guidelines Appendix G has been revised to include a stand-alone wildfire issue area as part of the Checklist. Consistent with current CEQA Guidelines Appendix G, the following presents an analysis of the potential impacts related to wildfire that would occur under the Revised Project.

B. Revised Project

If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would the project:

a. Would the project substantially impair an adopted emergency response plan or emergency evacuation plan?

No Impact. The Project Site is located in an area where adequate circulation and access is provided to facilitate emergency response. The City of Pasadena maintains a citywide emergency response plan, which goes into effect at the onset of a major disaster (e.g. a major earthquake). In the event of a disaster, the Fire Department is responsible for implementing the plan, and the Pasadena Police Department devises evacuation routes based on the specific circumstance of the emergency.

The City has pre-planned evacuation routes for dam inundation areas associated with Devil's Gate Dam, Eaton Wash, and the Jones Reservoir. According to the Technical Background Report of the adopted 2002 Safety Element of the General Plan (Plate 3-1), the Project Site is not within any of these dam inundation areas. The Safety Element of the General Plan does not identify any other types of disaster evacuation routes.

The State Responsibility Area (SRA) is the area in the State where the State of California has the primary financial responsibility for the prevention and suppression of wildland fires. The SRA is comprised of over 31 million acres across the entire State to which the State Department of Forestry and Fire Protection (CAL FIRE) provides a basic level of wildland fire prevention and protection services. Lands in the SRA are based on vegetative cover and natural resource values. As a result of the Oakland Hills Fire of 1991, AB 337 was passed in 1992 requiring CAL FIRE to work with local governments to identify high fire hazard severity zones within local responsibility areas throughout each county in the State. In response, the City of Pasadena (City) has identified Fire Hazard Zones within the Safety Element. The

Project Site is not located within a designated Fire Hazard Zone.[12] The Project Site is located in a developed, urban area in the City of Pasadena. The Project Site and surrounding area are relatively flat and do not contain any significant slope. Additionally, the Project Site is not located in or near a very high fire hazard severity zone.

The Revised Project would comply with applicable fire codes, including proper emergency exits for visitors of the building. Construction activities would generally be confined to the site and would be subjected to emergency access standards and requirements of the City of Pasadena Fire Department to ensure traffic safety. As such, implementation of the Revised Project would not impair or physically interfere with an adopted emergency response plan or emergency evacuation plan. Accordingly, the Revised Project would have no impact on adopted emergency response plans or emergency evacuation plans as they pertain to State responsibility areas or very high fire hazard severity zones and no mitigation measures would be required.

If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would the project:

b. Due to the slope, prevailing winds, and other factors, would a project exacerbate wildfire risks, and thereby expose project occupants to, pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire?

No Impact. As described above, the Project Site is not located in or near a designated fire hazard area. The nearest identified fire hazard area to the Project Site is located approximately one mile to the west of the Project Site; the Project Site and surrounding area are flat and not located downslope or downwind of the identified fire hazard zone. Therefore, the Revised Project would not have the potential to expose Project occupants to pollutant concentrations from a wildfire or the uncontrolled spread of wildfire. Accordingly, the Revised Project would have no impact with regard to pollutant concentrations or uncontrolled spread of wildfire as it pertains to identified fire hazard severity zones and no mitigation measures would be required.

If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would the project:

c. Would the project require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines or other utilities) that may exacerbate fire risks or that may result in temporary or ongoing impacts to the environment?

No Impact. As detailed above, the Project Site is not located in or near a designated fire hazard area. As such, the Revised Project would not require the installation or maintenance of associated infrastructure.

[12] *Safety Element of the General Plan City of Pasadena, California, Plate P-2, Summary of Hazards Map II, August 2002.*

Accordingly, the Revised Project would have no impact with regard to the installation and maintenance of infrastructure as it pertains to State responsibility areas or very high fire hazard severity zones and no mitigation measures would be required.

If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would the project:

d. Would the project expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope stability, or drainage changes?

No Impact. As detailed above, the Project Site is not located in or near a designated fire hazard area. Furthermore, the Project Site and surrounding area are flat and are not susceptible to flooding or landslides. In addition, implementation of the Revised Project would not significantly alter drainage patterns compared to existing conditions. The Revised Project would not modify the surrounding streets with respect to the manner in which they convey runoff to the City storm drain system. Therefore, the Revised Project would not have the potential to expose people or structures to downslope or downstream flooding or landslides. Accordingly, the Project would have no impact with regard to flooding or landslides as a result of runoff, post-fire slope instability, or drainage change within State responsibility areas or very high fire hazard severity zones and no mitigation measures would be required.

As detailed above, the Revised Project would not result in significant impacts related to wildfire and no mitigation measures would be required. There would be no new significant impacts or an increase in previously identified impacts under the Revised Project.

C. Mitigation Measures

No mitigation measures were required for wildfire in the Certified EIR; no mitigation measures are required for the Revised Project.

IV. CUMULATIVE IMPACTS

A. Original Project

The Certified EIR concludes that the potential construction-related NO_X emissions from the Original Project are considered cumulatively considerable, even after implementation of mitigation measures. As such, the Certified EIR finds that cumulative impacts on air quality during the project's construction would be significant and unavoidable.

B. Revised Project

As part of the Air Quality, Global Climate Change and Energy Impact Analysis prepared by EcoTierra Inc., dated January 2021 ("AQ GHG Energy Analysis"), which is included as Appendix B to this Addendum, the

Revised Project's potential for cumulatively considerable impacts was evaluated. The findings of the analysis are summarized below.

There are a number of cumulative projects in the project area that have not yet been built or are currently under construction. Since the timing or sequencing of the cumulative projects is unknown, any quantitative analysis to ascertain daily construction emissions that assumes multiple, concurrent construction projects would be speculative. Further, cumulative projects include local development as well as general growth within the project area. However, as with most development, the greatest source of emissions is from mobile sources, which travel well out of the local area. Therefore, from an air quality standpoint, the cumulative analysis would extend beyond any local projects and when wind patterns are considered would cover an even larger area. The SCAQMD recommends using two different methodologies: (1) that project-specific air quality impacts be used to determine the potential cumulative impacts to regional air quality;[13] and (2) that a project's consistency with the current AQMP be used to determine its potential cumulative impacts.

i) Project Specific Impacts

The project area is out of federal attainment for ozone and in 2018 was out of attainment for PM2.5 and lead. Construction and operation of cumulative projects would further degrade the local air quality, as well as the air quality of the South Coast Air Basin. The greatest cumulative impact on the quality of regional air cell would be the incremental addition of pollutants mainly from increased traffic volumes from residential, commercial, and industrial development and the use of heavy equipment and trucks associated with the construction of these projects. Air quality would be temporarily degraded during construction activities that occur separately or simultaneously. However, in accordance with the SCAQMD methodology, projects that do not exceed the SCAQMD criteria or can be mitigated to less than criteria levels are not significant and do not add a cumulatively considerable contribution of a federal or state non-attainment pollutant. In regards to state ambient air quality standards, the Air Basin is currently in non-attainment for ozone, PM10, and PM2.5.

The Revised Project would result in the emission of criteria pollutants for which the region is in nonattainment during both construction and operation. The emissions from construction of the Revised Project are not predicted to exceed any applicable SCAQMD regional or local significance thresholds and therefore, are not expected to result in ground level concentrations that exceed the NAAQS or CAAQS. Therefore, the Revised Project would not result in a cumulatively considerable net increase for non-attainment pollutants or ozone precursors and would result in a less than significant impact for construction emissions.

[13] *South Coast Air Quality Management District, Potential Control Strategies to Address Cumulative Impacts from Air Pollution White Paper, 1993, http://www.aqmd.gov/home/regulations/ceqa/air-quality-analysis-handbook.*

Revised Project operations would generate emissions of NOx, ROG, CO, PM10, and PM2.5, which would not exceed the SCAQMD regional or local thresholds and would not be expected to result in ground level concentrations that exceed the NAAQS or CAAQS. Since the Revised Project would not introduce any substantial stationary sources of emissions, CO is the benchmark pollutant for assessing local area air quality impacts from post-construction motor vehicle operations. No violations of the state and federal CO standards are projected to occur for the Revised Project, based on the magnitude of traffic the project is anticipated to create and the CO attainment status of the South Coast Air Basin. Therefore, operation of the Revised Project would not result in a cumulatively considerable net increase for non-attainment of criteria pollutants or ozone precursors. As a result, the Revised Project would result in a less than significant cumulative impact for operational emissions.

ii) Air Quality Compliance

The California Environmental Quality Act (CEQA) requires a discussion of any inconsistencies between a proposed project and applicable General Plans and Regional Plans (CEQA Guidelines Section 15125). The regional plan that applies to the proposed project includes the SCAQMD Air Quality Management Plan (AQMP). Therefore, this section discusses any potential inconsistencies of the proposed project with the AQMP.

The purpose of this discussion is to set forth the issues regarding consistency with the assumptions and objectives of the AQMP and discuss whether the Revised Project would interfere with the region's ability to comply with Federal and State air quality standards.

The SCAQMD CEQA Handbook states that "New or amended General Plan Elements (including land use zoning and density amendments), Specific Plans, and significant projects must be analyzed for consistency with the AQMP". Strict consistency with all aspects of the plan is usually not required. A proposed project should be considered to be consistent with the AQMP if it furthers one or more policies and does not obstruct other policies. The SCAQMD CEQA Handbook identifies two key indicators of consistency:

(1) Whether the project will result in an increase in the frequency or severity of existing air quality violations or cause or contribute to new violations, or delay timely attainment of air quality standards or the interim emission reductions specified in the AQMP.

(2) Whether the project will exceed the assumptions in the AQMP in 2016 or increments based on the year of project buildout and phase.

Both of these criteria are evaluated below.

Air Quality Compliance Analysis

Criteria 1 – Increase in the Frequency or Severity of Violations

Based on the air quality modeling analysis contained in the Air Analysis (see Appendix B), short-term construction impacts would not result in significant impacts based on the SCAQMD regional and local thresholds of significance. This Air Analysis also found that long-term operations impacts would not result in significant impacts based on the SCAQMD local and regional thresholds of significance.

Therefore, the Revised Project is not projected to contribute to the exceedance of any air pollutant concentration standards and is found to be consistent with the AQMP for the first criterion.

Criteria 2 – Exceed Assumptions in the AQMP?

Consistency with the AQMP assumptions is determined by performing an analysis of the proposed project with the assumptions in the AQMP. The emphasis of this criterion is to ensure that the analyses conducted for the proposed project are based on the same forecasts as the AQMP. The 2016-2040 Regional Transportation/Sustainable Communities Strategy prepared by SCAG (2016) includes chapters on: the challenges in a changing region, creating a plan for our future, and the road to greater mobility and sustainable growth. These chapters currently respond directly to federal and state requirements placed on SCAG. Local governments are required to use these as the basis of their plans for purposes of consistency with applicable regional plans under CEQA. For the Revised Project, the City of Pasadena General Plan defines the assumptions that are represented in the AQMP.

The Project Site is within the IG-SP2 (Industrial General, South Fair Oaks Specific Plan) zoning district. The Revised Project consists of the construction and operation of an approximately 99,996 square foot medical office/office building. Therefore, the Revised Project is consistent with the existing zoning/land use, would not exceed the AQMP assumptions for the project site, and is found to be consistent with the AQMP for the second criterion.

Based on the above, the Revised Project would not result in an inconsistency with the SCAQMD AQMP. Therefore, a less than significant impact would occur.

Therefore, the impact of the Revised Project would be lower than the Original Project and the Revised Project would not contribute further to cumulative impacts.

V. CONCLUSION

Based on the above analysis, which compared the potential effects of the Revised Project with the potential impacts of the Original Project as discussed in the Certified EIR and is summarized in Table 17 below, the City concludes that the Revised Project would not require major revisions of the Certified EIR due to the involvement of new significant environmental effects or a substantial increase in the severity of previously identified significant effects (CEQA Guidelines § 15162(a)(1)). In addition, no substantial changes have occurred with respect to the circumstances under which the project would be undertaken

which would require major revisions of the previous EIR due to the involvement of new significant environmental effects or a substantial increase in the severity of previously identified significant effects (CEQA Guidelines § 15162(a)(2)). Finally, no new information of substantial importance has been presented which would show that the Revised Project would have one or more significant effects not discussed in the previous EIR; that significant effects previously examined will be substantially more severe than shown in the previous EIR; that mitigation measures or alternatives previously found not to be feasible would in fact be feasible and would substantially reduce one or more significant effects of the project, but the project proponents declined to adopt the mitigation measure or alternative; or that mitigation measures or alternatives which are considerably different from those analyzed in the previous EIR would substantially reduce one or more significant effects on the environment, but the project proponents declined to adopt the mitigation measure of alternative (CEQA Guidelines § 15162(a)(3)). Therefore, none of these conditions described in CEQA Guidelines § 15162 requiring preparation of a subsequent EIR are present. Substantial evidence supporting the conclusions presented above is provided in the proceedings of this Addendum (CEQA Guidelines § 15164(e)).

As indicated above, the Certified EIR finds that the Original Project would result in significant unavoidable traffic impacts (street segment traffic on Pico Street), and construction air quality (NOx) impacts that could not be mitigated to a less than significant level. In such cases, CEQA requires that the project cannot be approved unless findings of overriding considerations can be made by the City Council. Accordingly, a Statement of Overriding Considerations was adopted by the City Council, which set forth the specific reasons why the project's benefits outweigh its significant environmental impacts. The City Council adopted a Statement of Overriding Considerations in August 2009 for the Original Project.

The Revised Project would have less than significant traffic impacts and construction air quality impacts and would not require mitigation for these issue areas, nor would the Revised Project require a Statement of Overriding Considerations. Therefore, as determined by this Addendum, the Revised Project would not result in new impacts or substantially increase in the severity of previously-identified impacts.

The Certified EIR finds that the Original Project would contribute to significant cumulative impacts with respect to construction-related NO_X emissions. However, as discussed above and further detailed in Appendix B, cumulative impacts for the Revised Project would be reduced compared to the Original Project and would not exceed thresholds related to NO_X emissions and therefore would not be cumulatively considerable.

Table 17

Summary of the Revised Project Compared to the Original Project

Impact Category	Original Project Impacts	Revised Project Impacts
Aesthetics	Less Than Significant	Same
Agricultural Resources	No Impact	Same
Air Quality - Construction	Significant and Unavoidable	Lower and Less than Significant
Air Quality - Operation	Less Than Significant	Same
Biological Resources	No Impact	Same
Cultural Resources	Less Than Significant with Mitigation	Same
Geology and Soils	Less Than Significant	Same
Greenhouse Gas Emissions	Less Than Significant	Same
Hazards and Hazardous Materials	Less Than Significant with Mitigation	Same
Hydrology and Water Quality	Less Than Significant	Same
Land Use	Less Than Significant	Same
Mineral Resources	No Impact	Same
Noise-Construction	Less Than Significant with Mitigation	Lower
Noise-Operation	Less Than Significant	Same
Population and Housing	Less Than Significant	Same
Public Services	Less Than Significant	Same
Recreation	Less Than Significant	Same
Transportation	Significant and Unavoidable	Lower and Less than Significant
Utilities	Less Than Significant	Same

APPENDIX A

MITIGATION MEASURES FROM CERTIFIED EIR

The mitigation measures listed below were identified in the Certified EIR as applicable to the Original Project and, except as indicated, would continue to be applicable to the Revised Project.

A. Air Quality

The Certified EIR for the Original Project required the following air quality mitigation measures:

A-1: Contractors shall implement a fugitive dust control program pursuant to the provisions of SCAQMD Rule 403.

A-2: All construction equipment shall be properly tuned and maintained in accordance with manufacturer's specifications.

A-3: Contractors shall maintain and operate construction equipment so as to minimize exhaust emissions.

A-4: Electricity from power poles rather than temporary diesel- or gasoline-powered generators shall be used to the extent feasible.

A-5: All construction vehicles shall be prohibited from idling in excess of ten minutes, both on- and off-site.

The air quality analysis for the Revised Project (see Appendix B) found impacts less than significant without mitigation and thus, Mitigation Measures A-1 through A-5 from the Certified EIR are not required for the Revised Project.

B. Cultural Resources

The Certified EIR for the Original Project required the following cultural resources mitigation measures:

B-1: Recordation and Photography. Prior to removal and relocation of the two signs, a pole-mounted sign and a wall-mounted sign presently situated at 592 S. Fair Oaks, a Historic American Buildings Survey (HABS) level III recordation shall be prepared. The signage shall be documented in large format black-and-white photographs and written narrative in accordance with HABS requirements. Completion of the HABS level III recordation of the existing signs on the project site should be implemented prior to their removal and before commencement of construction activities. This documentation shall be prepared by a qualified architectural historian or historic architect and a photographer experienced in Historic American Building Survey (HABS) photography. The building's exterior showing the signs in place, as well as the property setting and contextual views shall be documented. Original archival prints shall be submitted to the California Office of Historic Preservation, the City of Pasadena Planning and Development Department and the Pasadena Public Library.

B-2: Signage Relocation. To assist the general public and interested parties in understanding the history of neon signage in Pasadena and to make these historic resources available to the public, the neon and metal signage of the circa 1951-1953 pole-mounted sign located at 592 S. Fair Oaks Avenue shall be preserved on site (if feasible) and, if it cannot be preserved on site, it is preferred that it remain in the City and be exhibited in a suitable location in public view. The wall mounted sign (circa 1961) may be donated to a suitable off-site repository or collection, preferably one located either within Pasadena or another location within the Los Angeles metropolitan area, such as the Museum of Neon Art in Los Angeles, which will ensure the continued preservation of the signage. To reduce potential damage to the signs during their relocation, the applicant shall obtain the services of a qualified conservator experienced in the removal and conservation of neon signage and who shall prepare and implement a relocation plan. Prior to the issuance of a demolition permit and any permits for the relocation of the signs, the relocation plan shall be reviewed by City of Pasadena Design & Historic Preservation staff. The signs may be temporarily relocated in an effort to protect their integrity if deemed necessary and with the approval of City Historic Preservation staff.

B-3: A qualified paleontologist shall attend a pre-grade meeting and develop a paleontological monitoring program to cover excavations in the event they occur into the older Quaternary Alluvium. A qualified paleontologist is defined as a paleontologist meeting the criteria established by the Society for Vertebrate Paleontology. If excavation into Quaternary Alluvium occurs, monitoring shall consist of visually inspecting fresh exposures of rock for larger fossil remains and, where appropriate, collecting wet or dry screened sediment samples of promising horizons for smaller fossil remains. If it is determined that excavation will not encounter Quaternary Alluvium, no further measures need be taken. The frequency of monitoring inspections shall be based on the rate of excavation and grading activities, the materials being excavated, and if found, the abundance and type of fossils encountered.

B-4: If a fossil is found, the paleontologist shall be allowed to temporarily divert or redirect grading and excavation activities in the area of the exposed fossil to facilitate evaluation and, if necessary, salvage.

B-5: At the paleontologist's discretion and to reduce any construction delay, the grading and excavation contractor shall assist in removing rock samples for initial processing.

B-6: Any fossils encountered and recovered shall be prepared to the point of identification and catalogued before they are donated to their final repository.

B-7: Any fossils collected shall be donated to a public, non-profit institution with a research interest in the materials, such as the Natural History Museum of Los Angeles County. Accompanying notes, maps, and photographs shall also be filed at the repository.

B-8: If fossils are found following completion of the above tasks the paleontologist shall prepare a report summarizing the results of the monitoring and salvaging efforts, the methodology used in these efforts, as well as a description of the fossils collected and their significance. The report shall be submitted by the Project Applicant to the lead agency, the Natural History Museum of Los Angeles County, and representatives of other appropriate or concerned agencies to signify the satisfactory completion of the Project and required mitigation measures.

B-9: If archaeological resources are encountered during project implementation, an archaeologist meeting the Secretary of the Interior's Professional Qualification Standards (the "Archaeologist") shall be immediately notified and retained by the Project Applicant and approved by the City to oversee and carryout the mitigation measures stipulated in this EIR.

B-10: If archaeological resources are encountered during project implementation, the qualified archaeologist should coordinate with the Project Applicant as to the immediate treatment of the find until a proper site visit and evaluation is made by the archaeologist. The archaeologist shall be allowed to temporarily divert or redirect grading or excavation activities in the vicinity in order to make an evaluation of the find and determine appropriate treatment. Treatment will include the goals of preservation where practicable and public interpretation of historic and archaeological resources. All cultural resources recovered will be documented on California Department of Parks and Recreation Site Forms to be filed with the CHRIS-SCCIC. The archaeologist shall prepare a final report about the find to be filed with Project Applicant, the City, and the CHRIS-SCCIC, as required by the California Office of Historic Preservation. The report shall include documentation and interpretation of resources recovered. Interpretation will include full evaluation of the eligibility with respect to the National and California Register of Historic Places and CEQA. The report shall also include all specialists' reports as appendices. The Lead Agency shall designate repositories in the event that significant resources are recovered. The archaeologist shall also determine the need for archaeological and Native American monitoring for any ground-disturbing activities thereafter. If a need is warranted, the archaeologist will develop a monitoring program in coordination with a Native American representative (if there is potential to encounter prehistoric or Native American resources), the Project Applicant, and the City. The monitoring program will also include a treatment plan for any additional resources encountered and a final report on findings.

B-11: If human remains are encountered unexpectedly during construction excavation and grading activities, State Health and Safety Code Section 7050.5 requires that no further disturbance shall occur until the County Coroner has made the necessary findings as to origin and disposition pursuant to PRC Section 5097.98. If the remains are determined to be of Native American descent, the coroner has 24 hours to notify the NAHC. The NAHC will then identify the person(s) thought to be the Most Likely Descendent of the deceased Native

American, who will then help determine what course of action should be taken in dealing with the remains. Preservation of the remains in place or Project design alternatives shall be considered as possible courses of action by the Project Applicant, the City, and the Most Likely Descendent.

The Monty's Steakhouse building has been subsequently demolished since the certification of the Original EIR and mitigation measures, B-1 and B-2, listed below have been fulfilled and are no longer applicable to the Revised Project; Mitigation Measures B-3 through B-11 from the Certified EIR shall be implemented by the Revised Project.

E. Hazards and Hazardous Materials

The Certified EIR for the Original Project required the following hazards and hazardous materials mitigation measures:

E-1: Prior to the issuance of demolition permits, the Applicant shall submit to the City a comprehensive pre-demolition asbestos survey in accordance with SCAQMD Rule 1403. The survey shall be reviewed and approved by the City of Pasadena Building and Safety Division. All identified ACM shall be removed and disposed of by a registered Cal-OSHA-certified asbestos abatement contractor prior to any disturbance of the material, and the Applicant shall submit documentary proof of such handling to the City.

E-2: Prior to issuance of demolition permits, the Applicant shall submit to the City of Pasadena Building and Safety Division a lead-based paint survey for all existing buildings located on the project site. All identified lead-based paint shall be handled and disposed of pursuant to OSHA regulations, and the Applicant shall submit documentary proof of such handling to the City.

E-3: Prior to initiating grading on the site the Applicant shall inform contractor of the potential for discovery of underground storage tanks (USTs), as well as former above ground storage tanks, or remnants thereof, in the subsurface. In the event USTs or former above ground storage tanks are encountered, work in the immediate area shall be halted and the Pasadena Fire Department shall be contacted to ensure that proper procedures are established and followed for their removal. A qualified environmental consultant shall be contacted to evaluate the soil conditions in the area surrounding the tanks. Work in the area shall only continue with authorization from the Pasadena Fire Department.

E-4: Prior to initiation of excavation and grading activities, the Applicant shall retain a qualified environmental consultant to prepare a soils management plan, which will be submitted to the City of Pasadena Building and Safety Division for review and approval. The soils management plan shall be implemented during excavation and grading activities at the site to ensure that any contaminated soils are properly disposed of off-site. The plan shall include but not necessarily be limited to the following:

- A qualified environmental consultant shall be present at all times during digging or grading activities to monitor compliance with the soils management plan and to actively monitor the soils and excavations for evidence of contamination.

- Any soil encountered during future excavation or grading activities that appears to have been affected by hydrocarbon or any other contamination shall be evaluated, based upon appropriate laboratory analysis, by a qualified environmental consultant prior to offsite disposal at a licensed facility.

- Soils in the southwestern corner of the site near Boring Location B-1, as identified in the Phase I and Limited Phase II ESA, shall be segregated and analyzed prior to off-site disposal. Identified contamination shall be removed to the extent practicable. This may require over-excavation in this area and further analysis of this soil to determine the extent of soil contamination.

- All detectable contaminated soils shall be properly handled and transported to an appropriately licensed disposal facility.

As the Revised Project would be developed on the same Project Site as evaluated in the Certified EIR the Revised would be subject to the same mitigation measures and regulatory compliance identified in the Certified EIR. Thus, Mitigation Measures E-1 through E-4 from the Certified EIR shall be implemented by the Revised Project.

C. Noise

The Certified EIR for the Original Project required the following noise mitigation measures:

C-1: Construction activities shall be limited to the following hours in accordance with the City's Municipal Code:

- From 7:00 A.M. to 7:00 P.M. Monday through Friday;

- From 8:00 A.M. to 5:00 P.M. on Saturday;

- Construction shall not occur on Sundays and Holidays.

C-2: Noise-generating construction equipment operated at the project site shall be equipped with effective noise control devices, (i.e., mufflers, lagging, and/or motor enclosures). All equipment shall be properly maintained to assure that no additional noise, due to worn or improperly maintained parts, would be generated.

C-3: Engine idling from construction equipment such as bulldozers and haul trucks shall be limited, to the extent feasible.

C-4: To the extent feasible, construction activities shall be scheduled so as to avoid operating several pieces of heavy equipment simultaneously, which causes high noise levels.

The noise analysis for the Revised Project (see Appendix C) found impacts less than significant without mitigation and thus, Mitigation Measures C-1 through C-4 from the Certified EIR are not required for the Revised Project.

D. Transportation

The Certified EIR for the Original Project required the following transportation mitigation measure:

D-1: Pico Street between Raymond Avenue and Edmondson Alley – In order to address increased traffic volumes on Pico Street associated with the proposed project the applicant shall provide a contribution to the citywide traffic monitoring program to purchase and install two traffic monitoring stations on Pico Street.

The transportation analysis for the Revised Project (see Appendix D) found impacts less than significant without mitigation and thus, Mitigation Measure D-1 from the Certified EIR is not required for the Revised Project.

F. Water

The Certified EIR for the Original Project required the following water mitigation measures:

F-1: The water usage of the proposed building to be retained shall be reduced by 20 percent, in accordance with section 14.90.050 of the Pasadena Municipal Code. In order to demonstrate this reduction, the Applicant must submit a water-conservation plan for review and approval by the Planning Division. This plan is also subject to review and approval by the City's Water and Power Department and the Building Division before the issuance of a building permit. The plan must demonstrate the ability to limit water consumption to 80 percent of its originally anticipated amount. The project's irrigation and plumbing plans are also required to comply with the approved water-conservation plan. For this project, the original amount is 22,640 gallons/day and the required 20 percent reduction is 4,528 gallons/day. Plumbing permits required in order to complete this reduction shall be finalized prior to certificate of occupancy.

F-2: The Applicant shall submit a detailed landscape plan that proposes the planting of "California Friendly" plants and the use of high efficiency irrigation technology. Landscape and irrigation plans shall be submitted for review with each phase of the project and shall be reviewed by the Design Commission in combination with the building plans.

The water analysis for the Revised Project (see Appendix E) found impacts less than significant without mitigation and thus, Mitigation Measures F-1 and F-2 from the Certified EIR are not required for the Revised Project.

APPENDIX B

AQ GHG ENERGY REPORT

590 South Fair Oaks Project
Air Quality, Global Climate Change and Energy Impact Analysis

Prepared for:
City of Pasadena
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January 2021

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I. INTRODUCTION AND SUMMARY

1. PURPOSE OF ANALYSIS AND STUDY OBJECTIVES

The purpose of this air quality and global climate change impact analysis is to provide an assessment of the impacts resulting from development of the proposed 590 South Fair Oaks project and to identify measures that may be necessary to reduce potentially significant impacts. This study was performed to address the possibility of regional/local air quality impacts and global climate change impacts, from project related air emissions. The objectives of the study include:

- documentation of the atmospheric setting
- discussion of criteria pollutants and greenhouse gases
- discussion of the air quality and global climate change regulatory framework
- discussion of the air quality and greenhouse gases thresholds of significance
- analysis of the construction related air quality and greenhouse gas emissions
- analysis of the operations related air quality and greenhouse gas emissions
- analysis of the conformity of the proposed project with the SCAQMD AQMP
- recommendations for mitigation measures

The City of Pasadena is the lead agency for this air quality, greenhouse gas, and energy analysis, in accordance with the California Environmental Quality Act authorizing legislation. Although this is a technical report, every effort has been made to write the report clearly and concisely. To assist the reader with terms unique to air quality and global climate change, a definition of terms has been provided in Appendix A.

2. PROJECT LOCATION

The project site is located within the southern portion of the City of Pasadena, approximately two miles east of the City of Glendale, and eleven miles northeast of downtown Los Angeles. The entrance to the I-710 freeway is about half a mile to the west of the site. The Site is bounded by East California Boulevard to the north, South Fair Oaks Avenue to the west, Edmondson Alley to the east, and commercial buildings to the south. A vicinity map showing the project location is provided on **Figure 1, Project Location Map**.

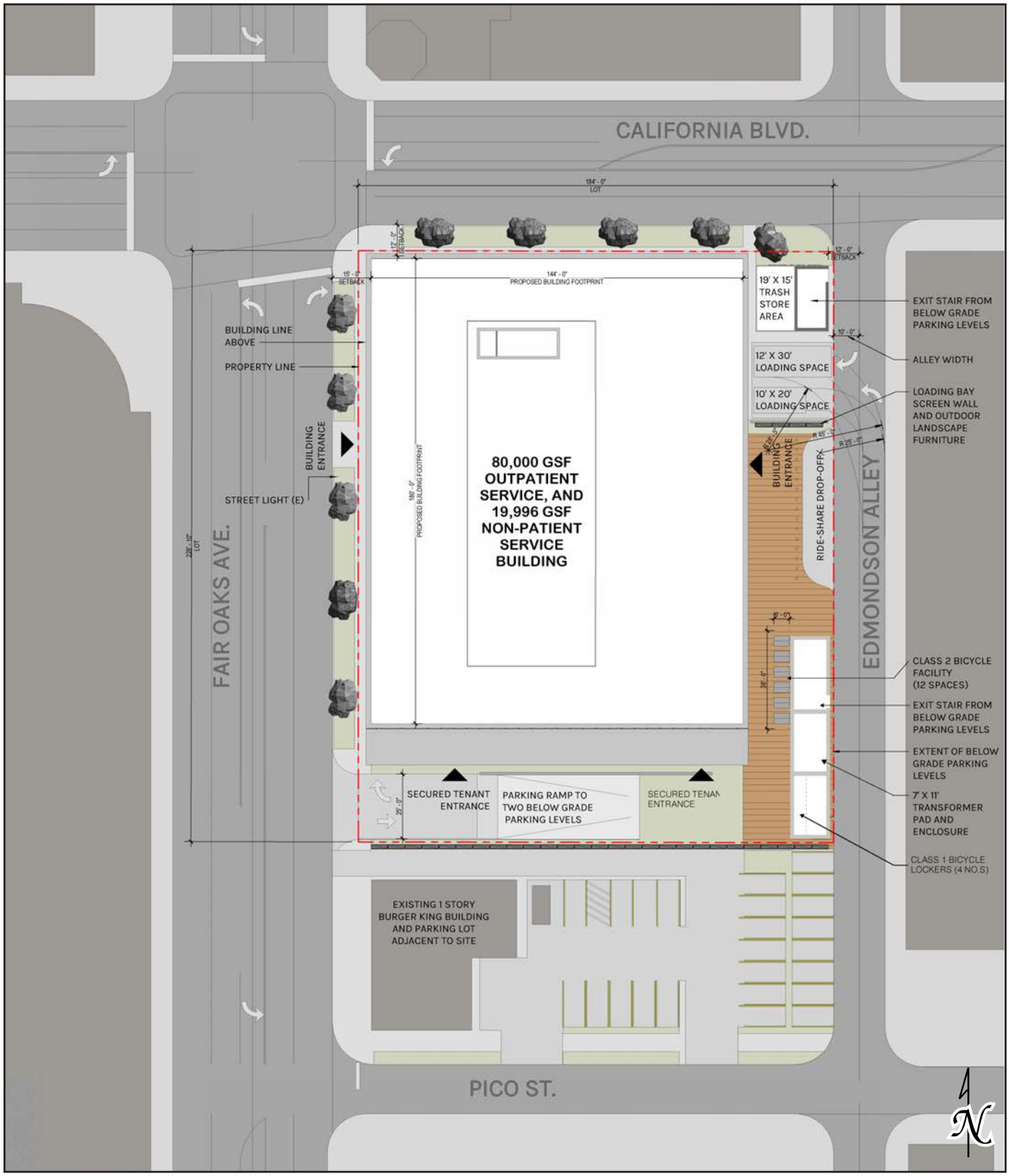
3. PROJECT DESCRIPTION

The project proposes development on a 0.97-acre lot which will be constructed into a four-story medical office building with two levels of underground parking. The finished project will cover about 27,000 square-feet (SF) of the original lot and encompass a total floor area of approximately 100,000 square-feet. Further site developments will be made which includes street sidewalk and alleyway improvements. **Figure 2, Site Plan**, illustrates the proposed site plan.

Project Site

Source: Google Earth and Open Street Maps, July 2020.

Figure 1
Project Location Map



Source: Smith Group, January 2021.

Figure 2
Site Plan

The Project would include the demolition of approximately 7,000 SF of existing buildings, surface parking, and earth work excavation with 37,500 cubic yards (CY) of export, in order to make way for construction of the new structure.

The project is anticipated to be built in one phase with project construction to start no sooner than August, 2021 and take approximately 18-24 months to complete.

4. SENSITIVE RECEPTORS IN PROJECT VICINITY

Those who are sensitive to air pollution include children, the elderly, and persons with preexisting respiratory or cardiovascular illness. For purposes of CEQA, the SCAQMD considers a sensitive receptor to be a location where a sensitive individual could remain for 24 hours, such as residences, hospitals, or convalescent facilities (South Coast Air Quality Management District 2008). Commercial and industrial facilities are not included in the definition because employees do not typically remain on-site for 24 hours.

The nearest sensitive receptor to the project site is the existing single-family detached residential dwelling unit located north of California Blvd and west of Concordia Ct, approximately 452 feet (137.8 meters) northwest of the project boundary. Other air quality sensitive land uses are located further from the project site and would experience lower impacts

5. SUMMARY OF IMPACTS

A. Construction-Source Emissions

Project construction-source emissions would not exceed applicable regional or local thresholds of significance established by the South Coast Air Quality Management District (SCAQMD).

As discussed herein, the project will comply with all applicable SCAQMD construction-source emission reduction rules and guidelines. Project construction source emissions would not cause or substantively contribute to violation of the California Ambient Air Quality Standards (CAAQS) or National Ambient Air Quality Standards (NAAQS) or result in toxic air contaminant (TAC)-related impacts.

Established requirements addressing construction equipment operations, and construction material use, storage, and disposal requirements act to minimize odor impacts that may result from construction activities. Moreover, construction-source odor emissions would be temporary, short-term, and intermittent in nature and would not result in persistent impacts that would affect substantial numbers of people. Potential construction-source odor impacts are therefore considered less than significant.

B. Operational-Source Emissions

The project operational-sourced emissions would not exceed applicable regional or local thresholds of significance established by the SCAQMD. Additionally, project-related trips will not cause or result in CO

concentrations exceeding applicable state and/or federal standards (CO “hotspots). Project operational-source emissions would therefore not adversely affect sensitive receptors within the vicinity of the project.

The project's emissions meet SCAQMD regional thresholds and will not result in a significant cumulative impact. The project does not propose any such uses or activities that would result in potentially significant operational-source toxic air contaminants or odor impacts. Potential operational-source odor impacts are therefore considered less than significant.

C. Greenhouse Gases

Project-related GHG emissions will not exceed the SCAQMD Draft GHG emissions threshold of 3,000 MTCO2e per year for all land uses. To be consistent with the City of Pasadena Climate Action Plan (CAP), the project completed the CAP Checklist and complied with the 11 required sustainable development actions. Therefore, the project would not conflict with an applicable plan, policy or regulation of an agency adopted for the purpose of reducing the emissions of greenhouse gases and impacts are considered to be less than significant.

D. Energy

For new development such as that proposed by the Project, compliance with California Building Standards Code Title 24 energy efficiency requirements (CalGreen), are considered demonstrable evidence of efficient use of energy. As discussed below, the project would be LEED Gold certified and provide for, and promote, energy efficiencies required under other applicable federal and State of California standards and regulations, and in so doing would meet or exceed all California Building Standards Code Title 24 standards. Moreover, energy consumed by the project’s operation is calculated to be comparable to, or less than, energy consumed by other uses of similar scale and intensity that are constructed and operating in California. On this basis, the project would not result in the inefficient, wasteful, or unnecessary consumption of energy. Further, the project would not cause or result in the need for additional energy producing facilities or energy delivery system

II. AIR QUALITY ANALYSIS

1. EXISTING AIR QUALITY CONDITIONS

A. Local Air Quality

The project site is located within the City of Pasadena, within the west San Gabriel Valley portion of Los Angeles County; which is part of the South Coast Air Basin (Basin). The Basin includes all of Orange County and the non-desert portions of Los Angeles, San Bernardino, and Riverside Counties. Bounded by the Pacific Ocean to the west and the San Gabriel, San Bernardino, and San Jacinto Mountains to the north and east, the Basin is an area of high air pollution potential. The regional climate within the Basin is considered semi-arid and is characterized by warm summers, mild winters, infrequent seasonal rainfall, moderate daytime onshore breezes, and moderate humidity. Air quality within the Basin is influenced by a wide range of emissions sources—such as dense population centers, heavy vehicular traffic, and industry. Climate change within the Basin is influenced by a wide range of emission sources, such as utility usage, heavy vehicular traffic, industry, and meteorology.

The annual average temperature varies throughout the Basin, ranging from the low to mid 60s to over 100 degrees during the summer, measured in Fahrenheit (°F). With a more pronounced oceanic influence, coastal areas show less variability in annual minimum and maximum temperatures than inland areas.

The Basin experiences a persistent temperature inversion, which is characterized by increasing temperature with increasing altitude. This inversion limits the vertical dispersion of air contaminants, holding them relatively near the ground. As the sun warms the ground and the lower air layer, the temperature of the lower air layer approaches the temperature of the base of the inversion (upper) layer until the inversion layer finally breaks, allowing vertical mixing with the lower layer.

Aside from a persistent temperature inversion, the vertical dispersion of air contaminants in the Basin is also affected by wind conditions. The combination of stagnant wind conditions and low inversions produces the greatest pollutant concentrations. Conversely, on days of no inversion or high wind speeds, ambient air pollutant concentrations are the lowest. During periods of low inversions and low wind speeds, air pollutants generated in urbanized areas in the Basin are transported eastward, predominantly into Riverside and San Bernardino Counties. Santa Ana winds, which are strong and dry north or northeasterly winds that occur during the fall and winter months, disperse air contaminants differently through the Basin, generally resulting in worse air conditions in the inner basin areas. Santa Ana conditions tend to last for several days at a time. Wind speeds in Pasadena area average about 6.9 miles per hour (mph)[1].

[1] *Weather Spark, Average Weather in Pasadena, website: https://weatherspark.com/y/1718/Average-Weather-in-Pasadena-California-United-States-Year-Round.*

The majority of annual rainfall in the Basin occurs between December and March. Summer rainfall is minimal and generally limited to scattered thundershowers in coastal regions. The annual average total of rainfall in the Pasadena area is approximately 21 inches[2].

In the winter, light nocturnal winds result mainly from the drainage of cool air off of the mountains toward the valley floor while the air aloft over the valley remains warm. This forms a type of inversion known as a radiation inversion. Such winds are characterized by stagnation and poor local mixing and trap pollutants such as automobile exhaust near their source. While these inversions may lead to air pollution "hot spots" in heavily developed coastal areas of the basin, there is not enough traffic in inland valleys to cause any winter air pollution problems. Despite light wind conditions, especially at night and in the early morning, winter is generally a period of good air quality in the project vicinity.

The temperature and precipitation levels for the Pasadena area (Pasadena, CA Station), the closest monitoring station to the project site, are shown below in **Table 1, Local Monthly Climate Data**. Table 1 shows that August is typically the warmest month and December is typically the coolest month. Rainfall in the project area varies considerably in both time and space. Almost all the annual rainfall comes from the fringes of mid-latitude storms from late November to early April, with summers being almost completely dry.

Table 1
Local Monthly Climate Data

Descriptor	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Avg. Max. Temperature	66.5	67.8	69.9	73.4	76.3	81.7	88.4	89.2	87.1	80.6	73.8	67.2
Avg. Min. Temperature	42.6	44.1	45.1	48.8	52.2	55.7	59.9	60.3	58.5	53.4	47.2	43.2
Avg. Total Precipitation (in.)	4.39	4.54	3.39	1.39	0.43	0.13	0.03	0.08	0.36	0.7	1.67	3.14

Source: https://wrcc.dri.edu/cgi-bin/cliMAIN.pl?ca6719
Data from the Pasadena, CA station (046719).

B. Pollutants

Pollutants are generally classified as either criteria pollutants or non-criteria pollutants. Federal ambient air quality standards have been established for criteria pollutants, whereas no ambient standards have been established for non-criteria pollutants. For some criteria pollutants, separate standards have been set for different periods. Most standards have been set to protect public health. For some pollutants, standards have been based on other values (such as protection of crops, protection of materials, or

[2] *Best Places, Climate in Pasadena, California, website: https://www.bestplaces.net/climate/city/california/pasadena.*

avoidance of nuisance conditions). A summary of federal and state ambient air quality standards is provided in the Regulatory Framework section.

i) Criteria Pollutants

The criteria pollutants consist of: ozone, nitrogen dioxide, carbon monoxide, sulfur dioxide, lead, and particulate matter. These pollutants can harm your health and the environment, and cause property damage. The Environmental Protection Agency (EPA) calls these pollutants "criteria" air pollutants because it regulates them by developing human health-based and/or environmentally-based criteria for setting permissible levels. The following provides descriptions of each of the criteria pollutants.

ii) Nitrogen Dioxides

Nitrogen Oxides (NOx) is the generic term for a group of highly reactive gases which contain nitrogen and oxygen. While most NOx are colorless and odorless, concentrations of nitrogen dioxide (NO_2) can often be seen as a reddish-brown layer over many urban areas. NOx form when fuel is burned at high temperatures, as in a combustion process. The primary manmade sources of NOx are motor vehicles, electric utilities, and other industrial, commercial, and residential sources that burn fuel. NOx reacts with other pollutants to form, ground-level ozone, nitrate particles, acid aerosols, as well as NO_2, which cause respiratory problems. NOx and the pollutants formed from NOx can be transported over long distances, following the patterns of prevailing winds. Therefore, controlling NOx is often most effective if done from a regional perspective, rather than focusing on the nearest sources.

iii) Ozone

Ozone (O_3) is not usually emitted directly into the air but at ground-level is created by a chemical reaction between NOx and volatile organic compounds (VOC) in the presence of sunlight. Motor vehicle exhaust, industrial emissions, gasoline vapors, chemical solvents as well as natural sources emit NOx and VOC that help form ozone. Ground-level ozone is the primary constituent of smog. Sunlight and hot weather cause ground-level ozone to form with the greatest concentrations usually occurring downwind from urban areas. Ozone is subsequently considered a regional pollutant. Ground-level ozone is a respiratory irritant and an oxidant that increases susceptibility to respiratory infections and can cause substantial damage to vegetation and other materials. Because NOx and VOC are ozone precursors, the health effects associated with ozone are also indirect health effects associated with significant levels of NOx and VOC emissions.

iv) Carbon Monoxide

Carbon monoxide (CO) is a colorless, odorless gas that is formed when carbon in fuel is not burned completely. It is a component of motor vehicle exhaust, which contributes about 56 percent of all CO

emissions nationwide. In cities, 85 to 95 percent of all CO emissions may come from motor vehicle exhaust.

Other sources of CO emissions include industrial processes (such as metals processing and chemical manufacturing), residential wood burning, and natural sources such as forest fires. Woodstoves, gas stoves, cigarette smoke, and unvented gas and kerosene space heaters are indoor sources of CO. The highest levels of CO in the outside air typically occur during the colder months of the year when inversion conditions are more frequent. The air pollution becomes trapped near the ground beneath a layer of warm air. CO is described as having only a local influence because it dissipates quickly. Since CO concentrations are strongly associated with motor vehicle emissions, high CO concentrations generally occur in the immediate vicinity of roadways with high traffic volumes and traffic congestion, active parking lots, and in automobile tunnels. Areas adjacent to heavily traveled and congested intersections are particularly susceptible to high CO concentrations.

CO is a public health concern because it combines readily with hemoglobin and thus reduces the amount of oxygen transported in the bloodstream. The health threat from lower levels of CO is most serious for those who suffer from heart disease such as angina, clogged arteries, or congestive heart failure. For a person with heart disease, a single exposure to CO at low levels may cause chest pain and reduce that person's ability to exercise; repeated exposures may contribute to other cardiovascular effects. High levels of CO can affect even healthy people. People who breathe high levels of CO can develop vision problems, reduced ability to work or learn, reduced manual dexterity, and difficulty performing complex tasks. At extremely high levels, CO is poisonous and can cause death.

v) Sulfur Dioxide

Sulfur Oxide (SOx) gases (including sulfur dioxide [SO2]) are formed when fuel containing sulfur, such as coal and oil is burned, and from the refining of gasoline. SOx dissolves easily in water vapor to form acid and interacts with other gases and particles in the air to form sulfates and other products that can be harmful to people and the environment.

vi) Lead

Lead (Pb) is a metal found naturally in the environment as well as manufactured products. The major sources of lead emissions have historically been motor vehicles and industrial sources. Due to the phase out of leaded gasoline, metal processing is now the primary source of lead emissions to the air. High levels of lead in the air are typically only found near lead smelters, waste incinerators, utilities, and lead-acid battery manufacturers. Exposure of fetuses, infants, and children to low levels of lead can adversely affect the development and function of the central nervous system, leading to learning disorders, distractibility, inability to follow simple commands, and lower intelligence quotient. In adults, increased lead levels are associated with increased blood pressure.

vii) Particulate Matter

Particulate matter (PM) is the term for a mixture of solid particles and liquid droplets found in the air. Particulate matter is made up of a number of components including acids (such as nitrates and sulfates), organic chemicals, metals, and soil or dust particles. The size of particles is directly linked to their potential for causing health problems. Particles that are less than 10 micrometers in diameter (PM10) are the particles that generally pass through the throat and nose and enter the lungs. Once inhaled, these particles can affect the heart and lungs and cause serious health effects. Particles that are less than 2.5 micrometers in diameter (PM2.5) have been designated as a subset of PM10 due to their increased negative health impacts and its ability to remain suspended in the air longer and travel further.

viii) Reactive Organic Gases (ROG)

Although not a criteria pollutant, reactive organic gases (ROGs), or volatile organic compounds (VOCs), are defined as any compound of carbon—excluding carbon monoxide, carbon dioxide, carbonic acid, metallic carbides or carbonates, and ammonium carbonate—that participates in atmospheric photochemical reactions. Although there are slight differences in the definition of ROGs and VOCs, the two terms are often used interchangeably. Indoor sources of VOCs include paints, solvents, aerosol sprays, cleansers, tobacco smoke, etc. Outdoor sources of VOCs are from combustion and fuel evaporation. A reduction in VOC emissions reduces certain chemical reactions that contribute to the formulation of ozone. VOCs are transformed into organic aerosols in the atmosphere, which contribute to higher PM10 and lower visibility.

C. Other Pollutants of Concern

i) Toxic Air Contaminants

In addition to the above-listed criteria pollutants, toxic air contaminants (TACs) are another group of pollutants of concern. Sources of toxic air contaminants include industrial processes such as petroleum refining and chrome plating operations, commercial operations such as gasoline stations and dry cleaners, and motor vehicle exhaust. Cars and trucks release at least forty different toxic air contaminants. The most important of these toxic air contaminants, in terms of health risk, are diesel particulates, benzene, formaldehyde, 1,3-butadiene, and acetaldehyde. Public exposure to toxic air contaminants can result from emissions from normal operations as well as from accidental releases. Health effects of toxic air contaminants include cancer, birth defects, neurological damage, and death.

Toxic air contaminants are less pervasive in the urban atmosphere than criteria air pollutants, however they are linked to short-term (acute) or long-term (chronic or carcinogenic) adverse human health effects. There are hundreds of different types of toxic air contaminants with varying degrees of toxicity. Sources

of toxic air contaminants include industrial processes, commercial operations (e.g., gasoline stations and dry cleaners), and motor vehicle exhaust.

According to the 2013 California Almanac of Emissions and Air Quality, the majority of the estimated health risk from toxic air contaminants can be attributed to relatively few compounds, the most important of which is diesel particulate matter (DPM). Diesel particulate matter is a subset of PM2.5 because the size of diesel particles are typically 2.5 microns and smaller. The identification of diesel particulate matter as a toxic air contaminant in 1998 led the California Air Resources Board (CARB) to adopt the Risk Reduction Plan to Reduce Particulate Matter Emissions from Diesel-fueled Engines and Vehicles in September 2000. The plan's goals are a 75-percent reduction in diesel particulate matter by 2010 and an 85-percent reduction by 2020 from the 2000 baseline. Diesel engines emit a complex mixture of air pollutants, composed of gaseous and solid material. The visible emissions in diesel exhaust are known as particulate matter or PM, which includes carbon particles or "soot". Diesel exhaust also contains a variety of harmful gases and over 40 other cancer-causing substances. California's identification of diesel particulate matter as a toxic air contaminant was based on its potential to cause cancer, premature deaths, and other health problems. Exposure to diesel particulate matter is a health hazard, particularly to children whose lungs are still developing and the elderly who may have other serious health problems. Overall, diesel engine emissions are responsible for the majority of California's potential airborne cancer risk from combustion sources.

ii) Asbestos

Asbestos is listed as a TAC by the ARB and as a Hazardous Air Pollutant by the EPA. Asbestos occurs naturally in mineral formations and crushing or breaking these rocks, through construction or other means, can release asbestiform fibers into the air. Asbestos emissions can result from the sale or use of asbestos-containing materials, road surfacing with such materials, grading activities, and surface mining. The risk of disease is dependent upon the intensity and duration of exposure. When inhaled, asbestos fibers may remain in the lungs and with time may be linked to such diseases as asbestosis, lung cancer, and mesothelioma. Naturally occurring asbestos is not present in Los Angeles County. The nearest likely locations of naturally occurring asbestos, as identified in the General Location Guide for Ultramafic Rocks in California prepared by the California Division of Mines and Geology, is located in Santa Barbara County. Due to the distance to the nearest natural occurrences of asbestos, the project site is not likely to contain asbestos.

2. REGULATORY SETTING

The proposed project is addressed through the efforts of various international, federal, state, regional, and local government agencies. These agencies work jointly, as well as individually, to improve air quality

through legislation, regulations, planning, policy-making, education, and a variety of programs. The agencies responsible for improving the air quality are discussed below.

A. Federal – United States Environmental Protection Agency

The United States Environmental Protection Agency (EPA) is responsible for setting and enforcing the National Ambient Air Quality Standards (NAAQS) for atmospheric pollutants. It regulates emission sources that are under the exclusive authority of the federal government, such as aircraft, ships, and certain locomotives. The National Ambient Air Quality Standards (NAAQS) pollutants were identified using medical evidence and are shown below in **Table 2, State and Federal Criteria Pollutant Standards**.

The EPA and the California Air Resource Board (CARB) designate air basins where ambient air quality standards are exceeded as "nonattainment" areas. If standards are met, the area is designated as an "attainment" area. If there is inadequate or inconclusive data to make a definitive attainment designation, they are considered "unclassified." National nonattainment areas are further designated as marginal, moderate, serious, severe, or extreme as a function of deviation from standards. Each standard has a different definition, or 'form' of what constitutes attainment, based on specific air quality statistics. For example, the Federal 8-hour CO standard is not to be exceeded more than once per year; therefore, an area is in attainment of the CO standard if no more than one 8-hour ambient air monitoring values exceeds the threshold per year. In contrast, the Federal annual PM2.5 standard is met if the three-year average of the annual average PM2.5 concentration is less than or equal to the standard. Attainment status is shown in **Table 3, South Coast Air Basin Attainment Status**.

As part of its enforcement responsibilities, the EPA requires each state with federal nonattainment areas to prepare and submit a State Implementation Plan (SIP) that demonstrates the means to attain the national standards. The State Implementation Plan (SIP) must integrate federal, state, and local components and regulations to identify specific measures to reduce pollution, using a combination of performance standards and market-based programs within the timeframe identified in the State Implementation Plan (SIP).

As indicated below in Table 3, the MDAB has been designated by the EPA as a non-attainment area for ozone (O3) and suspended particulates (PM10). Currently, the Basin is in attainment with the ambient air quality standards for carbon monoxide (CO), lead, sulfur dioxide (SO2), nitrogen dioxide (NO2) and particulate matter (PM2.5).

Table 2
State and Federal Criteria Pollutant Standards

Air Pollutant	Concentration / Averaging Time		Most Relevant Effects
	California Standards	Federal Primary Standards	
Ozone (O_3)	0.09 ppm/1-hour 0.07 ppm/8-hour	0.070 ppm/8-hour	(a) Decline in pulmonary function and localized lung edema in humans and animals; (b) Risk to public health implied by alterations in pulmonary morphology and host defense in animals; (c) Increased mortality risk; (d) Risk to public health implied by altered connective tissue metabolism and altered pulmonary morphology in animals after long-term exposures and pulmonary function decrements in chronically exposed humans; (e) Vegetation damage; and (f) Property damage.
Carbon Monoxide (CO)	20.0 ppm/1-hour 9.0 ppm/8-hour	35.0 ppm/1-hour 9.0 ppm/8-hour	(a) Aggravation of angina pectoris and other aspects of coronary heart disease; (b) Decreased exercise tolerance in persons with peripheral vascular disease and lung disease; (c) Impairment of central nervous system functions; and (d) Possible increased risk to fetuses.
Nitrogen Dioxide (NO_2)	0.18 ppm/1-hour 0.03 ppm/annual	100 ppb/1-hour 0.053 ppm/annual	(a) Potential to aggravate chronic respiratory disease and respiratory symptoms in sensitive groups; (b) Risk to public health implied by pulmonary and extra-pulmonary biochemical and cellular changes and pulmonary structural changes; and (c) Contribution to atmospheric discoloration.
Sulfur Dioxide (SO_2)	0.25 ppm/1-hour 0.04 ppm/24-hour	75 ppb/1-hour 0.14 ppm/annual	(a) Bronchoconstriction accompanied by symptoms which may include wheezing, shortness of breath and chest tightness, during exercise or physical activity in persons with asthma.
Suspended Particulate Matter (PM_{10})	50 µg/m^3/24-hour 20 µg/m^3/annual	150 µg/m^3/24-hour	(a) Exacerbation of symptoms in sensitive patients with respiratory or cardiovascular disease; (b) Declines in pulmonary function growth in children; (c) Increased risk of premature death from heart or lung diseases in elderly.
Suspended Particulate Matter ($PM_{2.5}$)	12 µg/m^3 / annual	35 µg/m^3/24-hour 12 µg/m^3/annual	
Sulfates	25 µg/m^3/24-hour	No Federal Standards	(a) Decrease in ventilatory function; (b) Aggravation of asthmatic symptoms; (c) Aggravation of cardio-pulmonary disease; (d) Vegetation damage; (e) Degradation of visibility; (f) property damage.
Lead	1.5 µg/m^3/30-day	0.15 µg/m^3/3-month rolling	(a) Learning disabilities; (b) Impairment of blood formation and nerve conduction.
Visibility Reducing Particles	Extinction coefficient of 0.23 per kilometer-visibility of 10 miles or more due to particles when humidity is less than 70 percent.	No Federal Standards	Visibility impairment on days when relative humidity is less than 70 percent.

Source: http://www3.epa.gov/climatechange/ghgemissions/gases.html.

Table 3
South Coast Air Basin Attainment Status

Pollutant	State Status	National Status
Ozone	Nonattainment	Nonattainment (Extreme)
Carbon monoxide	Attainment	Attainment/Unclassified
Nitrogen dioxide	Attainment	Attainment/Unclassified
Sulfur dioxide	Attainment	Attainment/Unclassified
PM10	Nonattainment	Attainment (Maintenance)
PM2.5	Nonattainment	Nonattainment (Moderate)

Source (Federal and State Status): California Air Resources Board, October 2018.

B. State – California Air Resources Board

The California Air Resources Board (CARB), which is a part of the California Environmental Protection Agency, is responsible for the coordination and administration of both federal and state air pollution control programs within California. In this capacity, the CARB conducts research, sets the California Ambient Air Quality Standards (CAAQS), compiles emission inventories, develops suggested control measures, provides oversight of local programs, and prepares the State Implementation Plan (SIP). The California Ambient Air Quality Standards (CAAQS) for criteria pollutants are shown in Table 2. In addition, the CARB establishes emission standards for motor vehicles sold in California, consumer products (e.g., hairspray, aerosol paints, and barbeque lighter fluid), and various types of commercial equipment. It also sets fuel specifications to further reduce vehicular emissions.

The SCAQMD-portion of the South Coast Air Basin (MDAB) has been designated by the CARB as a nonattainment area for ozone, PM10 and PM2.5. Currently, the MDAB is in attainment with the ambient air quality standards for CO, lead, SO_2, NO_2, and sulfates and is unclassified for visibility reducing particles and Hydrogen Sulfide.

On June 20, 2002, the CARB revised the PM10 annual average standard to 20 µg/m3 and established an annual average standard for PM2.5 of 12 µg/m3. These standards were approved by the Office of Administrative Law in June 2003 and are now effective. On September 27, 2007 CARB approved the South Coast Air Basin and the Coachella Valley 2007 Air Quality Management Plan for Attaining the Federal 8-hour Ozone and PM2.5 Standards. The plan projects attainment for the 8-hour Ozone standard by 2024 and the PM2.5 standard by 2015.

On December 12, 2008 the CARB adopted Resolution 08-43, which limits NOx, PM10 and PM2.5 emissions from on-road diesel truck fleets that operate in California. On October 12, 2009 Executive Order R-09-010 was adopted that codified Resolution 08-43 into Section 2025, Title 13 of the California Code of Regulations. This regulation requires that by the year 2023 all commercial diesel trucks that operate in California shall meet model year 2010 (Tier 4) or latter emission standards. In the interim period, this regulation provides annual interim targets for fleet owners to meet. This regulation also provides a few exemptions including a onetime per year 3-day pass for trucks registered outside of California.

The CARB is also responsible for regulations pertaining to toxic air contaminants. The Air Toxics "Hot Spots" Information and Assessment Act (AB 2588, 1987, Connelly) was enacted in 1987 as a means to establish a formal air toxics emission inventory risk quantification program. AB 2588, as amended, establishes a process that requires stationary sources to report the type and quantities of certain substances their facilities routinely release into the South Coast Air Basin. The data is ranked by high, intermediate, and low categories, which are determined by: the potency, toxicity, quantity, volume, and proximity of the facility to nearby receptors.

i) AB 617 Nonvehicular Air Pollution: Criteria Air Pollutants and Toxic Air Contaminants

This bill requires the state board to develop a uniform statewide system of annual reporting of emissions of criteria air pollutants and toxic air contaminants for use by certain categories of stationary sources. The bill requires those stationary sources to report their annual emissions of criteria air pollutants and toxic air contaminants, as specified. This bill required the state board, by October 1, 2018, to prepare a monitoring plan regarding technologies for monitoring criteria air pollutants and toxic air contaminants and the need for and benefits of additional community air monitoring systems, as defined. The bill requires the state board to select, based on the monitoring plan, the highest priority locations in the state for the deployment of community air monitoring systems. The bill requires an air district containing a selected location, by July 1, 2019, to deploy a system in the selected location. The bill would authorize the air district to require a stationary source that emits air pollutants in, or that materially affect, the selected location to deploy a fence-line monitoring system, as defined, or other specified real-time, on-site monitoring. The bill authorizes the state board, by January 1, 2020, and annually thereafter, to select additional locations for the deployment of the systems. The bill would require air districts that have deployed a system to provide to the state board air quality data produced by the system. By increasing the duties of air districts, this bill would impose a state-mandated local program. The bill requires the state board to publish the data on its Internet Web site.

C. Regional

The SCAQMD is the agency principally responsible for comprehensive air pollution control in the South Coast Air Basin. To that end, as a regional agency, the SCAQMD works directly with the Southern California Association of Governments (SCAG), county transportation commissions, and local governments and cooperates actively with all federal and state agencies.

i) South Coast Air Quality Management District (SCAQMD)

The SCAQMD develops rules and regulations, establishes permitting requirements for stationary sources, inspects emission sources, and enforces such measures through educational programs or fines, when necessary. The SCAQMD is directly responsible for reducing emissions from stationary, mobile, and

indirect sources. It has responded to this requirement by preparing a sequence of AQMPs. On June 30, 2016, the SCAQMD released its Draft 2016 AQMP. The 2016 AQMP is a regional blueprint for achieving the federal air quality standards and healthful air.

The 2016 AQMP includes both stationary and mobile source strategies to ensure that rapidly approaching attainment deadlines are met, that public health is protected to the maximum extent feasible, and that the region is not faced with burdensome sanctions if the Plan is not approved or if the NAAQS are not met on time. As with every AQMP, a comprehensive analysis of emissions, meteorology, atmospheric chemistry, regional growth projections, and the impact of existing control measures is updated with the latest data and methods. The most significant air quality challenge in the Basin is to reduce nitrogen oxide (NOx) emissions sufficiently to meet the upcoming ozone standard deadlines. On March 23, 2017 the CARB approved the 2016 AQMP. The primary goal of this Air Quality Management Plan is to meet clean air standards and protect public health, including ensuring benefits to environmental justice and disadvantaged communities. Now that the Plan has been approved by the CARB, it has been forwarded to the U.S. EPA for its review. The Plan was approved by the EPA on June 15, 2017.

During construction and operation, the project must comply with applicable rules and regulations. The following are rules the project may be required to comply with, either directly, or indirectly:

ii) SCAQMD Rule 402

Prohibits a person from discharging from any source whatsoever such quantities of air contaminants or other material which cause injury, detriment, nuisance, or annoyance to any considerable number of persons or to the public, or which endanger the comfort, repose, health, or safety of any such persons or the public, or which cause, or have a natural tendency to cause, injury or damage to business or property.

iii) SCAQMD Rule 403

Governs emissions of fugitive dust during construction and operation activities. Compliance with this rule is achieved through application of standard Best Management Practices, such as application of water or chemical stabilizers to disturbed soils, covering haul vehicles, restricting vehicle speeds on unpaved roads to 15 miles per hour, sweeping loose dirt from paved site access roadways, cessation of construction activity when winds exceed 25 mph, and establishing a permanent ground cover on finished sites.

Rule 403 requires that fugitive dust be controlled with best available control measures so that the presence of such dust does not remain visible in the atmosphere beyond the property line of the emission source. In addition, SCAQMD Rule 403 requires implementation of dust suppression techniques to prevent fugitive dust from creating a nuisance off-site. Applicable dust suppression techniques from Rule 403 are summarized below. Implementation of these dust suppression techniques can reduce the fugitive dust

generation (and thus the PM_{10} component). Compliance with these rules would reduce impacts on nearby sensitive receptors. Rule 403 measures may include but are not limited to the following:

- Apply nontoxic chemical soil stabilizers according to manufacturers' specifications to all inactive construction areas (previously graded areas inactive for 10 days or more).
- Water active sites at least three times daily. (Locations where grading is to occur will be thoroughly watered prior to earthmoving.)
- Cover all trucks hauling dirt, sand, soil, or other loose materials, or maintain at least 0.6 meters (2 feet) of freeboard (vertical space between the top of the load and top of the trailer) in accordance with the requirements of California Vehicle Code section 23114.

iv) SCAQMD Rule 445

Prohibits permanently installed wood burning devices into any new development. A wood burning device means any fireplace, wood burning heater, or pellet-fueled wood heater, or any similarly enclosed, permanently installed, indoor or outdoor device burning any solid fuel for aesthetic or space-heating purposes, which has a heat input of less than one million British thermal units per hour.

v) SCAQMD Rule 481

Applies to all spray painting and spray coating operations and equipment. The rule states that a person shall not use or operate any spray painting or spray coating equipment unless one of the following conditions is met:

(1) The spray coating equipment is operated inside a control enclosure, which is approved by the Executive Officer. Any control enclosure for which an application for permit for new construction, alteration, or change of ownership or location is submitted after the date of adoption of this rule shall be exhausted only through filters at a design face velocity not less than 100 feet per minute nor greater than 300 feet per minute, or through a water wash system designed to be equally effective for the purpose of air pollution control.

(2) Coatings are applied with high-volume low-pressure, electrostatic, and/or airless spray equipment.

(3) An alternative method of coating application or control is used which has effectiveness equal to or greater than the equipment specified in the rule.

vi) SCAQMD Rule 1108

Governs the sale, use, and manufacturing of asphalt and limits the volatile organic compound (VOC) content in asphalt used in the South Coast Air Basin. This rule would regulate the VOC content of asphalt

used during construction. Therefore, all asphalt used during construction of the project must comply with SCAQMD Rule 1108.

vii) SCAQMD Rule 1113

Governs the sale, use, and manufacturing of architectural coating and limits the VOC content in paints and paint solvents. This rule regulates the VOC content of paints available during construction. Therefore, all paints and solvents used during construction and operation of the project must comply with SCAQMD Rule 1113.

viii) SCAQMD Rule 1143

Governs the manufacture, sale, and use of paint thinners and solvents used in thinning of coating materials, cleaning of coating application equipment, and other solvent cleaning operations by limiting their VOC content. This rule regulates the VOC content of solvents used during construction. Solvents used during the construction phase must comply with this rule.

ix) SCAQMD Rule 1186

Limits the presence of fugitive dust on paved and unpaved roads and sets certification protocols and requirements for street sweepers that are under contract to provide sweeping services to any federal, state, county, agency, or special district such as water, air, sanitation, transit, or school district.

x) SCAQMD Rule 1303

Governs the permitting of re-located or new major emission sources, requiring Best Available Control Measures and setting significance limits for PM_{10} among other pollutants.

xi) SCAQMD Rule 1401

New Source Review of Toxic Air Contaminants, specifies limits for maximum individual cancer risk, cancer burden, and non-cancer acute and chronic hazard index from new permit units, relocations, or modifications to existing permit units, which emit toxic air contaminants.

xii) SCAQMD Rule 1403

Asbestos Emissions from Demolition/Renovation Activities, specifies work practice requirements to limit asbestos emissions from building demolition and renovation activities, including the removal and associated disturbance of asbestos-containing materials (ACM).

xiii) SCAQMD Rule 2202

On-Road Motor Vehicle Mitigation Options, is to provide employers with a menu of options to reduce mobile source emissions generated from employee commutes, to comply with federal and state Clean Air Act requirements, Health & Safety Code Section 40458, and Section 182(d)(1)(B) of the federal Clean Air Act. It applies to any employer who employs 250 or more employees on a full or part-time basis at a worksite for a consecutive six-month period calculated as a monthly average.

In order to assist local agencies with direction on GHG emissions, the SCAQMD organized a working group and adopted Rules 2700, 2701, 2702, and 3002 which are described below.

xiv) SCAQMD Rule 2700 and 2701

The SCAQMD adopted Rules 2700 and 2701 on December 5, 2008, which establishes the administrative structure for a voluntary program designed to quantify GHG emission reductions. Rule 2700 establishes definitions for the various terms used in Regulation XXVII – Global Climate Change. Rule 2701 provides specific protocols for private parties to follow to generate certified GHG emission reductions for projects within the district. Approved protocols include forest projects, urban tree planting, and manure management. The SCAQMD is currently developing additional protocols for other reduction measures. For a GHG emission reduction project to qualify, it must be verified and certified by the SCAQMD Executive Officer, who has 60 days to approve or deny the Plan to reduce GHG emissions. Upon approval of the Plan, the Executive Officer issues required to issue a certified receipt of the GHG emission reductions within 90 days.

xv) SCAQMD Rule 2702

The SCAQMD adopted Rule 2702 on February 6, 2009, which establishes a voluntary air quality investment program from which SCAQMD can collect funds from parties that desire certified GHG emission reductions, pool those funds, and use them to purchase or fund GHG emission reduction projects within two years, unless extended by the Governing Board. Priority will be given to projects that result in co-benefit emission reductions of GHG emissions and criteria or toxic air pollutants within environmental justice areas. Further, this voluntary program may compete with the cap-and-trade program identified for implementation in the CARB's Scoping Plan, or a Federal cap and trade program.

xvi) SCAQMD Rule 3002

The SCAQMD amended Rule 3002 on November 5, 2010 to include facilities that emit greater than 100,000 tons per year of CO_2e are required to apply for a Title V permit by July 1, 2011. A Title V permit is for facilities that are considered major sources of emissions.

Although the SCAQMD is responsible for regional air quality planning efforts, it does not have the authority to directly regulate air quality issues associated with plans and new development projects throughout the South Coast Air Basin. Instead, this is controlled through local jurisdictions in accordance with the California Environmental Quality Act (CEQA). In order to assist local jurisdictions with air quality compliance issues the CEQA Air Quality Handbook (SCAQMD CEQA Handbook) prepared by the SCAQMD (1993) with the most current updates found at http://www.aqmd.gov/ceqa/hdbk.html, was developed in accordance with the projections and programs of the AQMP. The purpose of the SCAQMD CEQA Handbook is to assist Lead Agencies, as well as consultants, project proponents, and other interested parties in evaluating a proposed project's potential air quality impacts. Specifically, the SCAQMD CEQA Handbook explains the procedures that the SCAQMD recommends be followed for the environmental review process required by CEQA. The SCAQMD CEQA Handbook provides direction on how to evaluate potential air quality impacts, how to determine whether these impacts are significant, and how to mitigate these impacts. SCAQMD is in the process of developing an "Air Quality Analysis Guidance Handbook" to replace the CEQA Air Quality Handbook approved by the AQMD Governing Board in 1993. The 1993 CEQA Air Quality Handbook is still available but not online. In addition, there are sections of the 1993 Handbook that are obsolete. In order to assist the CEQA practitioner in conducting an air quality analysis while the new Handbook is being prepared, supplemental information regarding: significance thresholds and analysis, emissions factors, cumulative impacts emissions analysis, and other useful subjects, are available at the SCAQMD website[3].

xvii) SCAQMD Working Group

Since neither the CARB nor the OPR has developed GHG emissions threshold, the SCAQMD formed a Working Group to develop significance thresholds related to GHG emissions. At the September 28, 2010 Working Group meeting, the SCAQMD released its most current version of the draft GHG emissions thresholds, which recommends a tiered approach that provides a quantitative annual thresholds of 10,000 MTCO2e for industrial uses.

The Southern California Association of Governments (SCAG) is the regional planning agency for Los Angeles, Orange, Ventura, Riverside, San Bernardino, and Imperial Counties and addresses regional issues relating to transportation, the economy, community development and the environment. SCAG is the Federally designated MPO for the majority of the southern California region and is the largest MPO in the nation. With respect to air quality planning, SCAG has prepared the Regional Transportation Plan and Regional Transportation Improvement Plan (RTIP), which addresses regional development and growth forecasts. These plans form the basis for the land use and transportation components of the AQMP, which are utilized in the preparation of air quality forecasts and in the consistency analysis included in the AQMP.

[3] *http://www.aqmd.gov/home/regulations/ceqa/air-quality-analysis-handbook.*

The Regional Transportation Plan, Regional Transportation Improvement Plan, and AQMP are based on projections originating within the City and County General Plans.

On April 7, 2016, SCAG's Regional Council adopted the 2016-2040 Regional Transportation Plan/Sustainable Communities Strategy (2016 RTP/SCS or Plan). The Plan is a long-range visioning plan that balances future mobility and housing needs with economic, environmental, and public health goals. The Plan charts a course for closely integrating land use and transportation – so that the region can grow smartly and sustainably. It outlines more than $556.5 billion in transportation system investments through 2040. The Plan was prepared through a collaborative, continuous, and comprehensive process with input from local governments, county transportation commissions, tribal governments, non-profit organizations, businesses, and local stakeholders within the counties of Imperial, Los Angeles, Orange, Riverside, San Bernardino, and Ventura. In June 2016, SCAG received its conformity determination from the Federal Highway Administration (FHWA) and the Federal Transit Administration (FTA) indicating that all air quality conformity requirements for the 2016 RTP/SCS and associated 2015 FTIP Consistency Amendment through Amendment 15-12 have been met.

D. Local – City of Pasadena

Local jurisdictions, such as the City of Pasadena, have the authority and responsibility to reduce air pollution through its police power and decision-making authority. Specifically, the County is responsible for the assessment and mitigation of air emissions resulting from its land use decisions. The County is also responsible for the implementation of transportation control measures as outlined in the 2016 AQMP and SCAQMD Attainment Plans. Examples of such measures include bus turnouts, energy-efficient streetlights, and synchronized traffic signals. In accordance with CEQA requirements and the CEQA review process, the County assesses the air quality impacts of new development projects, requires mitigation of potentially significant air quality impacts by conditioning discretionary permits, and monitors and enforces implementation of such mitigation.

In accordance with the CEQA requirements, the County does not, however, have the expertise to develop plans, programs, procedures, and methodologies to ensure that air quality within the City and region will meet federal and state standards. Instead, the County relies on the expertise of the SCAQMD and SCAQMD and utilizes the SCAQMD CEQA Handbook and SCAQMD California Environmental Quality Act (CEQA) And Federal Conformity Guidelines (depending on the location/jurisdiction of the project) as guidance documents for the environmental review of plans and development proposals within its jurisdiction.

The Pasadena General Plan EIR contains the following mitigation measures:

2-1: Prior to issuance of any construction permits, development project applicants shall prepare and submit to the City of Pasadena Planning Division a technical assessment evaluating

potential project construction-related air quality impacts. The evaluation shall be prepared in conformance with South Coast Air Quality Management District (SCAQMD) methodology for assessing air quality impacts. If construction-related criteria air pollutants are determined to have the potential to exceed the SCAQMD-adopted thresholds of significance, the City of Pasadena Planning Division shall require that applicants for new development projects incorporate mitigation measures to reduce air pollutant emissions during construction activities. These identified measures shall be incorporated into all appropriate construction documents (e.g., construction management plans) submitted to the City and shall be verified by the City's Planning Division. Mitigation measures to reduce construction-related emissions include, but are not limited to:

- Requiring fugitive-dust control measures that exceed SCAQMD's Rule 403, such as:
  - Use of nontoxic soil stabilizers to reduce wind erosion
  - Applying water every four hours to active soil-disturbing activities
  - Tarping and/or maintaining a minimum of 24 inches of freeboard on trucks hauling dirt, sand, soil, or other loose materials
  - Using construction equipment rated by the United States Environmental Protection Agency as having Tier 3 (model year 2006 or newer) or Tier 4 (model year 2008 or newer) emission limits, applicable for engines between 50 and 750 horsepower
  - Ensuring that construction equipment is properly serviced and maintained to the manufacturer's standards
  - Limiting nonessential idling of construction equipment to no more than five consecutive minutes
  - Using Super-Compliant VOC paints for coating of architectural surfaces whenever possible. A list of Super-Compliant architectural coating manufactures can be found on the SCAQMD's website at http://www.aqmd.gov/prdas/brochures/Super-Compliant_AIM.pdf

2-2: Prior to future discretionary project approval, development project applicants shall prepare and submit to the City of Pasadena Planning Division a technical assessment evaluating potential project operation phase-related air quality impacts. The evaluation shall be prepared in conformance with South Coast Air Quality Management District (SCAQMD) methodology in assessing air quality impacts. If operation-related air pollutants are determined to have the potential to exceed the SCAQMD-adopted thresholds of significance, the City of Pasadena Planning Division shall require that applicants for new development projects incorporate mitigation measures to reduce air pollutant emissions during operational

activities. The identified measures shall be included as part of the Standard Conditions of Approval. Below are possible mitigation measures to reduce long-term emissions:

- For site-specific development that requires refrigerated vehicles, the construction documents shall demonstrate an adequate number of electrical service connections at loading docks for plugin of the anticipated number of refrigerated trailers to reduce idling time and emissions.
- Applicants for manufacturing and light industrial uses shall consider energy storage and combined heat and power in appropriate applications to optimize renewable energy generation systems and avoid peak energy use.
- Site-specific developments with truck delivery and loading areas and truck parking spaces shall include signage as a reminder to limit idling of vehicles while parked for loading/unloading in accordance with California Air Resources Board Rule 2845 (13 CCR Chapter 10 § 2485).
- Site-specific development shall demonstrate that an adequate number of electrical vehicle Level 2 charging stations are provided onsite. The location of the electrical outlets shall be specified on building plans, and proper installation shall be verified by the Building Division prior to issuance of a Certificate of Occupancy.
- Applicant-provided appliances shall be Energy Star appliances (e.g., dishwashers, refrigerators, clothes washers, and dryers). Installation of Energy Star appliances shall be verified by the Building & Safety Division during plan check.
- Applicants for future development projects along existing and planned transit routes shall coordinate with the City of Pasadena, Metro, and Foothill Transit to ensure that bus pads and shelters are incorporated, as appropriate.

3. MONITORED AIR QUALITY

The air quality at any site is dependent on the regional air quality and local pollutant sources. Regional air quality is determined by the release of pollutants throughout the air basin. Estimates of the existing emissions in the Basin provided in the Final 2016 Air Quality Management Plan prepared by SCAQMD (March 2017) indicate that collectively, mobile sources account for 60 percent of the VOC, 90 percent of the NOx emissions, 95 percent of the CO emissions and 34 percent of directly emitted PM2.5, with another 13 percent of PM2.5 from road dust.

The EPA and the ARB designate air basins where ambient air quality standards are exceeded as “nonattainment” areas. If standards are met, the area is designated as an “attainment” area. If there is inadequate or inconclusive data to make a definitive attainment designation, they are considered “unclassified”. National nonattainment areas are further designated as marginal, moderate, serious, severe, or extreme as a function of deviation from standards. Each standard has a different definition, or

'form' of what constitutes attainment, based on specific air quality statistics. For example, the Federal 8-hour CO standard is not to be exceeded more than once per year; therefore, an area is in attainment of the CO standard if no more than one 8-hour ambient air monitoring values exceeds the threshold per year. In contrast, the Federal annual PM2.5 standard is met if the three-year average of the annual average PM2.5 concentration is less than or equal to the standard. Attainment status is shown in **Table 4, Air Quality Monitoring Summar**y.

Table 4
Air Quality Monitoring Summary

Pollutant (Standard)[1]		Year 2016	2017	2018
Ozone:	Maximum 1-Hour Concentration (ppm)	0.126	0.139	0.112
	Days > CAAQS (0.09 ppm)	**12**	**18**	**8**
	Maximum 8-Hour Concentration (ppm)	0.090	0.100	0.090
	Days > NAAQS/CAAQS (0.070 ppm)	**18**	**36**	**19**
Carbon Monoxide:	Maximum 8-Hour Concentration (ppm)	*	*	*
	Days > CAAQS (9 ppm)	0	0	0
	Days > NAAQS (9 ppm)	0	0	0
Nitrogen Dioxide:	Maximum 1-Hour Concentration (ppm)	0.072	0.072	0.068
	Days > CAAQS (0.18 ppm)	0	0	0
Inhalable Particulates (PM10):[2]	Maximum 24-Hour Concentration (µg/m^3)	74.6	96.2	81.2
	Days > NAAQS (150 µg/m3)	0	0	0
	Days > CAAQS (50 µg/m3)	**21**	**40**	**31**
	Annual Average (µg/m3)	25.8	25.7	34.0
Ultra-Fine Particulates (PM2.5):	Maximum 24-Hour Concentration (µg/m3)	29.2	22.8	32.5
	Days > NAAQS (35 µg/m3)	0	0	0
	Annual Average (µg/m3)	9.5	9.7	10.3

Notes:
Source: http://www.arb.ca.gov/adam/topfour/topfour1.php. Data from the Pasadena-S. Wilson Avenue Monitoring Station, unless otherwise noted.
(1) CAAQS = California Ambient Air Quality Standard; NAAQS = National Ambient Air Quality Standard; ppm = parts per million
(2) Data obtained from the Los Angeles - North Main street Station.
** Means there was insufficient data available to determine value.*

The SCAQMD has divided the South Coast Air Basin into 38 air-monitoring areas with a designated ambient air monitoring station representative of each area. The project site is located in the West San Gabriel Valley Source Receptor Area (SRA 8). The nearest air monitoring station to the project site is the Pasadena – S. Wilson Avenue Monitoring Station (Pasadena Station). The Pasadena Station is located approximately 1.3 miles east of the project site at 752 S. Wilson Avenue, Pasadena. Table 4 presents the monitored pollutant levels from the Pasadena Station. However, it should be noted that due to the air monitoring station distance from the project site, recorded air pollution levels at the air monitoring station reflect with varying degrees of accuracy, local air quality conditions at the project site. As PM-10 data was not available for the Pasadena station, data was obtained from the Los Angeles- North Main Street Station.

Table 4 summarizes 2016 through 2018 published monitoring data, which is the most recent 3-year period available. The data shows that during the past few years, the project area has exceeded the State ozone and Particulate Matter (PM10) standards.

A. Ozone

During the 2016 to 2018 monitoring period, the State 1-hour concentration standard for ozone was exceeded between 8 and 18 days at the Pasadena Station. The State/Federal 8-hour ozone standard has been exceeded between 18 and 36 days each year over the past three years at the Pasadena Station. Ozone is a secondary pollutant as it is not directly emitted. Ozone is the result of chemical reactions between other pollutants, most importantly hydrocarbons and NO_2, which occur only in the presence of bright sunlight. Pollutants emitted from upwind cities react during transport downwind to produce the oxidant concentrations experienced in the area. Many areas of the SCAQMD contribute to the ozone levels experienced at the monitoring station, with the more significant areas being those directly upwind.

B. Carbon Monoxide

CO is another important pollutant that is due mainly to motor vehicles. The Pasadena Station did not record an exceedance of the state or federal 8-hour CO standard for the last three years.

C. Nitrogen Dioxide

The Pasadena Station did not record an exceedance of the State or Federal NO_2 standards for the last three years.

D. Particulate Matter

From 2016 to 2018, the State 24-hour concentration standards for PM10 was exceeded between 21 and 40 days at the Pasadena Station. The Federal standards for PM10 were not exceeded. Over the past three years, the Federal 24-hour standards for PM2.5 were not exceeded at the Pasadena Station.

According to the EPA, some people are much more sensitive than others to breathing fine particles (PM10 and PM2.5). People with influenza, chronic respiratory and cardiovascular diseases, and the elderly may suffer worsening illness and premature death due to breathing these fine particles. People with bronchitis can expect aggravated symptoms from breathing in fine particles. Children may experience decline in lung function due to breathing in PM10 and PM2.5. Other groups considered sensitive are smokers and people who cannot breathe well through their noses. Exercising athletes are also considered sensitive, because many breathe through their mouths during exercise.

4. AIR QUALITY STANDARDS

A. Significance Thresholds

i) Appendix G of the State CEQA Guidelines

Appendix G of the State CEQA Guidelines states that, where available, the significance criteria established by the applicable air quality management district or air pollution control district may be relied upon to make a significance determination. Pursuant to Appendix G, the project would result in a significant impact related to air quality if it would:

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

The CEQA Guidelines Section 15064.7 provides the significance criteria established by the applicable air quality management district or air pollution control district, when available, may be relied upon to make determinations of significance. The potential air quality impacts of the Project are, therefore, evaluated according to thresholds developed by SCAQMD in their CEQA Air Quality Handbook, Air Quality Analysis Guidance Handbook, and subsequent guidance, which are listed below.[4] Therefore, the project would result in a potentially significant impact to air quality if it would:

AIR-1: Conflict with or obstruct the implementation of the applicable air quality plan;

AIR-2: Violate any air quality standard or contribute substantially to an existing or projected air quality violation as a result of:

- Criteria pollutant emissions during construction (direct and indirect) in excess of the SCAQMD's regional significance thresholds,
- Criteria pollutant emissions during operation (direct and indirect) in excess of the SCAQMD's regional significance thresholds.

AIR-3: Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is nonattainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors);

[4] *While the SCAQMD CEQA Air Quality Handbook contains significance thresholds for lead, Project construction and operation would not include sources of lead emissions and would not exceed the established thresholds for lead. Unleaded fuel and unleaded paints have virtually eliminated lead emissions from industrial land use projects such as the Project. As a result, lead emissions are not further evaluated herein.*

AIR-4: Expose sensitive receptors to substantial pollutant concentrations that would:

- Exceed SCAQMD's localized significance thresholds,
- Cause or contribute to the formation of CO hotspots.

AIR-5: Create objectionable odors affecting a substantial number of people.

B. Regional Air Quality

Many air quality impacts that derive from dispersed mobile sources, which are the dominate pollution generators in the basin, often occurs hours later and miles away after photochemical processes have converted primary exhaust pollutants into secondary contaminants such as ozone. The incremental regional air quality impact of an individual project is generally very small and difficult to measure. Therefore, the SCAQMD has developed significance thresholds based on the volume of pollution emitted rather than on actual ambient air quality because the direct air quality impact of a project is not quantifiable on a regional scale. The SCAQMD CEQA Handbook states that any project in the South Coast Air Basin with daily emissions that exceed any of the identified significance thresholds should be considered as having an individually and cumulatively significant air quality impact. For the purposes to this air quality impact analysis, a regional air quality impact would be considered significant if emissions exceed the SCAQMD significance thresholds identified in **Table 5, SCQAMD Air Quality Significance Thresholds.**

Table 5
SCAQMD Air Quality Significance Thresholds

Mass Daily Thresholds		
Pollutant	**Construction (lbs/day)**	**Operation (lbs/day)**
NOx	100	55
VOC	75	55
PM10	150	150
PM2.5	55	55
SOx	150	150
CO	550	550
Lead	3	3
Toxic Air Contaminants, Odor and GHG Thresholds		
TACs	Maximum Incremental Cancer Risk ≥ 10 in 1 million Cancer Burden > 0.5 excess cancer cases (in areas ≥ 1 in 1 million) Chronic & Acute Hazard Index > 1.0 (project increment)	
Odor	Project creates an odor nuisance pursuant to SCAQMD Rule 402	
GHG	10,000 MT/yr CO2e for industrial projects	

Table 5
SCAQMD Air Quality Significance Thresholds

Ambient Air Quality Standards	
Pollutant	**SCAQMD Standards**
NO2 -1-hour average	0.18 ppm (338 µg/m^3)
PM10 -24-hour average Construction Operations	 10.4 µg/m^3 2.5 ug/m^3
PM2.5 -24-hour average Construction Operations	 10.4 µg/m^3 2.5 µg/m^3
SO2 1-hour average 24-hour average	 0.25 ppm 0.04 ppm
CO 1-hour average 8-hour average	 20 ppm (23,000 µg/m^3) 9 ppm (10,000 µg/m^3)
Lead 30-day average Rolling 3-month average Quarterly average	 1.5 µg/m^3 0.15 µg/m^3 1.5 µg/m^3
Source: http://www.aqmd.gov/ceqa/handbook/signthres.pdf.	

C. Local Air Quality

Project-related construction air emissions may have the potential to exceed the State and Federal air quality standards in the project vicinity, even though these pollutant emissions may not be significant enough to create a regional impact to the South Coast Air Basin. In order to assess local air quality impacts the SCAQMD has developed Localized Significant Thresholds (LSTs) to assess the project-related air emissions in the project vicinity. The SCAQMD has also provided Final Localized Significant Threshold Methodology (LST Methodology), June 2003, which details the methodology to analyze local air emission impacts. The Localized Significant Threshold Methodology found that the primary emissions of concern are NO_2, CO, PM10, and PM2.5.

The significance thresholds for the local emissions of NO_2 and CO are determined by subtracting the highest background concentration from the last three years of these pollutants from Table 4 above, from the most restrictive ambient air quality standards for these pollutants that are outlined in the Localized Significant Thresholds. Table 5 shows the ambient air quality standards for NO_2, CO, and PM10 and PM2.5.

D. Toxic Air Contaminants (TACs)

i) Construction

Temporary TAC emissions associated with DPM emissions from heavy construction equipment would occur during the construction phase of the Project. According to the Office of Environmental Health

Hazard Assessment (OEHHA)[5] and the SCAQMD *Health Risk Assessment Guidance for Analyzing Cancer Risks from Mobile Source Diesel Idling Emissions for CEQA Air Quality Analysis* (August 2003),[6] health effects from TACs are described in terms of individual cancer risk. "Individual Cancer Risk" is the likelihood that a person exposed to concentrations of TACs over a 30-year lifetime will contract cancer based on the use of standard risk-assessment methodology. Additionally, the SCAQMD CEQA guidance does not require a HRA for short-term construction emissions. Construction activities associated with the project would be sporadic, transitory, and short-term in nature (approximately 18-24 months). Thus, construction of the project would not result in a substantial, long-term (i.e., 30-year) source of TAC emissions. Nonetheless, a qualitative assessment of TAC emissions associated with short-term construction TAC emissions is provided in the analysis section below.

ii) Operation

CARB published the *Air Quality and Land Use Handbook* in April 2005 to serve as a general guide for considering impacts to sensitive receptors from facilities that emit TAC emissions. The recommendations provided therein are voluntary and do not constitute a requirement or mandate for either land use agencies or local air districts. The goal of the guidance document is to protect sensitive receptors, such as children, the elderly, acutely ill, and chronically ill persons, from exposure to TAC emissions. Some examples of CARB's siting recommendations include the following: (1) avoid siting sensitive receptors within 500 feet of a freeway, urban road with 100,000 vehicles per day, or rural roads with 50,000 vehicles per day; (2) avoid siting sensitive receptors within 1,000 feet of a distribution center (that accommodates more than 100 trucks per day, more than 40 trucks with operating transport refrigeration units per day, or where transport refrigeration unit operations exceed 300 hours per week); (3) avoid siting sensitive receptors within 300 feet of any dry cleaning operation using perchloroethylene and within 500 feet of operations with two or more machines; and (4) avoid siting sensitive receptors within 300 feet of a large gasoline dispensing facility (3.6 million gallons per year or more) or 50 feet of a typical gasoline dispensing facility (less than 3.6 million gallons per year). The project does not include any such uses and is not anticipated to be a significant source of operational TACs.

E. Odor Impacts

The SCAQMD CEQA Handbook states that an odor impact would occur if the proposed project creates an odor nuisance pursuant to SCAQMD Rule 402, which states:

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[5] *Office of Environmental Health Hazard Assessment, Air Toxic Hot Spots Program Risk Assessment Guidelines Guidance Manual for Preparation of Health Risk Assessment, February 2015, https://oehha.ca.gov/media/downloads/crnr/2015guidancemanual.pdf.*

[6] *South Coast Air Quality Management District, Health Risk Assessment Guidance for Analyzing Cancer Risks from Mobile Source Diesel Idling Emissions for CEQA Air Quality Analysis, August 2003,http://www.aqmd.gov/docs/default-source/ceqa/handbook/mobile-source-toxics-analysis.doc?sfvrsn=2.*

A person shall not discharge from any source whatsoever such quantities of air contaminants or other material which cause injury, detriment, nuisance, or annoyance to any considerable number of persons to the public, or which endanger the comfort, repose, health, or safety of any such persons or the public, or which cause, or have a natural tendency to cause, injury or damage to business or property.

The provisions of this rule shall not apply to odors emanating from agricultural operations necessary for the growing of crops or the raising of fowl or animals.

If the proposed project results in a violation of Rule 402 with regards to odor impacts, then the proposed project would create a significant odor impact.

5. SHORT-TERM CONSTRUCTION EMISSIONS

Construction activities associated with the proposed project would have the potential to generate air emissions, toxic air contaminant emissions, and odor impacts. Assumptions for the phasing, duration, and required equipment for the construction of the proposed project were obtained from the project applicant. The construction activities for the proposed project are anticipated to include: demolition of 7,000 SF of existing buildings, site preparation/excavation of the project area (~0.97 acres); construction of a 100,000 SF, 4-story building (consisting of 79.8 TSF of medical offices and 20 TSF of general office) and two levels of 260-space subterranean parking structure; minor paving; and application of architectural coatings. The project is anticipated to export a total of 35,700 CY of material during excavation. See Appendix B for more details.

The proposed project is anticipated to start construction no sooner than August 2021 and take approximately 18-24 months to complete. The project is anticipated to be operational in 2023.

A. Methodology

The following provides a discussion of the methodology used to calculate regional construction air emissions and an analysis of the proposed project's short-term construction emissions for the criteria pollutants. The construction-related regional air quality impacts have been analyzed for both criteria pollutants and GHGs.

Emissions are estimated using the CalEEMod (Version 2016.3.2) software, which is a statewide land use emissions computer model designed to provide a uniform platform for government agencies, land use planners, and environmental professionals to quantify potential criteria pollutant and GHG emissions from a variety of land use projects. CalEEMod was developed in collaboration with the air districts of California. Regional data (e.g., emission factors, trip lengths, meteorology, source inventory, etc.) have been provided by the various California air districts to account for local requirements and conditions. The model is considered to be an accurate and comprehensive tool for quantifying air quality and GHG impacts from land use projects throughout California.

Daily regional emissions during construction are forecasted by assuming a conservative estimate of construction activities (i.e., assuming all construction occurs at the earliest feasible date) and applying the mobile source and fugitive dust emissions factors. The input values used in this analysis were adjusted to be project-specific for the construction schedule and the equipment used was based on CalEEMod defaults. The CalEEMod program uses the EMFAC2014 computer program to calculate the emission rates specific for Los Angeles County for construction-related employee vehicle trips and the OFFROAD2011 computer program to calculate emission rates for heavy truck operations. EMFAC2014 and OFFROAD2011 are computer programs generated by CARB that calculates composite emission rates for vehicles. Emission rates are reported by the program in grams per trip and grams per mile or grams per running hour. Daily truck trips and CalEEMod default trip length data were used to assess roadway emissions from truck exhaust. The maximum daily emissions are estimated values for the worst-case day and do not represent the emissions that would occur for every day of project construction. The maximum daily emissions are compared to the SCAQMD daily regional numeric indicators. Detailed construction equipment lists, construction scheduling, and emission calculations are provided in Appendix B.

The project will be required to comply with existing SCAQMD rules for the reduction of fugitive dust emissions. SCAQMD Rule 403 establishes these procedures. Compliance with this rule is achieved through application of standard best management practices in construction and operation activities, such as application of water or chemical stabilizers to disturbed soils, managing haul road dust by application of water, covering haul vehicles, restricting vehicle speeds on unpaved roads to 15 mph, sweeping loose dirt from paved site access roadways, cessation of construction activity when winds exceed 25 mph and establishing a permanent, stabilizing ground cover on finished sites. In addition, projects that disturb 50 acres or more of soil or move 5,000 cubic yards of materials per day are required to submit a Fugitive Dust Control Plan or a Large Operation Notification Form to SCAQMD. Based on the size of the Project area (approximately 0.97 acres) a Fugitive Dust Control Plan or Large Operation Notification would not be required.

SCAQMD's Rule 403 minimum requirements require that the application of the best available dust control measures are used for all grading operations and include the application of water or other soil stabilizers in sufficient quantity to prevent the generation of visible dust plumes. Compliance with Rule 403 would require the use of water trucks during all phases where earth moving operations would occur. Compliance with Rule 403 has been included in the CalEEMod modeling for the proposed project.

Per SCAQMD Rule 1113 as amended on June 3, 2011, the architectural coatings that would be applied to buildings after January 1, 2014 will be limited to an average of 50 grams per liter or less. CalEEMod defaults have been adjusted accordingly.

The phases of the construction activities which have been analyzed below for each phase are: (1) demolition, (2) site preparation/excavation, (3) building construction, (4) paving, and (5) application of

architectural coatings. Details pertaining to the project's construction timing and the type of equipment modeled for each construction phase are available in the CalEEMod output in **Appendix B** of this technical report. An excavator was substituted for a grader in site preparation equipment as the excavator will be used to excavate the subterranean garage and no grading will be needed.

B. Construction-Related Regional Impacts

The construction-related criteria pollutant emissions for each phase are shown below in **Table 6 Construction-Related Regional Pollutant Emissions**. Table 6 shows that none of the project's emissions will exceed regional thresholds. Therefore, a less than significant regional air quality impact would occur from construction of the proposed project.

Table 6
Construction-Related Regional Pollutant Emissions

Activity		Pollutant Emissions (pounds/day)					
		ROG	NOx	CO	SO_2	PM10	PM2.5
Demolition	On-Site[1]	0.80	7.25	7.57	0.01	0.68	0.43
	Off-Site[2]	0.07	0.89	0.60	0.00	0.17	0.05
	Subtotal	0.87	8.14	8.17	0.02	0.85	0.48
Site Preparation	On-Site[1]	0.42	4.05	5.53	0.01	0.28	0.21
	Off-Site[2]	1.32	41.93	10.03	0.12	2.92	0.89
	Subtotal	1.74	45.98	15.56	0.12	3.20	1.10
Building Construction	On-Site[1]	0.78	7.99	7.26	0.01	0.45	0.41
	Off-Site[2]	0.46	3.74	4.22	0.02	0.16	0.32
	Subtotal	1.24	11.72	11.48	0.03	0.61	0.73
Paving	On-Site[1]	0.61	5.50	7.02	0.01	0.26	0.25
	Off-Site[2]	0.07	0.04	0.62	0.00	0.20	0.05
	Subtotal	0.68	5.55	7.64	0.01	0.47	0.30
Architectural Coating	On-Site[1]	49.79	1.30	1.81	0.00	0.07	0.07
	Off-Site[2]	0.06	0.04	0.55	0.00	0.18	0.05
	Subtotal	49.85	1.34	2.36	0.00	0.25	0.12
Total for overlapping phases[3]		51.76	18.61	21.48	0.05	1.33	1.16
SCAQMD Thresholds		75	100	550	150	150	55
Exceeds Thresholds?		No	No	No	No	No	No

Notes:
(1) On-site emissions from equipment operated on-site that is not operated on public roads. On-site demolition and site preparation PM-10 and PM-2.5 emissions show mitigated values for fugitive dust for compliance with SCAQMD Rule 403.
(2) Off-site emissions from equipment operated on public roads.
(3) Construction, painting, and paving phases may overlap.

Source: CalEEMod Version 2016.3.2.

C. Construction-Related Local Impacts

Construction-related air emissions may have the potential to exceed the State and Federal air quality standards in the project vicinity, even though these pollutant emissions may not be significant enough to create a regional impact to the South Coast Air Basin. The proposed project has been analyzed for the potential local air quality impacts created from: construction-related fugitive dust and diesel emissions; from toxic air contaminants; and from construction-related odor impacts.

i) Local Air Quality Impacts from Construction

The SCAQMD has published a "Fact Sheet for Applying CalEEMod to Localized Significance Thresholds" (South Coast Air Quality Management District 2011b). CalEEMod calculates construction emissions based on the number of equipment hours and the maximum daily disturbance activity possible for each piece of equipment. In order to compare CalEEMod reported emissions against the localized significance threshold lookup tables, the CEQA document should contain the following parameters:

(1) The off-road equipment list (including type of equipment, horsepower, and hours of operation) assumed for the day of construction activity with maximum emissions.
(2) The maximum number of acres disturbed on the peak day.
(3) Any emission control devices added onto off-road equipment.
(4) Specific dust suppression techniques used on the day of construction activity with maximum emissions.

The CalEEMod output in Appendix B show the equipment used for this analysis.

As shown in **Table 7 Maximum Number of Acres Distributed Per Day**, the maximum number of acres disturbed in a day would be 1.5 acres during demolition. The local air quality emissions from construction were analyzed using the SCAQMD's Mass Rate Localized Significant Threshold Look-up Tables and the methodology described in Localized Significance Threshold Methodology prepared by SCAQMD (revised July 2008). The Look-up Tables were developed by the SCAQMD in order to readily determine if the daily emissions of CO, NOx, PM10, and PM2.5 from the proposed project could result in a significant impact to the local air quality. The emission thresholds were calculated based on the West San Gabriel Valley source receptor area (SRA) 8 and a disturbance value of one acre per day (to be conservative). According to LST Methodology, any receptor located closer than 25 meters (82 feet) shall be based on the 25-meter thresholds. The nearest sensitive receptor to the project site is the existing single-family detached residential dwelling unit located north of California Blvd and west of Concordia Ct, approximately 452 feet (137.8 meters) northwest of the project boundary; therefore, the SCAQMD 100-meter Look-up Tables was used. **Table 8, Local Construction Emissions at the Nearest Receptors,** shows the on-site emissions from the CalEEMod model for the different construction phases and the LST emissions thresholds. Other air quality sensitive land uses are located further from the project site and would experience lower impacts

The data provided in Table 8 shows that none of the analyzed criteria pollutants would exceed the local emissions thresholds at the nearest sensitive receptors. Therefore, a less than significant local air quality impact would occur from construction of the proposed project.

Table 7
Maximum Number of Acres Disturbed Per Day

Activity	Equipment	Number	Acres/8hr-day	Total Acres
Demolition	Crawler Tractors[1]	2	0.5	1
	Rubber Tired Dozers	1	0.5	0.5
	Total for phase	-	-	***1.5***
Site Preparation	Rubber Tired Dozers	0	0.5	0
	Crawler Tractors[1]	1	0.5	0.5
	Total for phase	-	-	***0.5***

Notes:
(1) Tractor/loader/backhoe is a suitable surrogate for a crawler tractor per SCAQMD staff.

Source: South Coast AQMD, Fact Sheet for Applying CalEEMod to Localized Significance Thresholds/CalEEMod Guidance Appendix A, page 9.

Table 8
Local Construction Emissions at the Nearest Receptors

Activity	On-Site Pollutant Emissions (pounds/day)			
	NOx	CO	PM10	PM2.5
Demolition	7.25	7.57	0.68	0.43
Site Preparation	4.05	5.53	0.28	0.21
Building Construction	7.99	7.26	0.45	0.41
Paving	5.50	7.02	0.26	0.25
Architectural Coating	1.30	1.81	0.07	0.07
SCAQMD Thresholds[1]	**81**	**1,158**	**27**	**7**
Exceeds Threshold?	No	No	No	No

Notes:
(1) The nearest sensitive receptor is the existing single-family detached residential dwelling unit located north of California Blvd and west of Concordia Ct, approximately 452 feet (137.8 meters) northwest of the project boundary; therefore, the 100-meter threshold was used.
Note: The project will disturb up to a maximum of 1.5 acres a day during demolition (see Table 7).

Source: Calculated from CalEEMod and SCAQMD's Mass Rate Look-up Tables for 1 acre, at a distance of 100 m in SRA 8 West San Gabriel Valley.

D. Construction-Related Toxic Contaminant Impacts

The greatest potential for toxic air contaminant emissions would be related to diesel particulate emissions associated with heavy equipment operations during construction of the proposed project. According to the Office of Environmental Health Hazard Assessment (OEHHA) and the SCAQMD Health Risk Assessment Guidance for Analyzing Cancer Risks from Mobile Source Diesel Idling Emissions for CEQA Air Quality Analysis (August 2003), health effects from TACs are described in terms of individual cancer risk based on

a lifetime (i.e., 30-year) resident exposure duration. Given the temporary and short-term construction schedule (approximately 18-24 months), the Project would not result in a long-term (i.e., lifetime or 30-year) exposure as a result of project construction. Furthermore, construction-based particulate matter (PM) emissions (including diesel exhaust emissions) do not exceed any local or regional thresholds.

The project would comply with the CARB Air Toxics Control Measure that limits diesel powered equipment and vehicle idling to no more than 5 minutes at a location, and the CARB In-Use Off-Road Diesel Vehicle Regulation; compliance with these would minimize emissions of TACs during construction. Therefore, impacts from TACs during construction would be less than significant.

E. Construction-Related Odor Impacts

Potential sources that may emit odors during construction activities include the application of materials such as asphalt pavement. The objectionable odors that may be produced during the construction process are of short-term in nature and the odor emissions are expected to cease upon the drying or hardening of the odor producing materials. Due to the short-term nature and limited amounts of odor producing materials being utilized, no significant impact related to odors would occur during construction of the proposed project. Diesel exhaust and VOCs would be emitted during construction of the project, which are objectionable to some; however, emissions would disperse rapidly from the project site and therefore should not reach an objectionable level at the nearest sensitive receptors.

6. LONG-TERM OPERATIONAL EMISSIONS

The on-going operation of the proposed project would result in a long-term increase in air quality emissions. This increase would be due to emissions from the project-generated vehicle trips and through operational emissions from the on-going use of the proposed project. The following section provides an analysis of potential long-term air quality impacts due to: regional air quality impacts with the on-going operations of the proposed project.

A. Operations-Related Regional Air Quality Impacts

The operations-related criteria air quality impacts created by the proposed project have been analyzed through the use of the CalEEMod model. The operating emissions were based on the year 2023, which is the anticipated opening year for the proposed project. The operations daily emissions printouts from the CalEEMod model are provided in Appendix B. The CalEEMod analyzes operational emissions from area sources, energy usage, and mobile sources, which are discussed below.

i) Mobile Sources

Mobile sources include emissions from the additional vehicle miles generated from the proposed project. The vehicle trips associated with the proposed project have been analyzed by inputting the project-

generated vehicular trips from the 590 South Fair Oaks Avenue Transportation Impact Analysis Outside CEQA Evaluation (Non-CEQA TIA) prepared by Pasadena Department of Transportation (October 30, 2020) for the proposed project into the CalEEMod Model. The Non-CEQA TIA found that the proposed project will generate a total of 2,378 daily trips with a trip generation rate of 7.792 trips per thousand square feet (TSF) for general office uses (with incorporation of the 10% walk-in and 10% transit reduction) and 27.84 daily trips/TSF for medical-dental office uses (with incorporation of the 10% walk-in and 10% transit reduction). As only weekday trip generation rates were provided in the Non-CEQA TIA, the Saturday and Sunday trip generation rates were obtained from the 10th Edition ITE Trip Generation Manual. Per the Trip Generation Manual, the project with generate 1.768 trips/TSF on Saturdays and 0.56 trips per TSF on Sundays for the general office use (with incorporation of the 10% walk-in and 10% transit reduction) and 6.856 trips/TSF on Saturdays and 1.136 trips/TSF on Sundays for the medical-dental office use (with incorporation of the 10% walk-in and 10% transit reduction). The highest mobile source emissions for weekday and weekends were reported in **Table 9, Regional Operational Pollutant Emissions**. The CalEEMod program then applies the emission factors for each trip, which is provided by the EMFAC2014 model, to determine the vehicular traffic pollutant emissions.

Table 9
Regional Operational Pollutant Emissions

	Pollutant Emissions (tons/year)					
Activity	**ROG**	**NOx**	**CO**	**SO2**	**PM10**	**PM2.5**
Area Sources[1]	2.16	0.00	0.04	0.00	0.00	0.00
Energy Usage[2]	0.03	0.28	0.23	0.00	0.02	0.02
Mobile Sources[3]	3.52	14.54	43.47	0.16	13.44	3.68
Total Emissions	**5.70**	**14.82**	**43.74**	**0.16**	**13.46**	**3.70**
SCAQMD Thresholds	**55**	**55**	**550**	**150**	**150**	**55**
Exceeds Threshold?	No	No	No	No	No	No

Notes:
(1) Area sources consist of emissions from consumer products, architectural coatings, and landscaping equipment.
(2) Energy usage consists of emissions from generation of electricity and on-site natural gas usage.
(3) Mobile sources consist of emissions from vehicles and road dust.

Source: CalEEMod Version 2016.3.2. Daily Emissions (see Appendix B for daily emissions).

ii) Area Sources

Area sources include emissions from consumer products, landscape equipment and architectural coatings. Landscape maintenance includes fuel combustion emissions from equipment such as lawn mowers, rototillers, shredders/grinders, blowers, trimmers, chain saws, and hedge trimmers, as well as air compressors, generators, and pumps. As specifics were not known about the landscaping equipment fleet, CalEEMod defaults were used to estimate emissions from landscaping equipment. No changes were made to the default area source parameters.

iii) Energy Usage

Energy usage includes emissions from the generation of electricity and natural gas used on-site. No changes were made to the default energy usage parameters.

iv) Project Impacts

The worst-case summer or winter criteria pollutant emissions created from the proposed project's long-term operations have been calculated and are shown in Table 9 above. Table 9 shows that none of the analyzed criteria pollutants would exceed the regional emissions thresholds. Therefore, a less than significant regional air quality impact would occur from operation of the proposed project.

B. Operations-Related Local Air Quality Impacts

Project-related air emissions may have the potential to exceed the State and Federal air quality standards in the project vicinity, even though these pollutant emissions may not be significant enough to create a regional impact to the South Coast Air Basin. The proposed project has been analyzed for the potential local CO emission impacts from the project-generated vehicular trips and from the potential local air quality impacts from on-site operations. The following analysis analyzes the vehicular CO emissions, local impacts from on-site operations per SCAQMD LST methodology, and odor impacts.

i) Local CO Emission Impacts from Project-Related Vehicular Trips

CO is the pollutant of major concern along roadways because the most notable source of CO is motor vehicles. For this reason, CO concentrations are usually indicative of the local air quality generated by a roadway network and are used as an indicator of potential local air quality impacts. Local air quality impacts can be assessed by comparing future without and with project CO levels to the State and Federal CO standards which were presented above.

To determine if the proposed project could cause emission levels in excess of the CO standards discussed above, a sensitivity analysis is typically conducted to determine the potential for CO "hot spots" at a number of intersections in the general project vicinity. Because of reduced speeds and vehicle queuing, "hot spots" potentially can occur at high traffic volume intersections with a Level of Service E or worse.

The analysis prepared for CO attainment in the South Coast Air Basin by the SCAQMD can be used to assist in evaluating the potential for CO exceedances in the South Coast Air Basin. CO attainment was thoroughly analyzed as part of the SCAQMD's 2003 Air Quality Management Plan (2003 AQMP) and the 1992 Federal Attainment Plan for Carbon Monoxide (1992 CO Plan). As discussed in the 1992 CO Plan, peak carbon monoxide concentrations in the South Coast Air Basin are due to unusual meteorological and topographical conditions, and not due to the impact of particular intersections. Considering the region's unique meteorological conditions and the increasingly stringent CO emissions standards, CO modeling

was performed as part of 1992 CO Plan and subsequent plan updates and air quality management plans. In the 1992 CO Plan, a CO hot spot analysis was conducted for four busy intersections in Los Angeles at the peak morning and afternoon time periods. The intersections evaluated included: South Long Beach Boulevard and Imperial Highway (Lynwood); Wilshire Boulevard and Veteran Avenue (Westwood); Sunset Boulevard and Highland Avenue (Hollywood); and La Cienega Boulevard and Century Boulevard (Inglewood). These analyses did not predict a violation of CO standards. The busiest intersection evaluated was that at Wilshire Boulevard and Veteran Avenue, which has a daily traffic volume of approximately 100,000 vehicles per day. The Los Angeles County Metropolitan Transportation Authority evaluated the Level of Service in the vicinity of the Wilshire Boulevard/Veteran Avenue intersection and found it to be Level of Service E during the morning peak hour and Level of Service F during the afternoon peak hour.

The Non-CEQA TIA showed that the project would generate a maximum of approximately 2,378 daily vehicle trips. The Non-CEQA TIA showed that the intersection of Pasadena Avenue and California Boulevard would have an existing plus project PM Peak hour volume of 1,948 vehicles. The 1992 Federal Attainment Plan for Carbon Monoxide (1992 CO Plan) showed that an intersection which has a daily traffic volume of approximately 100,000 vehicles per day would not violate the CO standard. Therefore, as the existing plus project traffic volumes would fall far short of 100,000 vehicles, no CO "hot spot" modeling was performed and no significant long-term air quality impact is anticipated to local air quality with the on-going use of the proposed project.

i) Local Air Quality Impacts from On-Site Operations

Project-related air emissions from on-site sources such as architectural coatings, landscaping equipment, on-site usage of natural gas appliances as well as the operation of vehicles on-site may have the potential to exceed the State and Federal air quality standards in the project vicinity, even though these pollutant emissions may not be significant enough to create a regional impact to the South Coast Air Basin. The nearest sensitive receptor to the project site is the existing single-family detached residential dwelling unit located north of California Blvd and west of Concordia Ct, approximately 452 feet (137.8 meters) northwest of the project boundary.

According to SCAQMD LST methodology, LSTs would apply to the operational phase of a project, if the project includes stationary sources, or attracts mobile sources (such as heavy-duty trucks) that may spend long periods queuing and idling at the site; such as industrial warehouse/transfer facilities. The proposed project consists of a medical office building, and does not include such uses. Therefore, due the lack of stationary source emissions, no long-term localized significance threshold analysis is warranted.

C. Operations-Related Odor Impacts

Potential sources that may emit odors during the on-going operations of the proposed project would include odor emissions from the intermittent diesel delivery truck emissions and trash storage areas. Due

to the distance of the nearest receptors from the project site and through compliance with SCAQMD's Rule 402 no significant impact related to odors would occur during the on-going operations of the proposed project.

7. CUMULATIVE AIR QUALITY IMPACTS

There are a number of cumulative projects in the project area that have not yet been built or are currently under construction. Since the timing or sequencing of the cumulative projects is unknown, any quantitative analysis to ascertain daily construction emissions that assumes multiple, concurrent construction projects would be speculative. Further, cumulative projects include local development as well as general growth within the project area. However, as with most development, the greatest source of emissions is from mobile sources, which travel well out of the local area. Therefore, from an air quality standpoint, the cumulative analysis would extend beyond any local projects and when wind patterns are considered would cover an even larger area. The SCAQMD recommends using two different methodologies: (1) that project-specific air quality impacts be used to determine the potential cumulative impacts to regional air quality;[7] and (2) that a project's consistency with the current AQMP be used to determine its potential cumulative impacts.

A. Project Specific Impacts

The project area is out of attainment for ozone and in 2018 was out of attainment for PM10. Construction and operation of cumulative projects will further degrade the local air quality, as well as the air quality of the South Coast Air Basin. The greatest cumulative impact on the quality of regional air cell will be the incremental addition of pollutants mainly from increased traffic volumes from residential, commercial, and industrial development and the use of heavy equipment and trucks associated with the construction of these projects. Air quality will be temporarily degraded during construction activities that occur separately or simultaneously. However, in accordance with the SCAQMD methodology, projects that do not exceed the SCAQMD criteria or can be mitigated to less than criteria levels are not significant and do not add to the overall cumulative impact. A significant impact may occur if a project would add a cumulatively considerable contribution of a federal or state non-attainment pollutant. As stated previously, the Air Basin is currently in non-attainment for ozone, PM10, and PM2.5.

The project would result in the emission of criteria pollutants for which the region is in nonattainment during both construction and operation. The emissions from construction of the project are not predicted to exceed any applicable SCAQMD regional or local impact threshold and therefore, are not expected to result in ground level concentrations that exceed the NAAQS or CAAQS. Therefore, the project would not

[7] *South Coast Air Quality Management District, Potential Control Strategies to Address Cumulative Impacts from Air Pollution White Paper, 1993, http://www.aqmd.gov/home/regulations/ceqa/air-quality-analysis-handbook.*

result in a cumulatively considerable net increase for non-attainment pollutants or ozone precursors and would result in a less than significant impact for construction emissions.

Project operations would generate emissions of NOx, ROG, CO, PM10, and PM2.5, which would not exceed the SCAQMD regional or local thresholds and would not be expected to result in ground level concentrations that exceed the NAAQS or CAAQS. Since the project would not introduce any substantial stationary sources of emissions, CO is the benchmark pollutant for assessing local area air quality impacts from post-construction motor vehicle operations. As indicated earlier, no violations of the state and federal CO standards are projected to occur for the project, based on the magnitude of traffic the project is anticipated to create. Therefore, operation of the project would not result in a cumulatively considerable net increase for non-attainment of criteria pollutants or ozone precursors. As a result, the project would result in a less than significant cumulative impact for operational emissions.

B. Air Quality Compliance

The California Environmental Quality Act (CEQA) requires a discussion of any inconsistencies between a proposed project and applicable General Plans and Regional Plans (CEQA Guidelines Section 15125). The regional plan that applies to the proposed project includes the SCAQMD Air Quality Management Plan (AQMP). Therefore, this section discusses any potential inconsistencies of the proposed project with the AQMP.

The purpose of this discussion is to set forth the issues regarding consistency with the assumptions and objectives of the AQMP and discuss whether the proposed project would interfere with the region's ability to comply with Federal and State air quality standards. If the decision-makers determine that the proposed project is inconsistent, the lead agency may consider project modifications or inclusion of mitigation to eliminate the inconsistency.

The SCAQMD CEQA Handbook states that "New or amended General Plan Elements (including land use zoning and density amendments), Specific Plans, and significant projects must be analyzed for consistency with the AQMP". Strict consistency with all aspects of the plan is usually not required. A proposed project should be considered to be consistent with the AQMP if it furthers one or more policies and does not obstruct other policies. The SCAQMD CEQA Handbook identifies two key indicators of consistency:

(1) Whether the project will result in an increase in the frequency or severity of existing air quality violations or cause or contribute to new violations, or delay timely attainment of air quality standards or the interim emission reductions specified in the AQMP.

(2) Whether the project will exceed the assumptions in the AQMP in 2016 or increments based on the year of project buildout and phase.

Both of these criteria are evaluated below.

i) Air Quality Compliance Analysis

a) Criteria 1 – Increase in the Frequency or Severity of Violations

Based on the air quality modeling analysis contained in this Air Analysis, short-term construction impacts will not result in significant impacts based on the SCAQMD regional and local thresholds of significance. This Air Analysis also found that long-term operations impacts will not result in significant impacts based on the SCAQMD local and regional thresholds of significance.

Therefore, the proposed project is not projected to contribute to the exceedance of any air pollutant concentration standards and is found to be consistent with the AQMP for the first criterion.

b) Criteria 2 – Exceed Assumptions in the AQMP?

Consistency with the AQMP assumptions is determined by performing an analysis of the proposed project with the assumptions in the AQMP. The emphasis of this criterion is to ensure that the analyses conducted for the proposed project are based on the same forecasts as the AQMP. The 2016-2040 Regional Transportation/Sustainable Communities Strategy prepared by SCAG (2016) includes chapters on: the challenges in a changing region, creating a plan for our future, and the road to greater mobility and sustainable growth. These chapters currently respond directly to federal and state requirements placed on SCAG. Local governments are required to use these as the basis of their plans for purposes of consistency with applicable regional plans under CEQA. For this project, the City of Pasadena General Plan defines the assumptions that are represented in the AQMP.

The Project Site The project site is within the IG-SP2 (Industrial General, South Fair Oaks Specific Plan) zoning district. The project consists of the construction and operation of a 100,000 SF medical office/office building. Therefore, the proposed project is consistent with the existing zoning/land use, would not exceed the AQMP assumptions for the project site, and is found to be consistent with the AQMP for the second criterion.

Based on the above, the proposed project will not result in an inconsistency with the SCAQMD AQMP. Therefore, a less than significant impact will occur.

III. GLOBAL CLIMATE CHANGE ANALYSIS

1. EXISTING GREENHOUSE GAS ENVIRONMENT

Constituent gases of the Earth's atmosphere, called atmospheric greenhouse gases (GHG), play a critical role in the Earth's radiation amount by trapping infrared radiation emitted from the Earth's surface, which otherwise would have escaped to space. Prominent greenhouse gases contributing to this process include carbon dioxide (CO_2), methane (CH_4), ozone, water vapor, nitrous oxide (N_2O), and chlorofluorocarbons (CFCs). This phenomenon, known as the Greenhouse Effect, is responsible for maintaining a habitable climate. Anthropogenic (caused or produced by humans) emissions of these greenhouse gases in excess of natural ambient concentrations are responsible for the enhancement of the Greenhouse Effect and have led to a trend of unnatural warming of the Earth's natural climate, known as global warming or climate change. Emissions of gases that induce global warming are attributable to human activities associated with industrial/manufacturing, agriculture, utilities, transportation, and residential land uses. Transportation is responsible for 41 percent of the State's greenhouse gas emissions, followed by electricity generation. Emissions of CO_2 and nitrous oxide (NOx) are byproducts of fossil fuel combustion. Methane, a potent greenhouse gas, results from off-gassing associated with agricultural practices and landfills. Sinks of CO_2, where CO_2 is stored outside of the atmosphere, include uptake by vegetation and dissolution into the ocean. The following provides a description of each of the greenhouse gases and their global warming potential.

A. Water Vapor

Water vapor is the most abundant, important, and variable GHG in the atmosphere. Water vapor is not considered a pollutant; in the atmosphere it maintains a climate necessary for life. Changes in its concentration are primarily considered a result of climate feedbacks related to the warming of the atmosphere rather than a direct result of industrialization. The feedback loop in which water is involved is critically important to projecting future climate change. As the temperature of the atmosphere rises, more water is evaporated from ground storage (rivers, oceans, reservoirs, soil). Because the air is warmer, the relative humidity can be higher (in essence, the air is able to "hold" more water when it is warmer), leading to more water vapor in the atmosphere. As a GHG, the higher concentration of water vapor is then able to absorb more thermal indirect energy radiated from the Earth, thus further warming the atmosphere. The warmer atmosphere can then hold more water vapor and so on and so on. This is referred to as a "positive feedback loop". The extent to which this positive feedback loop will continue is unknown as there is also dynamics that put the positive feedback loop in check. As an example, when water vapor increases in the atmosphere, more of it will eventually also condense into clouds, which are more able to reflect incoming solar radiation (thus allowing less energy to reach the Earth's surface and heat it up).

B. Carbon Dioxide (CO_2)

The natural production and absorption of CO_2 is achieved through the terrestrial biosphere and the ocean. However, humankind has altered the natural carbon cycle by burning coal, oil, natural gas, and wood. Since the industrial revolution began in the mid-1700s. Each of these activities has increased in scale and distribution. CO_2 was the first GHG demonstrated to be increasing in atmospheric concentration with the first conclusive measurements being made in the last half of the 20th century. Prior to the industrial revolution, concentrations were fairly stable at 280 parts per million (ppm). The International Panel on Climate Change (IPCC Fifth Assessment Report, 2014) Emissions of CO_2 from fossil fuel combustion and industrial processes contributed about 78% of the total GHG emissions increase from 1970 to 2010, with a similar percentage contribution for the increase during the period 2000 to 2010. Globally, economic and population growth continued to be the most important drivers of increases in CO_2 emissions from fossil fuel combustion. The contribution of population growth between 2000 and 2010 remained roughly identical to the previous three decades, while the contribution of economic growth has risen sharply.

C. Nitrous Oxide (N_2O)

Concentrations of N_2O also began to rise at the beginning of the industrial revolution. In 1998, the global concentration of this GHG was documented at 314 parts per billion (ppb). N_2O is produced by microbial processes in soil and water, including those reactions which occur in fertilizer containing nitrogen. In addition to agricultural sources, some industrial processes (fossil fuel-fired power plants, nylon production, nitric acid production, and vehicle emissions) also contribute to its atmospheric load. It is also commonly used as an aerosol spray propellant, (i.e., in whipped cream bottles, in potato chip bags to keep chips fresh, and in rocket engines and in race cars).

D. Hydrofluorocarbons (HFC)

HFCs are synthetic man-made chemicals that are used as a substitute for CFCs. Out of all the GHGs, they are one of three groups with the highest global warming potential. The HFCs with the largest measured atmospheric abundances are (in order), HFC-23 (CHF_3), HFC-134a (CF_3CH_2F), and HFC-152a (CH_3CHF_2). Prior to 1990, the only significant emissions were HFC-23. HFC-134a use is increasing due to its use as a refrigerant. Concentrations of HFC-23 and HFC-134a in the atmosphere are now about 10 parts per trillion (ppt) each. Concentrations of HFC-152a are about 1 ppt. HFCs are manmade for applications such as automobile air conditioners and refrigerants.

E. Perfluorocarbons (PFC)

PFCs have stable molecular structures and do not break down through the chemical processes in the lower atmosphere. High-energy ultraviolet rays about 60 kilometers above Earth's surface are able to destroy

the compounds. Because of this, PFCs have very long lifetimes, between 10,000 and 50,000 years. Two common PFCs are tetrafluoromethane (CF_4) and hexafluoroethane (C_2F_6). Concentrations of CF_4 in the atmosphere are over 70 ppt. The two main sources of PFCs are primary aluminum production and semiconductor manufacturing.

F. Sulfur Hexafluoride (SF_6)

SF_6 is an inorganic, odorless, colorless, nontoxic, nonflammable gas. SF_6 has the highest global warming potential of any gas evaluated; 23,900 times that of CO_2. Concentrations in the 1990s were about 4 ppt. Sulfur hexafluoride is used for insulation in electric power transmission and distribution equipment, in the magnesium industry, in semiconductor manufacturing, and as a tracer gas for leak detection.

G. Aerosols

Aerosols are particles emitted into the air through burning biomass (plant material) and fossil fuels. Aerosols can warm the atmosphere by absorbing and emitting heat and can cool the atmosphere by reflecting light. Cloud formation can also be affected by aerosols. Sulfate aerosols are emitted when fuel containing sulfur is burned. Black carbon (or soot) is emitted during biomass burning due to the incomplete combustion of fossil fuels. Particulate matter regulation has been lowering aerosol concentrations in the United States; however, global concentrations are likely increasing.

H. Global Warming Potential

The Global Warming Potential (GWP) was developed to allow comparisons of the global warming impacts of different gases. Specifically, it is a measure of how much energy the emissions of 1 ton of a gas will absorb over a given period of time, relative to the emissions of 1 ton of carbon dioxide (CO_2). The larger the GWP, the more that a given gas warms the Earth compared to CO_2 over that time period. The time period usually used for GWPs is 100 years. GWPs provide a common unit of measure, which allows analysts to add up emissions estimates of different gases (e.g., to compile a national GHG inventory), and allows policymakers to compare emissions reduction opportunities across sectors and gases. A summary of the atmospheric lifetime and the global warming potential of selected gases are summarized in **Table 10, Global Warming Potentials and Atmospheric Lifetimes**. As shown in **Table 10,** the global warming potential of GHGs ranges from 1 to 22,800.

Table 10
Global Warming Potentials and Atmospheric Lifetimes

Gas	Atmospheric Lifetime	Global Warming Potential[1] (100 Year Horizon)
Carbon Dioxide (CO_2)	—[2]	1
Methane (CH_4)	12	28-36
Nitrous Oxide (NO)	114	298
Hydrofluorocarbons (HFCs)	1-270	12-14,800
Perfluorocarbons (PFCs)	2,600-50,000	7,390-12,200
Nitrogen trifluoride (NF_3)	740	17,200
Sulfur Hexafluoride (SF_6)	3,200	22,800

Notes:
(1) Compared to the same quantity of CO_2 emissions.
(2) Carbon dioxide's lifetime is poorly defined because the gas is not destroyed over time, but instead moves among different parts of the ocean–atmosphere–land system. Some of the excess carbon dioxide will be absorbed quickly (for example, by the ocean surface), but some will remain in the atmosphere for thousands of years, due in part to the very slow process by which carbon is transferred to ocean sediments.

Source: http://www3.epa.gov/climatechange/ghgemissions/gases.html

2. GREENHOUSE GAS STANDARDS AND REGULATION

A. International

i) Montreal Protocol

In 1988, the United Nations established the Intergovernmental Panel on Climate Change (IPCC) to evaluate the impacts of global climate change and to develop strategies that nations could implement to curtail global climate change. In 1992, the United States joined other countries around the world in signing the United Nations' Framework Convention on Climate Change (UNFCCC) agreement with the goal of controlling GHG emissions. As a result, the Climate Change Action Plan was developed to address the reduction of GHGs in the United States. The plan consists of more than 50 voluntary programs.

Additionally, the Montreal Protocol was originally signed in 1987 and substantially amended in 1990 and 1992. The Montreal Protocol stipulates that the production and consumption of compounds that deplete ozone in the stratosphere—CFCs, halons, carbon tetrachloride, and methyl chloroform—were to be phased out, with the first three by the year 2000 and methyl chloroform by 2005.

ii) The Paris Agreement

The Paris Agreement became effective on November 4, 2016. Thirty days after this date at least 55 Parties to the United Nations Framework Convention on Climate Change (Convention), accounting in total for at

least an estimated 55 % of the total global greenhouse gas emissions, had deposited their instruments of ratification, acceptance, approval, or accession with the Depositary.

The Paris Agreement built upon the Convention and – for the first time – attempted to bring all nations into a common cause to undertake ambitious efforts to combat climate change and adapt to its effects, with enhanced support to assist developing countries to do so. As such, it charts a new course in the global climate effort.

The Paris Agreement's central aim is to strengthen the global response to the threat of climate change by keeping a global temperature rise this century well below 2 degrees Celsius above pre-industrial levels and to pursue efforts to limit the temperature increase even further to 1.5 degrees Celsius. Additionally, the agreement aims to strengthen the ability of countries to deal with the impacts of climate change. To reach these ambitious goals, appropriate financial flows, a new technology framework and an enhanced capacity building framework will be put in place, thus supporting action by developing countries and the most vulnerable countries, in line with their own national objectives. The Agreement also provides for enhanced transparency of action and support through a more robust transparency framework. Although the Trump administration withdrew the United States federal government from the Paris Agreement on November 4, 2020, the current administration reversed course and the federal government rejoined the Paris Agreement on January 20, 2021.

B. Federal

The United States Environmental Protection Agency (USEPA) is responsible for implementing federal policy to address GHGs. The federal government administers a wide array of public-private partnerships to reduce the GHG intensity generated in the United States. These programs focus on energy efficiency, renewable energy, methane and other non-CO2 gases, agricultural practices, and implementation of technologies to achieve GHG reductions. The USEPA implements numerous voluntary programs that contribute to the reduction of GHG emissions. These programs (e.g., the ENERGY STAR labeling system for energy-efficient products) play a significant role in encouraging voluntary reductions from large corporations, consumers, industrial and commercial buildings, and many major industrial sectors.

In Massachusetts v. Environmental Protection Agency (Docket No. 05–1120), argued November 29, 2006 and decided April 2, 2007, the U.S. Supreme Court held that not only did the EPA have authority to regulate greenhouse gases, but the EPA's reasons for not regulating this area did not fit the statutory requirements. As such, the U.S. Supreme Court ruled that the EPA should be required to regulate CO_2 and other greenhouse gases as pollutants under the federal Clean Air Act (CAA).

In response to the FY2008 Consolidations Appropriations Act (H.R. 2764; Public Law 110-161), EPA proposed a rule on March 10, 2009 that requires mandatory reporting of GHG emissions from large

sources in the United States. On September 22, 2009, the Final Mandatory Reporting of GHG Rule was signed and published in the Federal Register on October 30, 2009. The rule became effective on December 29, 2009. This rule requires suppliers of fossil fuels or industrial GHGs, manufacturers of vehicles and engines, and facilities that emit 25,000 metric tons or more per year of GHG emissions to submit annual reports to EPA.

On December 7, 2009, the EPA Administrator signed two distinct findings under section 202(a) of the Clean Air Act. One is an endangerment finding that finds concentrations of the six GHGs in the atmosphere threaten the public health and welfare of current and future generations. The other is a cause or contribute finding, that finds emissions from new motor vehicles and new motor vehicle engines contribute to the GHG pollution which threatens public health and welfare. These actions will not themselves impose any requirements on industry or other entities. However, it is a prerequisite to finalizing the EPA's proposed GHG emission standards for light-duty vehicles, which were jointly proposed by the EPA and Department of Transportation on September 15, 2009.

i) Clean Air Act

In Massachusetts v. Environmental Protection Agency (Docket No. 05–1120), the U.S. Supreme Court held in April of 2007 that the USEPA has statutory authority under Section 202 of the federal Clean Air Act (CAA) to regulate GHGs. The court did not hold that the USEPA was required to regulate GHG emissions; however, it indicated that the agency must decide whether GHGs cause or contribute to air pollution that is reasonably anticipated to endanger public health or welfare. On December 7, 2009, the USEPA Administrator signed two distinct findings regarding GHGs under Section 202(a) of the CAA. The USEPA adopted a Final Endangerment Finding for the six defined GHGs (CO_2, CH_4, N_2O, HFCs, PFCs, and SF_6) on December 7, 2009. The Endangerment Finding is required before USEPA can regulate GHG emissions under Section 202(a)(1) of the CAA consistently with the United States Supreme Court decision. The USEPA also adopted a Cause or Contribute Finding in which the USEPA Administrator found that GHG emissions from new motor vehicle and motor vehicle engines are contributing to air pollution, which is endangering public health and welfare. These findings do not, by themselves, impose any requirements on industry or other entities. However, these actions were a prerequisite for implementing GHG emissions standards for vehicles.

ii) Energy Independence Security Act

The Energy Independence and Security Act of 2007 (EISA) facilitates the reduction of national GHG emissions by requiring the following:

- Increasing the supply of alternative fuel sources by setting a mandatory Renewable Fuel Standard (RFS) that requires fuel producers to use at least 36 billion gallons of biofuel in 2022;

- Prescribing or revising standards affecting regional efficiency for heating and cooling products, procedures for new or amended standards, energy conservation, energy efficiency labeling for consumer electronic products, residential boiler efficiency, electric motor efficiency, and home appliances;
- Requiring approximately 25 percent greater efficiency for light bulbs by phasing out incandescent light bulbs between 2012 and 2014; requiring approximately 200 percent greater efficiency for light bulbs, or similar energy savings, by 2020; and
- While superseded by the USEPA and NHTSA actions described above, (i) establishing miles per gallon targets for cars and light trucks and (ii) directing the NHTSA to establish a fuel economy program for medium- and heavy-duty trucks and create a separate fuel economy standard for trucks.

Additional provisions of EISA address energy savings in government and public institutions, promote research for alternative energy, additional research in carbon capture, international energy programs, and the creation of green jobs.[8]

iii) Executive Order 13432

In response to the Massachusetts v. Environmental Protection Agency ruling, the President signed Executive Order 13432 on May 14, 2007, directing the USEPA, along with the Departments of Transportation, Energy, and Agriculture, to initiate a regulatory process that responds to the Supreme Court's decision. Executive Order 13432 was codified into law by the 2009 Omnibus Appropriations Law signed on February 17, 2009. The order sets goals in the areas of energy efficiency, acquisition, renewable energy, toxics reductions, recycling, sustainable buildings, electronics stewardship, fleets, and water conservation. Light-Duty Vehicle Greenhouse Gas and Corporate Average Fuel Economy Standards.

On May 19, 2009, President Obama announced a national policy for fuel efficiency and emissions standards in the United States auto industry. The adopted federal standard applies to passenger cars and light-duty trucks for model years 2012 through 2016. The rule surpasses the prior Corporate Average Fuel Economy standards (CAFE)[9] and requires an average fuel economy standard of 35.5 miles per gallon (mpg) and 250 grams of CO2 per mile by model year 2016, based on USEPA calculation methods. These standards were formally adopted on April 1, 2010. In August 2012, standards were adopted for model year 2017

[8] *A green job, as defined by the United States Department of Labor, is a job in business that produces goods or provides services that benefit the environment or conserve natural resources.*

[9] *The Corporate Average Fuel Economy standards are regulations in the United States, first enacted by Congress in 1975, to improve the average fuel economy of cars and light trucks. The U.S Department of Transportation has delegated the National Highway Traffic Safety Administration as the regulatory agency for the Corporate Average Fuel Economy standards.*

through 2025 for passenger cars and light-duty trucks. By 2025, vehicles are required to achieve 54.5 mpg (if GHG reductions are achieved exclusively through fuel economy improvements) and 163 grams of CO2 per mile. According to the USEPA, a model year 2025 vehicle would emit one-half of the GHG emissions from a model year 2010 vehicle.[10] In 2017, the USEPA recommended no change to the GHG standards for light-duty vehicles for model years 2022-2025.

In August 2018, the USEPA and NHTSA proposed the Safer Affordable Fuel-Efficient Vehicles Rule that would, if adopted, maintain the CAFE and CO2 standards applicable in model year 2020 for model years 2021 through 2026. The estimated CAFE and CO2 standards for model year 2020 are 43.7 mpg and 204 grams of CO2 per mile for passenger cars and 31.3 mpg and 284 grams of CO2 per mile for light trucks, projecting an overall industry average of 37 mpg, as compared to 46.7 mpg under the standards issued in 2012. The proposal, if adopted, would also exclude CO2- equivalent emission improvements associated with air conditioning refrigerants and leakage (and, optionally, offsets for nitrous oxide and methane emissions) after model year 2020.[11]

C. State of California

i) California Air Resources Board

CARB, a part of the California Environmental Protection Agency (CalEPA), is responsible for the coordination and administration of both federal and state air pollution control programs within California. In this capacity, CARB conducts research, sets state ambient air quality standards (California Ambient Air Quality Standards [CAAQS]), compiles emission inventories, develops suggested control measures, and provides oversight of local programs. CARB establishes emissions standards for motor vehicles sold in California, consumer products (such as hairspray, aerosol paints, and barbecue lighter fluid), and various types of commercial equipment. It also sets fuel specifications to further reduce vehicular emissions.

In 2004, the California Air Resources Board (CARB) adopted an Airborne Toxic Control Measure to limit heavy-duty diesel motor vehicle idling in order to reduce public exposure to diesel particulate matter and other toxic air contaminants (Title 13 California Code of Regulations [CCR], Section 2485). The measure applies to diesel-fueled commercial vehicles with gross vehicle weight ratings greater than 10,000 pounds that are licensed to operate on highways, regardless of where they are registered. This measure generally

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[10] *United States Environmental Protection Agency, EPA and NHTSA Set Standards to Reduce Greenhouse Gases and Improve Fuel Economy for Model Years 2017-2025 Cars and Light Trucks, August 2012, https://nepis.epa.gov/ Exe/ZyPDF.cgi/P100EZ7C.PDF?Dockey=P100EZ7C.PDF.*

[11] *National Highway Traffic Safety Administration (NHTSA) and U.S. Environmental Protection Agency (USEPA), 2018. Federal Register / Vol. 83, No. 165 / Friday, August 24, 2018 / Proposed Rules, The Safer Affordable Fuel-Efficient (SAFE) Vehicles Rule for Model Years 2021–2026 Passenger Cars and Light Trucks 2018. Available at: https://www.gpo.gov/fdsys/pkg/FR-2018-08-24/pdf/2018-16820.pdf.*

does not allow diesel-fueled commercial vehicles to idle for more than 5 minutes at any given location with certain exemptions for equipment in which idling is a necessary function such as concrete trucks. While this measure primarily targets diesel particulate matter emissions, it has co-benefits of minimizing GHG emissions from unnecessary truck idling.

In 2008, CARB approved the Truck and Bus regulation to reduce particulate matter and nitrogen oxide emissions from existing diesel vehicles operating in California (13 CCR, Section 2025, subsection (h)). CARB has also promulgated emission standards for off-road diesel construction equipment of greater than 25 horsepower such as bulldozers, loaders, backhoes, and forklifts, as well as many other self-propelled off-road diesel vehicles. The regulation, adopted by the CARB on July 26, 2007, aims to reduce emissions by installation of diesel soot filters and encouraging the retirement, replacement, or repower of older, dirtier engines with newer emission-controlled models. While these regulations primarily target reductions in criteria air pollutant emission, they have co-benefits of minimizing GHG emissions due to improved engine efficiencies.

The State currently has no regulations that establish ambient air quality standards for GHGs. However, the State has passed laws directing CARB to develop actions to reduce GHG emissions, which are listed below.

ii) Assembly Bill 1493

California Assembly Bill 1493 enacted on July 22, 2002, required the CARB to develop and adopt regulations that reduce GHGs emitted by passenger vehicles and light duty trucks. In 2005, the CARB submitted a "waiver" request to the EPA from a portion of the federal Clean Air Act in order to allow the State to set more stringent tailpipe emission standards for CO_2 and other GHG emissions from passenger vehicles and light duty trucks. On December 19, 2007 the EPA announced that it denied the "waiver" request. On January 21, 2009, CARB submitted a letter to the EPA administrator regarding the State's request to reconsider the waiver denial. The EPA approved the waiver on June 30, 2009.

iii) Executive Order S-3-05

The California Governor issued Executive Order S-3-05, GHG Emission, in June 2005, which established the following reduction targets:

- By 2010, California shall reduce GHG emissions to 2000 levels;
- By 2020, California shall reduce GHG emissions to 1990 levels; and
- By 2050, California shall reduce GHG emissions to 80 percent below 1990 levels.

The Executive Order directed the secretary of the California Environmental Protection Agency (CalEPA) to coordinate a multi-agency effort to reduce GHG emissions to the target levels. To comply with the Executive Order, the secretary of CalEPA created the California Climate Action Team (CAT), made up of members from various state agencies and commissions. The team released its first report in March 2006. The report proposed to achieve the targets by building on the voluntary actions of businesses, local governments, and communities and through State incentive and regulatory programs.

iv) Assembly Bill 32 (California Health and Safety Code, Division 25.2. – California Global Warming Solutions Act of 2006

In 2006, the California State Legislature adopted Assembly Bill (AB) 32 (codified in the California Health and Safety Code [HSC], Division 25.5 – California Global Warming Solutions Act of 2006), which focuses on reducing GHG emissions in California to 1990 levels by 2020. HSC Division 25.5 defines GHGs as CO2, CH4, N2O, HFCs, PFCs, and SF6 and represents the first enforceable statewide program to limit emissions of these GHGs from all major industries with penalties for noncompliance. The law further requires that reduction measures be technologically feasible and cost effective. Under HSC Division 25.5, CARB has the primary responsibility for reducing GHG emissions. CARB is required to adopt rules and regulations directing state actions that would achieve GHG emissions reductions equivalent to 1990 statewide levels by 2020.

v) Senate Bill 32 and Assembly Bill 197

In 2016, the California State Legislature adopted Senate Bill (SB) 32 and its companion bill AB 197, and both were signed by Governor Brown. SB 32 and AB 197 amends HSC Division 25.5 and establishes a new climate pollution reduction target of 40 percent below 1990 levels by 2030 and includes provisions to ensure the benefits of state climate policies reach into disadvantaged communities.

vi) Climate Change Scoping Plan (2008)

A specific requirement of AB 32 was to prepare a Climate Change Scoping Plan for achieving the maximum technologically feasible and cost-effective GHG emission reduction by 2020 (Health and Safety Code section 38561 (h)). CARB developed an AB 32 Scoping Plan that contains strategies to achieve the 2020 emissions cap. The initial Scoping Plan was approved in 2008, and contains a mix of recommended strategies that combined direct regulations, market-based approaches, voluntary measures, policies, and other emission reduction programs calculated to meet the 2020 statewide GHG emission limit and initiate the transformations needed to achieve the State's long-range climate objectives.

As required by HSC Division 25.5, CARB approved the 1990 GHG emissions inventory, thereby establishing the emissions limit for 2020. The 2020 emissions limit was originally set at 427 MMTCO2e using the GWP values from the IPCC SAR. CARB also projected the state's 2020 GHG emissions under no-action-taken

(NAT) conditions – that is, emissions that would occur without any plans, policies, or regulations to reduce GHG emissions. CARB originally used an average of the state's GHG emissions from 2002 through 2004 and projected the 2020 levels at approximately 596 MMTCO2e (using GWP values from the IPCC SAR). Therefore, under the original projections, the state must reduce its 2020 NAT emissions by 28.4 percent in order to meet the 1990 target of 427 MMTCO2e.

vii) First Update to the Climate Change Scoping Plan (2014)

The First Update to the Scoping Plan was approved by CARB in May 2014 and builds upon the initial Scoping Plan with new strategies and recommendations. In 2014, CARB revised the target using the GWP values from the IPCC AR4 and determined that the 1990 GHG emissions inventory and 2020 GHG emissions limit is 431 MMTCO2e. CARB also updated the State's 2020 NAT emissions estimate to account for the effect of the 2007–2009 economic recession, new estimates for future fuel and energy demand, and the reductions required by regulation that were recently adopted for motor vehicles and renewable energy. CARB's projected statewide 2020 emissions estimate using the GWP values from the IPCC AR4 is 509.4 MMTCO2e.

viii) 2017 Climate Change Scoping Plan

In response to the 2030 GHG reduction target, CARB adopted the 2017 Climate Change Scoping Plan at a public meeting held in December 2017. The 2017 Scoping Plan outlines the strategies the State will implement to achieve the 2030 GHG reduction target of 40 percent below 1990 levels. The 2017 Scoping Plan also addresses GHG emissions from natural and working lands of California, including the agriculture and forestry sectors. The 2017 Scoping Plan considered the Scoping Plan Scenario and four alternatives for achieving the required GHG reductions but ultimately selected the Scoping Plan Scenario.

CARB states that the Scoping Plan Scenario "is the best choice to achieve the State's climate and clean air goals."[12] Under the Scoping Plan Scenario, the majority of the reductions would result from the continuation of the Cap-and-Trade regulation. Additional reductions are achieved from electricity sector standards (i.e., utility providers to supply at least 50 percent renewable electricity by 2030), doubling the energy efficiency savings at end uses, additional reductions from the LCFS, implementing the short-lived GHG strategy (e.g., hydrofluorocarbons), and implementing the mobile source strategy and sustainable freight action plan. The alternatives were designed to consider various combinations of these programs, as well as consideration of a carbon tax in the event the Cap-and-Trade regulation is not continued. However, in July 2017, the California Legislature voted to extend the Cap-and-Trade regulation to 2030. Implementing this Scoping Plan will ensure that California's climate actions continue to promote

[12] *California Air Resources Board, California's 2017 Climate Change Scoping Plan, November 2017, https://www.arb.ca.gov/cc/scopingplan/scoping_plan_2017.pdf*

innovation, drive the generation of new jobs, and achieve continued reductions of smog and air toxics. The ambitious approach draws on a decade of successful programs that address the major sources of climate-changing gases in every sector of the economy:

- More Clean Cars and Trucks: The plan sets out far-reaching programs to incentivize the sale of millions of zero-emission vehicles, drive the deployment of zero-emission trucks, and shift to a cleaner system of handling freight statewide.
- Increased Renewable Energy: California's electric utilities are ahead of schedule meeting the requirement that 33 percent of electricity come from renewable sources by 2020. The Scoping Plan guides utilities to 50 percent renewables, as required under SB 350.
- Slashing Super-Pollutants: The plan calls for a significant cut in super-pollutants such as methane and HFC refrigerants, which are responsible for as much as 40 percent of global warming.
- Cleaner Industry and Electricity: California's renewed cap-and-trade program extends the declining cap on emissions from utilities and industries and the carbon allowance auctions. The auctions will continue to fund investments in clean energy and efficiency, particularly in disadvantaged communities.
- Cleaner Fuels: The Low Carbon Fuel Standard will drive further development of cleaner, renewable transportation fuels to replace fossil fuels.
- Smart Community Planning: Local communities will continue developing plans which will further link transportation and housing policies to create sustainable communities.
- Improved Agriculture and Forests: The Scoping Plan also outlines innovative programs to account for and reduce emissions from agriculture, as well as forests and other natural lands.

The 2017 Scoping Plan also evaluates reductions of smog-causing pollutants through California's climate programs.

ix) Senate Bill 32, California Global Warming Solutions Act 2006

(1) The California Global Warming Solutions Act of 2006 designates the State Air Resources Board as the state agency charged with monitoring and regulating sources of emissions of greenhouse gases. The state board is required to approve a statewide greenhouse gas emissions limit equivalent to the statewide greenhouse gas emissions level in 1990 to be achieved by 2020 and to adopt rules and regulations in an open public process to achieve the maximum, technologically feasible, and cost-effective greenhouse gas emissions reductions. This bill would require the state board to ensure that statewide greenhouse gas emissions are reduced to 40% below the 1990 level by 2030.

(2) This bill would become operative only if AB 197 of the 2015–16 Regular Session is enacted and becomes effective on or before January 1, 2017. AB 197 requires that the California Air Resources Board, which directs implementation of emission-reduction programs, should target direct reductions at both stationary and mobile sources. AB 197 of the 2015-2016 Regular Session was approved on September 8, 2016.

x) Executive Order S-1-07

Executive Order S-1-07 was issued in 2007 and proclaims that the transportation sector is the main source of GHG emissions in the State, since it generates more than 40 percent of the State's GHG emissions. It establishes a goal to reduce the carbon intensity of transportation fuels sold in the State by at least ten percent by 2020. This Order also directs the CARB to determine whether this Low Carbon Fuel Standard (LCFS) could be adopted as a discrete early-action measure as part of the effort to meet the mandates in AB 32.

On April 23, 2009, the CARB approved the proposed regulation to implement the low carbon fuel standard. The low carbon fuel standard is anticipated to reduce GHG emissions by about 16 MMT per year by 2020. The low carbon fuel standard is designed to provide a framework that uses market mechanisms to spur the steady introduction of lower carbon fuels. The framework establishes performance standards that fuel producers and importers must meet each year beginning in 2011. Separate standards are established for gasoline and diesel fuels and the alternative fuels that can replace each. The standards are "back-loaded", with more reductions required in the last five years, than during the first five years. This schedule allows for the development of advanced fuels that are lower in carbon than today's fuels and the market penetration of plug-in hybrid electric vehicles, battery electric vehicles, fuel cell vehicles, and flexible fuel vehicles. It is anticipated that compliance with the low carbon fuel standard will be based on a combination of both lower carbon fuels and more efficient vehicles.

Reformulated gasoline mixed with corn-derived ethanol at ten percent by volume and low sulfur diesel fuel represent the baseline fuels. Lower carbon fuels may be ethanol, biodiesel, renewable diesel, or blends of these fuels with gasoline or diesel as appropriate. Compressed natural gas and liquefied natural gas also may be low carbon fuels. Hydrogen and electricity, when used in fuel cells or electric vehicles are also considered as low carbon fuels for the low carbon fuel standard.

xi) Senate Bill 97

Senate Bill 97 (SB 97) was adopted August 2007 and acknowledges that climate change is a prominent environmental issue that requires analysis under CEQA. SB 97 directed the Governor's Office of Planning and Research (OPR), which is part of the State Natural Resources Agency, to prepare, develop, and transmit to the CARB guidelines for the feasible mitigation of GHG emissions or the effects of GHG

emissions, as required by CEQA, by July 1, 2009. The Natural Resources Agency was required to certify and adopt those guidelines by January 1, 2010.

Pursuant to the requirements of SB 97 as stated above, on December 30, 2009, the Natural Resources Agency adopted amendments to the state CEQA guidelines that address GHG emissions. The CEQA Guidelines Amendments changed 14 sections of the CEQA Guidelines and incorporate GHG language throughout the Guidelines. However, no GHG emissions thresholds of significance were provided and no specific mitigation measures were identified. The GHG emission reduction amendments went into effect on March 18, 2010, and are summarized below:

- Climate action plans and other greenhouse gas reduction plans can be used to determine whether a project has significant impacts, based upon its compliance with the plan.
- Local governments are encouraged to quantify the greenhouse gas emissions of proposed projects, noting that they have the freedom to select the models and methodologies that best meet their needs and circumstances. The section also recommends consideration of several qualitative factors that may be used in the determination of significance, such as the extent to which the given project complies with state, regional, or local GHG reduction plans and policies. OPR does not set or dictate specific thresholds of significance. Consistent with existing CEQA Guidelines, OPR encourages local governments to develop and publish their own thresholds of significance for GHG impacts assessment.
- When creating their own thresholds of significance, local governments may consider the thresholds of significance adopted or recommended by other public agencies, or recommended by experts.
- New amendments include guidelines for determining methods to mitigate the effects of greenhouse gas emissions in Appendix F of the CEQA Guidelines.
- OPR is clear to state that “to qualify as mitigation, specific measures from an existing plan must be identified and incorporated into the project; general compliance with a plan, by itself, is not mitigation”.
- OPR’s emphasizes the advantages of analyzing GHG impacts on an institutional, programmatic level. OPR therefore approves tiering of environmental analyses and highlights some benefits of such an approach.
- Environmental impact reports (EIRs) must specifically consider a project's energy use and energy efficiency potential.

xii) Senate Bill 100

Senate Bill 100 (SB 100) requires 100 percent of total retail sales of electricity in California to come from eligible renewable energy resources and zero-carbon resources by December 31, 2045. SB 100 was adopted September 2018.

The interim thresholds from prior Senate Bills and Executive Orders would also remain in effect. These include Senate Bill 1078 (SB 1078), which requires retail sellers of electricity, including investor-owned utilities and community choice aggregators, to provide at least 20 percent of their supply from renewable sources by 2017. Senate Bill 107 (SB 107) which changed the target date to 2010. Executive Order S-14-08, which was signed on November 2008 and expanded the State's Renewable Energy Standard to 33 percent renewable energy by 2020. Executive Order S-21-09 directed the CARB to adopt regulations by July 31, 2010 to enforce S-14-08. Senate Bill X1-2 codifies the 33 percent renewable energy requirement by 2020

xiii) Senate Bill 375

Senate Bill 375 (SB 375) was adopted September 2008 and aligns regional transportation planning efforts, regional GHG emission reduction targets, and land use and housing allocation. SB 375 requires Metropolitan Planning Organizations (MPO) to adopt a sustainable communities strategy (SCS) or alternate planning strategy (APS) that will prescribe land use allocation in that MPOs Regional Transportation Plan (RTP). The CARB, in consultation with each MPO, will provide each affected region with reduction targets for GHGs emitted by passenger cars and light trucks in the region for the years 2020 and 2035. These reduction targets will be updated every eight years but can be updated every four years if advancements in emissions technologies affect the reduction strategies to achieve the targets. The CARB is also charged with reviewing each MPO's sustainable communities strategy or alternate planning strategy for consistency with its assigned targets.

The proposed project is located within the Southern California Association of Governments (SCAG) jurisdiction, which has authority to develop the SCS or APS. For the SCAG region, the targets set by the CARB are at eight percent below 2005 per capita GHG emissions levels by 2020 and 19 percent below 2005 per capita GHG emissions levels by 2035. These reduction targets became effective October 2018.

xiv) Senate Bill X7-7

Senate Bill X7-7 (SB X7-7), enacted on November 9, 2009, mandates water conservation targets and efficiency improvements for urban and agricultural water suppliers. SB X7-7 requires the Department of Water Resources (DWR) to develop a task force and technical panel to develop alternative best management practices for the water sector. In addition, SB X7-7 required the DWR to develop criteria for

baseline uses for residential, commercial, and industrial uses for both indoor and landscaped area uses. The DWR was also required to develop targets and regulations that achieve a statewide 20 percent reduction in water usage.

xv) Assembly Bill 939 and Senate Bill 1374

Assembly Bill 939 (AB 939) requires that each jurisdiction in California to divert at least 50 percent of its waste away from landfills, whether through waste reduction, recycling, or other means. Senate Bill 1374 (SB 1374) requires the California Integrated Waste Management Board to adopt a model ordinance by March 1, 2004, suitable for adoption by any local agency to require 50 to 75 percent diversion of construction and demolition of waste materials from landfills.

xvi) California Code of Regulations (CCR) Title 24, Part 6

CCR Title 24, Part 6: California's Energy Efficiency Standards for Residential and Nonresidential Buildings (Title 24) were first established in 1978 in response to a legislative mandate to reduce California's energy consumption. The standards are updated periodically to allow consideration and possible incorporation of new energy efficiency technologies and methods. Although it was not originally intended to reduce GHG emissions, electricity production by fossil fuels results in GHG emissions and energy efficient buildings require less electricity. Therefore, increased energy efficiency results in decreased GHG emissions.

The Energy Commission adopted 2008 Standards on April 23, 2008, and Building Standards Commission approved them for publication on September 11, 2008. These updates became effective on August 1, 2009. CalEEMod modeling defaults to 2008 standards. 2013 Standards were approved and have been effective since July 1, 2014. 2016 Standards were adopted January 1, 2017. 2019 standards were published July 1, 2019 and became effective January 1, 2020.

Per Section 100 Scope, the 2019 Title 24, Part 6 Building Code now requires healthcare facilities, such as assisted living facilities, hospitals, and nursing homes, to meet documentation requirements of Title 24, Part 1 Chapter 7 – Safety Standards for Health Facilities. A healthcare facility is defined as any building or portion thereof licensed pursuant to California Health and Safety Code Division 2, Chapter 1, Section 1204 or Chapter 2, Section 1250. Section 120.1 Ventilation and Indoor Air Quality included both additions and revisions in the 2019 Code. This section now requires nonresidential and hotel/motel buildings to have air filtration systems that use forced air ducts to supply air to occupiable spaces to have air filters. Further, the air filter efficiency must be either MERV 13 or use a particle size efficiency rating specific in the Energy Code AND be equipped with air filters with a minimum 2-inch depth or minimum 1-inch depth if sized according to the equation 120.1-A. If natural ventilation is to be used the space must also use mechanical unless ventilation openings are either permanently open or controlled to stay open during occupied times.

The 2019 version of the Code also completely revised the minimum ventilation requirements including DVC airflow rates within Section 120.1 Table 120.1–A. Table 120.1-A now includes air classification and recirculation limitations, these are based on either the number of occupants or the CFM/ft^2 (cubic feet per minute per square foot), whichever is greater.

Section 120.1 Ventilation and Indoor Air Quality also included additions for high-rise residential buildings. Requirements include that mechanical systems must provide air filters that and that air filters must be MERV 13 or use a particle size efficiency rating specified in the Energy Code. Window operation is no longer a method allowed to meet ventilation requirements, continuous operation of central forced air system handlers used in central fan integrated ventilation system is not a permissible method of providing the dwelling unit ventilation airflow, and central ventilation systems that serve multiple dwelling units must be balanced to provide ventilation airflow to each dwelling unit. In addition, requirements for kitchen range hoods were also provided in the updated Section 120.1.

Per Section 120.1(a) healthcare facilities must be ventilated in accordance with Chapter 4 of the California Mechanical Code and are NOT required to meet the ventilations requirements of Title 24, Part 6. Section 140.4 Space Conditioning Systems included both additions and revisions within the 2019 Code. The changes provided new requirements for cooling tower efficiency, new chilled water-cooling system requirements, as well as new formulas for calculating allowed fan power. Section 140.4(n) also provide a new exception for mechanical system shut-offs for high-rise multifamily dwelling units, while Section 140.4(o) added new requirements for conditioned supply air being delivered to space with mechanical exhaust.

Section 120.6 Covered Processes added information in regards to adiabatic chiller requirements that included that all condenser fans for air-cooled converseness, evaporative-cooled condensers, adiabatic condensers, gas coolers, air or water fluid coolers or cooling towers must be continuously variable speed, with the speed of all fans serving a common condenser high side controlled in unison .Further, the mid-condensing setpoint must be 70 degrees Fahrenheit for all of the above mentioned systems.

New regulations were also adopted under Section 130.1 Indoor Lighting Controls. These included new exceptions being added for restrooms, the exception for classrooms being removed, as well as exceptions in regards to sunlight provided through skylights and overhangs.

Section 130.2 Outdoor Lighting Controls and Equipment added automatic scheduling controls which included that outdoor lighting power must be reduced by 50 to 90 percent, turn the lighting off during unoccupied times and have at least two scheduling options for each luminaire independent from each other and with a 2-hour override function. Furthermore, motion sensing controls must have the ability to reduce power within 15 minutes of area being vacant and be able to come back on again when occupied. An exception allows for lighting subject to a health or life safety statute, ordinance, or regulation may

have a minimum time-out period longer than 15 minutes or a minimum dimming level above 50% when necessary to comply with the applicable law.

xvii) California Code of Regulations (CCR) Title 24, Part 11

CCR Title 24, Part 6: California's Energy Efficiency Standards for Residential and Nonresidential Buildings (Title 24) were first established in 1978 in response to a legislative mandate to reduce California's energy consumption. The standards are updated periodically to allow consideration and possible incorporation of new energy efficiency technologies and methods. Although it was not originally intended to reduce GHG emissions, electricity production by fossil fuels results in GHG emissions and energy efficient buildings require less electricity. Therefore, increased energy efficiency results in decreased GHG emissions.

The Energy Commission adopted 2008 Standards on April 23, 2008, and Building Standards Commission approved them for publication on September 11, 2008. These updates became effective on August 1, 2009. 2013 Standards were approved and were effective July 1, 2014. 2016 Standards were adopted January 1, 2017. 2019 standards were published July 1, 2019 and became effective January 1, 2020.

All buildings for which an application for a building permit is submitted on or after January 1, 2020 must follow the 2019 standards. The 2016 residential standards were estimated to be approximately 28 percent more efficient than the 2013 standards, whereas the 2019 residential standards are estimated to be approximately 7 percent more efficient than the 2016 standards. Furthermore, once rooftop solar electricity generation is factored in, 2019 residential standards are estimated to be approximately 53 percent more efficient than the 2016 standards. Under the 2019 standards, nonresidential buildings are estimated to be approximately 30 percent more efficient than the 2016 standards[13]. Energy efficient buildings require less electricity; therefore, increased energy efficiency reduces fossil fuel consumption and decreases greenhouse gas emissions.

xviii) California Green Building Standards

2019 CALGreen Code: During the 2019-2020 fiscal year, the Department of Housing and Community Development (HCD) updated CALGreen through the 2018 Triennial Code Adoption Cycle. The 2019 Cal green code built upon the 2016 code.

[13] *California Energy Commission, Efficiency Division, 2019 Building Energy Efficiency Standards, Frequently Asked Questions, website: https://www.energy.ca.gov/sites/default/files/2020-03/Title_24_2019_Building_Standards_FAQ_ada.pdf, accessed: December 11, 2020.*

a) 2016

In 2016 HCD adopted three new definitions related to electric vehicle charging regulations. These definitions provided clarity to the code user as to the differences between an electric vehicle charging space and an electric vehicle charging station. HCD replaced the term "electric vehicle charging stations" with "electric vehicle charging spaces" since the term "electric vehicle charging space" better describes a space available for future installation of electric vehicle supply equipment, but with no electric vehicle charger installed.

HCD also increased the required construction waste reduction from 50 percent to 65 percent of the total building site waste. This increase aids in meeting CalRecycle's statewide solid waste recycling goal of 75 percent for 2020 as stated in Chapter 476, Statutes of 2011 (AB 341). HCD adopted new regulations requiring recycling areas for multifamily projects of five or more dwelling units. This regulation requires developers to provide readily accessible areas adequate in size to accommodate containers for depositing, storage and collection of non-hazardous materials (including organic waste) for recycling. This requirement assists businesses that were required as of April 1, 2016, to meet the requirements of Chapter 727, Statutes of 2014 (AB 1826).

HCD adopted new regulations to require information on photovoltaic systems and electric vehicle chargers to be included in operation and maintenance manuals. Currently, CALGreen section 4.410.1 Item 2(a) requires operation and maintenance instructions for equipment and appliances. Photovoltaic systems and electric vehicle chargers are systems that play an important role in many households in California, and their importance is increasing every day. HCD incorporated these two terms in the existing language in order to provide clarity to code users as to additional systems requiring operation and maintenance instructions.

HCD updated the reference to Clean Air Standards of the United States Environmental Protection Agency applicable to woodstoves and pellet stoves. HCD also adopted a new requirement for woodstoves and pellet stoves to have a permanent label indicating they are certified to meet the emission limits. This requirement provides clarity to the code user and is consistent with the United States Environmental Protection Agency's New Source Performance Standards. HCD updated the list of standards which can be used for verification of compliance for exterior grade composite wood products. This list now includes four standards from the Canadian Standards Association (CSA): CSA O121, CSA O151, CSA O153 and CSA O325. HCD updated heating and air-conditioning system design references to the ANSI/ACCA 2 Manual J, ANSI/ACCA 1 Manual D, and ANSI/ACCA 3 Manual S to the most recent versions approved by ANSI. HCD adopted a new elective measure for hot water recirculation systems for water conservation. The United States Department of Energy estimates that 3,600 to 12,000 gallons of water per year can be saved by the typical household (with four points of hot water use) if a hot water recirculation system is installed.

b) 2019

2019 CALGreen Code: During the 2019-2020 fiscal year, the HCD updated CALGreen through the 2019 Triennial Code Adoption Cycle.

HCD modified the best management practices for stormwater pollution prevention adding Section 5.106.2 for projects that disturb one or more acres of land. This section requires projects that disturb one acre or more of land or less than one acre of land but are part of a larger common plan of development or sale must comply with the postconstruction requirement detailed in the applicable National Pollutant Discharge Elimination System (NPDES) General Permit for Stormwater Discharges Associated with Construction and Land Disturbance Activities issued by the State Water Resources Control Board. The NPDES permits require postconstruction runoff (post-project hydrology) to match the preconstruction runoff pre-project hydrology) with installation of postconstruction stormwater management measures.

HCD added sections 5.106.4.1.3 and 5.106.4.1.5 in regards to bicycle parking. Section 5.106.4.1.3 requires new buildings with tenant spaces that have 10 or more tenant-occupants, provide secure bicycle parking for 5 percent of the tenant-occupant vehicular parking spaces with a minimum of one bicycle parking facility. In addition, Section 5.106.4.1.5 states that acceptable bicycle parking facility for Sections 5.106.4.1.2 through 5.106.4.1.4 shall be convenient from the street and shall meeting one of the following: (1) covered, lockable enclosures with permanently anchored racks for bicycles; (2) lockable bicycle rooms with permanently anchored racks; or (3) lockable, permanently anchored bicycle lockers.

HCD amended section 5.106.5.3.5 allowing future charging spaces to qualify as designated parking for clean air vehicles.

HCD updated section 5.303.3.3 in regards to showerhead flow rates. This update reduced the flow rate to 1.8 GPM.

HCD amended section 5.304.1 for outdoor potable water use in landscape areas and repealed sections 5.304.2 and 5.304.3. The update requires nonresidential developments to comply with a local water efficient landscape ordinance or the current California Department of Water Resource's' Model Water Efficient Landscape Ordinance (MWELO), whichever is more stringent. Some updates were also made in regards to the outdoor potable water use in landscape areas for public schools and community colleges.

HCD updated Section 5.504.5.3 in regards to the use of MERV filters in mechanically ventilated buildings. This update changed the filter use from MERV 8 to MERV 13. MERV 13 filters are to be installed prior to occupancy, and recommendations for maintenance with filters of the same value shall be included in the operation and maintenance manual.

xix) Executive Order B-30-15

On April 29, 2015, Governor Brown issued Executive Order B-30-15. Therein, the Governor directed the following:

- Established a new interim statewide reduction target to reduce GHG emissions to 40 percent below 1990 levels by 2030.
- Ordered all state agencies with jurisdiction over sources of GHG emissions to implement measures to achieve reductions of GHG emissions to meet the 2030 and 2050 reduction targets.
- Directed CARB to update the Climate Change Scoping Plan to express the 2030 target in terms of million metric tons of carbon dioxide equivalent.

xx) Executive Order B-29-15

Executive Order B-29-15, mandates a statewide 25 percent reduction in potable water usage. EO B-29-15 signed into law on April 1, 2015.

xxi) Executive Order B-37-16

Executive Order B-37-16, continuing the State's adopted water reductions, was signed into law on May 9, 2016. The water reductions build off the mandatory 25 percent reduction called for in EO B-29-15.

xxii) Senate Bill X1 2

Signed into law in April 2011, Senate Bill (SB)X1 2, requires one-third of the State's electricity to come from renewable sources. The legislation increases California's current 20 percent renewables portfolio standard target in 2010 to a 33 percent renewables portfolio standard by December 31, 2020.

xxiii) Senate Bill 350

Signed into law October 7, 2015, SB 350 increases California's renewable electricity procurement goal from 33 percent by 2020 to 50 percent by 2030. This will increase the use of Renewables Portfolio Standard (RPS) eligible resources, including solar, wind, biomass, geothermal, and others. In addition, SB 350 requires the state to double statewide energy efficiency savings in electricity and natural gas end uses by 2030. To help ensure these goals are met and the greenhouse gas emission reductions are realized, large utilities will be required to develop and submit Integrated Resource Plans (IRPs). These IRPs will detail how each entity will meet their customers resource needs, reduce greenhouse gas emissions, and ramp up the deployment of clean energy resources.

xxiv) Energy Sector and CEQA Guidelines Appendix F

The CEC first adopted Energy Efficiency Standards for Residential and Nonresidential Buildings (CCR, Title 24, Part 6) in 1978 in response to a legislative mandate to reduce energy consumption in the state. Although not originally intended to reduce GHG emissions, increased energy efficiency and reduced consumption of electricity, natural gas, and other fuels would result in fewer GHG emissions from residential and nonresidential buildings subject to the standard. The standards are updated periodically (typically every three years) to allow for the consideration and inclusion of new energy efficiency technologies and methods. The 2019 update to the Energy Efficiency Standards for Residential and Nonresidential Buildings focuses on several key areas to improve the energy efficiency of renovations and addition to existing buildings as well as newly constructed buildings and renovations and additions to existing buildings. The major efficiency improvements to the residential Standards involve improvements for attics, walls, water heating, and lighting, whereas the major efficiency improvements to the nonresidential Standards include alignment with the American Society of Heating, Refrigerating and Air-Conditioning Engineers (ASHRAE) 90.1-2013 national standards. Furthermore, the 2019 update requires that enforcement agencies determine compliance with CCR, Title 24, Part 6 before issuing building permits for any construction.[14]

Part 11 of the Title 24 Building Energy Efficiency Standards is referred to as the California Green Building Standards (CALGreen) Code. The purpose of the CALGreen Code is to "improve public health, safety and general welfare by enhancing the design and construction of buildings through the use of building concepts having a reduced negative impact or positive environmental impact and encouraging sustainable construction practices in the following categories: (1) Planning and design; (2) Energy efficiency; (3) Water efficiency and conservation; (4) Material conservation and resource efficiency; and (5) Environmental air quality."15 As of January 1, 2011, the CALGreen Code is mandatory for all new buildings constructed in the state. The CALGreen Code establishes mandatory measures for new residential and non-residential buildings. Such mandatory measures include energy efficiency, water conservation, material conservation, planning and design, and overall environmental quality. The CALGreen Code was most recently updated in 2019 to include new mandatory measures for residential and nonresidential uses; the new measures took effect on January 1, 2020.

[14] California Energy Commission, 2016 Building Energy Efficiency Standards, June 2015, http://www.energy.ca.gov/2015publications/CEC-400-2015-037/CEC-400-2015-037-CMF.pdf
[15] California Building Standards Commission, 2010 California Green Building Standards Code, (2010).

D. Regional – South Coast Air Quality Management District

The project is within the South Coast Air Basin, which is under the jurisdiction of the South Coast Air Quality Management District (SCAQMD).

i) SCAQMD Regulation XXVII, Climate Change

SCAQMD Regulation XXVII currently includes three rules:

- The purpose of Rule 2700 is to define terms and post global warming potentials.
- The purpose of Rule 2701, SoCal Climate Solutions Exchange, is to establish a voluntary program to encourage, quantify, and certify voluntary, high quality certified greenhouse gas emission reductions in the SCAQMD.
- Rule 2702, Greenhouse Gas Reduction Program, was adopted on February 6, 2009. The purpose of this rule is to create a Greenhouse Gas Reduction Program for greenhouse gas emission reductions in the SCAQMD. The SCAQMD will fund projects through contracts in response to requests for proposals or purchase reductions from other parties.

A variety of agencies have developed greenhouse gas emission thresholds and/or have made recommendations for how to identify a threshold. However, the thresholds for projects in the jurisdiction of the SCAQMD remain in flux. The California Air Pollution Control Officers Association explored a variety of threshold approaches, but did not recommend one approach (2008). The ARB recommended approaches for setting interim significance thresholds (California Air Resources Board 2008b), in which a draft industrial project threshold suggests that non-transportation related emissions under 7,000 MTCO2e per year would be less than significant; however, the ARB has not approved those thresholds and has not published anything since then. The SCAQMD is in the process of developing thresholds, as discussed below.

ii) SCAQMD Threshold Development

On December 5, 2008, the SCAQMD Governing Board adopted an interim greenhouse gas significance threshold for stationary sources, rules, and plans where the SCAQMD is lead agency (SCAQMD permit threshold). The SCAQMD permit threshold consists of five tiers. However, the SCAQMD is not the lead agency for this project. Therefore, the five permit threshold tiers do not apply to the proposed project.

The SCAQMD is in the process of preparing recommended significance thresholds for greenhouse gases for local lead agency consideration (“SCAQMD draft local agency threshold”); however, the SCAQMD Board has not approved the thresholds as of the date of the Notice of Preparation. The current draft thresholds consist of the following tiered approach:

- Tier 1 consists of evaluating whether or not the project qualifies for any applicable exemption under CEQA.
- Tier 2 consists of determining whether the project is consistent with a greenhouse gas reduction plan. If a project is consistent with a qualifying local greenhouse gas reduction plan, it does not have significant greenhouse gas emissions.
- Tier 3 consists of screening values, which the lead agency can choose, but must be consistent with all projects within its jurisdiction. A project's construction emissions are averaged over 30 years and are added to a project's operational emissions. If a project's emissions are under one of the following screening thresholds, then the project is less than significant:
  - All land use types: 3,000 MTCO2e per year
  - Based on land use type: residential: 3,500 MTCO2e per year; commercial: 1,400 MTCO2e per year; or mixed use: 3,000 MTCO2e per year.
  - Based on land type: Industrial (where SCAQMD is the lead agency), 10,000 MTCO2e per year.
- Tier 4 has the following options:
  - Option 1: Reduce emissions from business as usual (BAU) by a certain percentage; this percentage is currently undefined.
  - Option 2: Early implementation of applicable AB 32 Scoping Plan measures.
  - Option 3, 2020 target for service populations (SP), which includes residents and employees: 4.8 MTCO2e/SP/year for projects and 6.6 MTCO2e/SP/year for plans;
  - Option 3, 2035 target: 3.0 MTCO2e/SP/year for projects and 4.1 MTCO2e/SP/year for plans.
- Tier 5 involves mitigation offsets to achieve target significance threshold.

The SCAQMD's draft threshold uses the Executive Order S-3-05 goal as the basis for the Tier 3 screening level. Achieving the Executive Order's objective would contribute to worldwide efforts to cap carbon dioxide concentrations at 450 ppm, thus stabilizing global climate. Specifically, the Tier 3 screening level for stationary sources is based on an emission capture rate of 90 percent for all new or modified projects. A 90 percent emission capture rate means that 90 percent of total emissions from all new or modified stationary source projects would be subject to a CEQA analysis, including a negative declaration, a mitigated negative declaration, or an environmental impact report, which includes analyzing feasible alternatives and imposing feasible mitigation measures. A GHG significance threshold based on a 90 percent emission capture rate may be more appropriate to address the long-term adverse impacts associated with global climate change because most projects will be required to implement GHG reduction measures. Further, a 90 percent emission capture rate sets the emission threshold low enough to capture a substantial fraction of future stationary source projects that will be constructed to accommodate future statewide population and economic growth, while setting the emission threshold high enough to exclude small projects that will in aggregate contribute a relatively small fraction of the cumulative statewide GHG emissions. This assertion is based on the fact that staff estimates that these

GHG emissions would account for slightly less than one percent of future 2050 statewide GHG emissions target (85 MMTCO2eq/year). In addition, these small projects may be subject to future applicable GHG control regulations that would further reduce their overall future contribution to the statewide GHG inventory. Finally, these small sources are already subject to BACT for criteria pollutants and are more likely to be single-permit facilities, so they are more likely to have few opportunities readily available to reduce GHG emissions from other parts of their facility.

E. Local – City of Pasadena

The City of Pasadena adopted the Pasadena Climate Action Plan (CAP) on March 5, 2018. The purpose of the 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 the California Environmental Quality Act (CEQA) Guidelines Section 15183.5. The timeframe for the CAP extends from the date of adoption through the year 2035, consistent with the horizon year of Pasadena's 2015 General Plan Land Use Element. The CAP includes the following components:

- Summary of existing state and local initiatives addressing climate change;
- Community-wide GHG inventory and emissions forecasts;
- GHG reduction goals, measures, and actions;
- Implementation and monitoring of the plan; and
- Adaptation strategies and climate change preparedness.

The Climate Action Plan Consistency Checklist (Checklist) is intended to be a tool for new development projects to demonstrate consistency with Pasadena's Climate Action Plan (CAP), which is a qualified greenhouse gas (GHG) emissions reduction plan in accordance with California Environmental Quality Act (CEQA) Guidelines Section 15183.5. This Checklist has been developed as part of the CAP implementation and monitoring process and will support the achievement of individual CAP measures as well as Pasadena's overall GHG reduction goals. In addition, this Checklist will further Pasadena's sustainability goals and policies that encourage sustainable development and aim to conserve and reduce the consumption of resources, such as energy and water, among others. CEQA Guidelines Section 15183.5 allows lead agencies to analyze the impacts associated with GHG emissions at a programmatic level in plan-level documents such as CAPs, so that project-level environmental documents may tier from the programmatic review. Projects that meet the requirements of this Checklist will be deemed to be consistent with Pasadena's CAP and will be found to have a less than significant contribution to cumulative GHG (i.e., the project's incremental contribution to cumulative GHG effects is not cumulatively considerable), pursuant to CEQA Guidelines Sections 15064(h)(3), 15130(d), and 15183(b). Projects that do not meet the requirements in this Checklist will be deemed to be inconsistent with Pasadena's CAP

and must prepare a project-specific analysis of GHG emissions, including quantification of existing and projected GHG emissions and incorporation of the measures in this Checklist to the extent feasible.

The City also developed and adopted the Green City Action Plan on September 18, 2006. The Plan contains a wide range of initiatives that form a strategy towards fulfilling the ambitions of the United Nations Urban Environmental Accords of 2005, which acknowledge the environmental challenges and opportunities facing urban areas across the globe. There are seven focus areas within the Plan: 1) Energy, 2) Waste Reduction, 3) Urban Design, 4) Urban Nature, 5) Transportation, 6) Environmental Health, and 7) Water. Each of these focus areas contains actions and goals. Among the goals, the Plan establishes an energy goal to reduce greenhouse gas emissions by 25 percent by 2030.

3. SIGNIFICANCE THRESHOLDS

A. Appendix G of State CEQA Guidelines

The CEQA Guidelines recommend that a lead agency consider the following when assessing the significance of impacts from GHG emissions on the environment:

- The extent to which the project may increase (or reduce) GHG emissions as compared to the existing environmental setting;
- Whether the project emissions exceed a threshold of significance that the lead agency determines applies to the project;
- The extent to which the project complies with regulations or requirements adopted to implement an adopted statewide, regional, or local plan for the reduction or mitigation of GHG emissions[16].

B. Thresholds of Significance for this Project

The City has not adopted a numerical significance threshold for assessing impacts related to GHG emissions and has not formally adopted a local plan for reducing GHG emissions. Nor have SCAQMD, OPR, CARB, CAPCOA, or any other state or regional agency adopted a numerical significance threshold for assessing GHG emissions that is applicable to the Project. Since there is no applicable adopted or accepted numerical threshold of significance for GHG emissions, the methodology for evaluating the Project's impacts related to GHG emissions focuses on its consistency with the City's CAP. This evaluation of

[16] *The Governor's Office of Planning and Research recommendations include a requirement that such a plan must be adopted through a public review process and include specific requirements that reduce or mitigate the project's incremental contribution of GHG emissions. If there is substantial evidence that the possible effects of a particular project are still cumulatively considerable, notwithstanding compliance with the adopted regulations or requirements, an EIR must be prepared for the project.*

consistency with the CAP is the sole basis for determining the significance of the Project's GHG-related impacts on the environment.

4. METHODOLOGY

In view of the above considerations, this analysis also quantifies the project's total annual GHG emissions for informational purposes, taking into account the GHG emission reduction features that would be incorporated into the Project's design.

The proposed project is anticipated to generate GHG emissions from area sources, energy usage, mobile sources, waste, water, and construction equipment. The following provides the methodology used to calculate the project-related GHG emissions and the project impacts.

CalEEMod Version 2016.3.2 was used to calculate the GHG emissions from the proposed project. The CalEEMod Annual Outputs for year 2023 are available in Appendix B. Each source of GHG emissions is described in greater detail below.

A. Area Sources

Area sources include emissions from consumer products, landscape equipment and architectural coatings. No changes were made to the default area source emissions.

B. Energy Usage

Energy usage includes emissions from the generation of electricity and natural gas used on-site. Use of 2019 Title 24 Non-Residential Standards will result in a 30 percent reduction in energy use over 2016 Standards (CalEEMod defaults), this regulation was incorporated into the analysis. The project will be LEED Gold certified and it is anticipated that the lighting installed will be at least 35 percent more efficient than baseline. No details on the project's LEED-based measures were available at the time of this analysis. No other changes were made to the default energy usage parameters.

C. Mobile Sources

Mobile sources include emissions from the additional vehicle miles generated from the proposed project. The Transportation Impact Analysis CEQA Evaluation (CEQA TIA) found that the proposed project will generate a total of 776 daily trips and 7,753 daily (2,015,780 annual[17]) vehicle miles traveled (VMT). As the daily trips and daily VMT data only account for weekday traffic, the weekend only traffic data was obtained from the Institute of Traffic Engineers (ITE) 10th Edition Trip Generation Manual for General

[17] *Daily VMT (9,986) x 260 days.*

Office and Medical-Dental Office land uses. In order to just obtain the VMT emissions from mobile sources, the CalEEMod runs used 1,000 SF of User Defined Commercial as a base land use, changed the trip percentage to 100 percent H-S or C-C and the trip purpose to 100% primary. The trip generation rate was calculated based on the number of trips per day for the base unit. The trip mileage was then adjusted to give the same annual VMT as reported in the TIA. Weekday VMT GHG emissions were added to weekend only VMT emissions to give an annual total for mobile sources. See Section II for details.

D. Waste

Waste includes the GHG emissions generated from the processing of waste from the proposed project as well as the GHG emissions from the waste once it is interred into a landfill. AB 341 requires that 75 percent of waste be diverted from landfills by 2020, reductions for this are shown in the mitigated CalEEMod output values, this regulation was incorporated into the analysis. No other changes were made to the default waste parameters.

E. Water

Water includes the water used for the interior of the building as well as for landscaping and is based on the GHG emissions associated with the energy used to transport and filter the water. CalGreen requires a 20 percent reduction in indoor water use and water efficient irrigation systems, this regulation was incorporated into the analysis. No other changes were made to the default water usage parameters.

F. Construction

The construction-related GHG emissions were also included in the analysis and were based on a 30 year amortization rate as recommended in the SCAQMD GHG Working Group meeting on November 19, 2009. The construction-related GHG emissions were calculated by CalEEMod using the methodology detailed above in *Section II, Air Quality Analysis*, of this technical report.

5. PROJECT GREENHOUSE GAS EMISSIONS

The GHG emissions have been calculated based on the parameters described above. A summary of the results are shown in Table 11 below. Table 11, shows that the project's total emissions (with incorporation of regulatory requirements) would be 2,351.76 MTCO2e per year.

Table 11
Project-Related Greenhouse Gas Emissions With Incorporation of Regulation

Category	Greenhouse Gas Emissions (Metric Tons/Year)					
	Bio-CO2	NonBio-CO_2	CO_2	CH_4	N_2O	CO_2e
Area Sources[1]	0.00	0.01	0.00	0.00	0.00	0.01

Table 11
Project-Related Greenhouse Gas Emissions With Incorporation of Regulation

Category	Greenhouse Gas Emissions (Metric Tons/Year)					
	Bio-CO2	NonBio-CO_2	CO_2	CH_4	N_2O	CO_2e
Energy Usage[2]	0.00	1,127.72	1,127.72	0.02	0.00	1,129.60
Mobile Sources[3]	0.00	931.89	931.89	0.05	0.00	933.05
Waste[4]	44.68	0.00	44.68	2.64	0.00	110.68
Water[5]	3.44	140.95	144.40	0.36	0.01	155.94
Construction[6]	0.00	22.10	22.10	0.00	0.00	22.17
Total Emissions	48.12	2,222.96	2,271.08	3.06	0.01	**2,351.76**

Notes:
(1) Area sources consist of GHG emissions from consumer products, architectural coatings, and landscape equipment.
(2) Energy usage consist of GHG emissions from electricity (2019 Title 24 Standards applied) and natural gas usage.
(3) Mobile sources consist of GHG emissions from vehicles (based on VMT data for weekdays and ITE trip generation rates for weekends).
(4) Solid waste includes the CO_2 and CH_4 emissions created from the solid waste placed in landfills (AB341 applied).
(5) Water includes GHG emissions from electricity used for transport of water and processing of wastewater (CalGreen standards applied).
(6) Construction GHG emissions CO2e based on a 30 year amortization rate.

Source: CalEEMod Version 2016.3.2 for Opening Year 2023.

6. CONSISTENCY WITH APPLICABLE GREENHOUSE GAS REDUCTION PLANS AND POLICIES

The proposed project would have the potential to conflict with any applicable plan, policy or regulation of an agency adopted for the purpose of reducing the emissions of greenhouse gases.

As stated above, the Climate Action Plan Consistency Checklist is intended to be a tool for new development projects to demonstrate consistency with Pasadena's CAP, which is a qualified greenhouse gas (GHG) emissions reduction plan in accordance with California Environmental Quality Act (CEQA) Guidelines Section 15183.5. This Checklist has been developed as part of the CAP implementation and monitoring process and will support the achievement of individual CAP measures as well as Pasadena's overall GHG reduction goals. In addition, this Checklist will further Pasadena's sustainability goals and policies that encourage sustainable development and aim to conserve and reduce the consumption of resources, such as energy and water, among others.

The Checklist is only required for discretionary projects[18] that are subject to and not exempt from CEQA. Projects that are exempt from CEQA are deemed to be consistent with Pasadena's CAP, and no further review is necessary, with the exception of the Class 32 "In-Fill Development Projects" categorical

[18] *City of Pasadena, Pasadena Climate Action Plan (CAP), March 5, 2018, page 90.*

exemption (CEQA Guidelines Section 15332), for which Projects are required to demonstrate consistency with the CAP through this Checklist.

The project was required to complete the Checklist (included in Appendix C of this report). As shown in the CAP Checklist, the project incorporated all six of the mandatory sustainable development actions, one energy efficiency and conservation action, three sustainable mobility and land use actions, and one urban greening action; for a total of 11 points. Therefore, the proposed project will not result in substantial emissions of greenhouse gases and will not conflict with the City of Pasadena CAP. Impacts are considered to be less than significant.

7. CUMULATIVE GREENHOUSE GAS IMPACTS

Although the project is expected to emit GHGs, the emission of GHGs by a single project into the atmosphere is not itself necessarily an adverse environmental effect. Rather, it is the increased accumulation of GHG from more than one project and many sources in the atmosphere that may result in global climate change. Therefore, in the case of global climate change, the proximity of the project to other GHG emission generating activities is not directly relevant to the determination of a cumulative impact because climate change is a global condition. According to CAPCOA, "GHG impacts are exclusively cumulative impacts; there are no non-cumulative GHG emission impacts from a climate change perspective."[19] The resultant consequences of that climate change can cause adverse environmental effects. A project's GHG emissions typically would be very small in comparison to state or global GHG emissions and, consequently, they would, in isolation, have no significant direct impact on climate change.

The state has mandated a goal of reducing statewide emissions to 1990 levels by 2020, even though statewide population and commerce are predicted to continue to expand. In order to achieve this goal, CARB is in the process of establishing and implementing regulations to reduce statewide GHG emissions.

As discussed in the Consistency With Applicable Greenhouse Gas Reduction Plans and Policies section above, the project accrued the requisite 11 points and is consistent with the goals and objectives of the City's CAP. Therefore, the project's incremental contribution to greenhouse gas emissions and their effects on climate change would not be cumulatively considerable.

[19] *Source: California Air Pollution Control Officers Association, CEQA & Climate change: Evaluating and Addressing Greenhouse Gas Emissions from Projects Subject to the California Environmental Quality Act, (2008).*

IV. ENERGY ANALYSIS

1. EXISTING CONDITIONS

This section provides an overview of the existing energy conditions in the project area and region. As stated previously, the project will be LEED Gold certified; however, details on the energy-reducing measures that the project will employ to meet the certification were not available at the time of this analysis.

A. Overview

California's estimated annual energy use as of 2019 included:

- Approximately 277,704 gigawatt hours of electricity;[21]
- Approximately 2,136,907 million cubic feet of natural gas per year (for the year 2018)[22]; and
- Approximately 23.2 billion gallons of transportation fuel (for the year 2015).[23]

As of 2018, the year of most recent data currently available by the United States Energy Information Administration (EIA), energy use in California by demand sector was:

- Approximately 39.8 percent transportation;
- Approximately 23.2 percent industrial;
- Approximately 18.1 percent residential; and
- Approximately 18.9 percent commercial.[24]

California's electricity in-state generation system generates approximately 200,475 gigawatt-hours each year. In 2019, California produced approximately 72 percent of the electricity it uses; the rest was imported from the Pacific Northwest (approximately 9 percent) and the U.S. Southwest (approximately 19 percent). Natural gas is the main source for electricity generation at approximately 42.97 percent of the total in-state electric generation system power as shown in Table 14.

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[21] *California Energy Commission. Energy Almanac. Total Electric Generation. [Online] 2020. https://www.energy.ca.gov/data-reports/energy-almanac/california-electricity-data/2019-total-system-electric-generation.*

[22] *Natural Gas Consumption by End Use. U.S. Energy Information Administration. [Online] August 31, 20020. https://www.eia.gov/dnav/ng/ng_cons_sum_dcu_SCA_a.htm.*

[23] *California Energy Commission. Revised Transportation Energy Demand Forecast 2018-2030. [Online] April 19, 2018. https://www.energy.ca.gov/assessments/*

[24] *U.S. Energy Information Administration. California Energy Consumption by End-Use Sector. California State Profile and Energy Estimates.[Online] January 16, 2020 https://www.eia.gov/state/?sid=CA#tabs-2*

A summary of and context for energy consumption and energy demands within the State is presented in "U.S. Energy Information Administration, California State Profile and Energy Estimates, Quick Facts" excerpted below:

- California was the seventh-largest producer of crude oil among the 50 states in 2018, and, as of January 2019, it ranked third in oil refining capacity.
- California is the largest consumer of jet fuel among the 50 states and accounted for one-fifth of the nation's jet fuel consumption in 2018.
- California's total energy consumption is the second-highest in the nation, but, in 2018, the State's per capita energy consumption ranked the fourth-lowest, due in part to its mild climate and its energy efficiency programs.
- In 2018, California ranked first in the nation as a producer of electricity from solar, geothermal, and biomass resources and fourth in the nation in conventional hydroelectric power generation.
- In 2018, large- and small-scale solar PV and solar thermal installations provided 19% of California's net electricity generation[25].

As indicated above, California is one of the nation's leading energy-producing states, and California per capita energy use is among the nation's most efficient. Given the nature of the proposed project, the remainder of this discussion will focus on the three sources of energy that are most relevant to the project—namely, electricity and natural gas for building uses, and transportation fuel for vehicle trips associated with the proposed project.

[25] *State Profile and Energy Estimates. Independent Statistics and Analysis. [Online] [Cited: January 16, 2020.] http://www.eia.gov/state/?sid=CA#tabs2.*

Table 12
Total Electricity System Power (California 2019)

Fuel Type	California In-State Generation (GWh)	Percent of California In-State Generation	Northwest Imports (GWh)	Southwest Imports (GWh)	Total California Energy Mix (GWh)	Total California Power Mix
Coal	248	0.12%	219	7,765	8,233	2.96%
Natural Gas	86,136	42.97%	62	8,859	95,057	34.23%
Nuclear	16,163	8.06%	39	8,743	24,945	8.98%
Oil	36	0.02%	0	0	36	0.01%
Other (Petroleum Coke/Waste Heat)	411	0.20%	0	11	422	0.15%
Large Hydro	33,145	16.53%	6,387	1,071	40,603	14.62%
Unspecified Sources of Power	0	0.00%	6,609	13,767	20,376	7.34%
Renewables	64,336	32.09%	10,615	13,081	88,032	31.70%
Biomass	5,851	2.92%	903	33	6,787	2.44%
Geothermal	10,943	5.46%	99	2,218	13,260	4.77%
Small Hydro	5,349	2.67%	292	4	5,646	2.03%
Solar	28,513	14.22%	282	5,295	34,090	12.28%
Wind	13,680	6.82%	9,038	5,531	28,249	10.17%
Total	200,475	100.00%	23,930	53,299	277,704	100.00%

Source: California Energy Commission. 2019 Total System electric Generation. https://www.energy.ca.gov/data-reports/energy-almanac/california-electricity-data/2019-total-system-electric-generation

B. Electricity

Electricity would be provided to the project by Pasadena Department of Water and Power (PWP). PWP provides electricity to more than 65,000 customers within Pasadena. PWP also delivers water to almost 38,000 households and businesses in Pasadena and adjacent communities in the San Gabriel Valley.[26] PWP derives electricity from varied energy resources including: fossil fuels, hydroelectric generators, nuclear power plants, geothermal power plants, solar power generation, and wind farms.

Table 13 identifies PWP's specific proportional shares of electricity sources in 2019. As shown in Table 13, the 2019 PWP Power Mix has renewable energy at 26.8 percent of the overall energy resources, of which biomass and waste is at 6.9 percent, geothermal is at less than 1 percent, small hydroelectric is at 0 percent, solar energy is at 9.4 percent, and wind power is at 10.3 percent; other energy sources include

[26] *City of Pasadena, Department of Water and Power, About PWP, Who We Are, website: https://ww5.cityofpasadena.net/water-and-power/whoweare/.*

coal at 41.4 percent, large hydroelectric at 4.5 percent, natural gas at 11.4 percent, nuclear at 8.5 percent and unspecified sources at 7.4 percent.

Table 13
2019 PWP Power Content Mix

Energy Resources	2019 Power Mix (Actual)
Eligible Renewable	26.8%
Biomass & Waste	6.9%
Geothermal	<1%
Eligible Hydroelectric	0%
Solar	9.4%
Wind	10.3%
Coal	41.4%
Large Hydroelectric	4.5%
Natural Gas	11.4%
Nuclear	8.5%
Other	0%
Unspecified Sources of power*	7.4%
Total	100%

Notes:
** Unspecified sources of power means electricity from transactions that are not traceable to specific generation sources.*

Source: https://ww5.cityofpasadena.net/water-and-power/pcl/

C. Natural Gas

Natural gas would be provided to the project by Southern California Gas (SoCalGas). The following summary of natural gas resources and service providers, delivery systems, and associated regulation is excerpted from information provided by the California Public Utilities Commission (CPUC).

The CPUC regulates natural gas utility service for approximately 11 million customers that receive natural gas from Pacific Gas and Electric (PG&E), Southern California Gas (SoCalGas), San Diego Gas & Electric (SDG&E), Southwest Gas, and several smaller investor-owned natural gas utilities. The CPUC also regulates independent storage operators Lodi Gas Storage, Wild Goose Storage, Central Valley Storage, and Gill Ranch Storage.

The vast majority of California's natural gas customers are residential and small commercial customers, referred to as "core" customers. Larger volume gas customers, like electric generators and industrial customers, are called "noncore" customers. Although very small in number relative to core customers, noncore customers consume about 65% of the natural gas delivered by the state's natural gas utilities, while core customers consume about 35%.

The PUC regulates the California utilities' natural gas rates and natural gas services, including in-state transportation over the utilities' transmission and distribution pipeline systems, storage, procurement, metering, and billing.

Most of the natural gas used in California comes from out-of-state natural gas basins. In 2017, for example, California utility customers received 38% of their natural gas supply from basins located in the U.S. Southwest, 27% from Canada, 27% from the U.S. Rocky Mountain area, and 8% from production located in California."[27]

D. Transportation Energy Resources

The project would attract additional vehicle trips with resulting consumption of energy resources, predominantly gasoline and diesel fuel. Gasoline (and other vehicle fuels) are commercially-provided commodities and would be available to the project patrons and employees via commercial outlets.

The most recent data available shows the transportation sector emits 41 percent of the total greenhouse gases in the state (2017)[28] and about 84 percent of smog-forming oxides of nitrogen (NOx) (2016).[29] In 2019, petroleum products accounted for about 91 percent of the total U.S. transportation sector energy use.[30]

2. REGULATORY BACKGROUND

Federal and state agencies regulate energy use and consumption through various means and programs. On the federal level, the United States Department of Transportation, the United States Department of Energy, and the United States Environmental Protection Agency are three federal agencies with substantial influence over energy policies and programs. On the state level, the PUC, and the California Energy Commissions (CEC) are two agencies with authority over different aspects of energy. Relevant federal and state energy-related laws and plans are summarized below.

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[27] *California Public Utilities Commission. Natural Gas and California. http://www.cpuc.ca.gov/natural_gas/*

[28] *California Air Resources Board (CARB), 2019 Edition, California Greenhouse Gas Emission Inventory: 2000 – 2017, website: https://ww3.arb.ca.gov/cc/inventory/pubs/reports/2000_2017/ghg_inventory_trends_00-17.pdf accessed September 2020.*

[29] *CARB, 2016 SIP Emission Projection Data, website: https://www.arb.ca.gov/app/emsinv/2017/emseic1_query.php?F_DIV=-4&F_YR=2012&F_SEASON=A&SP=SIP105ADJ&F_AREA=CA accessed September 2020.*

[30] *US Energy Information Administration, Use of Energy in the United States Explained: Energy Use for Transportation, website: https://www.eia.gov/energyexplained/?page=us_energy_transportation accessed September 2020.*

A. Federal Regulations

i) Corporate Average Fuel Economy (CAFÉ) Standards

First established by the U.S. Congress in 1975, the Corporate Average Fuel Economy (CAFE) standards reduce energy consumption by increasing the fuel economy of cars and light trucks. The National Highway Traffic Safety Administration (NHTSA) and U.S. Environmental Protection Agency (USEPA) jointly administer the CAFE standards. The U.S. Congress has specified that CAFE standards must be set at the "maximum feasible level" with consideration given for: (1) technological feasibility; (2) economic practicality; (3) effect of other standards on fuel economy; and (4) need for the nation to conserve energy.[31]

ii) Intermodal Surface Transportation Efficiency Act of 1991 (ISTEA)

The Intermodal Surface Transportation Efficiency Act of 1991 (ISTEA) promoted the development of inter-modal transportation systems to maximize mobility as well as address national and local interests in air quality and energy. ISTEA contained factors that Metropolitan Planning Organizations (MPOs) were to address in developing transportation plans and programs, including some energy-related factors. To meet the new ISTEA requirements, MPOs adopted explicit policies defining the social, economic, energy, and environmental values guiding transportation decisions.

iii) The Transportation Equity Act of the 21st Century (TEA-21)

The Transportation Equity Act for the 21st Century (TEA-21) was signed into law in 1998 and builds upon the initiatives established in the ISTEA legislation, discussed above. TEA-21 authorizes highway, highway safety, transit, and other efficient surface transportation programs. TEA-21 continues the program structure established for highways and transit under ISTEA, such as flexibility in the use of funds, emphasis on measures to improve the environment, and focus on a strong planning process as the foundation of good transportation decisions. TEA-21 also provides for investment in research and its application to maximize the performance of the transportation system through, for example, deployment of Intelligent Transportation Systems, to help improve operations and management of transportation systems and vehicle safety.

[31] *United States Department of Transportation, National Highway Traffic Safety Administration, Laws and Regulations, Corporate Average Fuel Economy, website: https://www.nhtsa.gov/laws-regulations/corporate-average-fuel-economy.*

B. State Regulations

i) Integrated Energy Policy Report (IEPR)

Senate Bill 1389 requires the California Energy Commission (CEC) to prepare a biennial integrated energy policy report that assesses major energy trends and issues facing the State's electricity, natural gas, and transportation fuel sectors and provides policy recommendations to conserve resources; protect the environment; ensure reliable, secure, and diverse energy supplies; enhance the state's economy; and protect public health and safety. The Energy Commission prepares these assessments and associated policy recommendations every two years, with updates in alternate years, as part of the Integrated Energy Policy Report.

The recently-approved 2017 Integrated Energy Policy Report Updated (2017 IEPR) was published in April 2018, and continues to work towards improving electricity, natural gas, and transportation fuel energy use in California. The 2016 IEPR focuses on a variety of topics such as implementation of Senate Bill 350, integrated resource planning, distributed energy resources, transportation electrification, solutions to increase resiliency in the electricity sector, energy efficiency, transportation electrification, barriers faced by disadvantaged communities, demand response, transmission and landscape-scale planning, the California Energy Demand Preliminary Forecast, the preliminary transportation energy demand forecast, renewable gas (in response to Senate Bill 1383), updates on Southern California electricity reliability, natural gas outlook, and climate adaptation and resiliency.[32]

ii) State of California Energy Plan

The CEC is responsible for preparing the State Energy Plan, which identifies emerging trends related to energy supply, demand, conservation, public health and safety, and the maintenance of a healthy economy. The Plan calls for the state to assist in the transformation of the transportation system to improve air quality, reduce congestion, and increase the efficient use of fuel supplies with the least environmental and energy costs. To further this policy, the plan identifies a number of strategies, including assistance to public agencies and fleet operators and encouragement of urban designs that reduce vehicle miles traveled and accommodate pedestrian and bicycle access.

iii) California Building Standards Code (Title 24)

The California Building Standards Code Title 24 was previously discussed in Section 2 Air Quality Analysis of this report.

[32] *California Energy Commission. Final 2017 Integrated Energy Policy Report. April 16, 2018. https://www.energy.ca.gov/2017_energypolicy/*

a) California Building Energy Efficiency Standards (Title 24, Part 6)

The California Building Energy Efficiency Standards for Residential and Nonresidential Buildings (California Code of Regulations, Title 24, Part 6) were adopted to ensure that building construction and system design and installation achieve energy efficiency and preserve outdoor and indoor environmental quality. The current California Building Energy Efficiency Standards (Title 24 standards) are the 2019 Title 24 standards, which became effective on January 1, 2020. The 2019 Title 24 standards include efficiency improvements to the lighting and efficiency improvements to the non-residential standards include alignment with the American Society of Heating and Air-Conditioning Engineers. For example, window operation is no longer a method allowed to meet ventilation requirements, continuous operation of central forced air system handlers used in central fan integrated ventilation system is not a permissible method of providing the dwelling unit ventilation airflow, and central ventilation systems that serve multiple dwelling units must be balanced to provide ventilation airflow to each dwelling unit. In addition, requirements for kitchen range hoods were also provided in the updated Section 120.1. Ventilation and Indoor Air Quality included both additions and revisions in the 2019 Code. This section now requires nonresidential and hotel/motel buildings to have air filtration systems that use forced air ducts to supply air to occupiable spaces to have air filters. Further, the air filter efficiency must be either MERV 13 or use a particle size efficiency rating specific in the Energy Code AND be equipped with air filters with a minimum 2-inch depth or minimum 1-inch depth if sized according to the equation 120.1-A. If natural ventilation is to be used the space must also use mechanical unless ventilation openings are either permanently open or controlled to stay open during occupied times.

New regulations were also adopted under Section 130.1 Indoor Lighting Controls. These included new exceptions being added for restrooms, the exception for classrooms being removed, as well as exceptions in regards to sunlight provided through skylights and overhangs.

All buildings for which an application for a building permit is submitted on or after January 1, 2020 must follow the 2019 standards. The 2016 residential standards were estimated to be approximately 28 percent more efficient than the 2013 standards, whereas the 2019 residential standards are estimated to be approximately 7 percent more efficient than the 2016 standards. Furthermore, once rooftop solar electricity generation is factored in, 2019 residential standards are estimated to be approximately 53 percent more efficient than the 2016 standards. Under the 2019 standards, nonresidential buildings are estimated to be approximately 30 percent more efficient than the 2016 standards. Energy efficient buildings require less electricity; therefore, increased energy efficiency reduces fossil fuel consumption and decreases greenhouse gas emissions.

b) California Building Energy Efficiency Standards (Title 24, Part 11)

The 2019 California Green Building Standards Code (California Code of Regulations, Title 24, Part 11), commonly referred to as the CALGreen Code, went into effect on January 1, 2020. The 2019 CALGreen Code includes mandatory measures for non-residential development related to site development; energy efficiency; water efficiency and conservation; material conservation and resource efficiency; and environmental quality.

As previously discussed in Section 3 of this report, the Department of Housing and Community Development (HCD) updated CALGreen through the 2019 Triennial Code Adoption Cycle. HCD modified the best management practices for stormwater pollution prevention adding Section 5.106.2 for projects that disturb one or more acres of land. This section requires projects that disturb one acre or more of land or less than one acre of land but are part of a larger common plan of development or sale must comply with the postconstruction requirement detailed in the applicable National Pollutant Discharge Elimination System (NPDES) General Permit for Stormwater Discharges Associated with Construction and Land Disturbance Activities issued by the State Water Resources Control Board. The NPDES permits require postconstruction runoff (post-project hydrology) to match the preconstruction runoff pre-project hydrology) with installation of postconstruction stormwater management measures.

HCD added sections 5.106.4.1.3 and 5.106.4.1.5 in regards to bicycle parking. Section 5.106.4.1.3 requires new buildings with tenant spaces that have 10 or more tenant-occupants, provide secure bicycle parking for 5 percent of the tenant-occupant vehicular parking spaces with a minimum of one bicycle parking facility. In addition, Section 5.106.4.1.5 states that acceptable bicycle parking facility for Sections 5.106.4.1.2 through 5.106.4.1.4 shall be convenient from the street and shall meeting one of the following: (1) covered, lockable enclosures with permanently anchored racks for bicycles; (2) lockable bicycle rooms with permanently anchored racks; or (3) lockable, permanently anchored bicycle lockers.

HCD amended section 5.106.5.3.5 allowing future charging spaces to qualify as designated parking for clean air vehicles.

HCD updated section 5.303.3.3 in regards to showerhead flow rates. This update reduced the flow rate to 1.8 GPM.

HCD amended section 5.304.1 for outdoor potable water use in landscape areas and repealed sections 5.304.2 and 5.304.3. The update requires nonresidential developments to comply with a local water efficient landscape ordinance or the current California Department of Water Resource's' Model Water Efficient Landscape Ordinance (MWELO), whichever is more stringent. Some updates were also made in regards to the outdoor potable water use in landscape areas for public schools and community colleges.

HCD updated Section 5.504.5.3 in regards to the use of MERV filters in mechanically ventilated buildings. This update changed the filter use from MERV 8 to MERV 13. MERV 13 filters are to be installed prior to occupancy, and recommendations for maintenance with filters of the same value shall be included in the operation and maintenance manual.

iv) Senate Bill 350

As previously discussed in Section 3 of this report, Senate Bill 350 (SB 350) was signed into law October 7, 2015, SB 350 increases California's renewable electricity procurement goal from 33 percent by 2020 to 50 percent by 2030. This will increase the use of Renewables Portfolio Standard (RPS) eligible resources, including solar, wind, biomass, geothermal, and others. In addition, SB 350 requires the state to double statewide energy efficiency savings in electricity and natural gas end uses by 2030. To help ensure these goals are met and the greenhouse gas emission reductions are realized, large utilities will be required to develop and submit Integrated Resource Plans (IRPs). These IRPs will detail how each entity will meet their customers resource needs, reduce greenhouse gas emissions, and ramp up the deployment of clean energy resources.

v) Assembly Bill 32

As discussed in Section 3 of this report, in 2006 the California State Legislature adopted Assembly Bill 32 (AB 32), the California Global Warming Solutions Act of 2006. AB 32 requires CARB, to adopt rules and regulations that would achieve GHG emissions equivalent to statewide levels in 1990 by 2020 through an enforceable statewide emission cap which will be phased in starting in 2012. Emission reductions shall include carbon sequestration projects that would remove carbon from the atmosphere and best management practices that are technologically feasible and cost effective. Please see Section 4 for further detail on AB 32.

vi) Assembly Bill 1493/Pavley Regulations

As discussed Section 3 of this report, California Assembly Bill 1493 enacted on July 22, 2002, required CARB to develop and adopt regulations that reduce GHGs emitted by passenger vehicles and light duty trucks. In 2005, the CARB submitted a "waiver" request to the EPA from a portion of the federal Clean Air Act in order to allow the State to set more stringent tailpipe emission standards for CO_2 and other GHG emissions from passenger vehicles and light duty trucks. On December 19, 2007 the EPA announced that it denied the "waiver" request. On January 21, 2009, CARB submitted a letter to the EPA administrator regarding the State's request to reconsider the waiver denial. The EPA approved the waiver on June 30, 2009.

vii) Executive Order S-1-07/Low Carbon Fuel Standard

As discussed Section 3 of this report, Executive Order S-1-07 was issued in 2007 and proclaims that the transportation sector is the main source of GHG emissions in the State, since it generates more than 40 percent of the State's GHG emissions. It establishes a goal to reduce the carbon intensity of transportation fuels sold in the State by at least ten percent by 2020. This Order also directs CARB to determine whether this Low Carbon Fuel Standard (LCFS) could be adopted as a discrete early-action measure as part of the effort to meet the mandates in AB 32.

On April 23, 2009 CARB approved the proposed regulation to implement the low carbon fuel standard. The low carbon fuel standard is anticipated to reduce GHG emissions by about 16 MMT per year by 2020. The low carbon fuel standard is designed to provide a framework that uses market mechanisms to spur the steady introduction of lower carbon fuels. The framework establishes performance standards that fuel producers and importers must meet each year beginning in 2011. Separate standards are established for gasoline and diesel fuels and the alternative fuels that can replace each. The standards are "back-loaded", with more reductions required in the last five years, than during the first five years. This schedule allows for the development of advanced fuels that are lower in carbon than today's fuels and the market penetration of plug-in hybrid electric vehicles, battery electric vehicles, fuel cell vehicles, and flexible fuel vehicles. It is anticipated that compliance with the low carbon fuel standard will be based on a combination of both lower carbon fuels and more efficient vehicles.

Reformulated gasoline mixed with corn-derived ethanol at ten percent by volume and low sulfur diesel fuel represent the baseline fuels. Lower carbon fuels may be ethanol, biodiesel, renewable diesel, or blends of these fuels with gasoline or diesel as appropriate. Compressed natural gas and liquefied natural gas also may be low carbon fuels. Hydrogen and electricity, when used in fuel cells or electric vehicles are also considered as low carbon fuels for the low carbon fuel standard.

viii) California Air Resources Board

a) CARB's Advanced Clean Cars Program

Closely associated with the Pavley regulations, the Advanced Clean Cars emissions control program was approved by CARB in 2012. The program combines the control of smog, soot, and GHGs with requirements for greater numbers of zero-emission vehicles for model years 2015–2025.15 The components of the Advanced Clean Cars program include the Low-Emission Vehicle (LEV) regulations that reduce criteria pollutants and GHG emissions from light- and medium-duty vehicles, and the Zero-Emission Vehicle (ZEV) regulation, which requires manufacturers to produce an increasing number of pure ZEVs (meaning battery

electric and fuel cell electric vehicles), with provisions to also produce plug-in hybrid electric vehicles (PHEV) in the 2018 through 2025 model years.[33]

b) Airborne Toxic Control Measure to Limit Diesel-Fueled Commercial Motor Vehicle Idling

The Airborne Toxic Control Measure to Limit Diesel-Fueled Commercial Motor Vehicle Idling (Title 13, California Code of Regulations, Division 3, Chapter 10, Section 2435) was adopted to reduce public exposure to diesel particulate matter and other air contaminants by limiting the idling of diesel-fueled commercial motor vehicles. This section applies to diesel-fueled commercial motor vehicles with gross vehicular weight ratings of greater than 10,000 pounds that are or must be licensed for operation on highways. Reducing idling of diesel-fueled commercial motor vehicles reduces the amount of petroleum-based fuel used by the vehicle.

c) Regulation to Reduce Emissions of Diesel Particulate Matter, Oxides of Nitrogen, and other Criteria Pollutants, form In-Use Heavy-Duty Diesel-Fueled Vehicles

The Regulation to Reduce Emissions of Diesel Particulate Matter, Oxides of Nitrogen, and other Criteria Pollutants, from In-Use Heavy-Duty Diesel-Fueled Vehicles (Title 13, California Code of Regulations, Division 3, Chapter 1, Section 2025) was adopted to reduce emissions of diesel particulate matter, oxides of nitrogen (NOX) and other criteria pollutants from in-use diesel-fueled vehicles. This regulation is phased, with full implementation by 2023. The regulation aims to reduce emissions by requiring the installation of diesel soot filters and encouraging the retirement, replacement, or repower of older, dirtier engines with newer emission-controlled models. The newer emission-controlled models would use petroleum-based fuel in a more efficient manner.

ix) Sustainable Communities Strategy

The Sustainable Communities and Climate Protection Act of 2008, or Senate Bill 375 (SB 375), coordinates land use planning, regional transportation plans, and funding priorities to help California meet the GHG reduction mandates established in AB 32.

As previously stated in Section 3 of this report, Senate Bill 375 (SB 375) was adopted September 2008 and aligns regional transportation planning efforts, regional GHG emission reduction targets, and land use and housing allocation. SB 375 requires Metropolitan Planning Organizations (MPO) to adopt a sustainable communities strategy (SCS) or alternate planning strategy (APS) that will prescribe land use allocation in

[33] *California Air Resources Board, California's Advanced Clean Cars Program, January 18, 2017. www.arb.ca.gov/msprog/acc/acc.htm.*

that MPOs Regional Transportation Plan (RTP). CARB, in consultation with each MPO, will provide each affected region with reduction targets for GHGs emitted by passenger cars and light trucks in the region for the years 2020 and 2035. These reduction targets will be updated every eight years but can be updated every four years if advancements in emissions technologies affect the reduction strategies to achieve the targets. CARB is also charged with reviewing each MPO's sustainable communities strategy or alternate planning strategy for consistency with its assigned targets.

The proposed project is located within the Southern California Association of Governments (SCAG) jurisdiction, which has authority to develop the SCS or APS. For the SCAG region, the targets set by CARB are at eight percent below 2005 per capita GHG emissions levels by 2020 and 19 percent below 2005 per capita GHG emissions levels by 2035. These reduction targets became effective October 2018.

3. PROJECT ENERGY DEMANDS AND ENERGY EFFICIENCY MEASURES

A. Evaluation Criteria

In compliance with Appendix G of the State CEQA Guidelines, this report analyzes the project's anticipated energy use to determine if the project would:

- Result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation; or
- Conflict with or obstruct a state or local plan for renewable energy or energy efficiency.

In addition, Appendix F of the State CEQA Guidelines states that the means of achieving the goal of energy conservation includes the following:

- Decreasing overall per capita energy consumption;
- Decreasing reliance on fossil fuels such as coal, natural gas and oil; and
- Increasing reliance on renewable energy sources.

B. Methodology

Information from the CalEEMod 2016.3.2 Daily and Annual Outputs contained in **Appendix A** and **B** of this technical report, utilized for air quality and greenhouse gas analyses in Sections 2 and 3 of this report, were also used for this analysis. The CalEEMod outputs detail project related construction equipment, transportation energy demands, and facility energy demands.

C. Construction Energy Demands

Construction of the Revised Project is anticipated to begin no sooner than August 2021 and be completed in one phase over 18 to 24 months. Staging of construction vehicles and equipment will occur on-site. The

approximately 18 to 24-month schedule is relatively short and the project site is relatively small at approximately 0.97 net acres.

i) Construction Equipment Electricity Usage Estimates

As stated previously, Electrical service will be provided by PWP. The focus within this section is the energy implications of the construction process, specifically the power cost from on-site electricity consumption during construction of the proposed project. Based on the 2017 National Construction Estimator, Richard Pray (2017)[34], the typical power cost per 1,000 square feet of building construction per month is estimated to be $2.32. The project plans to develop the site with a total of 100 thousand square foot (TSF) of medical office/office uses. Based on **Table 14, Project Construction Power Cost and Electricity Usage,** the total power cost of the on-site electricity usage during the construction of the proposed project is estimated to be approximately $4,176 to $5,568, where the lower estimate represents an 18-month construction period and the higher dollar amount estimates a 24-month construction period.

Table 14
Project Construction Power Cost and Electricity Usage

Power Cost (per 1,000 square foot of building per month of construction)	Total Building Size (1,000 Square Foot)	Construction Duration (months)	Total Project Construction Power Cost
$2.32	100.00	18-24	$4,176 - $5,568

Although Title 24 requirements typically apply to energy usage for buildings, construction equipment would also comply with Title 24 requirements where applicable. Therefore, construction of the Project would not result in the wasteful, inefficient, or unnecessary consumption of electricity. Accordingly, impacts would be less than significant and no mitigation measures would be required.

ii) Natural Gas

Construction activities, including the construction of new buildings and facilities, typically do not involve the consumption of natural gas. Thus, there would be no demand generated by construction. Therefore, construction of the Revised Project would not result in the wasteful, inefficient, or unnecessary consumption of natural gas. Accordingly, impacts would be less than significant and no mitigation measures would be required.

[34] *Pray, Richard. 2017 National Construction Estimator. Carlsbad : Craftsman Book Company, 2017.*

iii) Construction Equipment Fuel Estimates

Fuel consumed by construction equipment would be the primary energy resource expended over the course of project construction. Fuel consumed by construction equipment was evaluated with the following assumptions:

- Construction schedule of 18-24 months
- All construction equipment was assumed to run on diesel fuel
- Typical daily use of 8 hours, with some equipment operating from ~1-8 hours
- Aggregate fuel consumption rate for all equipment was estimated at 18.5 horsepower hour per gallon (hp-hr/gal) (from CARB's 2017 Emissions Factors Tables and fuel consumption rate factors as shown in Table D-21 of the Moyer Guidelines: (https://www.arb.ca.gov/msprog/moyer/guidelines/2017gl/2017_gl_appendix_d.pdf).
- Diesel fuel would be the responsibility of the equipment operators/contractors and would be sources within the region.
- Project construction represents a "single-event" for diesel fuel demand and would not require on-going or permanent commitment of diesel fuel resources during long term operation.

Using the CalEEMod data input for the air quality and greenhouse gas analyses (Sections II and III of this report), the project's construction phase would consume electricity and fossil fuels as a single energy demand, that is, once construction is completed their use would cease. CARB's 2014 Emissions Factors Tables show that on average aggregate fuel consumption (gasoline and diesel fuel) would be approximately 18.5 hp-hr-gal. **Table 15, Construction Equipment Fuel Consumption Estimates,** shows the results of the analysis of construction equipment.

As presented in Table 15, project construction activities would consume an estimated 25,432 gallons of diesel fuel. As stated previously, project construction would represent a "single-event" diesel fuel demand and would not require on-going or permanent commitment of diesel fuel resources for this purpose.

The Revised Project would comply with CARB's anti-idling regulations as well as the In-Use Off-Road Diesel-Fueled Fleets regulation. Although these regulations are intended to reduce criteria pollutant emissions, compliance with the anti-idling and emissions regulations would also result in efficient use of construction-related energy. Therefore, construction of the Revised Project would not result in the wasteful, inefficient, or unnecessary consumption of petroleum-based fuels. Accordingly, impacts would be less than significant and no mitigation measures would be required.

Table 15
Construction Equipment Fuel Consumption Estimates

Phase	Number of Days	Off Road Equipment Type	Amount	Usage Hours	Horse Power	Load Factor	HP-hrs/ day	Total Fuel Consumption (gal diesel fuel)[1]
Demolition	10	Concrete/ Industrial Saws	1	8	81	0.73	473	256
	10	Rubber Tired Dozers	1	1	247	0.4	99	53
	10	Tractors/Loaders/ Backhoes	2	6	97	0.37	431	233
Site Preparation	30	Excavators	1	8	158	0.38	480	779
	30	Tractors/Loaders/ Backhoes	1	8	97	0.37	287	466
Building Construction	350	Cranes	1	8	231	0.29	536	10,139
	350	Forklifts	2	7	89	0.2	249	4,715
	350	Tractors/Loaders /Backhoes	2	6	97	0.37	431	8,148
Paving	10	Cement and Mortar Mixers	4	6	9	0.56	121	65
	10	Pavers	1	7	130	0.42	382	207
	10	Rollers	1	7	80	0.38	213	115
	10	Tractors/Loaders/ Backhoes	1	7	97	0.37	251	136
Architectural Coating	10	Air Compressors	1	6	78	0.48	225	121
CONSTRUCTION FUEL DEMAND (gallons of diesel fuel)								**25,432**

Notes:
(1) Using Carl Moyer Guidelines Table D-21 Fuel consumption rate factors (bhp-hr/gal) for engines less than 750 hp.

Source: https://www.arb.ca.gov/msprog/moyer/guidelines/2017gl/2017_gl_appendix_d.pdf

iv) Construction Worker Fuel Estimates

It is assumed that all construction worker trips are from light duty autos (LDA) along area roadways. With respect to estimated VMT, the construction worker trips would generate an estimated 430,563 VMT. Data regarding project related construction worker trips were based on CalEEMod 2016.3.2 model defaults.

Vehicle fuel efficiencies for construction workers were estimated in the air quality and greenhouse gas analyses (Sections II and III of this report) using information generated using CARB's EMFAC 2017 model for year 2021 emissions. An aggregate fuel efficiency of 30.13 miles per gallon (mpg) was used to calculate vehicle miles traveled for construction worker trips. **Table 16, Construction Worker Fuel Consumption Estimates,** shows that an estimated 14,290 gallons of fuel would be consumed for construction worker trips.

Table 16
Construction Worker Fuel Consumption Estimates

Phase	Number of Days	Worker Trips/Day	Trip Length (miles)	Vehicle Miles Traveled	Average Vehicle Fuel Economy (mpg)	Estimated Fuel Consumption (gallons)
Demolition	10	10	14.7	1,470	30.13	49
Site Preparation	30	5	14.7	2,205	30.13	73
Building Construction	350	82	14.7	421,890	30.13	14,002
Paving	10	18	14.7	2,646	30.13	88
Architectural Coating	10	16	14.7	2,352	30.13	78
Total Construction Worker Fuel Consumption						**14,290**

Notes:
(1) Assumptions for the worker trip length and vehicle miles traveled are consistent with CalEEMod 2016.3.2 defaults.

v) Construction Vendor and Hauling Fuel Estimates

Table 17, Construction Vendor Fuel Consumption Estimates (MHD Trucks), and Table **18, Construction Hauling Fuel Consumption Estimates (HHD Trucks),** show the estimated fuel consumption for vendor and hauling during building construction and architectural coating. With respect to estimated VMT, the vendor and hauling trips would generate an estimated 176,840 VMT. Data regarding project related construction worker trips were based on CalEEMod 2016.3.2 model defaults.

Table 17
Construction Vendor Fuel Consumption Estimates (MHD Trucks)[1]

Phase	Number of Days	Vendor Trips/Day	Trip Length (miles)	Vehicle Miles Traveled	Average Vehicle Fuel Economy (mpg)	Estimated Fuel Consumption (gallons)
Demolition	10	0	6.9	0	8.93	0
Site Preparation	30	0	6.9	0	8.93	0
Building Construction	350	36	6.9	86,940	8.93	9,736
Paving	10	0	6.9	0	8.93	0
Architectural Coating	10	0	6.9	0	8.93	0
Total Construction Worker Fuel Consumption						**9,736**

Notes:
(1) Assumptions for the vendor trip length and vehicle miles traveled are consistent with CalEEMod 2016.3.2 defaults.

For the architectural coatings it is assumed that the contractors would be responsible for bringing coatings and equipment with them in their light duty vehicles. Therefore, vendors delivering construction material would use medium with an average fuel consumption of 8.93 mpg and those hauling debris from the site

during grading would use heavy duty vehicles with an average fuel economy of 6.51 mpg. Tables 17 and 18 show that an estimated 23,546 gallons of fuel would be consumed for vendor and hauling trips.

Table 18
Construction Hauling Fuel Consumption Estimates (HHD Trucks)[1]

Phase	Number of Days	Hauling Trips	Trip Length (miles)	Vehicle Miles Traveled	Average Vehicle Fuel Economy (mpg)	Estimated Fuel Consumption (gallons)
Demolition	10	32	20	640	6.51	98
Site Preparation	30	4,463	20	89,260	6.51	13,711
Building Construction	350	0	20	0	6.51	0
Paving	10	0	20	0	6.51	0
Architectural Coating	10	0	20	0	6.51	0
Total Construction Worker Fuel Consumption						**13,810**

Notes:
(1) Assumptions for the hauling trip length and vehicle miles traveled are consistent with CalEEMod 2016.3.2 defaults.

vi) Construction Energy Efficiency/Conservation Measures

Construction equipment used over the approximately 18 to 24-month construction phase would conform to CARB regulations and California emissions standards and is evidence of related fuel efficiencies. There are no unusual project characteristics or construction processes that would require the use of equipment that would be more energy intensive than is used for comparable activities; or equipment that would not conform to current emissions standards (and related fuel efficiencies). Equipment employed in construction of the project would therefore not result in inefficient wasteful, or unnecessary consumption of fuel.

The project would utilize construction contractors which practice compliance with applicable CARB regulation regarding retrofitting, repowering, or replacement of diesel off-road construction equipment. Additionally, CARB has adopted the Airborne Toxic Control Measure to limit heavy-duty diesel motor vehicle idling in order to reduce public exposure to diesel particulate matter and other Toxic Air Contaminants. Compliance with these measures would result in a more efficient use of construction-related energy and would minimize or eliminate wasteful or unnecessary consumption of energy. Idling restrictions and the use of newer engines and equipment would result in less fuel combustion and energy consumption. Additionally, as required by California Code of Regulations Title 13, Motor Vehicles, section 2449(d)(3) Idling, limits idling times of construction vehicles to no more than five minutes, thereby minimizing, or eliminating unnecessary and wasteful consumption of fuel due to unproductive idling of construction equipment. Enforcement of idling limitations is realized through periodic site inspections conducted by County building officials, and/or in response to citizen complaints.

D. Operational Energy Demands

Energy consumption in support of or related to project operations would include transportation energy demands (energy consumed by employee and patron vehicles accessing the project site) and facilities energy demands (energy consumed by building operations and site maintenance activities).

i) Transportation Fuel Consumption

Using the CalEEMod output from the air quality and greenhouse gas analyses (Sections II and III of this report), an average trip for autos and light trucks was assumed to be 16.6 miles and 3- and 4-axle trucks were assumed to travel an average of 6.9 miles.[35] To present a worst-case scenario, it was assumed that vehicles would operate 365 days per year rather than the more likely 253 days (excluding weekends and up to 8 holidays). **Table 19, Estimated Vehicle Operations Fuel Consumption,** shows the estimated annual fuel consumption for all classes of vehicles from autos to heavy-heavy trucks.[36]

Table 19
Estimated Vehicle Operations Fuel Consumption

Vehicle Type	Vehicle Mix	Number of Vehicles	Average Trip (miles)[1]	Daily VMT	Average Fuel Economy (mpg)	Total Gallons per Day	Total Annual Fuel Consumption (gallons)
Light Auto	Automobile	1,298	16.6	21547	31.82	677.15	247,161
Light Truck	Automobile	106	16.6	1767	27.16	65.07	23,749
Light Truck	Automobile	488	16.6	8104	25.6	316.55	115,541
Medium Truck	Automobile	28	16.6	471	20.81	22.63	8,261
Light Heavy Truck	2-Axle Truck	37	16.6	606	13.81	43.88	16,015
Light Heavy Truck 10,000 lbs +	2-Axle Truck	15	6.9	102	14.18	7.21	2,630
Medium Heavy Truck	3-Axle Truck	49	6.9	336	9.85	34.08	12,440
Heavy Heavy Truck	4-Axle Truck	7	6.9	51	7.14	7.20	2,628
Total		2,378	--	7,753[2]	18.80	1,173.77	--
						Total Annual Fuel Consumption	**428,426**

Notes: (1) Based on the size of the site and relative location, trips were assumed to be local rather than regional.
(2) Based on the VMT reported in the CEQA TIA.

[35] *CalEEMod default distance for H-W (home-work) or C-W (commercial-work) is 16.6 miles; 6.9 miles for H-O (home-other) or C-O (commercial-other).*

[36] *Average fuel economy based on aggregate mileage calculated in EMFAC 2017 for opening year (2023). See Appendix C for EMFAC output.*

The proposed project would generate 2,378 trips per day and 7,753 daily VMT. The vehicle fleet mix was used from the CalEEMod output. Table 19 shows that an estimated 428,426 gallons of fuel would be consumed per year for the operation of the proposed project.

ii) Facility Energy Demands (Electricity and Natural Gas)

Building operation and site maintenance (including landscape maintenance) would result in the consumption of electricity (provided by PWP) and natural gas (provided by Southern California Gas Company). The annual natural gas and electricity demands were provided per the CalEEMod output from the air quality and greenhouse gas analyses (Sections II and III of this report) and in **Table 20**, **Project Annual Operational Energy Demand Summary.**

Energy use in buildings is divided into energy consumed by the built environment and energy consumed by uses that are independent of the construction of the building such as in plug-in appliances. In California, the California Building Standards Code Title 24 governs energy consumed by the built environment, mechanical systems, and some types of fixed lighting. Non-building energy use, or "plug-in" energy use can be further subdivided by specific end-use (refrigeration, cooking, appliances, etc.).

Table 20
Project Annual Operational Energy Demand Summary[1]

Natural Gas Demand	**kBTU/year**
Medical Office Building	590,839.0
General Office	148,080.0
Enclosed Parking with Elevator	0.0
Total	**738,919**
Electricity Demand	**kWh/year**
Medical Office Building	814,239.0
General Office	204,070.0
Enclosed Parking with Elevator	423,436
Total	**1,441,745**

Notes:
(1) Taken from the CalEEMod 2016.3.2 annual output (Appendix B of this report). Includes reductions for compliance with 2019 Title 24 Standards.

4. RENEWABLE ENERGY AND ENERGY EFFICIENCY PLAN CONSISTENCY

Regarding federal transportation regulations, the project site is located in an already developed area. Access to/from the project site is from existing roads. These roads are already in place so the project would not interfere with, nor otherwise obstruct intermodal transportation plans or projects that may be proposed pursuant to the ISTEA because SCAG is not planning for intermodal facilities in the project area.

Regarding the State's Energy Plan and compliance with Title 24 CCR energy efficiency standards, the applicant is required to comply with the California Green Building Standard Code requirements for energy efficient buildings and appliances as well as utility energy efficiency programs implemented by PWP and Southern California Gas Company.

Regarding Pavley (AB 1493) regulations, an individual project does not have the ability to comply or conflict with these regulations because they are intended for agencies and their adoption of procedures and protocols for reporting and certifying GHG emission reductions from mobile sources.

Regarding the State's Renewable Energy Portfolio Standards, the project would be required to meet or exceed the energy standards established in the California Green Building Standards Code, Title 24, Part 11 (CALGreen). CalGreen Standards require that new buildings reduce water consumption, employ building commissioning to increase building system efficiencies, divert construction waste from landfills, and install low pollutant-emitting finish materials.

As shown in *Section III, Global Climate Change Analysis*, above, the proposed project is consistent with the applicable strategies of the City's CAP.

5. CONCLUSION

As supported by the preceding analyses, project construction and operations would not result in the inefficient, wasteful, or unnecessary consumption of energy. Further, the energy demands of the project can be accommodated within the context of available resources and energy delivery systems. The project would therefore not cause or result in the need for additional energy producing or transmission facilities. The project would not engage in wasteful or inefficient uses of energy and aims to achieve energy conservations goals within the City of Pasadena and the State of California. Notwithstanding, the project proposes commercial uses and will not have any long-term effects on an energy provider's future energy development or future energy conservation strategies.

V. EMISSIONS REDUCTION MEASURES

1. CONSTRUCTION MEASURES

Adherence to SCQAMD Rule 403 is required.

2. OPERATIONAL MEASURES

None required.

VI. REFERENCES

California Air Resources Board

2008 Resolution 08-43

2008 Recommended Approaches for Setting Interim Significance Thresholds for Greenhouse Gases under the California Environmental Quality Act

2008 Climate Change Scoping Plan, a framework for change.

2011 Supplement to the AB 32 Scoping Plan Functional Equivalent Document

2013 Almanac of Emissions and Air Quality.

Source: https://www.arb.ca.gov/aqd/almanac/almanac13/almanac13.htm

2014 First Update to the Climate Change Scoping Plan, Building on the Framework Pursuant to AB32, the California Global Warming Solutions Act of 2006. May.

2017 California's 2017 Climate Change Scoping Plan. November.

2020 Historical Air Quality, Top 4 Summary

City of Pasadena

2015 General Plan Draft EIR. January

2018 Pasadena Climate Action Plan. March 5.

2020 Pasadena Department of Transportation. Transportation Impact Evaluation CEQA Evaluation. 590 South Fair Oaks Avenue. October 30.

2020 Pasadena Department of Transportation. Transportation Impact Evaluation Outside CEQA Evaluation. 590 South Fair Oaks Avenue. October 30.

Governor's Office of Planning and Research

2008 CEQA and Climate: Addressing Climate Change Through California Environmental Quality Act (CEQA) Review

2018 CEQA Guideline Sections to be Added or Amended

Intergovernmental Panel on Climate Change (IPCC).

2014 IPCC Fifth Assessment Report, Climate Change 2014: Synthesis Report

South Coast Air Quality Management District (SCAQMD)

2011 California Environmental Quality Act (CEQA) And Federal Conformity Guidelines. February

Office of Environmental Health Hazard Assessment

2015 Air Toxics Hot Spots Program Risk Assessment Guidelines

Southern California Association of Governments

2016 2016-2040 Regional Transportation Plan/Sustainable Communities Strategy

U.S. Environmental Protection Agency (EPA)

2017 Understanding Global Warming Potentials

(Source: https://www.epa.gov/ghgemissions/understanding-global-warming-potentials)

U.S. Geological Survey

2011 Reported Historic Asbestos Mines, Historic Asbestos Prospects, and Other Natural Occurrences of Asbestos in California

VII. LIST OF ACRONYMS AND ABBREVIATIONS

AQMP	Air Quality Management Plan
BACT	Best Available Control Technologies
CAAQS	California Ambient Air Quality Standards
CalEPA	California Environmental Protection Agency
CARB	California Air Resources Board
CCAA	California Clean Air Act
CCAR	California Climate Action Registry
CEQA	California Environmental Quality Act
CFCs	Chlorofluorocarbons
CH_4	Methane
CNG	Compressed natural gas
CO	Carbon monoxide
CO_2	Carbon dioxide
CO_2e	Carbon dioxide equivalent
DPM	Diesel particulate matter
EPA	U.S. Environmental Protection Agency
GHG	Greenhouse gas
GWP	Global warming potential
HIDPM	Hazard Index Diesel Particulate Matter
HFCs	Hydrofluorocarbons
IPCC	International Panel on Climate Change
LCFS	Low Carbon Fuel Standard
LST	Localized Significant Thresholds
$MTCO_2e$	Metric tons of carbon dioxide equivalent
$MMTCO_2e$	Million metric tons of carbon dioxide equivalent
MPO	Metropolitan Planning Organization
NAAQS	National Ambient Air Quality Standards
NOx	Nitrogen Oxides
NO_2	Nitrogen dioxide
N_2O	Nitrous oxide
O_3	Ozone
OPR	Governor's Office of Planning and Research
PFCs	Perfluorocarbons
PM	Particle matter
PM10	Particles that are less than 10 micrometers in diameter
PM2.5	Particles that are less than 2.5 micrometers in diameter

PMI	Point of maximum impact
PPM	Parts per million
PPB	Parts per billion
RTIP	Regional Transportation Improvement Plan
RTP	Regional Transportation Plan
SANBAG	San Bernardino Association of Governments
SCAB	South Coast Air Basin
SCAG	Southern California Association of Governments
SCAQMD	South Coast Air Quality Management District
SSAB	Salton Sea Air Basin
SF_6	Sulfur hexafluoride
SIP	State Implementation Plan
SOx	Sulfur Oxides
TAC	Toxic air contaminants
VOC	Volatile organic compounds

APPENDICES

Appendix A: CalEEMod Model Daily Emissions Printouts

Appendix B: CalEEMod Model Annual Emissions Printouts

Appendix C: CAP Checklist and EMFAC Data

APPENDIX A: CALEEMOD MODEL DAILY EMISSIONS PRINTOUTS

590 South Fair Oaks

Los Angeles-South Coast County, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Medical Office Building	79.80	1000sqft	0.00	79,800.00	0
Enclosed Parking with Elevator	260.00	Space	0.60	104,000.00	0
Other Non-Asphalt Surfaces	16.12	1000sqft	0.37	16,122.00	0
General Office Building	20.00	1000sqft	0.00	20,000.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	33
Climate Zone	12			**Operational Year**	2023
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 - ~79.8 TSF 4-story medical office, 20 TSF office, 260-space subterranean parking structure with ~16,122 SF of landscaping and hardscape on ~0.97 ac

Construction Phase - Construction to start ~August 2021 and last ~18-24 months

Off-road Equipment -

Off-road Equipment -

Off-road Equipment -

Off-road Equipment -

Off-road Equipment - No grading on-site. Excavator added for excavation for subterranean parking structure.

Trips and VMT -

Demolition - 2,800 SF + 4,200 SF buildings (7,000 SF total) to be demolished.

Grading - Site is ~ 0.97 acres. 35,700 CY of export.

Architectural Coating - SCAQMD Rule 1113 limits paints applied to buildings to 50g/L VOC content

Vehicle Trips - Per TIA, wkday trip gen rate for gen off=7.792trips/TSF, for med/dentl off=27.84trips/TSF. Wkend rates from 10th Ed ITE. For Gen off, Sat = 1.768trips/TSF, Sun =0.56trips/TSF;for med/dent off Sat=6.856trips/TSF, Sun=1.136trips/TSF (w/20%rdxn)

Area Coating - SCAQMD Rule 1113 limits paints applied to buildings to 50g/L VOC content

Construction Off-road Equipment Mitigation -

Energy Mitigation - 2019 standards, nonresidential buildings are approximately 30 percent more efficient than 2016 standards. Project will be LEED Gold certified. Lighting installed will be at least 35% more efficient than baseline.

Water Mitigation - 20% reduction in indoor water use per CalGreen. Water-efficient landscaping to be installed on-site.

Waste Mitigation - 75% diversion of waste per AB 341

Woodstoves -

Sequestration -

Mobile Land Use Mitigation -

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	EF_Nonresidential_Exterior	100.00	50.00
tblArchitecturalCoating	EF_Nonresidential_Interior	100.00	50.00
tblAreaCoating	Area_EF_Nonresidential_Exterior	100	50
tblAreaCoating	Area_EF_Nonresidential_Interior	100	50
tblConstructionPhase	NumDays	1.00	30.00
tblConstructionPhase	NumDays	100.00	350.00
tblConstructionPhase	NumDays	5.00	10.00
tblConstructionPhase	NumDays	5.00	10.00
tblGrading	AcresOfGrading	0.00	0.97
tblGrading	MaterialExported	0.00	37,500.00
tblLandUse	LandUseSquareFeet	16,120.00	16,122.00
tblLandUse	LotAcreage	1.83	0.00
tblLandUse	LotAcreage	2.34	0.60
tblLandUse	LotAcreage	0.46	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	UsageHours	8.00	0.00
tblVehicleTrips	ST_TR	8.96	6.86
tblVehicleTrips	ST_TR	2.46	1.77
tblVehicleTrips	SU_TR	1.55	1.14
tblVehicleTrips	SU_TR	1.05	0.56
tblVehicleTrips	WD_TR	36.13	27.84
tblVehicleTrips	WD_TR	11.03	7.79

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	2.9768	57.7032	27.0421	0.1608	4.1110	0.8074	4.9184	1.0984	0.7478	1.8462	0.0000	17,111.7416	17,111.7416	1.6010	0.0000	17,151.7671
2022	1.1183	10.5679	11.0644	0.0296	1.1471	0.3854	1.5324	0.3094	0.3548	0.6642	0.0000	2,985.8326	2,985.8326	0.4382	0.0000	2,996.7875
2023	49.8497	9.1381	10.6840	0.0290	1.1471	0.3301	1.4772	0.3094	0.3038	0.6133	0.0000	2,922.6308	2,922.6308	0.4296	0.0000	2,933.3698
Maximum	**49.8497**	**57.7032**	**27.0421**	**0.1608**	**4.1110**	**0.8074**	**4.9184**	**1.0984**	**0.7478**	**1.8462**	**0.0000**	**17,111.7416**	**17,111.7416**	**1.6010**	**0.0000**	**17,151.7671**

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	2.9768	57.7032	27.0421	0.1608	4.0038	0.8074	4.8112	1.0830	0.7478	1.8309	0.0000	17,111.7416	17,111.7416	1.6010	0.0000	17,151.7671
2022	1.1183	10.5679	11.0644	0.0296	1.1471	0.3854	1.5324	0.3094	0.3548	0.6642	0.0000	2,985.8326	2,985.8326	0.4382	0.0000	2,996.7875
2023	49.8497	9.1381	10.6840	0.0290	1.1471	0.3301	1.4772	0.3094	0.3038	0.6133	0.0000	2,922.6308	2,922.6308	0.4296	0.0000	2,933.3698
Maximum	**49.8497**	**57.7032**	**27.0421**	**0.1608**	**4.0038**	**0.8074**	**4.8112**	**1.0830**	**0.7478**	**1.8309**	**0.0000**	**17,111.7416**	**17,111.7416**	**1.6010**	**0.0000**	**17,151.7671**

590 South Fair Oaks - Los Angeles-South Coast County, Summer

	ROG	NOx	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**	**1.67**	**0.00**	**1.35**	**0.89**	**0.00**	**0.49**	**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	2.1580	3.5000e-004	0.0384	0.0000		1.4000e-004	1.4000e-004		1.4000e-004	1.4000e-004		0.0823	0.0823	2.2000e-004		0.0877
Energy	0.0307	0.2791	0.2344	1.6700e-003		0.0212	0.0212		0.0212	0.0212		334.8648	334.8648	6.4200e-003	6.1400e-003	336.8547
Mobile	3.5162	14.2429	43.4657	0.1608	13.3213	0.1186	13.4398	3.5649	0.1102	3.6751		16,385.3621	16,385.3621	0.7961		16,405.2642
Total	**5.7049**	**14.5223**	**43.7385**	**0.1625**	**13.3213**	**0.1399**	**13.4612**	**3.5649**	**0.1316**	**3.6964**		**16,720.3092**	**16,720.3092**	**0.8027**	**6.1400e-003**	**16,742.2066**

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	2.1580	3.5000e-004	0.0384	0.0000		1.4000e-004	1.4000e-004		1.4000e-004	1.4000e-004		0.0823	0.0823	2.2000e-004		0.0877
Energy	0.0218	0.1985	0.1667	1.1900e-003		0.0151	0.0151		0.0151	0.0151		238.1690	238.1690	4.5600e-003	4.3700e-003	239.5843
Mobile	3.5162	14.2429	43.4657	0.1608	13.3213	0.1186	13.4398	3.5649	0.1102	3.6751		16,385.3621	16,385.3621	0.7961		16,405.2642
Total	**5.6960**	**14.4417**	**43.6708**	**0.1620**	**13.3213**	**0.1338**	**13.4550**	**3.5649**	**0.1255**	**3.6903**		**16,623.6133**	**16,623.6133**	**0.8009**	**4.3700e-003**	**16,644.9362**

	ROG	NOx	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	**0.16**	**0.55**	**0.15**	**0.30**	**0.00**	**4.38**	**0.05**	**0.00**	**4.66**	**0.17**	**0.00**	**0.58**	**0.58**	**0.23**	**28.83**	**0.58**

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	8/2/2021	8/13/2021	5	10	
2	Site Preparation	Site Preparation	8/14/2021	9/24/2021	5	30	
3	Building Construction	Building Construction	9/24/2021	1/26/2023	5	350	
4	Paving	Paving	1/27/2023	2/9/2023	5	10	
5	Architectural Coating	Architectural Coating	2/10/2023	2/23/2023	5	10	

Acres of Grading (Site Preparation Phase): 0.97

Acres of Grading (Grading Phase): 0

Acres of Paving: 0.97

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 149,700; Non-Residential Outdoor: 49,900; Striped Parking Area: 7,207 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Demolition	Rubber Tired Dozers	1	1.00	247	0.40
Demolition	Tractors/Loaders/Backhoes	2	6.00	97	0.37
Site Preparation	Excavators	1	8.00	158	0.38
Site Preparation	Graders	0	0.00	187	0.41
Site Preparation	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Building Construction	Cranes	1	4.00	231	0.29
Building Construction	Forklifts	2	6.00	89	0.20
Building Construction	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Paving	Cement and Mortar Mixers	4	6.00	9	0.56
Paving	Pavers	1	7.00	130	0.42
Paving	Rollers	1	7.00	80	0.38
Paving	Tractors/Loaders/Backhoes	1	7.00	97	0.37
Architectural Coating	Air Compressors	1	6.00	78	0.48

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	4	10.00	0.00	32.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	2	5.00	0.00	4,688.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	5	82.00	36.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Paving	7	18.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	16.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

3.2 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					0.6891	0.0000	0.6891	0.1043	0.0000	0.1043			0.0000			0.0000
Off-Road	0.7965	7.2530	7.5691	0.0120		0.4073	0.4073		0.3886	0.3886		1,147.4338	1,147.4338	0.2138		1,152.7797
Total	**0.7965**	**7.2530**	**7.5691**	**0.0120**	**0.6891**	**0.4073**	**1.0964**	**0.1043**	**0.3886**	**0.4929**		**1,147.4338**	**1,147.4338**	**0.2138**		**1,152.7797**

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	0.0267	0.8584	0.2013	2.5000e-003	0.0560	2.6300e-003	0.0586	0.0153	2.5200e-003	0.0179		270.8628	270.8628	0.0184		271.3224
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	0.0429	0.0295	0.4028	1.1400e-003	0.1118	9.0000e-004	0.1127	0.0296	8.3000e-004	0.0305		113.8770	113.8770	3.3600e-003		113.9609
Total	**0.0696**	**0.8878**	**0.6040**	**3.6400e-003**	**0.1677**	**3.5300e-003**	**0.1713**	**0.0450**	**3.3500e-003**	**0.0483**		**384.7398**	**384.7398**	**0.0217**		**385.2832**

3.2 Demolition - 2021

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.2687	0.0000	0.2687	0.0407	0.0000	0.0407			0.0000			0.0000
Off-Road	0.7965	7.2530	7.5691	0.0120		0.4073	0.4073		0.3886	0.3886	0.0000	1,147.4338	1,147.4338	0.2138		1,152.7797
Total	**0.7965**	**7.2530**	**7.5691**	**0.0120**	**0.2687**	**0.4073**	**0.6761**	**0.0407**	**0.3886**	**0.4293**	**0.0000**	**1,147.4338**	**1,147.4338**	**0.2138**		**1,152.7797**

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	0.0267	0.8584	0.2013	2.5000e-003	0.0560	2.6300e-003	0.0586	0.0153	2.5200e-003	0.0179		270.8628	270.8628	0.0184		271.3224
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	0.0429	0.0295	0.4028	1.1400e-003	0.1118	9.0000e-004	0.1127	0.0296	8.3000e-004	0.0305		113.8770	113.8770	3.3600e-003		113.9609
Total	**0.0696**	**0.8878**	**0.6040**	**3.6400e-003**	**0.1677**	**3.5300e-003**	**0.1713**	**0.0450**	**3.3500e-003**	**0.0483**		**384.7398**	**384.7398**	**0.0217**		**385.2832**

3.3 Site Preparation - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.1757	0.0000	0.1757	0.0251	0.0000	0.0251			0.0000			0.0000
Off-Road	0.4165	4.0492	5.5321	8.2700e-003		0.2162	0.2162		0.1989	0.1989		801.0920	801.0920	0.2591		807.5693
Total	**0.4165**	**4.0492**	**5.5321**	**8.2700e-003**	**0.1757**	**0.2162**	**0.3919**	**0.0251**	**0.1989**	**0.2240**		**801.0920**	**801.0920**	**0.2591**		**807.5693**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	1.3029	41.9175	9.8285	0.1219	2.7324	0.1287	2.8610	0.7490	0.1231	0.8721		13,227.1337	13,227.1337	0.8976		13,249.5747
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	0.0214	0.0147	0.2014	5.7000e-004	0.0559	4.5000e-004	0.0563	0.0148	4.2000e-004	0.0152		56.9385	56.9385	1.6800e-003		56.9804
Total	**1.3244**	**41.9322**	**10.0299**	**0.1225**	**2.7883**	**0.1291**	**2.9174**	**0.7638**	**0.1235**	**0.8873**		**13,284.0722**	**13,284.0722**	**0.8993**		**13,306.5552**

3.3 Site Preparation - 2021

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.0685	0.0000	0.0685	9.7900e-003	0.0000	9.7900e-003			0.0000			0.0000
Off-Road	0.4165	4.0492	5.5321	8.2700e-003		0.2162	0.2162		0.1989	0.1989	0.0000	801.0920	801.0920	0.2591		807.5693
Total	**0.4165**	**4.0492**	**5.5321**	**8.2700e-003**	**0.0685**	**0.2162**	**0.2847**	**9.7900e-003**	**0.1989**	**0.2087**	**0.0000**	**801.0920**	**801.0920**	**0.2591**		**807.5693**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	1.3029	41.9175	9.8285	0.1219	2.7324	0.1287	2.8610	0.7490	0.1231	0.8721		13,227.1337	13,227.1337	0.8976		13,249.5747
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	0.0214	0.0147	0.2014	5.7000e-004	0.0559	4.5000e-004	0.0563	0.0148	4.2000e-004	0.0152		56.9385	56.9385	1.6800e-003		56.9804
Total	**1.3244**	**41.9322**	**10.0299**	**0.1225**	**2.7883**	**0.1291**	**2.9174**	**0.7638**	**0.1235**	**0.8873**		**13,284.0722**	**13,284.0722**	**0.8993**		**13,306.5552**

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	0.7750	7.9850	7.2637	0.0114		0.4475	0.4475		0.4117	0.4117		1,103.2158	1,103.2158	0.3568		1,112.1358
Total	**0.7750**	**7.9850**	**7.2637**	**0.0114**		**0.4475**	**0.4475**		**0.4117**	**0.4117**		**1,103.2158**	**1,103.2158**	**0.3568**		**1,112.1358**

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	0.1094	3.4952	0.9137	9.2600e-003	0.2305	7.1500e-003	0.2376	0.0664	6.8400e-003	0.0732		989.5703	989.5703	0.0583		991.0277
Worker	0.3515	0.2416	3.3028	9.3700e-003	0.9166	7.4100e-003	0.9240	0.2431	6.8200e-003	0.2499		933.7913	933.7913	0.0275		934.4791
Total	**0.4609**	**3.7368**	**4.2165**	**0.0186**	**1.1471**	**0.0146**	**1.1616**	**0.3094**	**0.0137**	**0.3231**		**1,923.3616**	**1,923.3616**	**0.0858**		**1,925.5069**

3.4 Building Construction - 2021

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.7750	7.9850	7.2637	0.0114		0.4475	0.4475		0.4117	0.4117	0.0000	1,103.2158	1,103.2158	0.3568		1,112.1358
Total	**0.7750**	**7.9850**	**7.2637**	**0.0114**		**0.4475**	**0.4475**		**0.4117**	**0.4117**	**0.0000**	**1,103.2158**	**1,103.2158**	**0.3568**		**1,112.1358**

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	0.1094	3.4952	0.9137	9.2600e-003	0.2305	7.1500e-003	0.2376	0.0664	6.8400e-003	0.0732		989.5703	989.5703	0.0583		991.0277
Worker	0.3515	0.2416	3.3028	9.3700e-003	0.9166	7.4100e-003	0.9240	0.2431	6.8200e-003	0.2499		933.7913	933.7913	0.0275		934.4791
Total	**0.4609**	**3.7368**	**4.2165**	**0.0186**	**1.1471**	**0.0146**	**1.1616**	**0.3094**	**0.0137**	**0.3231**		**1,923.3616**	**1,923.3616**	**0.0858**		**1,925.5069**

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	0.6863	7.0258	7.1527	0.0114		0.3719	0.3719		0.3422	0.3422		1,103.9393	1,103.9393	0.3570		1,112.8652
Total	**0.6863**	**7.0258**	**7.1527**	**0.0114**		**0.3719**	**0.3719**		**0.3422**	**0.3422**		**1,103.9393**	**1,103.9393**	**0.3570**		**1,112.8652**

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	0.1027	3.3239	0.8645	9.1700e-003	0.2305	6.2500e-003	0.2367	0.0664	5.9800e-003	0.0723		980.9492	980.9492	0.0563		982.3565
Worker	0.3293	0.2182	3.0471	9.0400e-003	0.9166	7.1700e-003	0.9237	0.2431	6.6100e-003	0.2497		900.9441	900.9441	0.0249		901.5658
Total	**0.4320**	**3.5421**	**3.9117**	**0.0182**	**1.1471**	**0.0134**	**1.1605**	**0.3094**	**0.0126**	**0.3220**		**1,881.8933**	**1,881.8933**	**0.0812**		**1,883.9223**

3.4 Building Construction - 2022

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.6863	7.0258	7.1527	0.0114		0.3719	0.3719		0.3422	0.3422	0.0000	1,103.9393	1,103.9393	0.3570		1,112.8652
Total	**0.6863**	**7.0258**	**7.1527**	**0.0114**		**0.3719**	**0.3719**		**0.3422**	**0.3422**	**0.0000**	**1,103.9393**	**1,103.9393**	**0.3570**		**1,112.8652**

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	0.1027	3.3239	0.8645	9.1700e-003	0.2305	6.2500e-003	0.2367	0.0664	5.9800e-003	0.0723		980.9492	980.9492	0.0563		982.3565
Worker	0.3293	0.2182	3.0471	9.0400e-003	0.9166	7.1700e-003	0.9237	0.2431	6.6100e-003	0.2497		900.9441	900.9441	0.0249		901.5658
Total	**0.4320**	**3.5421**	**3.9117**	**0.0182**	**1.1471**	**0.0134**	**1.1605**	**0.3094**	**0.0126**	**0.3220**		**1,881.8933**	**1,881.8933**	**0.0812**		**1,883.9223**

3.4 Building Construction - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.6322	6.4186	7.0970	0.0114		0.3203	0.3203		0.2946	0.2946		1,104.6089	1,104.6089	0.3573		1,113.5402
Total	**0.6322**	**6.4186**	**7.0970**	**0.0114**		**0.3203**	**0.3203**		**0.2946**	**0.2946**		**1,104.6089**	**1,104.6089**	**0.3573**		**1,113.5402**

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	0.0762	2.5220	0.7808	8.8700e-003	0.2305	2.9100e-003	0.2334	0.0664	2.7800e-003	0.0692		950.0667	950.0667	0.0499		951.3139
Worker	0.3092	0.1975	2.8062	8.7100e-003	0.9166	6.9700e-003	0.9235	0.2431	6.4200e-003	0.2495		867.9552	867.9552	0.0224		868.5157
Total	**0.3854**	**2.7195**	**3.5869**	**0.0176**	**1.1471**	**9.8800e-003**	**1.1569**	**0.3094**	**9.2000e-003**	**0.3187**		**1,818.0220**	**1,818.0220**	**0.0723**		**1,819.8296**

3.4 Building Construction - 2023

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.6322	6.4186	7.0970	0.0114		0.3203	0.3203		0.2946	0.2946	0.0000	1,104.6089	1,104.6089	0.3573		1,113.5402
Total	**0.6322**	**6.4186**	**7.0970**	**0.0114**		**0.3203**	**0.3203**		**0.2946**	**0.2946**	**0.0000**	**1,104.6089**	**1,104.6089**	**0.3573**		**1,113.5402**

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	0.0762	2.5220	0.7808	8.8700e-003	0.2305	2.9100e-003	0.2334	0.0664	2.7800e-003	0.0692		950.0667	950.0667	0.0499		951.3139
Worker	0.3092	0.1975	2.8062	8.7100e-003	0.9166	6.9700e-003	0.9235	0.2431	6.4200e-003	0.2495		867.9552	867.9552	0.0224		868.5157
Total	**0.3854**	**2.7195**	**3.5869**	**0.0176**	**1.1471**	**9.8800e-003**	**1.1569**	**0.3094**	**9.2000e-003**	**0.3187**		**1,818.0220**	**1,818.0220**	**0.0723**		**1,819.8296**

3.5 Paving - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.6112	5.5046	7.0209	0.0113		0.2643	0.2643		0.2466	0.2466		1,036.0878	1,036.0878	0.3018		1,043.6331
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**0.6112**	**5.5046**	**7.0209**	**0.0113**		**0.2643**	**0.2643**		**0.2466**	**0.2466**		**1,036.0878**	**1,036.0878**	**0.3018**		**1,043.6331**

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	0.0679	0.0433	0.6160	1.9100e-003	0.2012	1.5300e-003	0.2027	0.0534	1.4100e-003	0.0548		190.5268	190.5268	4.9200e-003		190.6498
Total	**0.0679**	**0.0433**	**0.6160**	**1.9100e-003**	**0.2012**	**1.5300e-003**	**0.2027**	**0.0534**	**1.4100e-003**	**0.0548**		**190.5268**	**190.5268**	**4.9200e-003**		**190.6498**

3.5 Paving - 2023

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.6112	5.5046	7.0209	0.0113		0.2643	0.2643		0.2466	0.2466	0.0000	1,036.0878	1,036.0878	0.3018		1,043.6331
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**0.6112**	**5.5046**	**7.0209**	**0.0113**		**0.2643**	**0.2643**		**0.2466**	**0.2466**	**0.0000**	**1,036.0878**	**1,036.0878**	**0.3018**		**1,043.6331**

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	0.0679	0.0433	0.6160	1.9100e-003	0.2012	1.5300e-003	0.2027	0.0534	1.4100e-003	0.0548		190.5268	190.5268	4.9200e-003		190.6498
Total	**0.0679**	**0.0433**	**0.6160**	**1.9100e-003**	**0.2012**	**1.5300e-003**	**0.2027**	**0.0534**	**1.4100e-003**	**0.0548**		**190.5268**	**190.5268**	**4.9200e-003**		**190.6498**

3.6 Architectural Coating - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	49.5977					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1917	1.3030	1.8111	2.9700e-003		0.0708	0.0708		0.0708	0.0708		281.4481	281.4481	0.0168		281.8690
Total	**49.7894**	**1.3030**	**1.8111**	**2.9700e-003**		**0.0708**	**0.0708**		**0.0708**	**0.0708**		**281.4481**	**281.4481**	**0.0168**		**281.8690**

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	0.0603	0.0385	0.5475	1.7000e-003	0.1788	1.3600e-003	0.1802	0.0474	1.2500e-003	0.0487		169.3571	169.3571	4.3700e-003		169.4665
Total	**0.0603**	**0.0385**	**0.5475**	**1.7000e-003**	**0.1788**	**1.3600e-003**	**0.1802**	**0.0474**	**1.2500e-003**	**0.0487**		**169.3571**	**169.3571**	**4.3700e-003**		**169.4665**

3.6 Architectural Coating - 2023

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	49.5977					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1917	1.3030	1.8111	2.9700e-003		0.0708	0.0708		0.0708	0.0708	0.0000	281.4481	281.4481	0.0168		281.8690
Total	**49.7894**	**1.3030**	**1.8111**	**2.9700e-003**		**0.0708**	**0.0708**		**0.0708**	**0.0708**	**0.0000**	**281.4481**	**281.4481**	**0.0168**		**281.8690**

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	0.0603	0.0385	0.5475	1.7000e-003	0.1788	1.3600e-003	0.1802	0.0474	1.2500e-003	0.0487		169.3571	169.3571	4.3700e-003		169.4665
Total	**0.0603**	**0.0385**	**0.5475**	**1.7000e-003**	**0.1788**	**1.3600e-003**	**0.1802**	**0.0474**	**1.2500e-003**	**0.0487**		**169.3571**	**169.3571**	**4.3700e-003**		**169.4665**

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	3.5162	14.2429	43.4657	0.1608	13.3213	0.1186	13.4398	3.5649	0.1102	3.6751		16,385.3621	16,385.3621	0.7961		16,405.2642
Unmitigated	3.5162	14.2429	43.4657	0.1608	13.3213	0.1186	13.4398	3.5649	0.1102	3.6751		16,385.3621	16,385.3621	0.7961		16,405.2642

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Enclosed Parking with Elevator	0.00	0.00	0.00		
Medical Office Building	2,221.63	547.11	90.65	4,352,466	4,352,466
Other Non-Asphalt Surfaces	0.00	0.00	0.00		
General Office Building	155.84	35.36	11.20	380,022	380,022
Total	2,377.47	582.47	101.85	4,732,488	4,732,488

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Enclosed Parking with Elevator	16.60	8.40	6.90	0.00	0.00	0.00	0	0	0
Medical Office Building	16.60	8.40	6.90	29.60	51.40	19.00	60	30	10
Other Non-Asphalt Surfaces	16.60	8.40	6.90	0.00	0.00	0.00	0	0	0
General Office Building	16.60	8.40	6.90	33.00	48.00	19.00	77	19	4

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Enclosed Parking with Elevator	0.545842	0.044768	0.205288	0.119317	0.015350	0.006227	0.020460	0.031333	0.002546	0.002133	0.005184	0.000692	0.000862
Medical Office Building	0.545842	0.044768	0.205288	0.119317	0.015350	0.006227	0.020460	0.031333	0.002546	0.002133	0.005184	0.000692	0.000862
Other Non-Asphalt Surfaces	0.545842	0.044768	0.205288	0.119317	0.015350	0.006227	0.020460	0.031333	0.002546	0.002133	0.005184	0.000692	0.000862
General Office Building	0.545842	0.044768	0.205288	0.119317	0.015350	0.006227	0.020460	0.031333	0.002546	0.002133	0.005184	0.000692	0.000862

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

Exceed Title 24

Install High Efficiency Lighting

Install Energy Efficient Appliances

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.0218	0.1985	0.1667	1.1900e-003		0.0151	0.0151		0.0151	0.0151		238.1690	238.1690	4.5600e-003	4.3700e-003	239.5843
NaturalGas Unmitigated	0.0307	0.2791	0.2344	1.6700e-003		0.0212	0.0212		0.0212	0.0212		334.8648	334.8648	6.4200e-003	6.1400e-003	336.8547

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					
Enclosed Parking with Elevator	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
General Office Building	570.411	6.1500e-003	0.0559	0.0470	3.4000e-004		4.2500e-003	4.2500e-003		4.2500e-003	4.2500e-003		67.1072	67.1072	1.2900e-003	1.2300e-003	67.5060
Medical Office Building	2275.94	0.0245	0.2231	0.1874	1.3400e-003		0.0170	0.0170		0.0170	0.0170		267.7576	267.7576	5.1300e-003	4.9100e-003	269.3488
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0307**	**0.2791**	**0.2344**	**1.6800e-003**		**0.0212**	**0.0212**		**0.0212**	**0.0212**		**334.8648**	**334.8648**	**6.4200e-003**	**6.1400e-003**	**336.8547**

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Enclosed Parking with Elevator	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
General Office Building	0.405699	4.3800e-003	0.0398	0.0334	2.4000e-004		3.0200e-003	3.0200e-003		3.0200e-003	3.0200e-003		47.7293	47.7293	9.1000e-004	8.8000e-004	48.0129
Medical Office Building	1.61874	0.0175	0.1587	0.1333	9.5000e-004		0.0121	0.0121		0.0121	0.0121		190.4397	190.4397	3.6500e-003	3.4900e-003	191.5714
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0218**	**0.1985**	**0.1667**	**1.1900e-003**		**0.0151**	**0.0151**		**0.0151**	**0.0151**		**238.1690**	**238.1690**	**4.5600e-003**	**4.3700e-003**	**239.5843**

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	2.1580	3.5000e-004	0.0384	0.0000		1.4000e-004	1.4000e-004		1.4000e-004	1.4000e-004		0.0823	0.0823	2.2000e-004		0.0877
Unmitigated	2.1580	3.5000e-004	0.0384	0.0000		1.4000e-004	1.4000e-004		1.4000e-004	1.4000e-004		0.0823	0.0823	2.2000e-004		0.0877

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	0.1359					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	2.0186					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	3.5500e-003	3.5000e-004	0.0384	0.0000		1.4000e-004	1.4000e-004		1.4000e-004	1.4000e-004		0.0823	0.0823	2.2000e-004		0.0877
Total	**2.1580**	**3.5000e-004**	**0.0384**	**0.0000**		**1.4000e-004**	**1.4000e-004**		**1.4000e-004**	**1.4000e-004**		**0.0823**	**0.0823**	**2.2000e-004**		**0.0877**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.1359					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	2.0186					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	3.5500e-003	3.5000e-004	0.0384	0.0000		1.4000e-004	1.4000e-004		1.4000e-004	1.4000e-004		0.0823	0.0823	2.2000e-004		0.0877
Total	**2.1580**	**3.5000e-004**	**0.0384**	**0.0000**		**1.4000e-004**	**1.4000e-004**		**1.4000e-004**	**1.4000e-004**		**0.0823**	**0.0823**	**2.2000e-004**		**0.0877**

7.0 Water Detail

7.1 Mitigation Measures Water

Apply Water Conservation Strategy

Use Water Efficient Irrigation System

8.0 Waste Detail

8.1 Mitigation Measures Waste

Institute Recycling and Composting Services

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

590 South Fair Oaks

Los Angeles-South Coast County, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Medical Office Building	79.80	1000sqft	0.00	79,800.00	0
Enclosed Parking with Elevator	260.00	Space	0.60	104,000.00	0
Other Non-Asphalt Surfaces	16.12	1000sqft	0.37	16,122.00	0
General Office Building	20.00	1000sqft	0.00	20,000.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	33
Climate Zone	12			**Operational Year**	2023
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

590 South Fair Oaks - Los Angeles-South Coast County, Winter

Project Characteristics -

Land Use - ~79.8 TSF 4-story medical office, 20 TSF office, 260-space subterranean parking structure with ~16,122 SF of landscaping and hardscape on ~0.97 ac

Construction Phase - Construction to start ~August 2021 and last ~18-24 months

Off-road Equipment -

Off-road Equipment -

Off-road Equipment -

Off-road Equipment -

Off-road Equipment - No grading on-site. Excavator added for excavation for subterranean parking structure.

Trips and VMT -

Demolition - 2,800 SF + 4,200 SF buildings (7,000 SF total) to be demolished.

Grading - Site is ~ 0.97 acres. 35,700 CY of export.

Architectural Coating - SCAQMD Rule 1113 limits paints applied to buildings to 50g/L VOC content

Vehicle Trips - Per TIA, wkday trip gen rate for gen off=7.792trips/TSF, for med/dentl off=27.84trips/TSF. Wkend rates from 10th Ed ITE. For Gen off, Sat = 1.768trips/TSF, Sun =0.56trips/TSF;for med/dent off Sat=6.856trips/TSF, Sun=1.136trips/TSF (w/20%rdxn)

Area Coating - SCAQMD Rule 1113 limits paints applied to buildings to 50g/L VOC content

Construction Off-road Equipment Mitigation -

Energy Mitigation - 2019 standards, nonresidential buildings are approximately 30 percent more efficient than 2016 standards. Project will be LEED Gold certified. Lighting installed will be at least 35% more efficient than baseline.

Water Mitigation - 20% reduction in indoor water use per CalGreen. Water-efficient landscaping to be installed on-site.

Waste Mitigation - 75% diversion of waste per AB 341

Woodstoves -

Sequestration -

Mobile Land Use Mitigation -

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	EF_Nonresidential_Exterior	100.00	50.00
tblArchitecturalCoating	EF_Nonresidential_Interior	100.00	50.00
tblAreaCoating	Area_EF_Nonresidential_Exterior	100	50
tblAreaCoating	Area_EF_Nonresidential_Interior	100	50
tblConstructionPhase	NumDays	1.00	30.00
tblConstructionPhase	NumDays	100.00	350.00
tblConstructionPhase	NumDays	5.00	10.00
tblConstructionPhase	NumDays	5.00	10.00
tblGrading	AcresOfGrading	0.00	0.97
tblGrading	MaterialExported	0.00	37,500.00
tblLandUse	LandUseSquareFeet	16,120.00	16,122.00
tblLandUse	LotAcreage	1.83	0.00
tblLandUse	LotAcreage	2.34	0.60
tblLandUse	LotAcreage	0.46	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	UsageHours	8.00	0.00
tblVehicleTrips	ST_TR	8.96	6.86
tblVehicleTrips	ST_TR	2.46	1.77
tblVehicleTrips	SU_TR	1.55	1.14
tblVehicleTrips	SU_TR	1.05	0.56
tblVehicleTrips	WD_TR	36.13	27.84
tblVehicleTrips	WD_TR	11.03	7.79

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	3.0555	58.2369	27.4323	0.1578	4.1110	0.8096	4.9206	1.0984	0.7499	1.8483	0.0000	16,797.6074	16,797.6074	1.6348	0.0000	16,838.4764
2022	1.1614	10.5821	10.8907	0.0288	1.1471	0.3856	1.5326	0.3094	0.3550	0.6644	0.0000	2,906.1793	2,906.1793	0.4404	0.0000	2,917.1879
2023	49.8569	9.1477	10.5037	0.0282	1.1471	0.3303	1.4773	0.3094	0.3040	0.6134	0.0000	2,846.1884	2,846.1884	0.4311	0.0000	2,856.9650
Maximum	**49.8569**	**58.2369**	**27.4323**	**0.1578**	**4.1110**	**0.8096**	**4.9206**	**1.0984**	**0.7499**	**1.8483**	**0.0000**	**16,797.6074**	**16,797.6074**	**1.6348**	**0.0000**	**16,838.4764**

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	3.0555	58.2369	27.4323	0.1578	4.0038	0.8096	4.8134	1.0830	0.7499	1.8329	0.0000	16,797.6073	16,797.6073	1.6348	0.0000	16,838.4764
2022	1.1614	10.5821	10.8907	0.0288	1.1471	0.3856	1.5326	0.3094	0.3550	0.6644	0.0000	2,906.1793	2,906.1793	0.4404	0.0000	2,917.1879
2023	49.8569	9.1477	10.5037	0.0282	1.1471	0.3303	1.4773	0.3094	0.3040	0.6134	0.0000	2,846.1884	2,846.1884	0.4311	0.0000	2,856.9650
Maximum	**49.8569**	**58.2369**	**27.4323**	**0.1578**	**4.0038**	**0.8096**	**4.8134**	**1.0830**	**0.7499**	**1.8329**	**0.0000**	**16,797.6073**	**16,797.6073**	**1.6348**	**0.0000**	**16,838.4764**

590 South Fair Oaks - Los Angeles-South Coast County, Winter

	ROG	NOx	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	1.67	0.00	1.35	0.89	0.00	0.49	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	2.1580	3.5000e-004	0.0384	0.0000		1.4000e-004	1.4000e-004		1.4000e-004	1.4000e-004		0.0823	0.0823	2.2000e-004		0.0877
Energy	0.0307	0.2791	0.2344	1.6700e-003		0.0212	0.0212		0.0212	0.0212		334.8648	334.8648	6.4200e-003	6.1400e-003	336.8547
Mobile	3.4030	14.5372	41.5217	0.1529	13.3213	0.1192	13.4405	3.5649	0.1109	3.6757		15,589.5432	15,589.5432	0.7962		15,609.4483
Total	**5.5917**	**14.8166**	**41.7945**	**0.1546**	**13.3213**	**0.1405**	**13.4618**	**3.5649**	**0.1322**	**3.6970**		**15,924.4903**	**15,924.4903**	**0.8028**	**6.1400e-003**	**15,946.3907**

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	2.1580	3.5000e-004	0.0384	0.0000		1.4000e-004	1.4000e-004		1.4000e-004	1.4000e-004		0.0823	0.0823	2.2000e-004		0.0877
Energy	0.0218	0.1985	0.1667	1.1900e-003		0.0151	0.0151		0.0151	0.0151		238.1690	238.1690	4.5600e-003	4.3700e-003	239.5843
Mobile	3.4030	14.5372	41.5217	0.1529	13.3213	0.1192	13.4405	3.5649	0.1109	3.6757		15,589.5432	15,589.5432	0.7962		15,609.4483
Total	**5.5829**	**14.7360**	**41.7268**	**0.1541**	**13.3213**	**0.1344**	**13.4557**	**3.5649**	**0.1261**	**3.6909**		**15,827.7944**	**15,827.7944**	**0.8010**	**4.3700e-003**	**15,849.1202**

	ROG	NOx	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	**0.16**	**0.54**	**0.16**	**0.31**	**0.00**	**4.36**	**0.05**	**0.00**	**4.64**	**0.17**	**0.00**	**0.61**	**0.61**	**0.23**	**28.83**	**0.61**

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	8/2/2021	8/13/2021	5	10	
2	Site Preparation	Site Preparation	8/14/2021	9/24/2021	5	30	
3	Building Construction	Building Construction	9/24/2021	1/26/2023	5	350	
4	Paving	Paving	1/27/2023	2/9/2023	5	10	
5	Architectural Coating	Architectural Coating	2/10/2023	2/23/2023	5	10	

Acres of Grading (Site Preparation Phase): 0.97

Acres of Grading (Grading Phase): 0

Acres of Paving: 0.97

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 149,700; Non-Residential Outdoor: 49,900; Striped Parking Area: 7,207 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Demolition	Rubber Tired Dozers	1	1.00	247	0.40
Demolition	Tractors/Loaders/Backhoes	2	6.00	97	0.37
Site Preparation	Excavators	1	8.00	158	0.38
Site Preparation	Graders	0	0.00	187	0.41
Site Preparation	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Building Construction	Cranes	1	4.00	231	0.29
Building Construction	Forklifts	2	6.00	89	0.20
Building Construction	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Paving	Cement and Mortar Mixers	4	6.00	9	0.56
Paving	Pavers	1	7.00	130	0.42
Paving	Rollers	1	7.00	80	0.38
Paving	Tractors/Loaders/Backhoes	1	7.00	97	0.37
Architectural Coating	Air Compressors	1	6.00	78	0.48

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	4	10.00	0.00	32.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	2	5.00	0.00	4,688.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	5	82.00	36.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Paving	7	18.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	16.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

3.2 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					0.6891	0.0000	0.6891	0.1043	0.0000	0.1043			0.0000			0.0000
Off-Road	0.7965	7.2530	7.5691	0.0120		0.4073	0.4073		0.3886	0.3886		1,147.4338	1,147.4338	0.2138		1,152.7797
Total	**0.7965**	**7.2530**	**7.5691**	**0.0120**	**0.6891**	**0.4073**	**1.0964**	**0.1043**	**0.3886**	**0.4929**		**1,147.4338**	**1,147.4338**	**0.2138**		**1,152.7797**

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	0.0273	0.8689	0.2134	2.4500e-003	0.0560	2.6700e-003	0.0586	0.0153	2.5600e-003	0.0179		266.1706	266.1706	0.0190		266.6463
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	0.0477	0.0326	0.3683	1.0800e-003	0.1118	9.0000e-004	0.1127	0.0296	8.3000e-004	0.0305		107.2251	107.2251	3.1600e-003		107.3040
Total	**0.0750**	**0.9015**	**0.5817**	**3.5300e-003**	**0.1677**	**3.5700e-003**	**0.1713**	**0.0450**	**3.3900e-003**	**0.0484**		**373.3957**	**373.3957**	**0.0222**		**373.9503**

3.2 Demolition - 2021

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.2687	0.0000	0.2687	0.0407	0.0000	0.0407			0.0000			0.0000
Off-Road	0.7965	7.2530	7.5691	0.0120		0.4073	0.4073		0.3886	0.3886	0.0000	1,147.4338	1,147.4338	0.2138		1,152.7797
Total	**0.7965**	**7.2530**	**7.5691**	**0.0120**	**0.2687**	**0.4073**	**0.6761**	**0.0407**	**0.3886**	**0.4293**	**0.0000**	**1,147.4338**	**1,147.4338**	**0.2138**		**1,152.7797**

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	0.0273	0.8689	0.2134	2.4500e-003	0.0560	2.6700e-003	0.0586	0.0153	2.5600e-003	0.0179		266.1706	266.1706	0.0190		266.6463
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	0.0477	0.0326	0.3683	1.0800e-003	0.1118	9.0000e-004	0.1127	0.0296	8.3000e-004	0.0305		107.2251	107.2251	3.1600e-003		107.3040
Total	**0.0750**	**0.9015**	**0.5817**	**3.5300e-003**	**0.1677**	**3.5700e-003**	**0.1713**	**0.0450**	**3.3900e-003**	**0.0484**		**373.3957**	**373.3957**	**0.0222**		**373.9503**

3.3 Site Preparation - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.1757	0.0000	0.1757	0.0251	0.0000	0.0251			0.0000			0.0000
Off-Road	0.4165	4.0492	5.5321	8.2700e-003		0.2162	0.2162		0.1989	0.1989		801.0920	801.0920	0.2591		807.5693
Total	**0.4165**	**4.0492**	**5.5321**	**8.2700e-003**	**0.1757**	**0.2162**	**0.3919**	**0.0251**	**0.1989**	**0.2240**		**801.0920**	**801.0920**	**0.2591**		**807.5693**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	1.3343	42.4310	10.4219	0.1198	2.7324	0.1306	2.8630	0.7490	0.1250	0.8740		12,997.9972	12,997.9972	0.9293		13,021.2294
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	0.0238	0.0163	0.1841	5.4000e-004	0.0559	4.5000e-004	0.0563	0.0148	4.2000e-004	0.0152		53.6126	53.6126	1.5800e-003		53.6520
Total	**1.3581**	**42.4473**	**10.6061**	**0.1203**	**2.7883**	**0.1311**	**2.9193**	**0.7638**	**0.1254**	**0.8892**		**13,051.6098**	**13,051.6098**	**0.9309**		**13,074.8814**

3.3 Site Preparation - 2021

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.0685	0.0000	0.0685	9.7900e-003	0.0000	9.7900e-003			0.0000			0.0000
Off-Road	0.4165	4.0492	5.5321	8.2700e-003		0.2162	0.2162		0.1989	0.1989	0.0000	801.0920	801.0920	0.2591		807.5693
Total	**0.4165**	**4.0492**	**5.5321**	**8.2700e-003**	**0.0685**	**0.2162**	**0.2847**	**9.7900e-003**	**0.1989**	**0.2087**	**0.0000**	**801.0920**	**801.0920**	**0.2591**		**807.5693**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	1.3343	42.4310	10.4219	0.1198	2.7324	0.1306	2.8630	0.7490	0.1250	0.8740		12,997.9972	12,997.9972	0.9293		13,021.2294
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	0.0238	0.0163	0.1841	5.4000e-004	0.0559	4.5000e-004	0.0563	0.0148	4.2000e-004	0.0152		53.6126	53.6126	1.5800e-003		53.6520
Total	**1.3581**	**42.4473**	**10.6061**	**0.1203**	**2.7883**	**0.1311**	**2.9193**	**0.7638**	**0.1254**	**0.8892**		**13,051.6098**	**13,051.6098**	**0.9309**		**13,074.8814**

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	0.7750	7.9850	7.2637	0.0114		0.4475	0.4475		0.4117	0.4117		1,103.2158	1,103.2158	0.3568		1,112.1358
Total	**0.7750**	**7.9850**	**7.2637**	**0.0114**		**0.4475**	**0.4475**		**0.4117**	**0.4117**		**1,103.2158**	**1,103.2158**	**0.3568**		**1,112.1358**

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	0.1149	3.4880	1.0108	9.0100e-003	0.2305	7.3800e-003	0.2379	0.0664	7.0500e-003	0.0734		962.4439	962.4439	0.0621		963.9972
Worker	0.3910	0.2674	3.0197	8.8300e-003	0.9166	7.4100e-003	0.9240	0.2431	6.8200e-003	0.2499		879.2459	879.2459	0.0259		879.8927
Total	**0.5059**	**3.7554**	**4.0305**	**0.0178**	**1.1471**	**0.0148**	**1.1618**	**0.3094**	**0.0139**	**0.3233**		**1,841.6898**	**1,841.6898**	**0.0880**		**1,843.8899**

3.4 Building Construction - 2021

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.7750	7.9850	7.2637	0.0114		0.4475	0.4475		0.4117	0.4117	0.0000	1,103.2158	1,103.2158	0.3568		1,112.1358
Total	**0.7750**	**7.9850**	**7.2637**	**0.0114**		**0.4475**	**0.4475**		**0.4117**	**0.4117**	**0.0000**	**1,103.2158**	**1,103.2158**	**0.3568**		**1,112.1358**

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	0.1149	3.4880	1.0108	9.0100e-003	0.2305	7.3800e-003	0.2379	0.0664	7.0500e-003	0.0734		962.4439	962.4439	0.0621		963.9972
Worker	0.3910	0.2674	3.0197	8.8300e-003	0.9166	7.4100e-003	0.9240	0.2431	6.8200e-003	0.2499		879.2459	879.2459	0.0259		879.8927
Total	**0.5059**	**3.7554**	**4.0305**	**0.0178**	**1.1471**	**0.0148**	**1.1618**	**0.3094**	**0.0139**	**0.3233**		**1,841.6898**	**1,841.6898**	**0.0880**		**1,843.8899**

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	0.6863	7.0258	7.1527	0.0114		0.3719	0.3719		0.3422	0.3422		1,103.9393	1,103.9393	0.3570		1,112.8652
Total	**0.6863**	**7.0258**	**7.1527**	**0.0114**		**0.3719**	**0.3719**		**0.3422**	**0.3422**		**1,103.9393**	**1,103.9393**	**0.3570**		**1,112.8652**

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	0.1078	3.3149	0.9568	8.9200e-003	0.2305	6.4500e-003	0.2369	0.0664	6.1700e-003	0.0725		953.8930	953.8930	0.0600		955.3917
Worker	0.3672	0.2415	2.7813	8.5100e-003	0.9166	7.1700e-003	0.9237	0.2431	6.6100e-003	0.2497		848.3470	848.3470	0.0234		848.9309
Total	**0.4751**	**3.5564**	**3.7380**	**0.0174**	**1.1471**	**0.0136**	**1.1607**	**0.3094**	**0.0128**	**0.3222**		**1,802.2400**	**1,802.2400**	**0.0833**		**1,804.3227**

3.4 Building Construction - 2022

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.6863	7.0258	7.1527	0.0114		0.3719	0.3719		0.3422	0.3422	0.0000	1,103.9393	1,103.9393	0.3570		1,112.8652
Total	**0.6863**	**7.0258**	**7.1527**	**0.0114**		**0.3719**	**0.3719**		**0.3422**	**0.3422**	**0.0000**	**1,103.9393**	**1,103.9393**	**0.3570**		**1,112.8652**

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	0.1078	3.3149	0.9568	8.9200e-003	0.2305	6.4500e-003	0.2369	0.0664	6.1700e-003	0.0725		953.8930	953.8930	0.0600		955.3917
Worker	0.3672	0.2415	2.7813	8.5100e-003	0.9166	7.1700e-003	0.9237	0.2431	6.6100e-003	0.2497		848.3470	848.3470	0.0234		848.9309
Total	**0.4751**	**3.5564**	**3.7380**	**0.0174**	**1.1471**	**0.0136**	**1.1607**	**0.3094**	**0.0128**	**0.3222**		**1,802.2400**	**1,802.2400**	**0.0833**		**1,804.3227**

3.4 Building Construction - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.6322	6.4186	7.0970	0.0114		0.3203	0.3203		0.2946	0.2946		1,104.6089	1,104.6089	0.3573		1,113.5402
Total	**0.6322**	**6.4186**	**7.0970**	**0.0114**		**0.3203**	**0.3203**		**0.2946**	**0.2946**		**1,104.6089**	**1,104.6089**	**0.3573**		**1,113.5402**

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	0.0801	2.5106	0.8502	8.6300e-003	0.2305	3.0600e-003	0.2336	0.0664	2.9300e-003	0.0693		924.2687	924.2687	0.0528		925.5881
Worker	0.3460	0.2184	2.5565	8.2000e-003	0.9166	6.9700e-003	0.9235	0.2431	6.4200e-003	0.2495		817.3109	817.3109	0.0210		817.8367
Total	**0.4261**	**2.7290**	**3.4067**	**0.0168**	**1.1471**	**0.0100**	**1.1571**	**0.3094**	**9.3500e-003**	**0.3188**		**1,741.5796**	**1,741.5796**	**0.0738**		**1,743.4248**

3.4 Building Construction - 2023

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.6322	6.4186	7.0970	0.0114		0.3203	0.3203		0.2946	0.2946	0.0000	1,104.6089	1,104.6089	0.3573		1,113.5402
Total	**0.6322**	**6.4186**	**7.0970**	**0.0114**		**0.3203**	**0.3203**		**0.2946**	**0.2946**	**0.0000**	**1,104.6089**	**1,104.6089**	**0.3573**		**1,113.5402**

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	0.0801	2.5106	0.8502	8.6300e-003	0.2305	3.0600e-003	0.2336	0.0664	2.9300e-003	0.0693		924.2687	924.2687	0.0528		925.5881
Worker	0.3460	0.2184	2.5565	8.2000e-003	0.9166	6.9700e-003	0.9235	0.2431	6.4200e-003	0.2495		817.3109	817.3109	0.0210		817.8367
Total	**0.4261**	**2.7290**	**3.4067**	**0.0168**	**1.1471**	**0.0100**	**1.1571**	**0.3094**	**9.3500e-003**	**0.3188**		**1,741.5796**	**1,741.5796**	**0.0738**		**1,743.4248**

3.5 Paving - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.6112	5.5046	7.0209	0.0113		0.2643	0.2643		0.2466	0.2466		1,036.0878	1,036.0878	0.3018		1,043.6331
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**0.6112**	**5.5046**	**7.0209**	**0.0113**		**0.2643**	**0.2643**		**0.2466**	**0.2466**		**1,036.0878**	**1,036.0878**	**0.3018**		**1,043.6331**

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	0.0759	0.0480	0.5612	1.8000e-003	0.2012	1.5300e-003	0.2027	0.0534	1.4100e-003	0.0548		179.4097	179.4097	4.6200e-003		179.5251
Total	**0.0759**	**0.0480**	**0.5612**	**1.8000e-003**	**0.2012**	**1.5300e-003**	**0.2027**	**0.0534**	**1.4100e-003**	**0.0548**		**179.4097**	**179.4097**	**4.6200e-003**		**179.5251**

3.5 Paving - 2023

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.6112	5.5046	7.0209	0.0113		0.2643	0.2643		0.2466	0.2466	0.0000	1,036.0878	1,036.0878	0.3018		1,043.6331
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**0.6112**	**5.5046**	**7.0209**	**0.0113**		**0.2643**	**0.2643**		**0.2466**	**0.2466**	**0.0000**	**1,036.0878**	**1,036.0878**	**0.3018**		**1,043.6331**

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	0.0759	0.0480	0.5612	1.8000e-003	0.2012	1.5300e-003	0.2027	0.0534	1.4100e-003	0.0548		179.4097	179.4097	4.6200e-003		179.5251
Total	**0.0759**	**0.0480**	**0.5612**	**1.8000e-003**	**0.2012**	**1.5300e-003**	**0.2027**	**0.0534**	**1.4100e-003**	**0.0548**		**179.4097**	**179.4097**	**4.6200e-003**		**179.5251**

3.6 Architectural Coating - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	49.5977					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1917	1.3030	1.8111	2.9700e-003		0.0708	0.0708		0.0708	0.0708		281.4481	281.4481	0.0168		281.8690
Total	**49.7894**	**1.3030**	**1.8111**	**2.9700e-003**		**0.0708**	**0.0708**		**0.0708**	**0.0708**		**281.4481**	**281.4481**	**0.0168**		**281.8690**

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	0.0675	0.0426	0.4988	1.6000e-003	0.1788	1.3600e-003	0.1802	0.0474	1.2500e-003	0.0487		159.4753	159.4753	4.1000e-003		159.5779
Total	**0.0675**	**0.0426**	**0.4988**	**1.6000e-003**	**0.1788**	**1.3600e-003**	**0.1802**	**0.0474**	**1.2500e-003**	**0.0487**		**159.4753**	**159.4753**	**4.1000e-003**		**159.5779**

3.6 Architectural Coating - 2023

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	49.5977					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1917	1.3030	1.8111	2.9700e-003		0.0708	0.0708		0.0708	0.0708	0.0000	281.4481	281.4481	0.0168		281.8690
Total	**49.7894**	**1.3030**	**1.8111**	**2.9700e-003**		**0.0708**	**0.0708**		**0.0708**	**0.0708**	**0.0000**	**281.4481**	**281.4481**	**0.0168**		**281.8690**

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	0.0675	0.0426	0.4988	1.6000e-003	0.1788	1.3600e-003	0.1802	0.0474	1.2500e-003	0.0487		159.4753	159.4753	4.1000e-003		159.5779
Total	**0.0675**	**0.0426**	**0.4988**	**1.6000e-003**	**0.1788**	**1.3600e-003**	**0.1802**	**0.0474**	**1.2500e-003**	**0.0487**		**159.4753**	**159.4753**	**4.1000e-003**		**159.5779**

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	3.4030	14.5372	41.5217	0.1529	13.3213	0.1192	13.4405	3.5649	0.1109	3.6757		15,589.5432	15,589.5432	0.7962		15,609.4483
Unmitigated	3.4030	14.5372	41.5217	0.1529	13.3213	0.1192	13.4405	3.5649	0.1109	3.6757		15,589.5432	15,589.5432	0.7962		15,609.4483

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Enclosed Parking with Elevator	0.00	0.00	0.00		
Medical Office Building	2,221.63	547.11	90.65	4,352,466	4,352,466
Other Non-Asphalt Surfaces	0.00	0.00	0.00		
General Office Building	155.84	35.36	11.20	380,022	380,022
Total	2,377.47	582.47	101.85	4,732,488	4,732,488

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Enclosed Parking with Elevator	16.60	8.40	6.90	0.00	0.00	0.00	0	0	0
Medical Office Building	16.60	8.40	6.90	29.60	51.40	19.00	60	30	10
Other Non-Asphalt Surfaces	16.60	8.40	6.90	0.00	0.00	0.00	0	0	0
General Office Building	16.60	8.40	6.90	33.00	48.00	19.00	77	19	4

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Enclosed Parking with Elevator	0.545842	0.044768	0.205288	0.119317	0.015350	0.006227	0.020460	0.031333	0.002546	0.002133	0.005184	0.000692	0.000862
Medical Office Building	0.545842	0.044768	0.205288	0.119317	0.015350	0.006227	0.020460	0.031333	0.002546	0.002133	0.005184	0.000692	0.000862
Other Non-Asphalt Surfaces	0.545842	0.044768	0.205288	0.119317	0.015350	0.006227	0.020460	0.031333	0.002546	0.002133	0.005184	0.000692	0.000862
General Office Building	0.545842	0.044768	0.205288	0.119317	0.015350	0.006227	0.020460	0.031333	0.002546	0.002133	0.005184	0.000692	0.000862

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

Exceed Title 24

Install High Efficiency Lighting

Install Energy Efficient Appliances

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.0218	0.1985	0.1667	1.1900e-003		0.0151	0.0151		0.0151	0.0151		238.1690	238.1690	4.5600e-003	4.3700e-003	239.5843
NaturalGas Unmitigated	0.0307	0.2791	0.2344	1.6700e-003		0.0212	0.0212		0.0212	0.0212		334.8648	334.8648	6.4200e-003	6.1400e-003	336.8547

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					
Enclosed Parking with Elevator	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
General Office Building	570.411	6.1500e-003	0.0559	0.0470	3.4000e-004		4.2500e-003	4.2500e-003		4.2500e-003	4.2500e-003		67.1072	67.1072	1.2900e-003	1.2300e-003	67.5060
Medical Office Building	2275.94	0.0245	0.2231	0.1874	1.3400e-003		0.0170	0.0170		0.0170	0.0170		267.7576	267.7576	5.1300e-003	4.9100e-003	269.3488
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0307**	**0.2791**	**0.2344**	**1.6800e-003**		**0.0212**	**0.0212**		**0.0212**	**0.0212**		**334.8648**	**334.8648**	**6.4200e-003**	**6.1400e-003**	**336.8547**

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Enclosed Parking with Elevator	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
General Office Building	0.405699	4.3800e-003	0.0398	0.0334	2.4000e-004		3.0200e-003	3.0200e-003		3.0200e-003	3.0200e-003		47.7293	47.7293	9.1000e-004	8.8000e-004	48.0129
Medical Office Building	1.61874	0.0175	0.1587	0.1333	9.5000e-004		0.0121	0.0121		0.0121	0.0121		190.4397	190.4397	3.6500e-003	3.4900e-003	191.5714
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0218**	**0.1985**	**0.1667**	**1.1900e-003**		**0.0151**	**0.0151**		**0.0151**	**0.0151**		**238.1690**	**238.1690**	**4.5600e-003**	**4.3700e-003**	**239.5843**

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	2.1580	3.5000e-004	0.0384	0.0000		1.4000e-004	1.4000e-004		1.4000e-004	1.4000e-004		0.0823	0.0823	2.2000e-004		0.0877
Unmitigated	2.1580	3.5000e-004	0.0384	0.0000		1.4000e-004	1.4000e-004		1.4000e-004	1.4000e-004		0.0823	0.0823	2.2000e-004		0.0877

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	0.1359					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	2.0186					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	3.5500e-003	3.5000e-004	0.0384	0.0000		1.4000e-004	1.4000e-004		1.4000e-004	1.4000e-004		0.0823	0.0823	2.2000e-004		0.0877
Total	**2.1580**	**3.5000e-004**	**0.0384**	**0.0000**		**1.4000e-004**	**1.4000e-004**		**1.4000e-004**	**1.4000e-004**		**0.0823**	**0.0823**	**2.2000e-004**		**0.0877**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.1359					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	2.0186					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	3.5500e-003	3.5000e-004	0.0384	0.0000		1.4000e-004	1.4000e-004		1.4000e-004	1.4000e-004		0.0823	0.0823	2.2000e-004		0.0877
Total	**2.1580**	**3.5000e-004**	**0.0384**	**0.0000**		**1.4000e-004**	**1.4000e-004**		**1.4000e-004**	**1.4000e-004**		**0.0823**	**0.0823**	**2.2000e-004**		**0.0877**

7.0 Water Detail

7.1 Mitigation Measures Water

Apply Water Conservation Strategy

Use Water Efficient Irrigation System

8.0 Waste Detail

8.1 Mitigation Measures Waste

Institute Recycling and Composting Services

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

APPENDIX B: CALEEMOD MODEL ANNUAL EMISSIONS PRINTOUTS

590 South Fair Oaks

Los Angeles-South Coast County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Medical Office Building	79.80	1000sqft	0.00	79,800.00	0
Enclosed Parking with Elevator	260.00	Space	0.60	104,000.00	0
Other Non-Asphalt Surfaces	16.12	1000sqft	0.37	16,122.00	0
General Office Building	20.00	1000sqft	0.00	20,000.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	33
Climate Zone	12			**Operational Year**	2023
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 - ~79.8 TSF 4-story medical office, 20 TSF office, 260-space subterranean parking structure with ~16,122 SF of landscaping and hardscape on ~0.97 ac

Construction Phase - Construction to start ~August 2021 and last ~18-24 months

Off-road Equipment -

Off-road Equipment -

Off-road Equipment -

Off-road Equipment -

Off-road Equipment - No grading on-site. Excavator added for excavation for subterranean parking structure.

Trips and VMT -

Demolition - 2,800 SF + 4,200 SF buildings (7,000 SF total) to be demolished.

Grading - Site is ~ 0.97 acres. 35,700 CY of export.

Architectural Coating - SCAQMD Rule 1113 limits paints applied to buildings to 50g/L VOC content

Vehicle Trips - Per TIA, wkday trip gen rate for gen off=7.792trips/TSF, for med/dentl off=27.84trips/TSF. Wkend rates from 10th Ed ITE. For Gen off, Sat = 1.768trips/TSF, Sun =0.56trips/TSF;for med/dent off Sat=6.856trips/TSF, Sun=1.136trips/TSF (w/20%rdxn)

Area Coating - SCAQMD Rule 1113 limits paints applied to buildings to 50g/L VOC content

Construction Off-road Equipment Mitigation -

Energy Mitigation - 2019 standards, nonresidential buildings are approximately 30 percent more efficient than 2016 standards. Project will be LEED Gold certified. Lighting installed will be at least 35% more efficient than baseline.

Water Mitigation - 20% reduction in indoor water use per CalGreen. Water-efficient landscaping to be installed on-site.

Waste Mitigation - 75% diversion of waste per AB 341

Woodstoves -

Sequestration -

Mobile Land Use Mitigation -

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	EF_Nonresidential_Exterior	100.00	50.00
tblArchitecturalCoating	EF_Nonresidential_Interior	100.00	50.00
tblAreaCoating	Area_EF_Nonresidential_Exterior	100	50
tblAreaCoating	Area_EF_Nonresidential_Interior	100	50
tblConstructionPhase	NumDays	1.00	30.00
tblConstructionPhase	NumDays	100.00	350.00
tblConstructionPhase	NumDays	5.00	10.00
tblConstructionPhase	NumDays	5.00	10.00
tblGrading	AcresOfGrading	0.00	0.97
tblGrading	MaterialExported	0.00	37,500.00
tblLandUse	LandUseSquareFeet	16,120.00	16,122.00
tblLandUse	LotAcreage	1.83	0.00
tblLandUse	LotAcreage	2.34	0.60
tblLandUse	LotAcreage	0.46	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	UsageHours	8.00	0.00
tblVehicleTrips	ST_TR	8.96	6.86
tblVehicleTrips	ST_TR	2.46	1.77
tblVehicleTrips	SU_TR	1.55	1.14
tblVehicleTrips	SU_TR	1.05	0.56
tblVehicleTrips	WD_TR	36.13	27.84
tblVehicleTrips	WD_TR	11.03	7.79

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2021	0.0747	1.1701	0.6800	3.0700e-003	0.0880	0.0237	0.1116	0.0232	0.0219	0.0451	0.0000	293.0626	293.0626	0.0313	0.0000	293.8448
2022	0.1459	1.3844	1.4198	3.7900e-003	0.1463	0.0501	0.1964	0.0395	0.0461	0.0857	0.0000	346.2521	346.2521	0.0517	0.0000	347.5455
2023	0.2624	0.1218	0.1498	3.6000e-004	0.0126	4.8300e-003	0.0174	3.3800e-003	4.4900e-003	7.8700e-003	0.0000	32.3142	32.3142	5.1900e-003	0.0000	32.4439
Maximum	**0.2624**	**1.3844**	**1.4198**	**3.7900e-003**	**0.1463**	**0.0501**	**0.1964**	**0.0395**	**0.0461**	**0.0857**	**0.0000**	**346.2521**	**346.2521**	**0.0517**	**0.0000**	**347.5455**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2021	0.0747	1.1701	0.6800	3.0700e-003	0.0843	0.0237	0.1079	0.0227	0.0219	0.0446	0.0000	293.0625	293.0625	0.0313	0.0000	293.8447
2022	0.1459	1.3844	1.4198	3.7900e-003	0.1463	0.0501	0.1964	0.0395	0.0461	0.0857	0.0000	346.2519	346.2519	0.0517	0.0000	347.5453
2023	0.2624	0.1218	0.1498	3.6000e-004	0.0126	4.8300e-003	0.0174	3.3800e-003	4.4900e-003	7.8700e-003	0.0000	32.3142	32.3142	5.1900e-003	0.0000	32.4439
Maximum	**0.2624**	**1.3844**	**1.4198**	**3.7900e-003**	**0.1463**	**0.0501**	**0.1964**	**0.0395**	**0.0461**	**0.0857**	**0.0000**	**346.2519**	**346.2519**	**0.0517**	**0.0000**	**347.5453**

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	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**1.50**	**0.00**	**1.14**	**0.83**	**0.00**	**0.40**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
1	**8-2-2021**	**11-1-2021**	0.9356	0.9356
2	**11-2-2021**	**2-1-2022**	0.4132	0.4132
3	**2-2-2022**	**5-1-2022**	0.3726	0.3726
4	**5-2-2022**	**8-1-2022**	0.3840	0.3840
5	**8-2-2022**	**11-1-2022**	0.3846	0.3846
6	**11-2-2022**	**2-1-2023**	0.3598	0.3598
7	**2-2-2023**	**5-1-2023**	0.2738	0.2738
		Highest	0.9356	0.9356

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.3936	4.0000e-005	4.8000e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005	0.0000	9.3300e-003	9.3300e-003	2.0000e-005	0.0000	9.9400e-003
Energy	5.6000e-003	0.0509	0.0428	3.1000e-004		3.8700e-003	3.8700e-003		3.8700e-003	3.8700e-003	0.0000	1,494.0487	1,494.0487	0.0261	6.2000e-003	1,496.5506
Mobile	0.4557	2.0322	5.7827	0.0213	1.7962	0.0163	1.8125	0.4815	0.0152	0.4966	0.0000	1,972.8402	1,972.8402	0.0988	0.0000	1,975.3103
Waste						0.0000	0.0000		0.0000	0.0000	178.7214	0.0000	178.7214	10.5621	0.0000	442.7746
Water						0.0000	0.0000		0.0000	0.0000	4.3045	167.6234	171.9279	0.4450	0.0110	186.3448
Total	**0.8549**	**2.0832**	**5.8303**	**0.0216**	**1.7962**	**0.0202**	**1.8164**	**0.4815**	**0.0191**	**0.5005**	**183.0259**	**3,634.5216**	**3,817.5475**	**11.1321**	**0.0172**	**4,100.9902**

2.2 Overall Operational

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.3936	4.0000e-005	4.8000e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005	0.0000	9.3300e-003	9.3300e-003	2.0000e-005	0.0000	9.9400e-003
Energy	3.9800e-003	0.0362	0.0304	2.2000e-004		2.7500e-003	2.7500e-003		2.7500e-003	2.7500e-003	0.0000	1,127.7203	1,127.7203	0.0197	4.6500e-003	1,129.5980
Mobile	0.4557	2.0322	5.7827	0.0213	1.7962	0.0163	1.8125	0.4815	0.0152	0.4966	0.0000	1,972.8402	1,972.8402	0.0988	0.0000	1,975.3103
Waste						0.0000	0.0000		0.0000	0.0000	44.6803	0.0000	44.6803	2.6405	0.0000	110.6937
Water						0.0000	0.0000		0.0000	0.0000	3.4436	140.9519	144.3955	0.3562	8.8600e-003	155.9394
Total	**0.8533**	**2.0685**	**5.8179**	**0.0216**	**1.7962**	**0.0191**	**1.8153**	**0.4815**	**0.0179**	**0.4994**	**48.1240**	**3,241.5217**	**3,289.6457**	**3.1152**	**0.0135**	**3,371.5513**

	ROG	NOx	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	**0.19**	**0.71**	**0.21**	**0.42**	**0.00**	**5.54**	**0.06**	**0.00**	**5.88**	**0.22**	**73.71**	**10.81**	**13.83**	**72.02**	**21.64**	**17.79**

3.0 Construction Detail

Construction Phase

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Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	8/2/2021	8/13/2021	5	10	
2	Site Preparation	Site Preparation	8/14/2021	9/24/2021	5	30	
3	Building Construction	Building Construction	9/24/2021	1/26/2023	5	350	
4	Paving	Paving	1/27/2023	2/9/2023	5	10	
5	Architectural Coating	Architectural Coating	2/10/2023	2/23/2023	5	10	

Acres of Grading (Site Preparation Phase): 0.97

Acres of Grading (Grading Phase): 0

Acres of Paving: 0.97

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 149,700; Non-Residential Outdoor: 49,900; Striped Parking Area: 7,207 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Demolition	Rubber Tired Dozers	1	1.00	247	0.40
Demolition	Tractors/Loaders/Backhoes	2	6.00	97	0.37
Site Preparation	Excavators	1	8.00	158	0.38
Site Preparation	Graders	0	0.00	187	0.41
Site Preparation	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Building Construction	Cranes	1	4.00	231	0.29
Building Construction	Forklifts	2	6.00	89	0.20
Building Construction	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Paving	Cement and Mortar Mixers	4	6.00	9	0.56
Paving	Pavers	1	7.00	130	0.42
Paving	Rollers	1	7.00	80	0.38
Paving	Tractors/Loaders/Backhoes	1	7.00	97	0.37
Architectural Coating	Air Compressors	1	6.00	78	0.48

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	4	10.00	0.00	32.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	2	5.00	0.00	4,688.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	5	82.00	36.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Paving	7	18.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	16.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

3.2 Demolition - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					3.4500e-003	0.0000	3.4500e-003	5.2000e-004	0.0000	5.2000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	3.9800e-003	0.0363	0.0379	6.0000e-005		2.0400e-003	2.0400e-003		1.9400e-003	1.9400e-003	0.0000	5.2047	5.2047	9.7000e-004	0.0000	5.2289
Total	**3.9800e-003**	**0.0363**	**0.0379**	**6.0000e-005**	**3.4500e-003**	**2.0400e-003**	**5.4900e-003**	**5.2000e-004**	**1.9400e-003**	**2.4600e-003**	**0.0000**	**5.2047**	**5.2047**	**9.7000e-004**	**0.0000**	**5.2289**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	1.3000e-004	4.4300e-003	1.0300e-003	1.0000e-005	2.7000e-004	1.0000e-005	2.9000e-004	8.0000e-005	1.0000e-005	9.0000e-005	0.0000	1.2197	1.2197	8.0000e-005	0.0000	1.2218
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.2000e-004	1.7000e-004	1.8900e-003	1.0000e-005	5.5000e-004	0.0000	5.5000e-004	1.5000e-004	0.0000	1.5000e-004	0.0000	0.4945	0.4945	1.0000e-005	0.0000	0.4948
Total	**3.5000e-004**	**4.6000e-003**	**2.9200e-003**	**2.0000e-005**	**8.2000e-004**	**1.0000e-005**	**8.4000e-004**	**2.3000e-004**	**1.0000e-005**	**2.4000e-004**	**0.0000**	**1.7141**	**1.7141**	**9.0000e-005**	**0.0000**	**1.7166**

3.2 Demolition - 2021

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					1.3400e-003	0.0000	1.3400e-003	2.0000e-004	0.0000	2.0000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	3.9800e-003	0.0363	0.0379	6.0000e-005		2.0400e-003	2.0400e-003		1.9400e-003	1.9400e-003	0.0000	5.2047	5.2047	9.7000e-004	0.0000	5.2289
Total	**3.9800e-003**	**0.0363**	**0.0379**	**6.0000e-005**	**1.3400e-003**	**2.0400e-003**	**3.3800e-003**	**2.0000e-004**	**1.9400e-003**	**2.1400e-003**	**0.0000**	**5.2047**	**5.2047**	**9.7000e-004**	**0.0000**	**5.2289**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	1.3000e-004	4.4300e-003	1.0300e-003	1.0000e-005	2.7000e-004	1.0000e-005	2.9000e-004	8.0000e-005	1.0000e-005	9.0000e-005	0.0000	1.2197	1.2197	8.0000e-005	0.0000	1.2218
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.2000e-004	1.7000e-004	1.8900e-003	1.0000e-005	5.5000e-004	0.0000	5.5000e-004	1.5000e-004	0.0000	1.5000e-004	0.0000	0.4945	0.4945	1.0000e-005	0.0000	0.4948
Total	**3.5000e-004**	**4.6000e-003**	**2.9200e-003**	**2.0000e-005**	**8.2000e-004**	**1.0000e-005**	**8.4000e-004**	**2.3000e-004**	**1.0000e-005**	**2.4000e-004**	**0.0000**	**1.7141**	**1.7141**	**9.0000e-005**	**0.0000**	**1.7166**

3.3 Site Preparation - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					2.6300e-003	0.0000	2.6300e-003	3.8000e-004	0.0000	3.8000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	6.2500e-003	0.0607	0.0830	1.2000e-004		3.2400e-003	3.2400e-003		2.9800e-003	2.9800e-003	0.0000	10.9011	10.9011	3.5300e-003	0.0000	10.9892
Total	**6.2500e-003**	**0.0607**	**0.0830**	**1.2000e-004**	**2.6300e-003**	**3.2400e-003**	**5.8700e-003**	**3.8000e-004**	**2.9800e-003**	**3.3600e-003**	**0.0000**	**10.9011**	**10.9011**	**3.5300e-003**	**0.0000**	**10.9892**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0197	0.6489	0.1513	1.8200e-003	0.0403	1.9400e-003	0.0422	0.0111	1.8600e-003	0.0129	0.0000	178.6822	178.6822	0.0124	0.0000	178.9923
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.2000e-004	2.5000e-004	2.8400e-003	1.0000e-005	8.2000e-004	1.0000e-005	8.3000e-004	2.2000e-004	1.0000e-005	2.2000e-004	0.0000	0.7417	0.7417	2.0000e-005	0.0000	0.7422
Total	**0.0201**	**0.6491**	**0.1541**	**1.8300e-003**	**0.0411**	**1.9500e-003**	**0.0431**	**0.0113**	**1.8700e-003**	**0.0131**	**0.0000**	**179.4239**	**179.4239**	**0.0124**	**0.0000**	**179.7345**

3.3 Site Preparation - 2021

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					1.0300e-003	0.0000	1.0300e-003	1.5000e-004	0.0000	1.5000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	6.2500e-003	0.0607	0.0830	1.2000e-004		3.2400e-003	3.2400e-003		2.9800e-003	2.9800e-003	0.0000	10.9011	10.9011	3.5300e-003	0.0000	10.9892
Total	**6.2500e-003**	**0.0607**	**0.0830**	**1.2000e-004**	**1.0300e-003**	**3.2400e-003**	**4.2700e-003**	**1.5000e-004**	**2.9800e-003**	**3.1300e-003**	**0.0000**	**10.9011**	**10.9011**	**3.5300e-003**	**0.0000**	**10.9892**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0197	0.6489	0.1513	1.8200e-003	0.0403	1.9400e-003	0.0422	0.0111	1.8600e-003	0.0129	0.0000	178.6822	178.6822	0.0124	0.0000	178.9923
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.2000e-004	2.5000e-004	2.8400e-003	1.0000e-005	8.2000e-004	1.0000e-005	8.3000e-004	2.2000e-004	1.0000e-005	2.2000e-004	0.0000	0.7417	0.7417	2.0000e-005	0.0000	0.7422
Total	**0.0201**	**0.6491**	**0.1541**	**1.8300e-003**	**0.0411**	**1.9500e-003**	**0.0431**	**0.0113**	**1.8700e-003**	**0.0131**	**0.0000**	**179.4239**	**179.4239**	**0.0124**	**0.0000**	**179.7345**

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	tons/yr										MT/yr					
Off-Road	0.0275	0.2835	0.2579	4.0000e-004		0.0159	0.0159		0.0146	0.0146	0.0000	35.5291	35.5291	0.0115	0.0000	35.8164
Total	**0.0275**	**0.2835**	**0.2579**	**4.0000e-004**		**0.0159**	**0.0159**		**0.0146**	**0.0146**	**0.0000**	**35.5291**	**35.5291**	**0.0115**	**0.0000**	**35.8164**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	3.9700e-003	0.1261	0.0342	3.2000e-004	8.0500e-003	2.6000e-004	8.3100e-003	2.3200e-003	2.5000e-004	2.5700e-003	0.0000	31.5023	31.5023	1.9300e-003	0.0000	31.5506
Worker	0.0125	9.7500e-003	0.1101	3.2000e-004	0.0319	2.6000e-004	0.0322	8.4700e-003	2.4000e-004	8.7100e-003	0.0000	28.7874	28.7874	8.5000e-004	0.0000	28.8086
Total	**0.0165**	**0.1359**	**0.1443**	**6.4000e-004**	**0.0400**	**5.2000e-004**	**0.0405**	**0.0108**	**4.9000e-004**	**0.0113**	**0.0000**	**60.2896**	**60.2896**	**2.7800e-003**	**0.0000**	**60.3591**

3.4 Building Construction - 2021

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0275	0.2835	0.2579	4.0000e-004		0.0159	0.0159		0.0146	0.0146	0.0000	35.5291	35.5291	0.0115	0.0000	35.8164
Total	**0.0275**	**0.2835**	**0.2579**	**4.0000e-004**		**0.0159**	**0.0159**		**0.0146**	**0.0146**	**0.0000**	**35.5291**	**35.5291**	**0.0115**	**0.0000**	**35.8164**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	3.9700e-003	0.1261	0.0342	3.2000e-004	8.0500e-003	2.6000e-004	8.3100e-003	2.3200e-003	2.5000e-004	2.5700e-003	0.0000	31.5023	31.5023	1.9300e-003	0.0000	31.5506
Worker	0.0125	9.7500e-003	0.1101	3.2000e-004	0.0319	2.6000e-004	0.0322	8.4700e-003	2.4000e-004	8.7100e-003	0.0000	28.7874	28.7874	8.5000e-004	0.0000	28.8086
Total	**0.0165**	**0.1359**	**0.1443**	**6.4000e-004**	**0.0400**	**5.2000e-004**	**0.0405**	**0.0108**	**4.9000e-004**	**0.0113**	**0.0000**	**60.2896**	**60.2896**	**2.7800e-003**	**0.0000**	**60.3591**

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	tons/yr										MT/yr					
Off-Road	0.0892	0.9134	0.9299	1.4800e-003		0.0484	0.0484		0.0445	0.0445	0.0000	130.1920	130.1920	0.0421	0.0000	131.2447
Total	**0.0892**	**0.9134**	**0.9299**	**1.4800e-003**		**0.0484**	**0.0484**		**0.0445**	**0.0445**	**0.0000**	**130.1920**	**130.1920**	**0.0421**	**0.0000**	**131.2447**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0136	0.4388	0.1185	1.1800e-003	0.0295	8.2000e-004	0.0303	8.5100e-003	7.9000e-004	9.3000e-003	0.0000	114.3472	114.3472	6.8300e-003	0.0000	114.5179
Worker	0.0430	0.0323	0.3714	1.1300e-003	0.1168	9.3000e-004	0.1178	0.0310	8.6000e-004	0.0319	0.0000	101.7129	101.7129	2.8000e-003	0.0000	101.7829
Total	**0.0567**	**0.4711**	**0.4899**	**2.3100e-003**	**0.1463**	**1.7500e-003**	**0.1481**	**0.0395**	**1.6500e-003**	**0.0412**	**0.0000**	**216.0601**	**216.0601**	**9.6300e-003**	**0.0000**	**216.3008**

3.4 Building Construction - 2022

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0892	0.9134	0.9299	1.4800e-003		0.0484	0.0484		0.0445	0.0445	0.0000	130.1918	130.1918	0.0421	0.0000	131.2445
Total	**0.0892**	**0.9134**	**0.9299**	**1.4800e-003**		**0.0484**	**0.0484**		**0.0445**	**0.0445**	**0.0000**	**130.1918**	**130.1918**	**0.0421**	**0.0000**	**131.2445**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0136	0.4388	0.1185	1.1800e-003	0.0295	8.2000e-004	0.0303	8.5100e-003	7.9000e-004	9.3000e-003	0.0000	114.3472	114.3472	6.8300e-003	0.0000	114.5179
Worker	0.0430	0.0323	0.3714	1.1300e-003	0.1168	9.3000e-004	0.1178	0.0310	8.6000e-004	0.0319	0.0000	101.7129	101.7129	2.8000e-003	0.0000	101.7829
Total	**0.0567**	**0.4711**	**0.4899**	**2.3100e-003**	**0.1463**	**1.7500e-003**	**0.1481**	**0.0395**	**1.6500e-003**	**0.0412**	**0.0000**	**216.0601**	**216.0601**	**9.6300e-003**	**0.0000**	**216.3008**

3.4 Building Construction - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	6.0100e-003	0.0610	0.0674	1.1000e-004		3.0400e-003	3.0400e-003		2.8000e-003	2.8000e-003	0.0000	9.5198	9.5198	3.0800e-003	0.0000	9.5968
Total	**6.0100e-003**	**0.0610**	**0.0674**	**1.1000e-004**		**3.0400e-003**	**3.0400e-003**		**2.8000e-003**	**2.8000e-003**	**0.0000**	**9.5198**	**9.5198**	**3.0800e-003**	**0.0000**	**9.5968**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	7.4000e-004	0.0242	7.7700e-003	8.0000e-005	2.1500e-003	3.0000e-005	2.1800e-003	6.2000e-004	3.0000e-005	6.5000e-004	0.0000	8.0945	8.0945	4.4000e-004	0.0000	8.1056
Worker	2.9600e-003	2.1300e-003	0.0250	8.0000e-005	8.5400e-003	7.0000e-005	8.6000e-003	2.2700e-003	6.0000e-005	2.3300e-003	0.0000	7.1609	7.1609	1.8000e-004	0.0000	7.1655
Total	**3.7000e-003**	**0.0264**	**0.0327**	**1.6000e-004**	**0.0107**	**1.0000e-004**	**0.0108**	**2.8900e-003**	**9.0000e-005**	**2.9800e-003**	**0.0000**	**15.2554**	**15.2554**	**6.2000e-004**	**0.0000**	**15.2711**

3.4 Building Construction - 2023

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	6.0100e-003	0.0610	0.0674	1.1000e-004		3.0400e-003	3.0400e-003		2.8000e-003	2.8000e-003	0.0000	9.5198	9.5198	3.0800e-003	0.0000	9.5968
Total	**6.0100e-003**	**0.0610**	**0.0674**	**1.1000e-004**		**3.0400e-003**	**3.0400e-003**		**2.8000e-003**	**2.8000e-003**	**0.0000**	**9.5198**	**9.5198**	**3.0800e-003**	**0.0000**	**9.5968**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	7.4000e-004	0.0242	7.7700e-003	8.0000e-005	2.1500e-003	3.0000e-005	2.1800e-003	6.2000e-004	3.0000e-005	6.5000e-004	0.0000	8.0945	8.0945	4.4000e-004	0.0000	8.1056
Worker	2.9600e-003	2.1300e-003	0.0250	8.0000e-005	8.5400e-003	7.0000e-005	8.6000e-003	2.2700e-003	6.0000e-005	2.3300e-003	0.0000	7.1609	7.1609	1.8000e-004	0.0000	7.1655
Total	**3.7000e-003**	**0.0264**	**0.0327**	**1.6000e-004**	**0.0107**	**1.0000e-004**	**0.0108**	**2.8900e-003**	**9.0000e-005**	**2.9800e-003**	**0.0000**	**15.2554**	**15.2554**	**6.2000e-004**	**0.0000**	**15.2711**

3.5 Paving - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	3.0600e-003	0.0275	0.0351	6.0000e-005		1.3200e-003	1.3200e-003		1.2300e-003	1.2300e-003	0.0000	4.6996	4.6996	1.3700e-003	0.0000	4.7338
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**3.0600e-003**	**0.0275**	**0.0351**	**6.0000e-005**		**1.3200e-003**	**1.3200e-003**		**1.2300e-003**	**1.2300e-003**	**0.0000**	**4.6996**	**4.6996**	**1.3700e-003**	**0.0000**	**4.7338**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.4000e-004	2.5000e-004	2.8800e-003	1.0000e-005	9.9000e-004	1.0000e-005	9.9000e-004	2.6000e-004	1.0000e-005	2.7000e-004	0.0000	0.8273	0.8273	2.0000e-005	0.0000	0.8279
Total	**3.4000e-004**	**2.5000e-004**	**2.8800e-003**	**1.0000e-005**	**9.9000e-004**	**1.0000e-005**	**9.9000e-004**	**2.6000e-004**	**1.0000e-005**	**2.7000e-004**	**0.0000**	**0.8273**	**0.8273**	**2.0000e-005**	**0.0000**	**0.8279**

3.5 Paving - 2023

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	3.0600e-003	0.0275	0.0351	6.0000e-005		1.3200e-003	1.3200e-003		1.2300e-003	1.2300e-003	0.0000	4.6996	4.6996	1.3700e-003	0.0000	4.7338
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**3.0600e-003**	**0.0275**	**0.0351**	**6.0000e-005**		**1.3200e-003**	**1.3200e-003**		**1.2300e-003**	**1.2300e-003**	**0.0000**	**4.6996**	**4.6996**	**1.3700e-003**	**0.0000**	**4.7338**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.4000e-004	2.5000e-004	2.8800e-003	1.0000e-005	9.9000e-004	1.0000e-005	9.9000e-004	2.6000e-004	1.0000e-005	2.7000e-004	0.0000	0.8273	0.8273	2.0000e-005	0.0000	0.8279
Total	**3.4000e-004**	**2.5000e-004**	**2.8800e-003**	**1.0000e-005**	**9.9000e-004**	**1.0000e-005**	**9.9000e-004**	**2.6000e-004**	**1.0000e-005**	**2.7000e-004**	**0.0000**	**0.8273**	**0.8273**	**2.0000e-005**	**0.0000**	**0.8279**

3.6 Architectural Coating - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.2480					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	9.6000e-004	6.5100e-003	9.0600e-003	1.0000e-005		3.5000e-004	3.5000e-004		3.5000e-004	3.5000e-004	0.0000	1.2766	1.2766	8.0000e-005	0.0000	1.2785
Total	**0.2490**	**6.5100e-003**	**9.0600e-003**	**1.0000e-005**		**3.5000e-004**	**3.5000e-004**		**3.5000e-004**	**3.5000e-004**	**0.0000**	**1.2766**	**1.2766**	**8.0000e-005**	**0.0000**	**1.2785**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.0000e-004	2.2000e-004	2.5600e-003	1.0000e-005	8.8000e-004	1.0000e-005	8.8000e-004	2.3000e-004	1.0000e-005	2.4000e-004	0.0000	0.7354	0.7354	2.0000e-005	0.0000	0.7359
Total	**3.0000e-004**	**2.2000e-004**	**2.5600e-003**	**1.0000e-005**	**8.8000e-004**	**1.0000e-005**	**8.8000e-004**	**2.3000e-004**	**1.0000e-005**	**2.4000e-004**	**0.0000**	**0.7354**	**0.7354**	**2.0000e-005**	**0.0000**	**0.7359**

3.6 Architectural Coating - 2023

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.2480					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	9.6000e-004	6.5100e-003	9.0600e-003	1.0000e-005		3.5000e-004	3.5000e-004		3.5000e-004	3.5000e-004	0.0000	1.2766	1.2766	8.0000e-005	0.0000	1.2785
Total	**0.2490**	**6.5100e-003**	**9.0600e-003**	**1.0000e-005**		**3.5000e-004**	**3.5000e-004**		**3.5000e-004**	**3.5000e-004**	**0.0000**	**1.2766**	**1.2766**	**8.0000e-005**	**0.0000**	**1.2785**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.0000e-004	2.2000e-004	2.5600e-003	1.0000e-005	8.8000e-004	1.0000e-005	8.8000e-004	2.3000e-004	1.0000e-005	2.4000e-004	0.0000	0.7354	0.7354	2.0000e-005	0.0000	0.7359
Total	**3.0000e-004**	**2.2000e-004**	**2.5600e-003**	**1.0000e-005**	**8.8000e-004**	**1.0000e-005**	**8.8000e-004**	**2.3000e-004**	**1.0000e-005**	**2.4000e-004**	**0.0000**	**0.7354**	**0.7354**	**2.0000e-005**	**0.0000**	**0.7359**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.4557	2.0322	5.7827	0.0213	1.7962	0.0163	1.8125	0.4815	0.0152	0.4966	0.0000	1,972.8402	1,972.8402	0.0988	0.0000	1,975.3103
Unmitigated	0.4557	2.0322	5.7827	0.0213	1.7962	0.0163	1.8125	0.4815	0.0152	0.4966	0.0000	1,972.8402	1,972.8402	0.0988	0.0000	1,975.3103

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Enclosed Parking with Elevator	0.00	0.00	0.00		
Medical Office Building	2,221.63	547.11	90.65	4,352,466	4,352,466
Other Non-Asphalt Surfaces	0.00	0.00	0.00		
General Office Building	155.84	35.36	11.20	380,022	380,022
Total	2,377.47	582.47	101.85	4,732,488	4,732,488

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Enclosed Parking with Elevator	16.60	8.40	6.90	0.00	0.00	0.00	0	0	0
Medical Office Building	16.60	8.40	6.90	29.60	51.40	19.00	60	30	10
Other Non-Asphalt Surfaces	16.60	8.40	6.90	0.00	0.00	0.00	0	0	0
General Office Building	16.60	8.40	6.90	33.00	48.00	19.00	77	19	4

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Enclosed Parking with Elevator	0.545842	0.044768	0.205288	0.119317	0.015350	0.006227	0.020460	0.031333	0.002546	0.002133	0.005184	0.000692	0.000862
Medical Office Building	0.545842	0.044768	0.205288	0.119317	0.015350	0.006227	0.020460	0.031333	0.002546	0.002133	0.005184	0.000692	0.000862
Other Non-Asphalt Surfaces	0.545842	0.044768	0.205288	0.119317	0.015350	0.006227	0.020460	0.031333	0.002546	0.002133	0.005184	0.000692	0.000862
General Office Building	0.545842	0.044768	0.205288	0.119317	0.015350	0.006227	0.020460	0.031333	0.002546	0.002133	0.005184	0.000692	0.000862

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

Exceed Title 24

Install High Efficiency Lighting

Install Energy Efficient Appliances

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	1,088.2888	1,088.2888	0.0190	3.9200e-003	1,089.9322
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	1,438.6081	1,438.6081	0.0251	5.1900e-003	1,440.7805
NaturalGas Mitigated	3.9800e-003	0.0362	0.0304	2.2000e-004		2.7500e-003	2.7500e-003		2.7500e-003	2.7500e-003	0.0000	39.4315	39.4315	7.6000e-004	7.2000e-004	39.6659
NaturalGas Unmitigated	5.6000e-003	0.0509	0.0428	3.1000e-004		3.8700e-003	3.8700e-003		3.8700e-003	3.8700e-003	0.0000	55.4406	55.4406	1.0600e-003	1.0200e-003	55.7701

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Enclosed Parking with Elevator	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
General Office Building	208200	1.1200e-003	0.0102	8.5700e-003	6.0000e-005		7.8000e-004	7.8000e-004		7.8000e-004	7.8000e-004	0.0000	11.1103	11.1103	2.1000e-004	2.0000e-004	11.1764
Medical Office Building	830718	4.4800e-003	0.0407	0.0342	2.4000e-004		3.0900e-003	3.0900e-003		3.0900e-003	3.0900e-003	0.0000	44.3303	44.3303	8.5000e-004	8.1000e-004	44.5937
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**5.6000e-003**	**0.0509**	**0.0428**	**3.0000e-004**		**3.8700e-003**	**3.8700e-003**		**3.8700e-003**	**3.8700e-003**	**0.0000**	**55.4406**	**55.4406**	**1.0600e-003**	**1.0100e-003**	**55.7701**

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Enclosed Parking with Elevator	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
General Office Building	148080	8.0000e-004	7.2600e-003	6.1000e-003	4.0000e-005		5.5000e-004	5.5000e-004		5.5000e-004	5.5000e-004	0.0000	7.9021	7.9021	1.5000e-004	1.4000e-004	7.9491
Medical Office Building	590839	3.1900e-003	0.0290	0.0243	1.7000e-004		2.2000e-003	2.2000e-003		2.2000e-003	2.2000e-003	0.0000	31.5294	31.5294	6.0000e-004	5.8000e-004	31.7168
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**3.9900e-003**	**0.0362**	**0.0304**	**2.1000e-004**		**2.7500e-003**	**2.7500e-003**		**2.7500e-003**	**2.7500e-003**	**0.0000**	**39.4315**	**39.4315**	**7.5000e-004**	**7.2000e-004**	**39.6659**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Enclosed Parking with Elevator	609440	460.0304	8.0200e-003	1.6600e-003	460.7251
General Office Building	259800	196.1078	3.4200e-003	7.1000e-004	196.4039
Medical Office Building	1.0366e+006	782.4699	0.0136	2.8200e-003	783.6515
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Total		**1,438.6081**	**0.0251**	**5.1900e-003**	**1,440.7805**

5.3 Energy by Land Use - Electricity

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Enclosed Parking with Elevator	423436	319.6269	5.5700e-003	1.1500e-003	320.1096
General Office Building	204070	154.0405	2.6800e-003	5.6000e-004	154.2731
Medical Office Building	814239	614.6214	0.0107	2.2200e-003	615.5495
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Total		**1,088.2888**	**0.0190**	**3.9300e-003**	**1,089.9322**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.3936	4.0000e-005	4.8000e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005	0.0000	9.3300e-003	9.3300e-003	2.0000e-005	0.0000	9.9400e-003
Unmitigated	0.3936	4.0000e-005	4.8000e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005	0.0000	9.3300e-003	9.3300e-003	2.0000e-005	0.0000	9.9400e-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	tons/yr										MT/yr					
Architectural Coating	0.0248					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.3684					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	4.4000e-004	4.0000e-005	4.8000e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005	0.0000	9.3300e-003	9.3300e-003	2.0000e-005	0.0000	9.9400e-003
Total	**0.3936**	**4.0000e-005**	**4.8000e-003**	**0.0000**		**2.0000e-005**	**2.0000e-005**		**2.0000e-005**	**2.0000e-005**	**0.0000**	**9.3300e-003**	**9.3300e-003**	**2.0000e-005**	**0.0000**	**9.9400e-003**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0248					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.3684					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	4.4000e-004	4.0000e-005	4.8000e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005	0.0000	9.3300e-003	9.3300e-003	2.0000e-005	0.0000	9.9400e-003
Total	**0.3936**	**4.0000e-005**	**4.8000e-003**	**0.0000**		**2.0000e-005**	**2.0000e-005**		**2.0000e-005**	**2.0000e-005**	**0.0000**	**9.3300e-003**	**9.3300e-003**	**2.0000e-005**	**0.0000**	**9.9400e-003**

7.0 Water Detail

7.1 Mitigation Measures Water

Apply Water Conservation Strategy

Use Water Efficient Irrigation System

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	144.3955	0.3562	8.8600e-003	155.9394
Unmitigated	171.9279	0.4450	0.0110	186.3448

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Enclosed Parking with Elevator	0 / 0	0.0000	0.0000	0.0000	0.0000
General Office Building	3.55467 / 2.17867	54.3368	0.1168	2.9300e-003	58.1279
Medical Office Building	10.0133 / 1.9073	117.5910	0.3283	8.1200e-003	128.2168
Other Non-Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**171.9279**	**0.4450**	**0.0111**	**186.3448**

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Enclosed Parking with Elevator	0 / 0	0.0000	0.0000	0.0000	0.0000
General Office Building	2.84374 / 2.17867	47.1237	0.0935	2.3500e-003	50.1621
Medical Office Building	8.01068 / 1.9073	97.2719	0.2627	6.5000e-003	105.7773
Other Non-Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**144.3955**	**0.3562**	**8.8500e-003**	**155.9394**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Institute Recycling and Composting Services

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	44.6803	2.6405	0.0000	110.6937
Unmitigated	178.7214	10.5621	0.0000	442.7746

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Enclosed Parking with Elevator	0	0.0000	0.0000	0.0000	0.0000
General Office Building	18.6	3.7756	0.2231	0.0000	9.3540
Medical Office Building	861.84	174.9457	10.3390	0.0000	433.4206
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Total		**178.7214**	**10.5621**	**0.0000**	**442.7746**

8.2 Waste by Land Use

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Enclosed Parking with Elevator	0	0.0000	0.0000	0.0000	0.0000
General Office Building	4.65	0.9439	0.0558	0.0000	2.3385
Medical Office Building	215.46	43.7364	2.5848	0.0000	108.3552
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Total		**44.6803**	**2.6405**	**0.0000**	**110.6937**

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

590 South Fair Oaks Weekday VMT OPS ONLY

Los Angeles-South Coast County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
User Defined Commercial	1,000.00	User Defined Unit	0.97	0.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	33
Climate Zone	12			**Operational Year**	2023
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 - OPERATIONAL ANALYSIS ONLY FOR WEEKDAY MOBILE SOURCE EMISSIONS

Land Use - Generic land use of 1,000 SF for VMT calculation use.

Construction Phase -

Vehicle Trips - Per City TIA, 776 trips per day = 0.776/TSF. Trip length of 9.99097938144 miles per VMT data.

Consumer Products - VMT calcs only

Area Coating -

Landscape Equipment - .

Energy Use -

2.0 Emissions Summary

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mobile	0.1623	0.7451	2.3259	8.9200e-003	0.7651	6.7300e-003	0.7718	0.2051	6.2600e-003	0.2113	0.0000	824.4462	824.4462	0.0401	0.0000	825.4479

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mobile	0.1623	0.7451	2.3259	8.9200e-003	0.7651	6.7300e-003	0.7718	0.2051	6.2600e-003	0.2113	0.0000	824.4462	824.4462	0.0401	0.0000	825.4479

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.1623	0.7451	2.3259	8.9200e-003	0.7651	6.7300e-003	0.7718	0.2051	6.2600e-003	0.2113	0.0000	824.4462	824.4462	0.0401	0.0000	825.4479
Unmitigated	0.1623	0.7451	2.3259	8.9200e-003	0.7651	6.7300e-003	0.7718	0.2051	6.2600e-003	0.2113	0.0000	824.4462	824.4462	0.0401	0.0000	825.4479

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
User Defined Commercial	776.00	0.00	0.00	2,015,780	2,015,780
Total	776.00	0.00	0.00	2,015,780	2,015,780

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
User Defined Commercial	0.00	9.99	0.00	0.00	100.00	0.00	100	0	0

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
User Defined Commercial	0.545842	0.044768	0.205288	0.119317	0.015350	0.006227	0.020460	0.031333	0.002546	0.002133	0.005184	0.000692	0.000862

590 South Fair Oaks Weekend VMT OPS Only

Los Angeles-South Coast County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Office Building	20.00	1000sqft	0.00	20,000.00	0
Medical Office Building	79.80	1000sqft	0.00	79,800.00	0
Enclosed Parking with Elevator	260.00	Space	0.60	104,000.00	0
Other Non-Asphalt Surfaces	16.12	1000sqft	0.37	16,122.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	33
Climate Zone	12			**Operational Year**	2023
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 - ~79.8 TSF 4-story medical office, 20.0 TSF office, 260-space subterranean parking structure with ~16,122 SF of landscaping and hardscape on ~0.97 ac. Footprint is 0.37 ac.
Construction Phase - Construction to start ~August 2021 and last ~18-24 months

Off-road Equipment -

Off-road Equipment -

Off-road Equipment -

Off-road Equipment -

Off-road Equipment - No grading on-site. Excavator added for excavation for subterranean parking structure.

Trips and VMT -

Demolition - 2,800 SF + 4,200 SF buildings (7,000 SF total) to be demolished.

Grading - Site is ~ 0.97 acres. 35,700 CY of export.

Architectural Coating - SCAQMD Rule 1113 limits paints applied to buildings to 50g/L VOC content

Vehicle Trips - Weekend trips based on 10th Edition ITE Trip Generation Manual rates for (710) Gen Off: Saturday = 1.768 trips/TSF. Sunday = 0.56 trips/TSF. (720) Med/dental off: Saturday = 6.856 trips/TSF. Sunday = 1.136 trips/TSF(incld s 20%rdxn for walk-in & transit trips).

Area Coating - SCAQMD Rule 1113 limits paints applied to buildings to 50g/L VOC content

Construction Off-road Equipment Mitigation -

Energy Mitigation - 2019 standards, nonresidential buildings are approximately 30 percent more efficient than 2016 standards. Project will be LEED Gold certified. Lighting installed will be at least 35% more efficient than baseline.
Water Mitigation - 20% reduction in indoor water use per CalGreen. Water-efficient landscaping to be installed on-site.

Waste Mitigation - 75% diversion of waste per AB 341

Table Name	Column Name	Default Value	New Value
tblLandUse	LandUseSquareFeet	16,120.00	16,122.00
tblLandUse	LotAcreage	0.46	0.00
tblLandUse	LotAcreage	1.83	0.00
tblLandUse	LotAcreage	2.34	0.60
tblTripsAndVMT	HaulingTripNumber	0.00	4,463.00
tblVehicleTrips	ST_TR	2.46	1.77
tblVehicleTrips	ST_TR	8.96	6.86
tblVehicleTrips	SU_TR	1.05	0.56
tblVehicleTrips	SU_TR	1.55	1.14
tblVehicleTrips	WD_TR	11.03	0.00
tblVehicleTrips	WD_TR	36.13	0.00

2.0 Emissions Summary

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.4168	4.0000e-005	4.8000e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005	0.0000	9.3300e-003	9.3300e-003	2.0000e-005	0.0000	9.9400e-003
Energy	5.6000e-003	0.0509	0.0428	3.1000e-004		3.8700e-003	3.8700e-003		3.8700e-003	3.8700e-003	0.0000	1,494.0487	1,494.0487	0.0261	6.2000e-003	1,496.5506
Mobile	0.0248	0.1107	0.3149	1.1600e-003	0.0978	8.9000e-004	0.0987	0.0262	8.3000e-004	0.0271	0.0000	107.4448	107.4448	5.3800e-003	0.0000	107.5794
Waste						0.0000	0.0000		0.0000	0.0000	178.7214	0.0000	178.7214	10.5621	0.0000	442.7746
Water						0.0000	0.0000		0.0000	0.0000	4.3045	167.6234	171.9279	0.4450	0.0110	186.3448
Total	**0.4472**	**0.1616**	**0.3625**	**1.4700e-003**	**0.0978**	**4.7800e-003**	**0.1026**	**0.0262**	**4.7200e-003**	**0.0309**	**183.0259**	**1,769.1262**	**1,952.1521**	**11.0387**	**0.0172**	**2,233.2592**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.4168	4.0000e-005	4.8000e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005	0.0000	9.3300e-003	9.3300e-003	2.0000e-005	0.0000	9.9400e-003
Energy	3.9800e-003	0.0362	0.0304	2.2000e-004		2.7500e-003	2.7500e-003		2.7500e-003	2.7500e-003	0.0000	1,129.0337	1,129.0337	0.0197	4.6500e-003	1,130.9135
Mobile	0.0248	0.1107	0.3149	1.1600e-003	0.0978	8.9000e-004	0.0987	0.0262	8.3000e-004	0.0271	0.0000	107.4448	107.4448	5.3800e-003	0.0000	107.5794
Waste						0.0000	0.0000		0.0000	0.0000	44.6803	0.0000	44.6803	2.6405	0.0000	110.6937
Water						0.0000	0.0000		0.0000	0.0000	3.4436	140.9519	144.3955	0.3562	8.8600e-003	155.9394

Total	**0.4456**	**0.1469**	**0.3501**	**1.3800e-003**	**0.0978**	**3.6600e-003**	**0.1015**	**0.0262**	**3.6000e-003**	**0.0298**	**48.1240**	**1,377.4398**	**1,425.5638**	**3.0218**	**0.0135**	**1,505.1358**

	ROG	NOx	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	**0.36**	**9.10**	**3.41**	**6.12**	**0.00**	**23.43**	**1.09**	**0.00**	**23.73**	**3.62**	**73.71**	**22.14**	**26.97**	**72.63**	**21.64**	**32.60**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.0248	0.1107	0.3149	1.1600e-003	0.0978	8.9000e-004	0.0987	0.0262	8.3000e-004	0.0271	0.0000	107.4448	107.4448	5.3800e-003	0.0000	107.5794
Unmitigated	0.0248	0.1107	0.3149	1.1600e-003	0.0978	8.9000e-004	0.0987	0.0262	8.3000e-004	0.0271	0.0000	107.4448	107.4448	5.3800e-003	0.0000	107.5794

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Enclosed Parking with Elevator	0.00	0.00	0.00		
General Office Building	0.00	35.36	11.20	21,427	21,427
Medical Office Building	0.00	547.11	90.65	236,323	236,323
Other Non-Asphalt Surfaces	0.00	0.00	0.00		
Total	0.00	582.47	101.85	257,751	257,751

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Enclosed Parking with Elevator	16.60	8.40	6.90	0.00	0.00	0.00	0	0	0
General Office Building	16.60	8.40	6.90	33.00	48.00	19.00	77	19	4
Medical Office Building	16.60	8.40	6.90	29.60	51.40	19.00	60	30	10
Other Non-Asphalt Surfaces	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
Enclosed Parking with Elevator	0.545842	0.044768	0.205288	0.119317	0.015350	0.006227	0.020460	0.031333	0.002546	0.002133	0.005184	0.000692	0.000862
General Office Building	0.545842	0.044768	0.205288	0.119317	0.015350	0.006227	0.020460	0.031333	0.002546	0.002133	0.005184	0.000692	0.000862
Medical Office Building	0.545842	0.044768	0.205288	0.119317	0.015350	0.006227	0.020460	0.031333	0.002546	0.002133	0.005184	0.000692	0.000862
Other Non-Asphalt Surfaces	0.545842	0.044768	0.205288	0.119317	0.015350	0.006227	0.020460	0.031333	0.002546	0.002133	0.005184	0.000692	0.000862

APPENDIX C: CAP CHECKLIST AND EMFAC DATA

Climate Action Plan Consistency Checklist Introduction

The Climate Action Plan Consistency Checklist (Checklist) is intended to be a tool for new development projects to demonstrate consistency with Pasadena's Climate Action Plan (CAP), which is a qualified greenhouse gas (GHG) emissions reduction plan in accordance with California Environmental Quality Act (CEQA) Guidelines Section 15183.5. This Checklist has been developed as part of the CAP implementation and monitoring process and will support the achievement of individual CAP measures as well as Pasadena's overall GHG reduction goals. In addition, this Checklist will further Pasadena's sustainability goals and policies that encourage sustainable development and aim to conserve and reduce the consumption of resources, such as energy and water, among others.

CEQA Guidelines Section 15183.5 allows lead agencies to analyze the impacts associated with GHG emissions at a programmatic level in plan-level documents such as CAPs, so that project-level environmental documents may tier from the programmatic review. Projects that meet the requirements of this Checklist will be deemed to be consistent with Pasadena's CAP and will be found to have a less than significant contribution to cumulative GHG (i.e., the project's incremental contribution to cumulative GHG effects is not cumulatively considerable), pursuant to CEQA Guidelines Sections 15064(h)(3), 15130(d), and 15183(b). Projects that do not meet the requirements in this Checklist will be deemed to be inconsistent with Pasadena's CAP and must prepare a project-specific analysis of GHG emissions, including quantification of existing and projected GHG emissions and incorporation of the measures in this Checklist to the extent feasible.

Applicability

This Checklist is only required for discretionary projects[1] that are subject to and not exempt from CEQA. Projects that are exempt from CEQA are deemed to be consistent with Pasadena's CAP, and no further review is necessary, with the exception of the Class 32 "In-Fill Development Projects" categorical exemption (CEQA Guidelines Section 15332), for which Projects are required to demonstrate consistency with the CAP through this Checklist.

[1] In this context a project is any action that meets the definition of a "Project" in Section 15378 of the State CEQA Guidelines.

Climate Action Plan Consistency Checklist Application Form

When required, the Checklist must be included in the project submittal package. The requirements in the Checklist will be included in the project's conditions of approval. The applicant is required to provide supporting documentation on how the proposed project will implement the measures identified in the Checklist to the satisfaction of the Planning & Community Development Department.

Step 1: Complete a Master Land Use Application Form (separate attachment)

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

The growth projections outlined in the 2015 General Plan Land Use Element were used in Pasadena's CAP to estimate community-wide GHG emissions over time. Therefore, new development projects must be consistent with the Land Use Element to be consistent with Pasadena's CAP. In order for City staff to determine a project's consistency with the Land Use Element, please answer the following question and provide explanation with supporting documentation for each response.

Is the proposed project consistent with the existing land use designation of the Land Use Element?

☑ Yes ☐ No

If "Yes," proceed and complete Step 3 of the Checklist.

If "No," the proposed project may not tier from this document and must prepare a comprehensive project-specific analysis of GHG emissions and incorporate the measures in this Checklist to the extent feasible.

Yes: The Project Site is within the IG-SP2 (Industrial General, South Fair Oaks Specific Plan) zoning district. The project consists of the construction and operation of a 100,000 SF medical office/office building; therefore, the proposed project is consistent with the existing zoning/land use.

Step 3: Demonstrate consistency with Pasadena's CAP

Proposed projects which complete one of the following three options will be deemed to be consistent with Pasadena's CAP and will be found to have a less than significant contribution to cumulative GHG emissions (i.e., the project's incremental contribution to cumulative GHG effects is not cumulatively considerable), pursuant to CEQA Guidelines Sections 15064(h)(3), 15130(d), and 15183(b).

Please select one of the following options:

☑ Option A: Sustainable Development Actions – Demonstrate that the proposed project is consistent with the Pasadena CAP by incorporating applicable actions intended to ensure that the project contributes its fair share to the City's cumulative GHG reduction goals

☐ Option B: GHG Efficiency - Demonstrate that the proposed project is consistent with Pasadena's per person GHG efficiency thresholds

☐ Option C: Net Zero GHG Emissions – Demonstrate that the proposed project would not result in a net increase in GHG emissions

Option A: Sustainable Development Actions

In order to complete this option, a proposed project must incorporate applicable Sustainable Development Actions to the satisfaction of the applicable City Departments. Incorporating these actions will ensure that the project is reducing its fair share of GHG emissions and support the achievement of Pasadena's overall GHG emissions reduction goals. For each action selected, please submit the requested documentation. If a mandatory action is not applicable to the project, please provide a description as to why that action cannot be implemented.

Mandatory Actions (all of the actions below are required)

GHG Reduction Strategy (Measure in Pasadena's CAP)	Sustainable Development Actions	Yes	N/A
		Check the appropriate box and provide explanation	
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? Check "N/A" only if the project does not include residents or 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. If applicable, please submit the TDM plan for review.	✓	
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? Please include specifications on the project plans. Check "N/A" only if the project does not include more than three parking spaces.	✓	
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? Please include specifications on the project plans.	✓	
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? Please include specifications on the project plans. Check "N/A" only if the project does not include any landscaping.	✓	
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? Please include specifications on the project plans.	✓	

Selective Actions

In addition the mandatory actions, the proposed project must implement the following:

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

Energy Efficiency and Conservation (select a minimum of one action)

GHG Reduction Strategy (Measure in Pasadena's CAP)	Sustainable Development Actions	Yes	No
E-1.1: Increase energy efficiency requirements of new buildings to perform better than 2016 Title 24 Standards	**Zero-Net Energy (ZNE):** Does the project generate 100% of electricity required on site? ZNE calculations must be provided.		✓
E-1.1: Increase energy efficiency requirements of new buildings to perform better than 2016 Title 24 Standards	**Energy Efficiency (Exceed 2016 Title 24):** Does the project exceed the 2016 Title 24 Efficiency Standards by at least 5%? Please include Title 24 energy model.	✓	
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? Please include specifications on the project plans.		✓

Sustainable Mobility and Land Use (select a minimum of one action)

GHG Reduction Strategy (Measure in Pasadena's CAP)	Sustainable Development Action	Yes	No
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? Please include these specifications on the project plans.		✓
T-1.1: Continue to expand Pasadena's bicycle and pedestrian network	**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.		✓
T-3.1: Decrease annual commuter miles traveled by single occupancy vehiclesT-3.1	**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.	✓	
T-3.1: Decrease annual commuter miles traveled by single occupancy vehicles	**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

GHG Reduction Strategy (Measure in Pasadena's CAP)	Sustainable Development Action	Yes	No
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.		✓
WC-2.1: Increase access to and use of non-potable water	**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.		✓
WC-2.1: Increase access to and use of non-potable water	**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.		✓
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.		✓
WC-3.1: Improve storm water to slow, sink, and treat water run-off, recharge groundwater, and improve water quality	**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? Please provide the engineered stormwater retention plan with the project plans (http://dpw.lacounty.gov/wrd/hydrologygis/)		✓

Waste Reduction

GHG Reduction Strategy (Measure in Pasadena's CAP)	Sustainable Development Action	Yes	No
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

GHG Reduction Strategy (Measure in Pasadena's CAP)	Sustainable Development Action	Yes	No
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.	✓	

Total Actions Taken

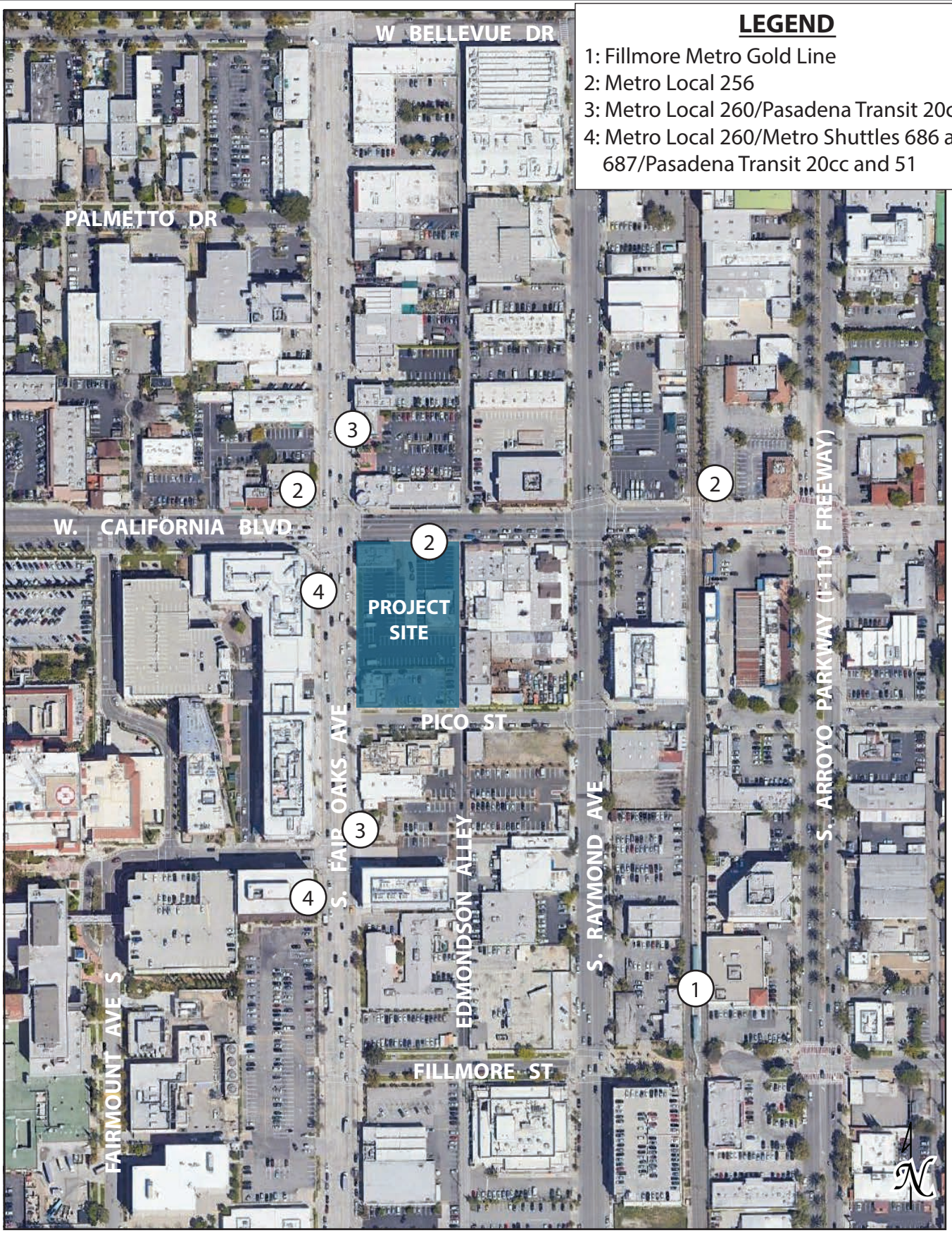
Sector	Actions Selected (#)	Actions Required
Mandatory Actions	6	6
Energy Efficiency and Conservation	1	1
Sustainable Mobility and Land Use	3	1
Water Conservation	0	0
Waste Reduction	0	0
Urban Greening	1	0
Total # of Actions Selected	11	
Total Required	*11*	

Supporting Documentation

Use the section below to provide supporting information describing how each selected Sustainable Development Action will be implemented in the proposed project. Additional information such as model outputs, invoices, and project plans should be noted below and attached to this submittal as needed.

Sustainable Development Action	Description of Project Implementation
T-1.2	Bicycle Storage: Storage is provided in the site's south east corner. The specifications will be in the included in the project plans as required.
T-3.1	Transportation Demand Management: According to the Planning Division Master Application Form, the project will include a Transportation Demand Management Program approved by the City. The TDM will be submitted for review.
T-4.1	Alternative Vehicle Fueling Wiring: As shown on the site plan, the project includes two (2) EV spaces (1 inductive and 1 conductive) on parking level 2.
E-1.2	Passive Design Features: As the project will be LEED Gold certifiable, it is anticipated that the project will be utilize energy conservation devices and passive design concepts that make use of the natural climate to increase energy efficiency. Per the Supplemental Application for Conditional use Permit/Minor Conditional Use Permit the project will replace a large parking lot and older, inefficient buildings with a new building meeting all state and local requirements for sustainability. The specifications will be included on the project plans as required.

Sustainable Development Action	Description of Project Implementation
WC-1.1	Irrigation Efficiency: As shown on the project plans, the project includes 2,570 SF of landscaping. As the project will be LEED Gold certifiable, it is anticipated that the landscaping will be drought tolerant and utilize water-efficient irrigation systems. The specifications will be included on the project plans as required.
WR-1.1	Facilitate Recycling: The plans for the project include a designated trash area. As the project will be LEED Gold certifiable, it is anticipated that the trash area will provide space for separate trash and recycling bins and will provide information to employees outlining the types of materials to be recycled. The specifications will be included on the project plans as required.
E-1.1	Energy Efficiency (Exceed 2016 Title 24): As the project will be LEED Gold certifiable, the project will meet or exceed 2019 Title 24 Efficiency Standards; therefore, the project will exceed 2016 Title 24 Efficiency Standards by at least 5%. Title 24 modeling will be included in the project submission package.
T-5.1	Transit Oriented Development: The project is located within 0.17 miles of the Metro Gold Line Fillmore Station. There are also numerous bus stops along Fair Oaks Blvd within walking distance of the site. Please see the attached map showing the locations of the closest transit stops.
T-3.1	Parking De-Coupling: The project will separate the cost of parking from TI leasing fee. The specifications will be included in the project plans as required.
UG-2.1	Trees: The project includes new trees. The specifications will be included in the project plans as required.



Source: Google Earth, January 2021.

Climate Action Plan Transit Map

Source: EMFAC2017 (v1.0.3) Emissions Inventory
Region Type: Air Basin
Region: South Coast
Calendar Year: 2021
Season: Annual
Vehicle Classification: EMFAC2007 Categories
Units: miles/day for VMT, trips/day for Trips, tons/day for Emissions, 1000 gallons/day for Fuel Consumption

Region	Calendar Y	Vehicle Cat	Model Year	Speed	Fuel	Population	Trips	Fuel Consumption	Fuel Consumption	Total Fuel Consumption	VMT	Total VMT	Miles Per Gallon	Vehicle Class
South Coast	2021	HHDT	Aggregate	Aggregate	Gasoline	81.3725634	1628.102	1.889707176	1889.707176	1776086.603	7629.442554	11553449.42	6.51	HHD
South Coast	2021	HHDT	Aggregate	Aggregate	Diesel	96726.9495	974405.7	1774.196896	1774196.896		11545819.98			
South Coast	2021	LDA	Aggregate	Aggregate	Gasoline	6276233.77	29647186	8195.759914	8195759.914	8241884.504	246181276.2	248366515	30.13	LDA
South Coast	2021	LDA	Aggregate	Aggregate	Diesel	53709.9025	254840.1	46.1245898	46124.5898		2185238.836			
South Coast	2021	LDA	Aggregate	Aggregate	Electricity	105013.549	525424.1	0	0		4192834.836			
South Coast	2021	LDT1	Aggregate	Aggregate	Gasoline	695145.897	3200417	1009.571346	1009571.346	1009999.543	26066042.38	26075562.75	25.82	LDT1
South Coast	2021	LDT1	Aggregate	Aggregate	Diesel	406.399031	1419.826	0.42819713	428.1971296		9520.378718			
South Coast	2021	LDT1	Aggregate	Aggregate	Electricity	3691.83415	18421.42	0	0		147589.5362			
South Coast	2021	LDT2	Aggregate	Aggregate	Gasoline	2144804.15	10052342	3441.716707	3441716.707	3457561.278	81991235.59	82539629.16	23.87	LDT2
South Coast	2021	LDT2	Aggregate	Aggregate	Diesel	12472.425	61718.11	15.84457068	15844.57068		548393.5724			
South Coast	2021	LDT2	Aggregate	Aggregate	Electricity	16651.9689	84424.2	0	0		552985.8715			
South Coast	2021	LHDT1	Aggregate	Aggregate	Gasoline	172430.216	2568953	598.0686059	598068.6059	809349.9359	6230805.225	10720475.04	13.25	LHDT1
South Coast	2021	LHDT1	Aggregate	Aggregate	Diesel	109610.028	1378756	211.28133	211281.33		4489669.812			
South Coast	2021	LHDT2	Aggregate	Aggregate	Gasoline	28913.8178	430772.8	111.7961286	111796.1286	201931.6877	1014315.328	2744944.158	13.59	LHDT2
South Coast	2021	LHDT2	Aggregate	Aggregate	Diesel	43242.2337	543932.9	90.13555911	90135.55911		1730628.83			
South Coast	2021	MCY	Aggregate	Aggregate	Gasoline	279209.361	558418.7	53.89538804	53895.38804	53895.38804	1958676.919	1958676.919	36.34	MCY
South Coast	2021	MDV	Aggregate	Aggregate	Gasoline	1520877.3	7026646	2808.57758	2808577.58	2854598.975	54421172.7	55643285	19.49	MDV
South Coast	2021	MDV	Aggregate	Aggregate	Diesel	29603.6659	145604.8	46.02139556	46021.39556		1222112.304			
South Coast	2021	MDV	Aggregate	Aggregate	Electricity	7250.17223	37174.04	0	0		249429.9943			
South Coast	2021	MH	Aggregate	Aggregate	Gasoline	34556.2813	3457.01	64.51935527	64519.35527	75563.3084	327720.8034	443086.5288	5.86	MH
South Coast	2021	MH	Aggregate	Aggregate	Diesel	11829.1715	1182.917	11.04395313	11043.95313		115365.7253			
South Coast	2021	MHDT	Aggregate	Aggregate	Gasoline	24683.6081	493869.6	264.5056072	264505.6072	991967.8223	1325210.138	8860357.635	8.93	MHDT
South Coast	2021	MHDT	Aggregate	Aggregate	Diesel	119075.286	1192855	727.4622151	727462.2151		7535147.497			
South Coast	2021	OBUS	Aggregate	Aggregate	Gasoline	5845.39061	116954.6	49.57947234	49579.47234	87256.58216	246477.18	555364.3745	6.36	OBUS
South Coast	2021	OBUS	Aggregate	Aggregate	Diesel	4131.13499	40389.68	37.67710982	37677.10982		308887.1946			
South Coast	2021	SBUS	Aggregate	Aggregate	Gasoline	2414.92674	9659.707	10.85210767	10852.10767	37379.67328	98099.38663	297576.5962	7.96	SBUS
South Coast	2021	SBUS	Aggregate	Aggregate	Diesel	6314.06403	72863.42	26.52756561	26527.56561		199477.2096			
South Coast	2021	UBUS	Aggregate	Aggregate	Gasoline	943.967838	3775.871	18.45610299	18456.10299	18702.89919	88729.36464	90207.45032	4.82	UBUS
South Coast	2021	UBUS	Aggregate	Aggregate	Diesel	14.1414183	56.56567	0.246796198	246.7961984		1478.085683			
South Coast	2021	UBUS	Aggregate	Aggregate	Electricity	12.1169389	48.46776	0			1072.906717			

Source: https://arb.ca.gov/emfac/emissions-inventory

Source: EMFAC2017 (v1.0.3) Emissions Inventory
Region Type: Air District
Region: South Coast AQMD
Calendar Year: 2023
Season: Annual
Vehicle Classification: EMFAC2007 Categories
Units: miles/day for VMT, trips/day for Trips, tons/day for Emissions, 1000 gallons/day for Fuel Consumption

Region	Calendar Y	Vehicle Cat	Model Year	Speed	Fuel	Population	VMT	Trips	Fuel Consumption	Fuel Consumption	Total Fuel Consumption	VMT	Total VMT	Miles Per Gallon	Vehicle Class
South Coas	2023	HHDT	Aggregate	Aggregate	Gasoline	75.10442936	8265.097	1502.689	1.936286145	1936.286145	1913466.474	8265.097	13656273.03	7.14	**HHD**
South Coas	2023	HHDT	Aggregate	Aggregate	Diesel	109818.6753	13648008	1133618	1911.530188	1911530.188		13648008			
South Coas	2023	LDA	Aggregate	Aggregate	Gasoline	6635002.295	2.53E+08	31352477	7971.24403	7971244.03	8020635.698	2.53E+08	255180358.3	31.82	**LDA**
South Coas	2023	LDA	Aggregate	Aggregate	Diesel	62492.97958	2469816	297086.6	49.3916685	49391.6685		2469816			
South Coas	2023	LDA	Aggregate	Aggregate	Electricity	150700.3971	6237106	751566	0	0		6237106			
South Coas	2023	LDT1	Aggregate	Aggregate	Gasoline	758467.6481	27812996	3504563	1023.913006	1023913.006	1024279.466	27812996	27821405.09	27.16	**LDT1**
South Coas	2023	LDT1	Aggregate	Aggregate	Diesel	360.7799144	8408.618	1256.88	0.366459477	366.4594769		8408.618			
South Coas	2023	LDT1	Aggregate	Aggregate	Electricity	7122.93373	303507.5	35798.19	0	0		303507.5			
South Coas	2023	LDT2	Aggregate	Aggregate	Gasoline	2285150.139	85272416	10723315	3338.798312	3338798.312	3356536.438	85272416	85922778.34	25.60	**LDT2**
South Coas	2023	LDT2	Aggregate	Aggregate	Diesel	15594.68309	650362.8	76635.83	17.73812611	17738.12611		650362.8			
South Coas	2023	LDT2	Aggregate	Aggregate	Electricity	28809.63735	917592.8	145405.4	0	0		917592.8			
South Coas	2023	LHDT1	Aggregate	Aggregate	Gasoline	174910.3847	6216643	2605904	583.3851736	583385.1736	811563.1022	6216643	11211395.79	13.81	**LHDT1**
South Coas	2023	LHDT1	Aggregate	Aggregate	Diesel	125545.0822	4994753	1579199	228.1779285	228177.9285		4994753			
South Coas	2023	LHDT2	Aggregate	Aggregate	Gasoline	30102.75324	1034569	448486.2	111.5753864	111575.3864	209423.5025	1034569	2969599.008	14.18	**LHDT2**
South Coas	2023	LHDT2	Aggregate	Aggregate	Diesel	50003.13116	1935030	628976.5	97.84811618	97848.11618		1935030			
South Coas	2023	MCY	Aggregate	Aggregate	Gasoline	305044.5141	2104624	610089	57.849018	57849.018	57849.018	2104624	2104623.657	36.38	**MCY**
South Coas	2023	MDV	Aggregate	Aggregate	Gasoline	1589862.703	55684188	7354860	2693.883526	2693883.526	2744536.341	55684188	57109879.73	20.81	**MDV**
South Coas	2023	MDV	Aggregate	Aggregate	Diesel	36128.1019	1425691	176566.9	50.65281491	50652.81491		1425691			
South Coas	2023	MDV	Aggregate	Aggregate	Electricity	16376.67653	537591.7	83475.95	0	0		537591.7			
South Coas	2023	MH	Aggregate	Aggregate	Gasoline	34679.50542	330042.9	3469.338	63.26295123	63262.95123	74893.26955	330042.9	454344.9436	6.07	**MH**
South Coas	2023	MH	Aggregate	Aggregate	Diesel	13122.69387	124302	1312.269	11.63031832	11630.31832		124302			
South Coas	2023	MHDT	Aggregate	Aggregate	Gasoline	25624.3151	1363694	512691.3	265.2060557	265206.0557	989975.6425	1363694	9484317.768	9.58	**MHDT**
South Coas	2023	MHDT	Aggregate	Aggregate	Diesel	122124.488	8120623	1221858	724.7695868	724769.5868		8120623			
South Coas	2023	OBUS	Aggregate	Aggregate	Gasoline	5955.291639	245774	119153.5	48.07750689	48077.50689	86265.88761	245774	579743.8353	6.72	**OBUS**
South Coas	2023	OBUS	Aggregate	Aggregate	Diesel	4286.940093	333969.8	41558.29	38.18838072	38188.38072		333969.8			
South Coas	2023	SBUS	Aggregate	Aggregate	Gasoline	2783.643068	112189.6	11134.57	12.19474692	12194.74692	39638.85935	112189.6	323043.5203	8.15	**SBUS**
South Coas	2023	SBUS	Aggregate	Aggregate	Diesel	6671.825716	210853.9	76991.94	27.44411242	27444.11242		210853.9			
South Coas	2023	UBUS	Aggregate	Aggregate	Gasoline	957.7686184	89782.63	3831.074	17.62416327	17624.16327	17863.66378	89782.63	91199.2533	5.11	**UBUS**
South Coas	2023	UBUS	Aggregate	Aggregate	Diesel	13.00046095	1416.622	52.00184	0.239500509	239.5005093		1416.622			
South Coas	2023	UBUS	Aggregate	Aggregate	Electricity	16.11693886	1320.163	64.46776	0			1320.163			

APPENDIX C

NOISE REPORT

590 South Fair Oaks Project
Noise Impact Analysis

Prepared for:
City of Pasadena
Planning & Community Development Department
175 North Garfield Avenue
Pasadena, CA 91101

January 2021

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I. INTRODUCTION AND SUMMARY

1. PURPOSE OF ANALYSIS AND STUDY OBJECTIVES

This Noise Impact Study has been prepared by EcoTierra Consulting to determine the offsite and onsite noise impacts associated with the proposed 590 South Fair Oaks development project. The following is provided in this report:

- A description of the study area and the proposed project.
- Information regarding the fundamentals of noise.
- Information regarding the fundamentals of vibration.
- A description of the local noise guidelines and standards.
- An evaluation of the current noise environment.
- An analysis of the potential short-term construction-related noise and vibration impacts from the proposed project.
- An analysis of long-term operations-related noise and vibration impacts from the proposed project.
- An evaluation of airport-related noise impacts to the proposed project.

2. PROJECT LOCATION

The project site is located within the southern portion of the City of Pasadena, approximately two miles east of the City of Glendale, and eleven miles northeast of downtown Los Angeles. The entrance to the I-710 freeway is about half a mile to the west of the site. The Site is bounded by East California Boulevard to the north, South Fair Oaks Avenue to the west, Edmondson Alley to the east, and commercial buildings to the south. A vicinity map showing the project location is provided on **Figure 1, Project Location Map**.

3. PROJECT DESCRIPTION

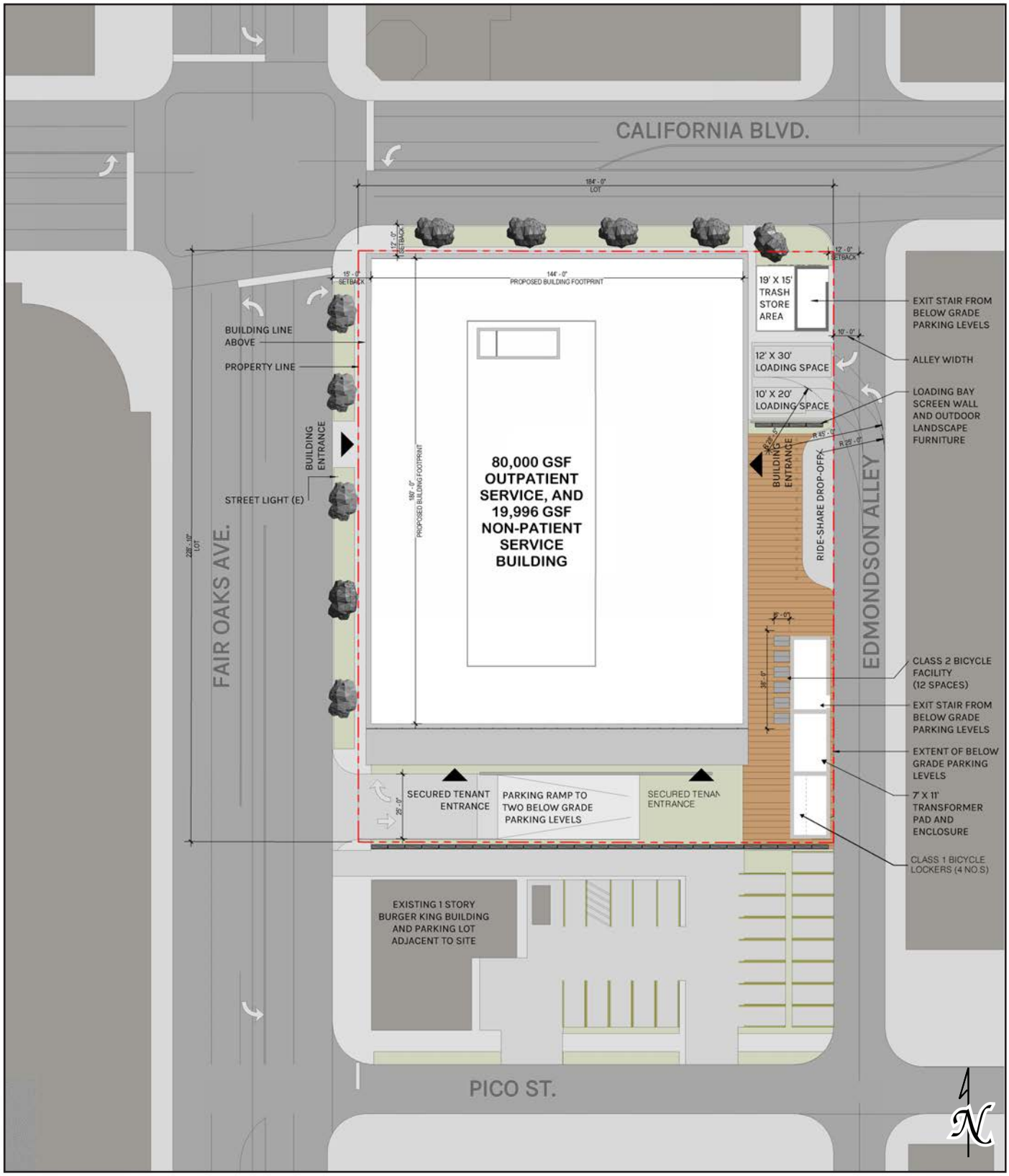
The project proposes development on a 0.97-acre lot which will be constructed into a four-story medical office building with two levels of underground parking. The finished project will cover about 27,000 square-feet (SF) of the original lot and encompass a total floor area of approximately 100,000 square-feet. Further site developments will be made which includes street sidewalk and alleyway improvements. The Project would include the demolition of approximately 7,000 SF of existing buildings, surface parking, and earth work excavation with 37,500 cubic yards (CY) of export, in order to make way for construction of the new structure. **Figure 2, Site Plan**, illustrates the proposed site plan.

The project is anticipated to be built in one phase with project construction to start no sooner than August, 2021 and take approximately 18-24 months to complete.

Project Site

Source: Google Earth and Open Street Maps, July 2020.

Figure 1
Project Location Map



Source: Smith Group, January 2021.

Figure 2
Site Plan

4. SUMMARY OF IMPACTS

A. Construction Noise Impacts

Construction noise levels were modeled for each phase using methodology presented in the Road Construction Noise Model (RCNM) User's Guide. Modeled unmitigated noise levels will not exceed 85 dBA when measured within a radius of 100 feet from the source. Construction noise levels are considered to be less than significant.

B. Operational Noise Impacts

The proposed project would not result in a perceptible increase in noise due to the increase of project-related traffic on roadways in the project vicinity. The calculated noise levels show that the project would contribute a maximum of 0.4 dBA to existing noise levels. As the project-related increase in traffic noise does not exceed 5 dBA, the project would not contribute to a substantial permanent increase in ambient noise levels in the project vicinity. Impacts are considered less than significant.

On-site noise sources (HVAC and parking structure noise) associated with the proposed project will not result in a significant increase in ambient noise levels at closest receptor locations. Impacts related to project operational noise would be less than significant.

C. Vibration Impacts

Groundborne vibration levels associated with vibratory equipment that may be utilized during project construction were found to be less than significant. The project will not be a source of operational vibration.

D. Airport Impacts

The project is not located within an airport noise contour and airport-related noise impacts are considered to be less than significant.

II. NOISE FUNDAMENTALS

Noise is defined as unwanted sound. Sound becomes unwanted when it interferes with normal activities, when it causes actual physical harm or when it has adverse effects on health. Sound is produced by the vibration of sound pressure waves in the air. Sound pressure levels are used to measure the intensity of sound and are described in terms of decibels. The decibel (dB) is a logarithmic unit, which expresses the ratio of the sound pressure level being measured to a standard reference level. A-weighted decibels (dBA) approximate the subjective response of the human ear to a broad frequency noise source by discriminating against very low and very high frequencies of the audible spectrum. They are adjusted to reflect only those frequencies that are audible to the human ear.

1. NOISE DESCRIPTIONS

Noise equivalent sound levels are not measured directly, but are calculated from sound pressure levels typically measured in dBA. The equivalent sound level (L_{eq}) represents a steady state sound level containing the same total energy as a time varying signal over a given sample period. The peak traffic hour L_{eq} is the noise metric used by California Department of Transportation (Caltrans) for all traffic noise impact analyses.

The Day-Night Average Sound Level (L_{dn}) is the weighted average of the intensity of a sound, with corrections for time of day, and averaged over 24 hours. The time of day corrections require the addition of ten decibels to sound levels at night between 10 p.m. and 7 a.m. While the Community Noise Equivalent Level (CNEL) is similar to the L_{dn}, except that it has another addition of 4.77 dB to sound levels during the evening hours between 7 p.m. and 10 p.m. These additions are made to the sound levels at these times because during the evening and nighttime hours, when compared to daytime hours, there is a decrease in the ambient noise levels, which creates an increased sensitivity to sounds. For this reason the sound is perceived to be louder in the evening and nighttime hours and is weighted accordingly. Many cities rely on the CNEL noise standard to assess transportation-related impacts on noise sensitive land uses.

Another noise descriptor that is used primarily for the assessment of aircraft noise impacts is the Sound Exposure Level, which is also called the Single Event Level (SEL). The SEL descriptor represents the acoustic energy of a single event (i.e., an aircraft overflight) normalized to one-second event duration. This is useful for comparing the acoustical energy of different events involving different durations of the noise sources. The SEL is based on an integration of the noise during the period when the noise first rises within 10 dBA of its maximum value and last falls below 10 dBA of its maximum value. The SEL is often 10 dBA greater, or more, than the L_{MAX} since the SEL logarithmetically adds the L_{eq} for each second of the duration of the noise.

2. TONE NOISE

A pure tone noise is a noise produced at a single frequency and laboratory tests have shown the humans are more perceptible to changes in noise levels of a pure tone (Caltrans 1998). For a noise source to contain a "pure tone," there must be a significantly higher A-weighted sound energy in a given frequency band than in the neighboring bands, thereby causing the noise source to "stand out" against other noise sources. A pure tone occurs if the sound pressure level in the one-third octave band with the tone exceeds the average of the sound pressure levels of the two contagious one-third octave bands by: 5 dB for center frequencies of 500 Hertz (Hz) and above; by 8 dB for center frequencies between 160 and 400 Hz; and by 15 dB for center frequencies of 125 Hz or less (Department of Health Services 1977).

3. NOISE PROPAGATION

From the noise source to the receiver, noise changes both in level and frequency spectrum. The most obvious is the decrease in noise as the distance from the source increases. The manner in which noise reduces with distance depends on whether the source is a point or line source as well as ground absorption, atmospheric effects, and refraction, and shielding by natural and manmade features. Sound from point sources, such as air conditioning condensers, radiate uniformly outward as it travels away from the source in a spherical pattern. The noise drop-off rate associated with this geometric spreading is 6 dBA per each doubling of the distance (dBA/DD). Transportation noise sources such as roadways are typically analyzed as line sources, since at any given moment the receiver may be impacted by noise from multiple vehicles at various locations along the roadway. Because of the geometry of a line source, the noise drop-off rate associated with the geometric spreading of a line source is 3 dBA/DD.

4. GROUND ABSORPTION

The sound drop-off rate is highly dependent on the conditions of the land between the noise source and receiver. To account for this ground-effect attenuation (absorption), two types of site conditions are commonly used in traffic noise models: soft-site and hard-site conditions. Soft-site conditions account for the sound propagation loss over natural surfaces such as normal earth and ground vegetation. For point sources, a drop-off rate of 7.5 dBA/DD is typically observed over soft ground with landscaping, as compared with a 6.0 dBA/DD drop-off rate over hard ground such as asphalt, concrete, stone, and very hard packed earth. For line sources a 4.5 dBA/DD is typically observed for soft-site conditions compared to the 3.0 dBA/DD drop-off rate for hard-site conditions. To be conservative, hard-site conditions were used in this analysis where applicable.

5. TRAFFIC NOISE PREDICTION

The level of traffic noise depends on the three primary factors: (1) the volume of the traffic, (2) the speed of the traffic, and (3) the number of trucks in the flow of traffic. Generally, the loudness of traffic noise is increased by heavier traffic volumes, higher speeds, and greater number of trucks. Vehicle noise is a combination of the noise produced by the engine, exhaust, and tires. Because of the logarithmic nature of traffic noise levels, a doubling of the traffic volume (assuming that the speed and truck mix do not change) results in a noise level increase of 3 dBA. Based on the FHWA community noise assessment criteria, this change is "barely perceptible," for reference a doubling of perceived noise levels would require an increase of approximately 10 dBA. However, the 1992 findings of Federal Interagency Committee on Noise (FICON), which assessed changes in ambient noise levels resulting from aircraft operations, found that noise increases as low as 1.5 dB can cause annoyance, when the existing noise levels are already greater than 65 dB. The truck mix on a given roadway also has an effect on community noise levels. As the number of heavy trucks increases and becomes a larger percentage of the vehicle mix, adjacent noise levels increase.

6. NOISE BARRIER ATTENUATION

Effective noise barriers can reduce noise levels by 10 to 15 dBA, cutting the loudness of traffic noise in half. For a noise barrier to work, it must be high enough and long enough to block the view of a road. A noise barrier is most effective when placed close to the noise source or receiver. A noise barrier can achieve a 5-dBA noise level reduction when it is tall enough to break the line-of-sight. When the noise barrier is a berm instead of a wall, the noise attenuation can be increased by another 3 dBA.

III. GROUND BORNE VIBRATION FUNDAMENTALS

Groundborne vibrations consist of rapidly fluctuating motions within the ground that have an average motion of zero. The effects of groundborne vibrations typically only cause a nuisance to people, but at extreme vibration levels, damage to buildings may occur. Although groundborne vibration can be felt outdoors, it is typically only an annoyance to people indoors where the associated effects of the shaking of a building can be notable. Groundborne noise is an effect of groundborne vibration and only exists indoors, since it is produced from noise radiated from the motion of the walls and floors of a room and may also consist of the rattling of windows or dishes on shelves.

1. VIBRATION DESCRIPTORS

Several different methods are used to quantify vibration amplitude such as the maximum instantaneous peak in the vibrations velocity, which is known as the peak particle velocity (PPV) or the root mean square (RMS) amplitude of the vibration velocity. Because of the typically small amplitudes of vibrations, vibration velocity is often expressed in decibels and is denoted as L_V and is based on the RMS velocity amplitude. A commonly used abbreviation is VdB, which in this text, is when vibration level (L_V) is based on the reference quantity of 1 microinch per second.

2. VIBRATION PERCEPTION

Typically, developed areas are continuously affected by vibration velocities of 50 VdB or lower. These continuous vibrations are not noticeable to humans whose threshold of perception is around 65 VdB. Offsite sources that may produce perceptible vibrations are usually caused by construction equipment, steel-wheeled trains, and traffic on rough roads, while smooth roads rarely produce perceptible groundborne noise or vibration.

3. VIBRATION PROPAGATION

The propagation of groundborne vibration is not as simple to model as airborne noise. This is because noise in the air travels through a relatively uniform median, while groundborne vibrations travel through the earth, which may contain significant geological differences. There are three main types of vibration propagation: surface, compression, and shear waves. Surface waves, or Rayleigh waves, travel along the ground's surface. These waves carry most of their energy along an expanding circular wave front, similar to ripples produced by throwing a rock into a pool of water. P-waves, or compression waves, are body waves that carry their energy along an expanding spherical wave front. The particle motion in these waves is longitudinal (i.e., in a "push-pull" fashion). P-waves are analogous to airborne sound waves. S-waves, or shear waves, are also body waves that carry energy along an expanding spherical wave front. However, unlike P-waves, the particle motion is transverse, or side-to-side and perpendicular to the direction of propagation.

As vibration waves propagate from a source, the vibration energy decreases in a logarithmic nature and the vibration levels typically decrease by 6 VdB per doubling of the distance from the vibration source. As stated above, this drop-off rate can vary greatly depending on the soil but has been shown to be effective enough for screening purposes, in order to identify potential vibration impacts that may need to be studied through actual field tests.

4. CONSTRUCTION-RELATED VIBRATION LEVEL PREDICTION

Construction activity can result in varying degrees of ground vibration, depending on the equipment used on the site. Operation of construction equipment causes ground vibrations that spread through the ground and diminish in strength with distance. Buildings in the vicinity of the construction site respond to these vibrations with varying results ranging from no perceptible effects at the low levels to slight damage at the highest levels. **Table 1, Vibration Source Levels for Construction Equipment,** gives approximate vibration levels for particular construction activities. The data in Table provides a reasonable estimate for a wide range of soil conditions.

Table 1
Vibration Source Levels for Construction Equipment

Equipment	Peak Particle Velocity (inches/second) at 25 feet	Approximate Vibration Level (L_V) at 25 feet
Pile driver (impact)	1.518 (upper range) 0.644 (typical)	112 104
Pile driver (sonic)	0.734 upper range 0.170 typical	105 93
Clam shovel drop (slurry wall)	0.202	94
Hydromill (slurry wall)	0.008 in soil 0.017 in rock	66 75
Vibratory Roller	0.210	94
Hoe Ram	0.089	87
Large bulldozer	0.089	87
Caisson drill	0.089	87
Loaded trucks	0.076	86
Jackhammer	0.035	79
Small bulldozer	0.003	58
Source: Transit Noise and Vibration Impact Assessment, Federal Transit Administration, Table 7-4. September 2018.		

There are no federal vibration standards or regulations adopted by any agency that are applicable to evaluating vibration impacts from land use development projects such as the proposed Project. However, the Federal Transit Administration (FTA) has adopted vibration criteria for use in evaluating vibration impacts from construction activities.[1] The vibration damage criteria adopted by the FTA are shown in **Table 2, Construction Vibration Damage Criteria.**

Table 2
Construction Vibration Damage Criteria

Building Category	PPV (in/sec)
I. Reinforced-concrete, steel or timber (no plaster)	0.50
II. Engineered concrete and masonry (no plaster)	0.30
III. Non-engineered timber and masonry buildings	0.20
IV. Buildings extremely susceptible to vibration damage	0.12
Source: FTA, Transit Noise and Vibration Impact Assessment Manual, September 2018.	

[1] *Federal Transit Administration, Transit Noise and Vibration Impact Assessment Manual, Table 7-5, page 186, 2018.*

IV. REGULATORY SETTING

The proposed project is located in the City of Pasadena and noise regulations are addressed through the efforts of various federal, State, and local government agencies. The agencies responsible for regulating noise are discussed below.

1. FEDERAL REGULATIONS

The adverse impact of noise was officially recognized by the federal government in the Noise Control Act of 1972, which serves three purposes:

- Promulgating noise emission standards for interstate commerce.
- Assisting state and local abatement efforts.
- Promoting noise education and research.

The Federal Office of Noise Abatement and Control (ONAC) was initially tasked with implementing the Noise Control Act. However, the ONAC has since been eliminated, leaving the development of federal noise policies and programs to other federal agencies and interagency committees. For example, the Occupational Safety and Health Administration (OSHA) agency limits noise exposure of workers to 90 dB L_{eq} or less for 8 continuous hours or 105 dB L_{eq} or less for 1 continuous hour. The Department of Transportation (DOT) assumed a significant role in noise control through its various operating agencies. The Federal Aviation Administration (FAA) regulates noise of aircraft and airports. Surface transportation system noise is regulated by a host of agencies, including the Federal Transit Administration (FTA). Transit noise is regulated by the federal Urban Mass Transit Administration (UMTA), while freeways that are part of the interstate highway system are regulated by the Federal Highway Administration (FHWA). Finally, the federal government actively advocates that local jurisdictions use their land use regulatory authority to arrange new development in such a way that "noise sensitive" uses are either prohibited from being sited adjacent to a highway or, alternately that the developments are planned and constructed in such a manner that potential noise impacts are minimized.

Since the federal government has preempted the setting of standards for noise levels that can be emitted by the transportation sources, the City is restricted to regulating the noise generated by the transportation system through nuisance abatement ordinances and land use planning.

2. STATE REGULATIONS

Though not adopted by law, the State of California General Plan Guidelines 2017, published by the California Governor's Office of Planning and Research (OPR) (OPR Guidelines), provides guidance for the compatibility of projects within areas of specific noise exposure. The OPR Guidelines identify the suitability of various types of construction relative to a range of outdoor noise levels and provide each local community some flexibility in setting local noise standards that allow for the variability in community

preferences. Findings presented in the Levels of Environmental Noise Document (EPA 1974) influenced the recommendations of the OPR Guidelines, most importantly in the choice of noise exposure metrics (i.e., Ldn or CNEL) and in the upper limits for the normally acceptable outdoor exposure of noise-sensitive uses.

The OPR Guidelines include a Noise and Land Use Compatibility Matrix which identifies acceptable and unacceptable community noise exposure limits for various land use categories. Where the "normally acceptable" range is used, it any special acoustical is defined as the highest noise level that should be considered for the construction of the buildings which do not incorporate treatment or noise mitigation. The "conditionally acceptable" or "normally unacceptable" ranges include conditions calling for detailed acoustical study prior to the construction or operation of the proposed project. The City of Pasadena has adopted their own version of the State Land Use Compatibility Guidelines for land use planning and to assess potential transportation noise impacts to proposed land uses (see Table 3).

Title 24, Chapter 1, Article 4 of the California Administrative Code (California Noise Insulation Standards) requires noise insulation in new hotels, motels, apartment houses, and dwellings (other than single-family detached housing) that provides an annual average noise level of no more than 45 dBA CNEL. When such structures are located within a 60-dBA CNEL (or greater) noise contour, an acoustical analysis is required to ensure that interior levels do not exceed the 45-dBA CNEL annual threshold. In addition, Title 21, Chapter 6, Article 1 of the California Administrative Code requires that all habitable rooms, hospitals, convalescent homes, and places of worship shall have an interior CNEL of 45 dB or less due to aircraft noise.

Government Code Section 65302 mandates that the legislative body of each county and city in California adopt a noise element as part of its comprehensive general plan. The local noise element must recognize the land use compatibility guidelines published by the State Department of Health Services. The guidelines rank noise land use compatibility in terms of normally acceptable, conditionally acceptable, normally unacceptable, and clearly unacceptable.

A. California Environmental Quality Act

The California Environmental Quality Act Guidelines (Appendix G) establishes thresholds for noise impact analysis. This noise study includes analysis of noise and vibration impacts necessary to assess the project in light of the following Appendix G Checklist Thresholds.

Would the project result in:

a) Generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project <u>in excess of standards</u> established in the local general plan or noise ordinance, or applicable standards of other agencies?

Substantial increases in ambient noise levels are usually associated with project construction noise (temporary) and project operational noise (permanent).

Project Construction Noise (temporary): The City of Pasadena's noise ordinance regulates the timing of construction activities. No construction is permitted within 500 feet of a residential district outside of the hours specified under Section 9.36.070 of the City of Pasadena's Municipal Code (7:00 AM to 7:00 PM, Monday through Friday, 8:00 AM to 5:00 PM on Saturday, and at no time on Sundays or federal holidays). Section 9.36.080 of the City Municipal Code prohibits noise from operation of any powered construction equipment from exceeding 85 dBA Leq at a distance of 100 feet. The City of Pasadena restricts construction activities to the daytime hours. The potential for construction noise impacts to be objectionable depends on the magnitude of noise generated by the construction equipment, the frequency of noise sources during a construction day, and total duration of construction activities. Although construction activity may be exempt from the noise standards in the City's Municipal Code, CEQA requires that potential noise impacts still be evaluated for significance.

Project Operational Noise (permanent): Potential noise impacts are evaluated by local criteria established by the City of Pasadena for stationary source noise control. Section 9.36.090 of the City Municipal Code regulates machinery, equipment, and fans and air conditioning units and prohibits these sources from generating noise that exceeds the ambient noise level by more than 5 dB at the property line of the receiving property.

The City of Pasadena does not have adopted thresholds to assess off-site project-related traffic noise impacts. Therefore, the significant threshold for off-site traffic noise is based on human perceptibility to changes in noise levels (increases), with consideration of existing ambient noise conditions, and the City's guidelines for noise compatible land use. For off-site project generated noise, increases in ambient noise along affected roadways due to project generated vehicle traffic is considered substantial if they result in an increase of at least 5 dBA CNEL and: (1) the existing noise levels already exceed the applicable land use compatibility standard for the affected sensitive receptors set forth in the Noise Element of the City's General Plan; or (2) the project increases noise levels by at least 5 dBA CNEL and raises the ambient noise level from below the applicable standard to above the applicable standard.

b) Generate excessive groundborne vibration or groundborne noise levels?

The City of Pasadena does not have an adopted significant threshold to assess vibration impacts during construction. Based on the FTA vibration criteria, vibration annoyance impacts are considered significant when average vibration levels produced by vehicles or equipment would produce perceptible levels of vibration (78 VdB) during the daytime at offsite vibration-sensitive structures. In addition, the vibration level at which there is a risk of architectural damage is based on the FTA structural damage criteria (0.12

in/sec for historic structures, 0.2 in/sec for typical wood-framed buildings, or 0.5 in/sec for reinforced concrete, steel, or timber).

3. LOCAL REGULATIONS

The City of Pasadena General Plan and Municipal Code establish the following applicable goals policies related to noise and vibration.

A. City of Pasadena General Plan

The Noise Element of the City's General Plan (revised in December 2002) incorporates noise standards for various land uses, which are based on the California Office of Planning and Research's (OPR) Noise Element Guidelines. **Table 3, city of Pasadena Noise Compatibility Guidelines,** presents the City's noise guidelines for land use planning. The objective of the noise compatibility guidelines is to provide a means of identifying acceptable noise exposure levels for a proposed use in relation to the existing noise environment. Since the proposed project is a medical office use, the clearly acceptable noise level would be below 70 dBA CNEL, the normally acceptable noise levels would be between 67.5 -75 dBA CNEL, the conditionally acceptable noise levels would be less than 75 dBA CNEL.

B. City of Pasadena Municipal Code

In addition to any measures to reduce noise levels recommended in this report, project operations will be subject to City ordinances.

Chapter 9.36, Noise Restrictions (Noise Ordinance), of the Pasadena Municipal Code (PMC) establishes exterior noise standards by land use and the maximum duration of time that the noise standards may be exceeded without being considered a nuisance punishable by law. As such, the City's Noise Ordinance prohibits any "unnecessary, excessive, or annoying noises" in the City. The Noise Ordinance does not control traffic noise, but applies to all noise sources located on private property.

According to Section 9.36.050 of the PMC, the City generally limits intrusive noises from exceeding the ambient level at the property line by more than 5 dB, with adjustments made for steady audible tones, impulsive noise, and noise emitted for limited durations. The ambient noise is the actual measured noise level. In addition, Section 9.36.060 sets the interior noise limit for multi-family residential uses to 60 dB during 7:00 AM to 10:00 PM and 50 dB during 10:00 PM to 7:00 AM.

The Noise Ordinance also includes restrictions for construction activities in residential districts. PMC Section 9.36.070 prohibits noise levels generated by construction in or within 500 feet of a residential district from 7:00 PM to 7:00 AM on weekdays, 5:00 PM to 8:00 AM on Saturday, or anytime on Sundays and holidays. In addition, PMC Section 9.26.080 prohibits the operation of powered construction

equipment if such equipment emits noise at a level in excess of 85 dB when measured within a radius of 100 feet from the source.

Table 3
City of Pasadena Noise Compatibility Guidelines

	Exterior Noise Level (CNEL dBA)						
Land Use Category	**50**	**55**	**60**	**65**	**70**	**75**	**80**
Residential – low density single family, duplex, mobile homes							
Residential- multiple family and mixed use commercial/residential uses							
Transient lodging – motels, hotels							
Schools, libraries, churches, hospitals, nursing homes							
Auditoriums, concert halls, amphitheaters							
Sports arena, outdoor spectator sports							
Playground, neighborhood parks							
Golf courses, riding stables, water recreation, cemeteries							
Office buildings, business commercial and professional							
Industrial, manufacturing, utilities Agriculture, mining							

	Clearly Acceptable	Specified land use is satisfactory, based upon the assumption that any buildings involved are of normal construction, without any special noise insulation requirements.
	Normally Acceptable	New construction or development should be undertaken after an analysis of the noise reduction requirements is made and needed noise insulation features included in the design. Conventional construction, but with closed windows and fresh air supply systems or air conditioning will normally suffice.
	Continually Acceptable	New construction or development proceeds, an analysis of the noise reduction requirements should be made and needed noise insulation features included in the design
	Normally Unacceptable	New construction or development should generally not be undertaken, unless it can be demonstrated that an interior level of 45 dBA can be achieved.

Source:
City of Pasadena General Plan Noise Element

V. EXISTING NOISE CONDITIONS

To determine the existing noise level environment, short-term noise measurements were taken in the project study area at four locations in the project vicinity. The following describes the measurement procedures, measurement locations, and the noise measurement results.

1. MEASUREMENT PROCEDURE AND CRITERIA

To ascertain the existing noise at and adjacent to the project site, field monitoring was conducted on June 22, 2020. The field survey noted that noise within the proposed project area is generally characterized by traffic noise. The nearest airport is Bob Hope (Burbank) Airport, which is located approximately 12 miles northwest of the project site. The project site falls well outside the 65 dBA airport noise contour, and is not considered as a source that contributes to the ambient noise levels on the project site.

A. Noise Measurement Equipment

Noise monitoring was performed using an American National Standards Institute (ANSI Section SI4 1979, Type 1) Larson Davis model LxT sound level meter. The sound level meter was programmed in "slow" mode to record the sound pressure level at one second intervals for in A-weighted form. The sound level meter and microphone were mounted approximately five feet above the ground and equipped with a windscreen during all measurements. The sound level meter was calibrated before monitoring using Larson Davis Cal 250. The noise level measurement equipment meets American National Standards Institute (ANSI) specifications for sound level meters (S1.4-1983 identified in Chapter 19.68.020.AA).

B. Noise Measurement Locations

The noise monitoring locations were selected in order to obtain noise measurements of the current noise sources impacting the vicinity of the project site and to provide a baseline for any potential noise impacts that may be created by development of the proposed project. The sites are shown in Error! Reference source not found.**, Noise Monitoring Locations**, on the following page. **Appendix A** (of this analysis technical report) includes a photographic index of the study area and noise level measurement locations.

C. Noise Measurement Timing and Climate

The noise measurements were recorded between 12:03 PM and 1:13 PM on June 22, 2020. At the start of the noise monitoring, the temperature was 77°F, 46 percent humidity, sunny, clear skies, and calm wind conditions (5-10 mph).

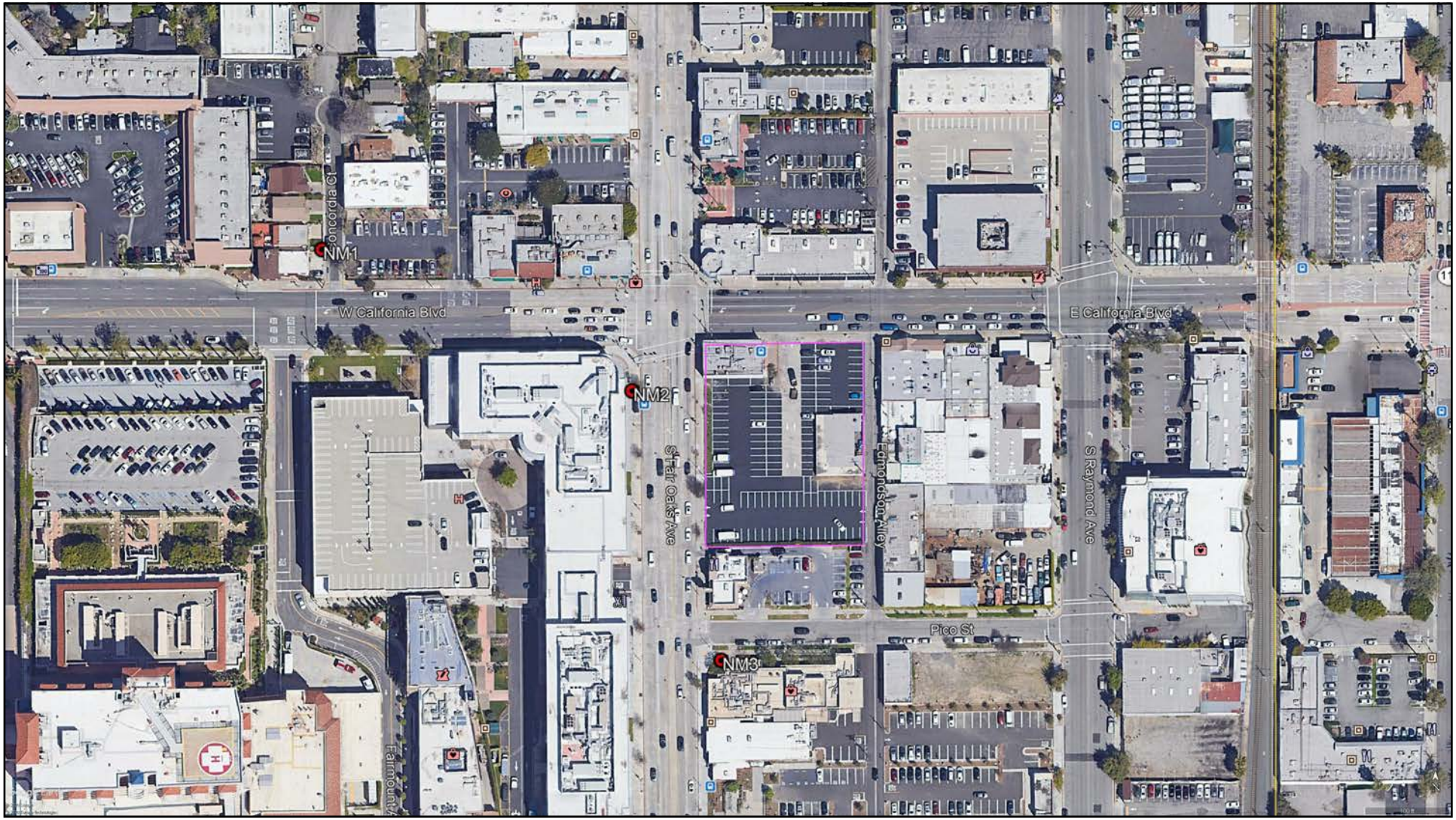


Figure 3
Noise Monitoring Locations

2. NOISE MEASUREMENT RESULTS

The noise measurements were taken at three (3) locations in the project vicinity. The results of the noise level measurements are provided below in **Table 3, Existing Noise Level Measurements (dBA)**. The dominant noise source in the area was traffic, with secondary noise from pedestrians, birds, and low-altitude aircraft.

Table 3
Existing Noise Level Measurements (dBA)

Site Location	Description	L_{eq}	L_{MAX}	L_{MIN}
NM 1	On the sidewalk adjacent to the residential receptor located northwest of the site, north of California Blvd and west of Concordia Ct.	60.8	76.7	50.8
NM 2	On the sidewalk adjacent to Cal Oaks II Pharmacy/UCLA Health on the western side of Fair Oaks Ave, directly across from the western boundary of the project site.	71.7	83.2	57.7
NM 3	On the sidewalk adjacent to Huntington MRI Center, east of Fair Oaks Ave, south of Pico St, to the south of the project site.	69.0	82.7	53.3

As shown in Table 3, receptors in the project vicinity are subject to average noise levels ranging from 60.8 dBA leq to 71.7 dBA leq, with maximum noise levels reaching as high as 83.2 dBA at commercial/medical uses directly across from the project, on the western side of South Fair Oaks Avenue.

A. Traffic Noise Modeling Results

The Noise impacts related to vehicular traffic were modeled using a version of the Federal Highway Administration (FHWA) Traffic Noise Prediction Model (FHWA-RD-77-108), as modified for CNEL and the "Calveno" energy curves. Site-specific information is entered, such as roadway traffic volumes, roadway active width, source-to-receiver distances, travel speed, noise source and receiver heights, and the percentages of automobiles, medium trucks, and heavy trucks that the traffic is made up of throughout the day, amongst other variables.

The FHWA Traffic Noise Prediction Model arrives at a predicted noise level through a series of adjustments to the Reference Energy Mean Emission Level (REMEL). Adjustments are then made to the REMEL to account for: total average daily traffic volumes, roadway classification, width, speed and truck mix, roadway grade and site conditions (hard or soft ground surface). All modeled roadways were assumed to have a "hard site" to predict worst-case, conservative noise levels. A hard site, such as pavement, is highly

Existing and Existing Plus Project average daily traffic (ADT) were calculated from the Transportation Impact Analysis Outside CEQA Evaluation (Non-CEQA TIA) (Pasadena Department of Transportation, 2020).

Roadway parameters utilized to model future traffic noise levels to the Project include location, traffic volume, speed and vehicle mix (autos, medium trucks, and heavy trucks) . The various scenarios that are described above were modeled to determine project-specific increases in noise levels at an arbitrary distance of 50 feet from roadway centerline. The uniform distance allows for direct comparisons of potential increases or decreases in noise levels based upon various traffic scenarios; however, at this distance, no specific noise standard necessarily applies. Therefore, the change in a noise level between scenarios is the focus of this portion of the analysis, rather than the resulting independent noise level for any one segment. FHWA calculation spreadsheets are included in Appendix C.

The calculated noise levels in **Table 7** (in Section VI of this report) shows that the existing traffic noise in the project area is as high as 72.0 dBA at a distance of 50 feet from the centerline.

VI. NOISE AND VIBRATION IMPACT ANALYSES

Consistent with the California Environmental Quality Act (CEQA) and the CEQA Guidelines, a significant impact related to noise would occur if a proposed project is determined to result in:

- Exposure of persons to or generation of noise levels in excess of standards established in the local General Plan or noise ordinance, or applicable standards of other agencies.
- Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels.
- Exposure of persons residing or working in the project area to excessive noise levels from aircraft.

According to the CEQA checklist, to determine whether impacts to noise resources are significant environmental effects, the following thresholds are analyzed and evaluated:

- Exceedance of noise standards for construction and operational noise.
- Construction noise.
- Groundborne vibration.
- Operational noise.
- Airport noise.

Each of these thresholds is analyzed below.

1. EXCEEDANCE OF NOISE STANDARDS

This impact discussion analyzes the potential for project construction noise to cause an exposure of persons to or generation of noise levels in excess of established City of Pasadena noise standards or applicable standards of other agencies.

Noise levels in the project area would be influenced by construction activities.

A. Construction Noise

As stated previously, According to Section 9.36.070, noise from construction activity is prohibited within 500 feet of a residential district from 7:00 PM to 7:00 AM on weekdays, 5:00 PM to 8:00 AM on Saturday, or anytime on Sundays and holidays. In addition, PMC Section 9.26.080 prohibits the operation of powered construction equipment if such equipment emits noise at a level in excess of 85 dBA when measured within a radius of 100 feet from the source.

The State of California defines sensitive receptors as those land uses that require serenity or are otherwise adversely affected by noise events or conditions. Schools, libraries, churches, hospitals, single and

multiple-family residential, including transient lodging, motels and hotel uses make up the majority of these areas. The closest receptors to the project site include: the residential use located northwest of the site, north of California Blvd and west of Concordia Ct, the Cal Oaks II Pharmacy/UCLA Health medical facility on the western side of Fair Oaks Ave, directly across from the western boundary of the project site, and the Huntington MRI Center, located east of Fair Oaks Ave, south of Pico St, to the south of the project site.

Short-term noise impacts could occur during construction activities from either the noise impacts created from the transport of workers and movement of construction materials to and from the project site, or from the noise generated onsite during: demolition, ground clearing/excavation, building, and paving activities.

Construction noise levels will vary significantly based upon the size and topographical features of the active construction zone, duration of the work day, and types of equipment employed, as indicated in **Table 4, Typical Construction Equipment Noise Levels**. A typical construction day with an eight-hour duration will generate 84 dBA CNEL at a distance of 50 feet from the noise source, on average. Typical 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. Although there would be a relatively high single event noise exposure potential, resulting in potential short-term intermittent annoyances, the effect in long-term ambient noise levels would be small when averaged over longer time. As shown by the ambient noise level measurements in Table 3, Existing Noise Level Measurements (see section V. Existing Noise Conditions of this report), the project vicinity is already exposed to a maximum noise level of 83.2 dBA.

Construction noise associated with the Project was calculated utilizing methodology presented in the FTA Transit Noise and Vibration Impact Assessment Manual (2018) together with several key construction parameters including: distance to each sensitive receiver, equipment usage, percent usage factor, and baseline parameters for the Project Site (see Appendix C for details). Distances to receptors were based on the acoustical center of the proposed construction activity. Construction noise levels were calculated for each phase. To be conservative, the noise generated by each piece of equipment was added together for each phase of construction; however, it is unlikely (and unrealistic) that every piece of equipment will be used at the same time, at the same distance from the receptor, for each phase of construction.

Construction noise levels are compared to the existing noise level in Table 3 of this report. As shown in **Table 5, Estimated Construction Noise Levels at Sensitive Receptors**, during demolition of the existing uses on the project site, the modeled construction noise levels could reach 73.3 dBA L_{eq} at the façade of the nearest medical office receptor (NM2) located west of the project site, up to 63.3 dBA L_{eq} at the façade of the nearest residential receptor (NM1) to the northwest, and up to 70.6 dBA L_{eq} at the façade of the medical office receptor (NM3) to the south of the site.

Table 4
Typical Construction Equipment Noise Levels

EQUIPMENT			NOISE LEVEL (dBA) AT 50 FEET
			60 70 80 90 100 110
EQUIPMENT POWERED BY INTERNAL COMBUSTION ENGINES	EARTH MOVING	Compacters (Rollers)	
		Front Loaders	
		Backhoes	
		Tractors	
		Scrapers, Graders	
		Pavers	
		Trucks	
	MATERIAL HANDLING	Concrete Mixers	
		Concrete Pumps	
		Cranes (Moveable)	
		Cranes (Derrick)	
	STATIONARY	Pumps	
		Generators	
		Compressors	
IMPACT EQUIPMENT		Pneumatic Wrenches	
		Jack Hammers and Rock Drills	
		Pile Drivers	
OTHER		Vibrators	
		Saws	

Source: United States Environmental Protection Agency, 1971, "Noise from Construction Equipment and Operations, Building Equipment, and Home Appliances," NTID 300-1.

Table 5
Estimated Construction Noise Levels at Sensitive Receptors

Construction Phase	Receptor Location	Existing Ambient Noise Levels (dBA Leq)[1]	Construction Noise Levels at Receptor Locations (dBA Leq)[2]	Increase Over Ambient (dBA)
Demolition	Northwest (NM1)	60.8	63.3	2.5
	West (NM2)	71.7	73.3	1.6
	South (NM3)	69.0	70.6	1.6
Site Preparation	Northwest (NM1)	60.8	58.1	-2.7
	West (NM2)	71.7	68.1	-3.6
	South (NM3)	69.0	65.4	-3.6
Building Construction	Northwest (NM1)	60.8	57.2	-3.6
	West (NM2)	71.7	67.2	-4.5
	South (NM3)	69.0	64.5	-4.5
Paving	Northwest (NM1)	60.8	61.5	0.7
	West (NM2)	71.7	71.5	-0.2
	South (NM3)	69.0	68.8	-0.2
Architectural Coating	Northwest (NM1)	60.8	52.6	-8.2
	West (NM2)	71.7	59.9	-11.8
	South (NM3)	69.0	59.9	-9.1

Notes:
1 Noise measurement locations are shown on Figure 3, Noise Monitoring Locations.
2 Construction noise calculated in Tables A, B, and C in Appendix C of this Technical Report
Source: EcoTierra Consulting, Inc. July 2020.

Construction noise levels are compared to the existing, ambient noise levels reported in Table 3 of this report. As shown in Table 5, during demolition of the existing uses on the project site, the modeled construction noise levels could reach 73.3 dBA L_{eq} at the façade of the nearest medical office receptor (NM2) located west of the project site, up to 63.3 dBA L_{eq} at the façade of the nearest residential receptor (NM1) to the northwest, and up to 70.6 dBA L_{eq} at the façade of the medical office receptor (NM3) to the south of the site.

As shown in Table 3, the construction noise levels at the closest receptors will not exceed 85 dBA and will have less than a 5 dBA increase over ambient noise levels. Impacts related to construction noise will be further minimized with adherence to the above Municipal Ordinances and implementation of the best management practice measures (BMPs) presented below.

In addition to adherence to the City of Pasadena Municipal Code which limits the construction hours of operation, the following BMPs are recommended to reduce construction noise and vibrations, emanating from the proposed project:

1. During all project site excavation, construction contractors shall equip all construction equipment, fixed or mobile, with properly operating and maintained mufflers, consistent with manufacturer standards.
2. The contractor shall place all stationary construction equipment so that emitted noise is directed away from the noise sensitive receptors nearest the project site.
3. Equipment shall be shut off and not left to idle when not in use.
4. The contractor shall locate equipment staging in areas that will create the greatest distance between construction-related noise/vibration sources and sensitive receptors nearest the project site during all project construction.
5. The project proponent shall mandate that the construction contractor prohibit the use of music or sound amplification on the project site during construction.
6. The construction contractor shall limit haul truck deliveries to the same hours specified for construction equipment.
7. Limit the use of heavy equipment or vibratory rollers and soil compressors along the project boundaries to the greatest degree possible. It is acknowledged that some soil compression may be necessary along the project boundaries.
8. Jackhammers, pneumatic equipment and all other portable stationary noise sources shall be shielded and noise shall be directed away from sensitive receptors.
9. For the duration of construction activities, the construction manager shall serve as the contact person should noise levels become disruptive to local residents. A sign should be posted at the project site with the contact phone number.

Impacts from construction noise are considered to be less than significant, no mitigation measures are required.

2. GROUNDBORNE VIBRATION

This impact discussion analyzes the potential for the proposed project to cause an exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels. Vibration levels in the project area would be influenced by construction activities and from the ongoing operations of the proposed project.

The California Department of Transportation (Caltrans) Transportation and Construction Vibration Manual identifies various vibration damage criteria for different building classes. This evaluation uses the Caltrans architectural damage criterion for continuous vibrations at residential structures of 0.3 inch-per-second PPV. Further, as the nearest sensitive receptors to project construction are residents, the criterion for human annoyance of 0.2 inch-per-second PPV is utilized. 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.

A. Construction Vibration

Construction activities can produce vibration that may be felt by adjacent uses. The construction of the proposed project would not require the use of equipment such as pile drivers, which are known to generate substantial construction vibration levels. The highest degree of groundborne vibration would be generated during the paving construction phase due to the operation of a vibratory roller. Based on the Federal Transit Administration (FTA) data (see Table 1), vibration velocities from vibratory roller operations are estimated to be approximately 0.1980 inch-per-second PPV at 26 feet from the source of activity.[1] As such, structures located greater than 26 feet from vibratory roller operations would not experience groundborne vibration above the Caltrans significance thresholds (i.e. 0.3 inch-per-second PPV for structures and 0.2 inch-per-second PPV for human annoyance). The nearest vibration-sensitive receptor would be the mixed commercial/medical use to the west, across Fair Oaks Avenue, located approximately 93 feet from western edge of the project boundary. At this distance, the vibration felt at the building façade would be approximately 0.029 inches-per-second, which is less than 0.2 inches-per-second. The façade of the Huntington MRI Center, located approximately 130 feet from the southern boundary of the project site. As this distance, the vibration felt at the building façade would be 0.018 in/sec PPV; which is well below even the 0.12 in/sec vibration threshold for historic structures.

The nearest existing structure to the project site is the Burger King located approximately 15 feet from the southern boundary. According to the FTA's Transit Noise and Vibration Impact Assessment, the vibration criteria for potential structural damage to FTA Building Category I – Reinforced-concrete, steel, or timber (no plaster) is 0.5 in/sec PPV. At a distance of 15 feet, the vibration level from a vibratory roller would be 0.452 in/sec PPV. Therefore, no structural damage due to vibration is anticipated and impacts would be less than significant in this regard.

B. Operational Vibration

As the proposed project consists of a proposed medical office building, the project does not include any significant sources of operational vibration; no impacts are anticipated.

3. OPERATIONAL NOISE

This impact discussion analyzes the potential for a substantial permanent increase in ambient noise levels in the project vicinity associated with operation of the proposed project, including impacts related to offsite vehicular noise and exposure of neighboring land uses to onsite noise.

[1] *Federal Transit Administration, Transit Noise and Vibration Impact Assessment Manual, September 2018.*

A. Parking Noise

The proposed parking areas have the potential to generate noise due to cars entering and exiting, engines accelerating, braking, car alarms, squealing tires, and other general activities associated with people using the parking areas (i.e., talking, opening/closing doors, etc.). Noise levels within the parking areas would fluctuate with the amount of automobile and human activity. Activity levels would be highest in the early morning and evening when the largest number of people would enter and exit. However, these events would occur at low exiting and entering speeds, which would not generate high noise levels. During these times, the noise levels can range from 44 to 63 dBA Leq[2]. As the parking area would be fully enclosed on all sides except the driveway area and located in the subterranean levels of the project site, noise generated from within the parking area would not adversely affect off-site sensitive receptors. Chapter 9.36, of the PMC establishes exterior noise standards by land use and the maximum duration of time that the noise standards may be exceeded without being considered a nuisance punishable by law. As such, the City's Noise Ordinance prohibits any "unnecessary, excessive, or annoying noises" in the City. The Noise Ordinance does not control traffic noise, but applies to all noise sources located on private property. Therefore, through project design, and compliance with existing PMC regulations, noise impacts associated with parking would be less than significant and no mitigation measures are required.

B. Stationary Noise Sources

As part of the Project, HVAC units and exhaust fans are anticipated to installed for the proposed use. Although the operation of this equipment would generate noise, the design of all mechanical equipment would be required to comply with the regulations. According to Section 9.36.050 of the PMC, the City generally limits intrusive noises from exceeding the ambient level at the property line by more than 5 dB, with adjustments made for steady audible tones, impulsive noise, and noise emitted for limited durations. The project is required to comply with the PMC; therefore, impacts related to stationary noise sources are considered to be less than significant.

C. Traffic Noise

For off-site project generated noise, increases in ambient noise along affected roadways due to project generated vehicle traffic is considered substantial if they result in an increase of at least 5 dBA CNEL. In order for a new noise source to be audible, there would need to be a 3 dBA or greater CNEL noise increase.

Potential noise impacts associated with the operations of the proposed project are a result of project-generated vehicular traffic on the project vicinity roadways. As stated previously, the noise impacts related to vehicular traffic were modeled using a version of the Federal Highway Administration (FHWA)

[2] *Source: Gordon Bricken & Associates, 1996. Estimates are based on actual noise measurements taken at various parking lots.*

Traffic Noise Prediction Model (FHWA-RD-77-108), as modified for CNEL and the "Calveno" energy curves. The existing and existing plus project average daily traffic (ADT) were calculated from the PM peak hour volumes given in the Non-CEQA TIA. FHWA calculation spreadsheets are included in Appendix C.

The calculated noise levels in **Table 6, Project-Related Increase in Traffic Noise** below show that there would be a marginal increase in noise due to the increase of project-related traffic on roadways in the project vicinity. The highest increase in traffic noise would be 0.4 dB at the road segments of Raymond Avenue south of California Boulevard, California Boulevard w/o Pasadena Avenue, and at Glenarm Street west of Raymond Avenue. As the project-related increase in traffic noise does not exceed 3 dBA, the project would not contribute to a substantial permanent increase in ambient noise levels in the project vicinity. Impacts are considered to be less than significant.

Table 6
Project-Related Increase in Traffic Noise

	Existing		Existing Plus Project		
Road Segments	ADT	dB CNEL*	ADT	Total dB CNEL*	Project-Specific Increase
St. John Avenue					
s/o California Blvd	14,200	69.2	14,380	69.3	0.1
Pasadena Avenue					
n/o California Blvd	26,960	72.0	27,310	72.1	0.1
Fair Oaks Avenue					
n/o Del Mar Blvd	6,040	65.5	6,130	65.6	0.1
n/o California Blvd	8,590	67.0	8,760	67.1	0.1
s/o California Blvd	11,000	68.1	11,430	68.3	0.2
n/o of Glenarm St	11,760	68.4	12,000	68.5	0.1
s/o of Glenarm St	11,780	68.4	11,870	68.4	0.0
Raymond Avenue					
n/o California Blvd	4,880	64.6	4,880	64.6	0.0
s/o California Blvd	4,180	63.9	4,530	64.3	0.4
n/o of Glenarm St	1,900	60.5	1,900	60.5	0.0
Arroyo Parkway					
n/o California Blvd	8,110	66.8	8,110	66.8	0.0
s/o California Blvd	9,340	67.4	9,520	67.5	0.1
Del Mar Boulevard					
w/o Fair Oaks Avenue	11,580	68.3	11,580	68.3	0.0
e/o Fair Oaks Avenue	7,650	66.5	7,740	66.6	0.1
California Boulevard					
w/o St. John Avenue	6,100	65.6	6,190	65.6	0.0
w/o Pasadena Avenue	3,170	62.7	3,430	63.1	0.4
w/o Fair Oaks Avenue	7,350	66.4	7,960	66.7	0.3
w/o Raymond Avenue	7,310	66.3	7,440	66.4	0.1

Table 6
Project-Related Increase in Traffic Noise

Road Segments	Existing		Existing Plus Project		
	ADT	dB CNEL*	ADT	Total dB CNEL*	Project-Specific Increase
w/o Arroyo Pkwy	4,700	64.4	4,840	64.5	0.1
e/o Arroyo Pkwy	5,220	64.9	5,390	65.0	0.1
Glenarm Street					
w/o Fair Oaks Avenue	2,640	61.9	2,730	62.1	0.2
w/o Raymond Avenue	4,400	64.1	4,830	64.5	0.4
e/o Raymond Avenue	8,840	67.2	9,270	67.4	0.2

**Noise levels at 50 feet from the roadway centerline. The uniform distance of 50 feet allows for direct comparisons of potential increases or decreases in noise levels based upon various traffic scenarios; however, at this distance, no specific noise standard necessarily applies.*

4. AIRPORT NOISE

This impact discussion analyzes the potential for nearby airports or private airstrips to expose people residing or working in the project area to excessive noise levels.

The nearest airport is Bob Hope Airport (Burbank airport), located approximately 12 miles northwest of the project site. The project site falls well outside the 65 dBA noise contour[3] and is not considered as a source that contributes to the ambient noise levels on the project site. Impacts are considered to be less than significant.

[3] *Burbank-Glendale-Pasadena Airport Authority, Bob Hope Airport, 14 CFR Part 150 Noise Compatibility Study, Final Noise Compatibility Program Revision #2, website: https://hollywoodburbankairport.com/wp-content/uploads/2019/04/BUR-NCP-Revision-032816-Final-Revised-Part-1_compressed.pdf.*

VII. REFERENCES

Anon. 1977. Model Community Noise Control Ordinance. Berkley, CA: California Department of Health Services, Office of Noise Control.

California, State of. Department of Transportation (Caltrans). 2004. Transportation- and Construction-Induced Vibration Guidance Manual. June. Website: http://www.dot.ca.gov/hq/env/noise/pub/vibrationmanFINAL.pdf

California, State of. Department of Transportation (Caltrans). 2009 and 1998. Technical Noise Supplement. November. Website: http://www.dot.ca.gov/hq/env/noise/pub/tens_complete.pdf

Federal Transit Administration. 2006. Transit Noise and Vibration Impact Assessment. May. Website: http://www.fta.dot.gov/documents/FTA_Noise_and_Vibration_Manual.pdf.

Pasadena, City of. 2002. Revised Noise Element of the General Plan. December

Pasadena, City of. 2015. General Plan Draft EIR. January

Pasadena, City of. 2020. Pasadena Department of Transportation. Transportation Impact Analysis CEQA Evaluation. 590 South Fair Oaks Avenue. October 30.

Pasadena, City of. 2020. Pasadena Department of Transportation. Transportation Impact Analysis Outside CEQA Evaluation. 590 South Fair Oaks Avenue. October 30.

U.S. Department of Transportation. 2006. FHWA Roadway Construction Noise Model User's Guide. January. Website: http://www.fhwa.dot.gov/environment/noise/rcnm/rcnm.pdf.

VII. LIST OF ACRONYMS AND ABBREVIATIONS

ADT	average daily traffic
ANSI	American National Standards Institute
Caltrans	California Department of Transportation
CEQA	California Environmental Quality Act
CNEL	Community Noise Equivalent Level
dB	decibel
dBA	A-weighted decibel
dBA/DD	A-weighted decibel per each doubling of distance
DOT	Department of Transportation
FAA	Federal Aviation Administration
FHWA	Federal Highway Administration
FICON	Federal Interagency Committee on Noise
FTA	Federal Transit Administration
Hz	Hertz
L_{dn}	Day-Night Average Sound Level
L_{eq}	Equivalent Sound Level
L_V	Vibration Level
ONAC	Federal Office of Noise Abatement Control
ONC	California Department of Health Services Office of Noise Control
OSHA	Occupational Safety and Health Administration
PPV	peak particle velocity
RMS	root mean square
SEL	Single Event Level
sq ft	square feet
UMTA	Urban Mass Transit Administration
VdB	L_V at 1 microinch per second

APPENDICES

Appendix A: Study Area Photographic Index and Noise Measurement Data

Appendix B: Noise Meter Print Outs

Appendix C: RCNM Construction Noise Calculations

APPENDIX A: STUDY AREA PHOTOGRAPHIC INDEX AND NOISE MEASUREMENT DATA

KW

CA Office
7404 Kingsley Way,
Riverside, CA

15-Minute Noise Measurement Datasheet

Project: KW 590 S Fair Oaks Ave, Pasadena Project
Site Address/Location: 590 S Fair Oaks Ave, Pasadena, CA
Date: 6/22/2020
Field Tech/Engineer: Ian Edward Gallagher

General Location: S Fair Oaks Ave & California Blvd intersection.
Sound Meter: Larson Davis Sound Track LxT1 **SN:** 3099
Settings: A-weighted, slow, 1-min, 15-minute interval
Meteorological Con.: 77 deg F, 5 to 10 mph wind, 46% humidity, sunny, clear skies.
Site ID: NM-1 2 & 3

Site Observations: Main noise sources are from vehicular traffic travelling along California Boulevard, Fair Oaks Avenue & surrounding roads . The local buildings do reflect much of the sound. Other noise sources include pedestrians, low altitude aircraft both fixed wing propeller, jets & choppers, constant acoustiacal signal chirping like noise from light comtrolled pedestrian crossings at intersection, also bird song.

Site Topo: Cityscape,concrete&glass bldgs, asphalt & concrete paving.
Ground Type: Hard site conditions, reflective, refractive.

NM locations, lat , long :

NM1 Meter: 34° 8'9.41"N 118° 9'6.01"W
NM2 Meter: 34° 8'7.89"N 118° 9'1.82"W
NM3 Meter: 34° 8'4.89"N 118° 9'0.81"W

Figure 1: Monitoring Locations

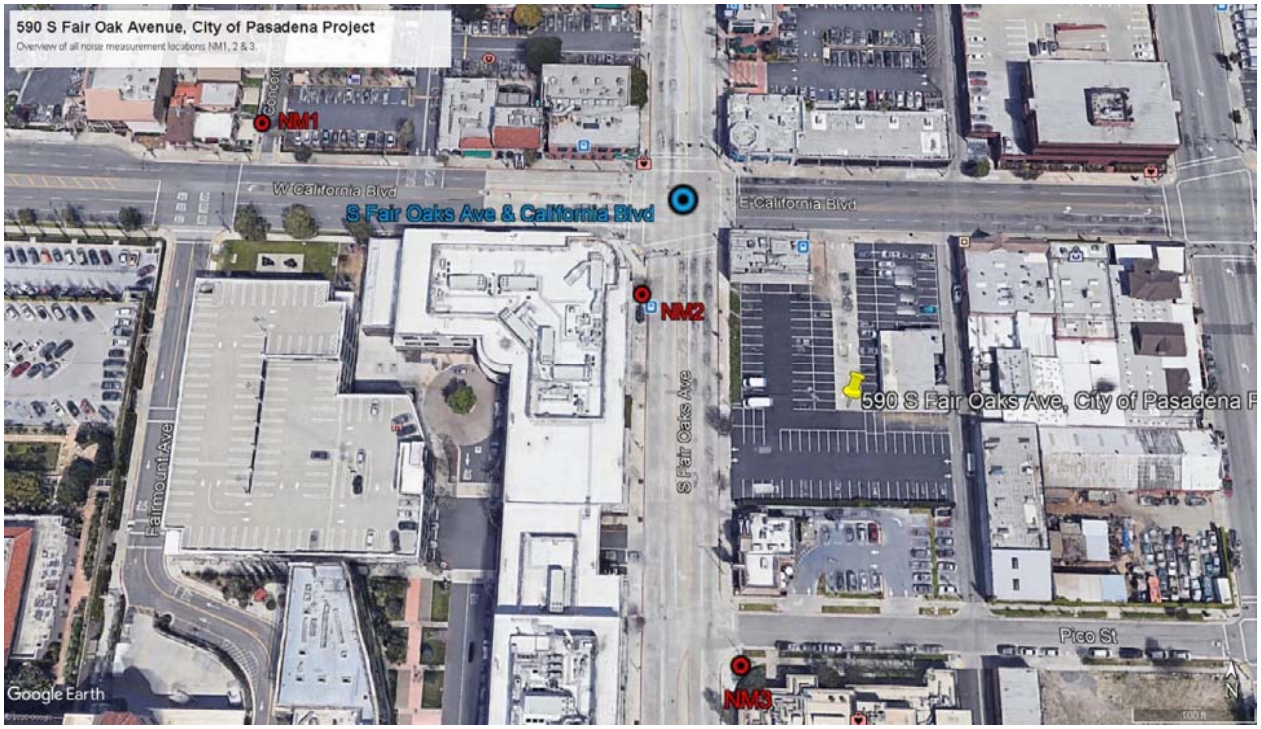
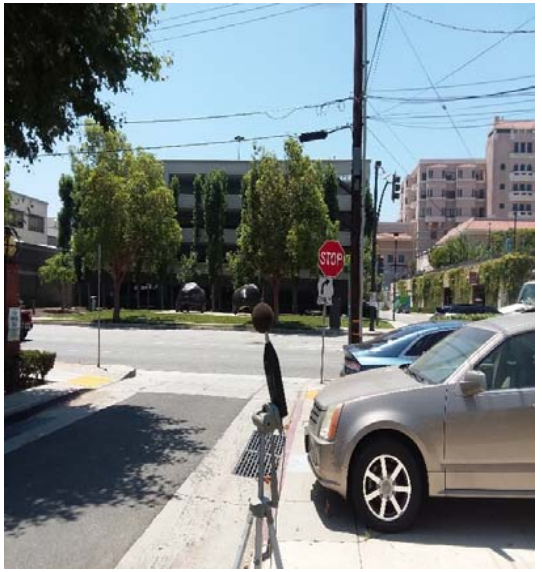


Figure 2: STNM1 Photo



NM1 looking S down Concordia Ct towards California Blvd intersection (12 yards). multi-story parking lot (50 yards).

CA Office
7404 Kingsley Way,
Riverside, CA

15-Minute Noise Measurement Datasheet - Cont.

Project:	KW 590 S Fair Oaks Ave, Pasadena Project
Site Address/Location:	590 S Fair Oaks Ave, Pasadena, CA
Site ID:	NM-1 2 & 3

Figure 3: STNM2 Photo

NM2 looking NE across Fair Oaks Ave & California Blvd intersection towards building 576 S Fair Oaks Ave, Pasadena (50 yards).

Figure 4: STNM3 Photo

NM3 looking NNW past Pico St & Fair Oaks Ave intersection, past building 622 Fair Oaks Ave, up Fair Oaks Ave towards California Blvd intersection (125 yards).

CA Office
7404 Kingsley Way,
Riverside, CA

15-Minute Noise Measurement Datasheet - Cont.

Project: KW 590 S Fair Oaks Ave, Pasadena Project
Site Address/Location: 590 S Fair Oaks Ave, Pasadena, CA
Site ID: NM-1 2 & 3

Table 1: Noise Measurement Summary

Location	Start	Stop	Leq/ dB	Lmax/ dB	Lmin/ dB	L2/ dB	L8/ dB	L25/ dB	L50/ dB	L90/ dB
NM 1	12:03 PM	12:18 PM	60.8	76.7	50.8	67.3	64.2	61.3	58.3	53.7
NM 2	12:27 PM	12:42 PM	71.7	83.2	57.7	78.2	75.6	72.7	69.8	67.6
NM 3	12:58 PM	1:13 PM	69.0	82.7	53.3	76.1	72.4	69.6	67.1	65.0

APPENDIX B: NOISE METER PRINTOUTS

NM1 KW 590 S Fair Oaks Avw , Pasadena Project

Record #	Record Type	Date	Time	LAeq	LZpeak	LASmax	LASmin	ıt. Temp (°I	LCeq-LAe	LAleq-LAeq	OVLD	Marker
1	Calibration Change	6/22/2020	12:00:28 PM									
2	Calibration Change	6/22/2020	12:00:44 PM									
3	Run	6/22/2020	12:03:07 PM									
4		6/22/2020	12:03:07 PM	61.0	91.0	68.3	52.2	95.3	10.7	1.0	No	
5		6/22/2020	12:04:00 PM	60.2	93.3	69.2	53.7	96.2	13.9	2.8	No	
6		6/22/2020	12:05:00 PM	59.7	89.1	67.0	54.3	97.4	11.2	1.7	No	
7		6/22/2020	12:06:00 PM	58.5	86.7	67.0	50.8	98.5	11.5	0.3	No	
8		6/22/2020	12:07:00 PM	61.7	92.1	71.7	53.0	99.3	10.8	2.7	No	
9		6/22/2020	12:08:00 PM	57.6	87.0	63.1	53.3	100.0	13	0.6	No	
10		6/22/2020	12:09:00 PM	59.1	87.5	65.9	51.0	101.0	10.5	1.6	No	
11		6/22/2020	12:10:00 PM	61.7	92.9	68.1	53.4	101.6	11.9	0.4	No	
12		6/22/2020	12:11:00 PM	60.6	89.8	67.0	51.7	102.4	10.7	0.0	No	
13		6/22/2020	12:12:00 PM	58.2	88.4	65.4	53.0	102.9	13.5	-0.3	No	
14		6/22/2020	12:13:00 PM	61.9	91.8	69.7	53.7	103.4	12.3	1.6	No	
15		6/22/2020	12:14:00 PM	59.8	91.9	66.9	51.8	103.8	13.9	2.5	No	
16		6/22/2020	12:15:00 PM	62.8	95.4	73.0	52.0	104.3	11.3	0.6	No	
17		6/22/2020	12:16:00 PM	58.7	92.3	63.8	52.5	104.8	13.5	0.4	No	
18		6/22/2020	12:17:00 PM	64.3	100.6	76.7	54.2	105.4	12.5	3.4	No	
19		6/22/2020	12:18:00 PM	54.1	84.8	59.6	52.2	105.4	14.2	0.7	No	
20	Stop	6/22/2020	12:18:07 PM									

NM2 KW 590 S Fair Oaks Avw , Pasadena Project

Record #	Record Type	Date	Time	LAeq	LZpeak	LASmax	LASmin	ıt. Temp (°I	LCeq-LAe	LAleq-LAeq	OVLD	Marker
1	Calibration Change	6/22/2020	12:26:34 PM									
2	Calibration Change	6/22/2020	12:26:50 PM									
3	Calibration Change	6/22/2020	12:27:05 PM									
4	Run	6/22/2020	12:27:19 PM									
5		6/22/2020	12:27:20 PM	68.6	97.2	75.1	61.4	106.6	9.1	5.7	No	
6		6/22/2020	12:28:00 PM	72.5	103.5	80.0	62.2	106.0	8.7	1.6	No	
7		6/22/2020	12:29:00 PM	75.4	107.1	83.2	57.7	105.3	8.7	6.4	No	
8		6/22/2020	12:30:00 PM	71.1	119.9	78.6	60.3	104.9	10.1	2.5	No	
9		6/22/2020	12:31:00 PM	73.5	101.5	81.4	63.3	104.7	8.3	0.5	No	
10		6/22/2020	12:32:00 PM	72.1	98.8	77.1	65.5	104.3	9.4	1.2	No	
11		6/22/2020	12:33:00 PM	69.3	102.0	76.4	61.8	103.8	11.5	2.8	No	
12		6/22/2020	12:34:00 PM	72.4	100.2	78.7	64.3	103.4	7	0.2	No	
13		6/22/2020	12:35:00 PM	71.5	98.2	76.6	65.5	103.1	8.8	1.9	No	
14		6/22/2020	12:36:00 PM	69.8	100.4	75.1	65.7	102.9	19.5	0.4	No	
15		6/22/2020	12:37:00 PM	70.2	97.1	76.2	62.4	102.4	8	0.8	No	
16		6/22/2020	12:38:00 PM	72.6	100.4	81.2	63.5	102.3	8	2.3	No	
17		6/22/2020	12:39:00 PM	71.0	99.1	77.6	64.0	101.9	7.8	0.6	No	
18		6/22/2020	12:40:00 PM	70.2	99.5	76.7	58.3	101.9	7.6	1.6	No	
19		6/22/2020	12:41:00 PM	71.3	99.1	76.8	62.4	101.5	5.8	2.1	No	
20		6/22/2020	12:42:00 PM	65.9	90.6	69.5	62.8	101.5	9.5	1.2	No	
21	Stop	6/22/2020	12:42:20 PM									

NM3 KW 590 S Fair Oaks Avw , Pasadena Project

Record #	Record Type	Date	Time	LAeq	LZpeak	LASmax	LASmin	ıt. Temp (°I	LCeq-LAe	LAleq-LAeq	OVLD	Marker
1	Calibration Change	6/22/2020	12:57:32 PM									
2	Calibration Change	6/22/2020	12:57:46 PM									
3	Calibration Change	6/22/2020	12:58:02 PM									
4	Run	6/22/2020	12:58:15 PM									
5		6/22/2020	12:58:15 PM	63.3	93.0	69.4	54.2	98.3	9.2	0.6	No	
6		6/22/2020	12:59:00 PM	71.4	102.8	78.6	57.5	99.0	11.2	4.1	No	
7		6/22/2020	1:00:00 PM	65.5	99.6	68.9	55.2	99.6	10.9	1.5	No	
8		6/22/2020	1:01:00 PM	66.7	93.1	70.4	62.2	99.8	9.6	1.0	No	
9		6/22/2020	1:02:00 PM	69.5	97.9	75.0	59.4	100.0	7.1	0.2	No	
10		6/22/2020	1:03:00 PM	69.0	96.8	76.2	58.6	100.2	7.7	7.6	No	
11		6/22/2020	1:04:00 PM	74.4	102.7	82.7	63.5	100.5	8.6	0.0	No	
12		6/22/2020	1:05:00 PM	68.4	95.3	72.3	57.7	100.5	8.4	0.0	No	
13		6/22/2020	1:06:00 PM	66.3	94.8	73.2	54.5	100.5	8.8	4.2	No	
14		6/22/2020	1:07:00 PM	70.9	101.0	77.1	60.1	101.0	8.3	0.4	No	
15		6/22/2020	1:08:00 PM	67.3	93.8	71.7	58.2	101.0	8.5	0.4	No	
16		6/22/2020	1:09:00 PM	64.7	94.3	70.2	55.0	101.5	8.7	1.3	No	
17		6/22/2020	1:10:00 PM	68.6	92.9	72.1	63.1	101.6	6.7	5.1	No	
18		6/22/2020	1:11:00 PM	67.9	97.2	73.5	55.6	101.8	7	1.3	No	
19		6/22/2020	1:12:00 PM	66.8	92.5	72.4	53.3	101.9	6.8	2.6	No	
20		6/22/2020	1:13:00 PM	66.9	92.7	72.0	62.2	101.9	5.9	0.5	No	
21	Stop	6/22/2020	1:13:15 PM									

APPENDIX C:

RCNM CONSTRUCTION NOISE AND FHWA MODEL ANALYSIS CALCULATIONS

CA/T Construction Equipment Noise Emissions and Acoustical Usage Factor Database

Equipment Description	Impact Device?	Acoustical use Factor (%)	Spec. Lmax @ 50ft (dBA, slow)	Actual Measured Lmax @ 50ft (dBA, slow)	No. of Actual Data Samples (Count)
Compressor (air)	No	40	80	78	18
Concrete Mixer Truck	No	40	85	79	40
Concrete Saw	No	20	90	89.6	55
Crane	No	16	85	81	405
Dozer	No	40	85	82	55
Excavator	No	40	85	81	170
Forklift[1,2]	No	50	n/a	61	n/a
Front End Loader	No	40	80	79	96
Generator	No	50	82	81	19
Grader	No	40	85	-N/A-	0
Paver	No	50	85	77	9
Pickup Truck	No	50	85	77	9
Paving Equipment	No	20	90	-N/A-	9
Roller	No	20	85	80	16
Scraper	No	40	85	84	12
Tractor/Loader/Backhoe	No	25	80	-N/A-	0
Welder/Torch	No	40	73	74	5

Source: FHWA RCNM User's Guide, 2006

[1] Warehouse & Forklift Noise Exposure - NoiseTesting.info Carl Stautins, November 4, 2014 http://www.noisetesting.info/blog/carl-strautins/page-3/

[2] Data provided Leq as measured at the operator. Sound Level at 50 feet is estimated.

Table A
Construction Noise by Phase - Receptor Northwest of the Project Site (NM1)

A	B	C	D	E	F	G	H	I
Equipment Type	# of Equipment	Equipment Lmax at 50 feet, dBA[1, 2]	Distance to Receptor[3]	Equipment Usage Percent	Usage Factor	Dist. Correction dB	Usage Adj. dB	Noise Level Leq (dBA) at Receptor
Demolition								
Concrete/Industrial Saw	1	89.6	590	20	0.20	-21.4	-7.0	61.2
Rubber Tired Dozers	1	82	590	40	0.40	-21.4	-4.0	56.6
Tractors/Loaders/Backhoes	2	80	590	25	0.50	-21.4	-3.0	55.6
							Log Sum	63.3
Site Preparation								
Excavators	1	81	590	40	0.40	-21.4	-4.0	55.6
Tractors/Loaders/Backhoes	1	80	590	40	0.40	-21.4	-4.0	54.6
							Log Sum	58.1
Building Construction								
Cranes	1	81	590	16	0.16	-21.4	-8.0	51.6
Forklifts	2	64	590	50	1.00	-21.4	0.0	42.6
Tractors/Loaders/Backhoes	2	80	590	25	0.50	-21.4	-3.0	55.6
							Log Sum	57.2
Paving								
Pavers	1	77	590	50	0.50	-21.4	-3.0	52.6
Cement and Mortar Mixers	4	79	590	40	1.60	-21.4	2.0	59.6
Tractors/Loaders/Backhoes	1	80	590	25	0.25	-21.4	-6.0	52.5
Rollers	1	80	590	20	0.20	-21.4	-7.0	51.6
							Log Sum	61.5
Architectural Coating								
Air Compressors	1	78	590	40	0.40	-21.4	-4.0	52.6
							Log Sum	52.6

Notes:

(1) Source: Referenced noise levels from the Federal Transit Administration (FTA) Transit Noise and Vibration Impact Assessment Manual (September 2018).

(2) Source: https://www.google.com/url?q=http://www.noisetesting.info/blog/warehouse-forklift-workplace-noise-levels/&sa=D&source=hangouts&ust=1545259247311000&usg=AFQjCNHFcKKoEKUjv5VZMOtw_KO977Em1A

(3) Distance to receptor calculated from center of site. Construction noise projected from the center of the project site to the structural façade of the nearest sensitive use.

Table B
Construction Noise by Phase - Receptor West of the Project Site (NM2)

A	B	C	D	E	F	G	H	I
Equipment Type	# of Equipment	Equipment Lmax at 50 feet, dBA[1, 2]	Distance to Receptor[3]	Equipment Usage Percent	Usage Factor	Dist. Correction dB	Usage Adj. dB	Noise Level Leq (dBA) at Receptor
Demolition								
Concrete/Industrial Saw	1	89.6	186	20	0.20	-11.4	-7.0	71.2
Rubber Tired Dozers	1	82	186	40	0.40	-11.4	-4.0	66.6
Tractors/Loaders/Backhoes	2	80	186	25	0.50	-11.4	-3.0	65.6
							Log Sum	73.3
Site Preparation								
Excavators	1	81	186	40	0.40	-11.4	-4.0	65.6
Tractors/Loaders/Backhoes	1	80	186	40	0.40	-11.4	-4.0	64.6
							Log Sum	68.1
Building Construction								
Cranes	1	81	186	16	0.16	-11.4	-8.0	61.6
Forklifts	2	64	186	50	1.00	-11.4	0.0	52.6
Tractors/Loaders/Backhoes	2	80	186	25	0.50	-11.4	-3.0	65.6
							Log Sum	67.2
Paving								
Pavers	1	77	186	50	0.50	-11.4	-3.0	62.6
Cement and Mortar Mixers	4	79	186	40	1.60	-11.4	2.0	69.6
Tractors/Loaders/Backhoes	1	80	186	25	0.25	-11.4	-6.0	62.6
Rollers	1	80	186	20	0.20	-11.4	-7.0	61.6
							Log Sum	71.5
Architectural Coating								
Air Compressors	1	78	186	40	0.40	-11.4	-4.0	62.6
							Log Sum	62.6

Notes:

(1) Source: Referenced noise levels from the Federal Transit Administration (FTA) Transit Noise and Vibration Impact Assessment Manual (September 2018).

(2) Source: https://www.google.com/url?q=http://www.noisetesting.info/blog/warehouse-forklift-workplace-noise-levels/&sa=D&source=hangouts&ust=1545259247311000&usg=AFQjCNHFcKKoEKUjv5VZMOtw_KO977Em1A

(3) Distance to receptor calculated from center of site. Construction noise projected from the center of the project site to the structural façade of the nearest sensitive use.

Table C
Construction Noise by Phase - Receptor South of the Project Site (NM3)

A	B	C	D	E	F	G	H	I
Equipment Type	# of Equipment	Equipment Lmax at 50 feet, dBA[1, 2]	Distance to Receptor[3]	Equipment Usage Percent	Usage Factor	Dist. Correction dB	Usage Adj. dB	Noise Level Leq (dBA) at Receptor
Demolition								
Concrete/Industrial Saw	1	89.6	254	20	0.20	-14.1	-7.0	68.5
Rubber Tired Dozers	1	82	254	40	0.40	-14.1	-4.0	63.9
Tractors/Loaders/Backhoes	2	80	254	25	0.50	-14.1	-3.0	62.9
							Log Sum	70.6
Site Preparation								
Excavators	1	81	254	40	0.40	-14.1	-4.0	62.9
Tractors/Loaders/Backhoes	1	80	254	40	0.40	-14.1	-4.0	61.9
							Log Sum	65.4
Building Construction								
Cranes	1	81	254	16	0.16	-14.1	-8.0	58.9
Forklifts	2	64	254	50	1.00	-14.1	0.0	49.9
Tractors/Loaders/Backhoes	2	80	254	25	0.50	-14.1	-3.0	62.9
							Log Sum	64.5
Paving								
Pavers	1	77	254	50	0.50	-14.1	-3.0	59.9
Cement and Mortar Mixers	4	79	254	40	1.60	-14.1	2.0	66.9
Tractors/Loaders/Backhoes	1	80	254	25	0.25	-14.1	-6.0	59.9
Rollers	1	80	254	20	0.20	-14.1	-7.0	58.9
							Log Sum	68.8
Architectural Coating								
Air Compressors	1	78	254	40	0.40	-14.1	-4.0	59.9
							Log Sum	59.9

Notes:

(1) Source: Referenced noise levels from the Federal Transit Administration (FTA) Transit Noise and Vibration Impact Assessment Manual (September 2018).

(2) Source: https://www.google.com/url?q=http://www.noisetesting.info/blog/warehouse-forklift-workplace-noise-levels/&sa=D&source=hangouts&ust=1545259247311000&usg=AFQjCNHFcKKoEKUjv5VZMOtw_KO977Em1A

(3) Distance to receptor calculated from center of site. Construction noise projected from the center of the project site to the structural façade of the nearest sensitive use.

NOISE CONTOUR WORKSHEET

(calculations based on the FHWA-RD-77-108 Highway Noise Prediction Model)

PROJECT INFORMATION

Project:	- -	**W.O. #:**	- -
City/County:	- -	**Date Entered:**	
Comments:	- -	**Entered By:**	- -

SITE INFORMATION

Planning Area(s):	- -	**Land Use(s):**	- -
Obs. Location:	(see below)	**Scenario:**	LOS 'C' Volumes

ROADWAY SEGMENT, VEHICULAR AND OBSERVER CHARACTERISTICS

Roadway:	"standard roadway"	**Roadway Class:**	- -
Segment:	- -	**Right of Way:**	- -
ADT:	10,000	**Travel Speed:**	40 MPH
Pad Elev. (opt.):	0.0 feet	**Obs. Height:**	5.0 feet
Roadway Elev.:	0.0 feet	**Roadway Grade:**	0.1%

	Required	Type	Height
Ext. Mitigation:	- -	- -	- -

	Left	Right	Total
Exposure:	90º	90º	180º

	Autos	Med Trucks	Heavy Trucks
Noise Height: (above roadway)	0.00 feet	2.30 feet	8.01 feet
Hard/Soft Site:	Hard	Hard	Hard

Veh. Distributio	Daytime	Evening	Nighttime	Daily
Automobiles	77.50%	12.90%	9.59%	97.42%
Medium Trucks	84.78%	4.89%	10.33%	1.84%
Heavy Trucks	86.49%	2.70%	10.81%	0.74%

Notes: Standard Road at 50 feet from the centerline

CALCULATED CNEL NOISE IMPACTS

Noise impact under various scenarios:

67.7
Exterior
Umitigated

Noise is a function of both speed and ADTs.
Since speed is assumed constant at 40 mph for this analysis, noise is a function of ADT only, and can be calculated by the following equation:

CNEL (dB) = 67.7 + 10 x log (ADT/10,000)

Table D Noise Levels 50 feet from Roadway Centerline*					
Road Segments	**Existing**		**Existing Plus Project**		
	ADT	**dB CNEL**	**ADT**	**Total**	**Project-Specific Increase**
St. John Avenue					
s/o California Blvd	14,200	69.2	14,380	69.3	0.1
Pasadena Avenue					
n/o California Blvd	26,960	72.0	27,310	72.1	0.1
Fair Oaks Avenue					
n/o Del Mar Blvd	6,040	65.5	6,130	65.6	0.1
n/o California Blvd	8,590	67.0	8,760	67.1	0.1
s/o California Blvd	11,000	68.1	11,430	68.3	0.2
n/o of Glenarm St	11,760	68.4	12,000	68.5	0.1
s/o of Glenarm St	11,780	68.4	11,870	68.4	0.0
Raymond Avenue					
n/o California Blvd	4,880	64.6	4,880	64.6	0.0
s/o California Blvd	4,180	63.9	4,530	64.3	0.4
n/o of Glenarm St	1,900	60.5	1,900	60.5	0.0
Arroyo Parkway					
n/o California Blvd	8,110	66.8	8,110	66.8	0.0
s/o California Blvd	9,340	67.4	9,520	67.5	0.1
Del Mar Boulevard					
w/o Fair Oaks Avenue	11,580	68.3	11,580	68.3	0.0
e/o Fair Oaks Avenue	7,650	66.5	7,740	66.6	0.1
California Boulevard					
w/o St. John Avenue	6,100	65.6	6,190	65.6	0.0
w/o Pasadena Avenue	3,170	62.7	3,430	63.1	0.4
w/o Fair Oaks Avenue	7,350	66.4	7,960	66.7	0.3
w/o Raymond Avenue	7,310	66.3	7,440	66.4	0.1
w/o Arroyo Pkwy	4,700	64.4	4,840	64.5	0.1
e/o Arroyo Pkwy	5,220	64.9	5,390	65.0	0.1
Glenarm Street					
w/o Fair Oaks Avenue	2,640	61.9	2,730	62.1	0.2
w/o Raymond Avenue	4,400	64.1	4,830	64.5	0.4
e/o Raymond Avenue	8,840	67.2	9,270	67.4	0.2

*The uniform distance of 50 feet allows for direct comparisons of potential increases or decreases in noise levels based upon various traffic scenarios; however, at this distance, no specific noise standard necessarily applies

APPENDIX D

TRANSPORTATION IMPACT ANALYSIS

CEQA EVALUATION

PASADENA
DEPARTMENT OF TRANSPORTATION

Transportation Impact Analysis

CEQA Evaluation

Project Address: 590 South Fair Oaks Avenue

Project Summary: The Department of Transportation received an application for the construction of a building with 79,800 sf medical office and 20,000 sf general office land uses with subterranean parking. Existing buildings on-site will be demolished.

Applicant:
590 Fair Oaks Development, LLC
303 South Union Avenue
First Floor
Los Angeles, CA 90017

Attention:
Luis Rocha, Zoning Administrator
City Planning Department

October 30, 2020

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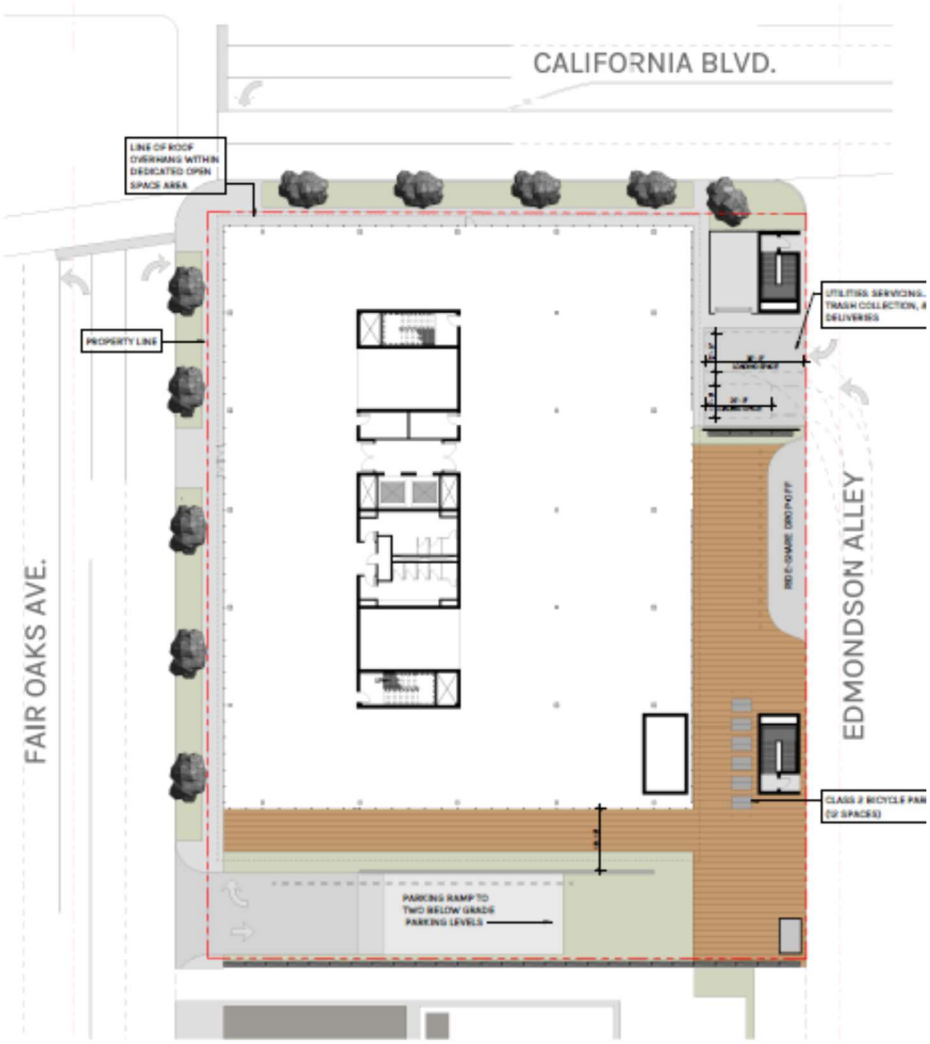
I. Study Objective

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 construction of a new 99,800 sf building with approximately 79,800 sf medical office and 20,000 sf general office land uses with subterranean parking. Parking garage access is off of Fair Oaks Avenue.

Figure 1. Project Level 1 Floor Plan



III. Existing Transportation Network

Street System Classifications

Pasadena Avenue is a multi-lane northbound **City Connector** with on-street parking on both sides of the roadway. It is also classified as Commercial – Suburban in the City's Street Design Guide.

Fair Oaks Avenue is a north/south **City Connector** with two through travel lanes in each direction and turn lanes at key intersections. It is also classified as Commercial – Urban between California Boulevard and Congress Street, Commercial – Suburban between Congress Street and Arlington Drive, and Commercial – Urban between Arlington Drive and Glenarm Street in the City's Street Design Guide. Fair Oaks Avenue has a speed limit of 35 mph. Parking is restricted along the project frontage. Parking access is along Fair Oaks Avenue.

Edmondson Alley is a north/south alley that provides local access to various land uses. It is 20' wide between California Boulevard and Pico Street.

Raymond Avenue is a **City Connector** between Del Mar Boulevard to Glenarm Street. Per the City's Street Design Guide, Raymond Avenue is classified as a Commercial – Suburban between Bellevue Drive and Glenarm Street.

Arroyo Parkway is a north/south **City Connector** between Colorado Boulevard to the SR-110 freeway. South of Colorado Boulevard, this street is also designated as a multimodal corridor with two through travel lanes provided in each direction. Arroyo Parkway is not designated as a bike lane or route.

Del Mar Boulevard is an east/west **City Connector** that generally offers two lanes in each direction. Del Mar Boulevard is designated as a Class III Bike Route between Saint John Avenue and Wilson Avenue, and a Class III Enhanced Bike Route east of Wilson Avenue.

California Boulevard is an east/west roadway designated as a **City Connector**. One through travel lane is provided west of Orange Grove Boulevard, two travel lanes are provided east of Orange Grove Boulevard to Lake Avenue, and one through travel lane per direction is provided east of Lake Avenue. California Boulevard is posted for a 30 mph speed limit within the project study area. California Boulevard is designated as a Class III Bike Route between Marengo Avenue and Lake Avenue, and a Class III Enhanced Bike Route between Lake Avenue and Allen Avenue.

Glenarm Street is an east/west oriented roadway that is classified as an **Access Road** between Pasadena Avenue to Fair Oaks Avenue, a **City Connector** between Fair Oaks Avenue to Arroyo Parkway, and a **Neighborhood Connector** between Arroyo Parkway to El Molino Avenue. Glenarm Street is designated as a Class III Bike Route between

Pasadena Avenue and Marengo Avenue, and a Class II Bike Lane east of Marengo Avenue.

Figure 2 depicts the project in the City of Pasadena's 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:

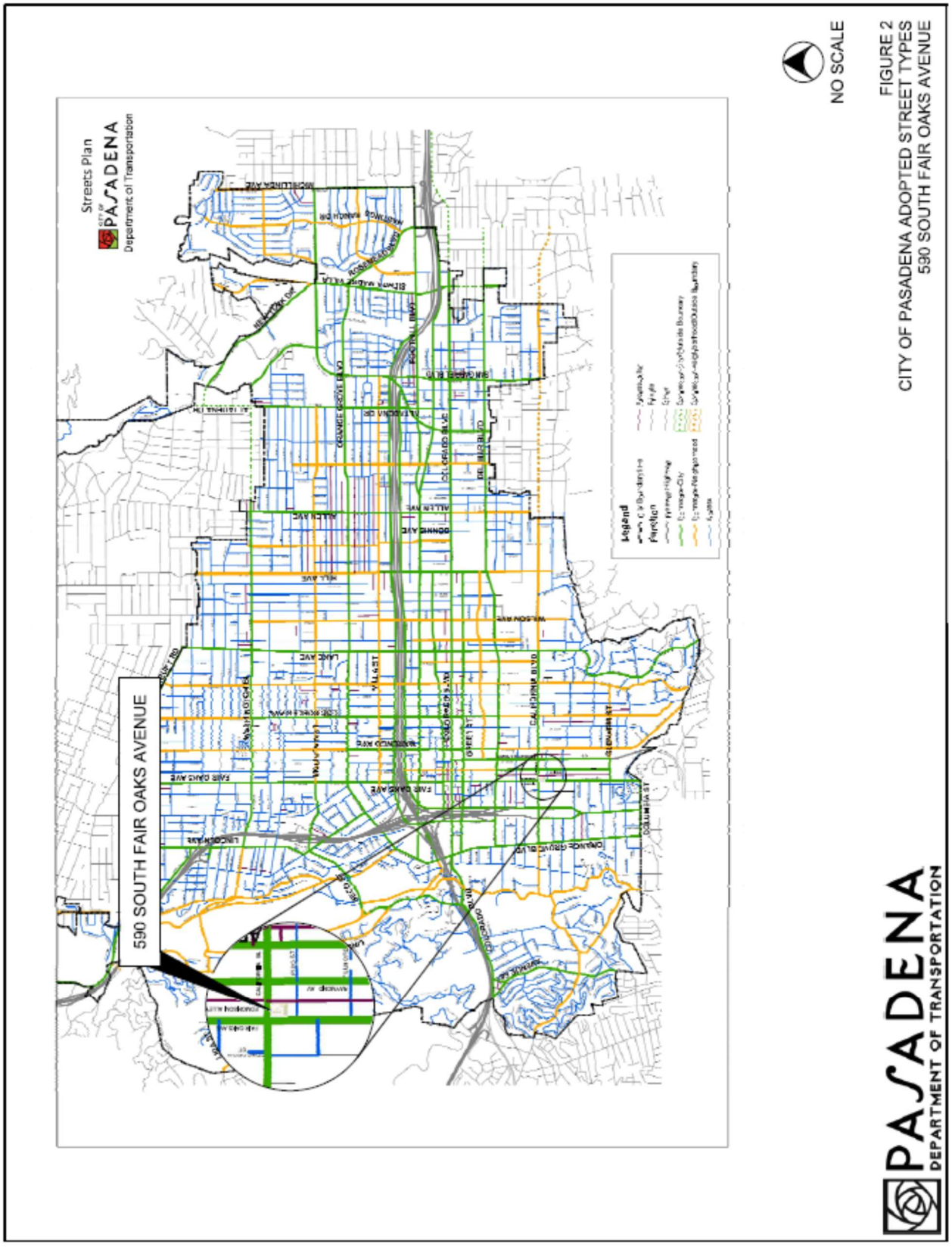
Location	**Route**
Fair Oaks Ave at California Blvd – Northeast side	PT 20; Metro 260, 762
Fair Oaks Ave at California Blvd – Southwest corner	PT 20, 51; Metro 260, 686, 687, 762
Fair Oaks Ave at California Blvd – Northwest corner – Southeast corner	Metro 256
Fair Oaks Avenue at Congress St – Southwest corner	PT 20, 51; Metro 260, 686, 687
Fair Oaks Ave at Congress St – Northeast side	PT 20; Metro 260
Fair Oaks Ave at Bellefontaine St – Northeast corner	PT 20; Metro 260
Fair Oaks Ave at Bellefontaine St – Southwest corner	PT 20, 51; Metro 260, 686, 687
Raymond Ave at Fillmore St – Northeast corner	PT 51,52; Metro 686, 687
Raymond Ave at Fillmore St – East side	Metro Gold Line Station

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.

Figure 2. City of Pasadena Adopted Street Types Map



- 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	20.7	No
VT per Capita	>2.8	2.1	No
Proximity and Quality of Bicycle Network	<31.7%	31.7	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 of the CEQA thresholds of significance.

VI. Conclusion

The City of Pasadena Department of Transportation conducted an analysis to review potential transportation impacts related to the construction of a new 99,800 sf building with approximately 79,800 sf medical office and 20,000 sf general office land uses with subterranean parking. Parking garage access is off of Fair Oaks Avenue.

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

VII. Appendices

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

Appendix:
Memorandum of Understanding

PASADENA PERMIT CENTER
www.cityofpasadena.net/permitcenter

PLN2020-00136
CUP# 6831

PLANNING DIVISION MASTER APPLICATION FORM

Project Address: 590 FAIR OAKS AVENUE, PASADENA, CA 91105

Project Name: 590 FAIR OAKS AVENUE MEDICAL OFFICE BUILDING

Project Description: (Please describe demolitions, alterations and any new construction)
NEW 99,800 SQUARE FOOT OFFICE BUILDING OF WHICH NOT MORE THAN 79,800 SQUARE FEET DEDICATED TO IN-PERSON PATIENT SERVING MEDICAL USES, IN ADDITION THE PROJECT WILL HAVE TWO LEVELS OF UNDERGROUND PARKING AND SITE IMPROVEMENTS INCLUDING SIDEWALKS AND IMPROVEMENTS TO THE ADJACENT EDMONSON ALLEY.THE PROGRAM WILL INCLUDE A TRANSPORTATION DEMAND MANAGEMENT PROGRAM APPROVED BY THE CITY.

Zoning Designation: IG (INDUSTRY, GENERAL) **General Plan Designation:** SP-2 (SOUTH FAIR OAKS SPECIFIC PLAN)

Valuation (Cost of Project):

APPLICANT / OWNER INFORMATION

APPLICANT NAME: 590 Fair Oaks Development, LLC
Telephone: [213] 550.7200
Address: 303 South Union Ave., First Floor
Fax: [213] 481.0014
City Los Angeles, State: CA Zip: 90017
Email: mohammed@mjislam.com

CONTACT PERSON: Richard Bruckner
Telephone: [626] 701.7911
Address: 1110 S 9th Ave.
Fax: [ ]
City Arcadia State: CA Zip: 91004
Email: rbruckner5354@gmail.com

PROPERTY OWNER NAME: Genesis FO Partners LLC
Telephone: [213] 550.7200
Address: 303 South Union Ave., First Floor
Fax: [213] 481.0114
City Los Angeles, State: CA Zip: 90017
Email: mohammed@mjislam.com

TYPE OF PLANNING REVIEW AND APPROVALS REQUIRED (Mark clearly the type of approval(s) required):

	ADJUSTMENT PERMIT	
	AFFORDABLE HOUSING CONCESSION OR WAIVER	
	CERTIFICATE OF APPROPRIATENESS	
	CERTIFICATE OF EXCEPTION	
	CHANGES TO APPROVED PROJECT	
✓	CONDITIONAL USE PERMIT	
✓	DESIGN REVIEW	
	DEVELOPMENT AGREMENT	
	EXPRESSIVE USE PERMIT	
	FLOOR AREA RATIO (FAR) INCREASE	
	GENERAL PLAN AMENDMENT	
	HEIGHT AVERAGING	
	HILLSIDE DEVELOPMENT PERMIT	
	HISTORIC DESIGNATION (MONUMENT, LANDMARK, TREE OR SIGN)	
	HISTORICAL RESEARCH/EVALUATION	
	LANDMARK TREE PRUNING	
	MASTER DEVELOPMENT PLAN	
✓	MASTER SIGN PLAN	
	MINOR CONDITIONAL USE PERMIT	
	MINOR VARIANCE	
	PLANNED DEVELOPMENT ZONE	
	PRELIMINARY PLAN CHECK	
✓	PREDEVELOPMENT PLAN REVIEW	
	RELIEF FROM THE REPLACEMENT BUILDING PERMIT REQUIREMENT	
	SIGN EXCEPTION	
	TENTATIVE PARCEL/TRACT MAP	
	TEMP. CONDITIONAL USE PERMIT	
	TREE PROTECTION PLAN REVIEW	
	TREE REMOVAL	
	VARIANCE	
	VARIANCE FOR HISTORIC RESOURCES	
✓	ZONE CHANGE (MAP AMENDMENT)	
	OTHER:	

Note: Space for signature is on reverse side

PLANNING DEPARTMENT // PLANNING DIVISION
175 NORTH GARFIELD AVENUE PASADENA, CA 91101
T 626-744-4009 F 626-744-4785

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

590 South Fair Oaks Avenue

VMT/Cap and VT/Cap Calculations Summary

Daily Trips	Internal	External
Internal	351,108	336,287
External	336,287	491,115

Pop	135,938
Emp	111,723
Ext. Factor	50%

FINAL REDUCED DAILY VMT BY SPEED BIN					EMFAC
Speed	**Internal**	**External**	**Regional**	**Total**	**INPUT**
5	110	0	1,743	1,853	0%
10	673	135	14,375	15,183	0%
15	4,140	1,352	45,930	51,422	1%
20	16,843	4,474	75,282	96,599	2%
25	98,020	12,647	150,391	261,058	5%
30	491,989	61,426	275,453	828,869	15%
35	819,596	139,899	320,602	1,280,098	23%
40	202,154	55,505	225,759	483,418	9%
45	135,999	105,057	169,622	410,678	7%
50	114,028	2,079	212,015	328,122	6%
55	94,161	7,981	229,595	331,738	6%
60	119,988	15,506	238,379	373,873	7%
65	323,787	20,503	181,259	525,549	9%
70	3,637	0	529,615	533,252	11%
75	0	0	77,370	77,370	
80	0	0	0	0	
85	0	0	0	0	
SUM	**2,425,127**	**426,564**	**2,747,390**	**5,599,081**	**100%**

TOTAL RAW DAILY SUMMARY					
Metric	**Internal**	**External**	**Regional**	**Total**	**Capita**
VMT	2,425,127	853,128	5,494,780	8,773,035	35.4
VT	351,108	672,574	-	1,023,682	4.1
Length	6.9	1.3	-	8.6	-

REDUCED DAILY SUMMARY					
Metric	**Internal**	**External**	**Regional**	**Total**	**Capita**
VMT	2,425,127	426,564	2,747,390	5,599,081	22.6
VT	351,108	336,287	-	687,395	2.8
Length	6.9	1.3	-	8.1	-

FINAL DAILY SCENARIO SUMMARY					
Pop	**Emp**	**VMT**	**VT**	**VMT/Cap**	**VT/Cap**
135,938	111,723	5,599,081	687,395	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**
0	375	7,753	776	20.7	2.1
				PASS	PASS

590 South Fair Oaks Avenue

Proximity and Quality Metric Calculations Summary

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	0	78,415	31.7%
Level 3	123,670	375.0954092	124,045	50.1%
No Facility	45,202	0	45,202	18.3%
Exist City Total	247,286	375.0954092	247,662	100.0%

Proximity and Quality Metric Summary - Bicycle

Network	Service Population Adjustment	Significant Impact Threshold	Service Population %	Impact?
Bike	375.0954092	< 31.7%	31.7%	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	375.0954092	90,975	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	375.0954092	247,662	100.0%

Proximity and Quality Metric Summary - Transit

Network	Service Population Adjustment	Significant Impact Threshold	Service Population %	Impact?
Transit	375.0954092	< 66.6%	66.7%	No

590 South Fair Oaks Avenue

Pedestrian Accessibility Summary

				Weighted Average:	**3.851519829**
PasadenaDTATAZ	Land Use Types	Population_In_TAZ	Employment_In_TAZ	Service_Population	Land Use Types