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MEMORANDUM

DATE: September 29, 2022

TO: Alexis Oropeza, Current Planning Officer

FROM: Ashley Davis, Principal

SUBJECT: Class 3 Categorical Exemption for the Proposed Medical Building at 2600 California Avenue in the City of Long Beach, Los Angeles County, California

LSA is pleased to submit this memorandum in consideration of a Class 3 Categorical Exemption for the proposed Medical Building at 2600 California Avenue (project) in the City of Long Beach, Los Angeles County, California.

PROJECT DESCRIPTION

Existing Project Site

As shown in Figure 1 (all figures are provided in Attachment A), the project site is located at 2600 California Avenue in City of Long Beach. The 0.72-acre (31,375 square foot [sf]) project site is long and rectangular shaped located on the northeast corner of California Avenue and East Willow Street The project site consists of Assessor's Parcel Number (APN) 7212-009-017. The project site is currently developed with a surface parking lot, a small open space area with walking path, and associated landscaping. The project site is generally flat in elevation. In the project site's existing condition, vehicular access is provided via two one-way driveways on California Avenue.

The project site is surrounded by a mixture of open space, office, and retail uses. The project site is bounded to the east by a cemetery, to the north by an urban farm, to the west by California Avenue and office uses, and to the south by East Willow Street and retail uses. Regional access to the project site is provided by Interstates 405 (I-405) and 710 (I-710), which are located approximately 0.6 miles north and 1.5 miles west of the project site, respectively. Local access to the project site is provided by California Avenue and East Willow Street.

Proposed Project

The proposed project would construct an approximately 3,000 sf single story medical commercial building located on the northern half of the project site. Figure 2, Conceptual Site Plan, provides an overview of the proposed site plan, including the location of the proposed building, parking areas, trash enclosure, transformer, and associated landscaping. The project site is a long and narrow rectangular shape. The propose building would be bordered to the north and south by surface parking. As shown in Figure 3, physical development would be restricted to the northern portion of the project site. The southern portion of the project site includes existing parking and associated landscaping. This portion of the project site would not include physical development besides the placement of the proposed transformer and restriping of existing parking spaces. The proposed transformer would be located immediately south of the building's exterior on the southeast corner.

A trash enclosure, 8 ft in height, would be included on the northeastern corner of the project site. The trash enclosure would include a concrete tilt up roof along with swinging gates and a roof.

Zoning and General Plan Land Use Designations

The project site has a current General Plan PlaceType designation of Open Space. The proposed project would require a General Plan Amendment to change the PlaceType designation to Neo-Industrial (NI). The NI PlaceType designation permits land uses associated with offices. According to the City's Zoning Map, the project site is currently zoned for Institutional Use (I). The proposed project would be consistent with the project sites current zoning designation as permitted uses in the Institutional Zoning District include medical buildings and complexes.

The proposed project would have a Floor Area Ratio (FAR) of .936, which would be consistent with the project site's proposed General Plan PlaceType designation (Neo-Industrial) FAR (minimum of 0.5 and maximum of 1.0).

Parking

The proposed project would include 61 parking spaces in total, 49 of which are maintained as off-site parking for the office building located at 999 E. Willow Street, which is located in the City of Signal Hill across California Avenue. Of the 12 new spaces required for the proposed project, the following would be supplied: one van-accessible space, one electric vehicle (EV) van-accessible space, two EV charging station spaces, and two carpool/vanpool spaces. Of the 49 existing spaces 13 would be EV designated spaces, and 4 would be carpool/vanpool spaces. The project site is divided into the northern portion that includes proposed physical development and the southern portion that would not include physical development. The southern portion of the project site includes existing parking, lighting, and landscaping that would not be physically altered. The only improvements applied to the existing parking would be the designation of 13 existing parking spaces to EV capable spaces and the designation of 4 existing spaces to "vanpool or carpool". The proposed project would include 4 bicycle parking stalls.

Building Design

The proposed building would have a total floor area of approximately 3,000 sf and would have a building footprint of 9.64% of the total project site (31,275 sf). The overall height of the medical office building is proposed to a maximum of 24 ft 8 inches. The building entrance would be provided at the northwest corner and would be ADA accessible. The proposed building windows would be a dual pane storefront system, with 65% visible light transmittance.

Lighting

The proposed project includes minimal parking lot lighting as required by the Chapter 21 Section 41.259 of the Zoning Regulations (Title 21 of the Long Beach Municipal Code). One proposed lighting pole would be included in the parking lot north of the proposed building along the eastern project site boundary. This lighting fixture would include glare shields to direct light downwards and avoid light intrusion onto adjacent properties. There are currently 11 existing parking lot lighting poles in the parking area south of the proposed building which would be kept in place by the proposed project. Lighting fixtures would be included at all exits and entrances.

Landscaping

The landscaping for the proposed project would include approximately 20 percent of the total project site. Proposed plant materials would be low to moderate water plantings and would match the existing landscaping included in the existing parking area in the southern portion of the project site. The proposed project would include planting of 5 new trees and 41 shrubs. Approximately 30 percent of the landscaping would be within a medium water zone and 70 percent would be within a low water zone. The proposed project would be serviced with drip irrigation in order to reduce runoff. In accordance with the Chapter 21.42 of the Zoning Regulations, the proposed landscaping and irrigation for the proposed project would incorporate the Best Management Practices within the Model Water Efficient Landscape Ordinance and the Maximum Allowable Water Allowance.

Site Access

Vehicular access would be provided by two driveways on the west side of the project site. The project site would also include an exit-only driveway onto California Avenue, with a right-turn only restriction.

Infrastructure Improvements

The proposed project would use existing electricity, water, and sewer lines and connections in California Avenue. As part of the project, new electricity, water, and sewer infrastructure would be constructed within the project site to connect the proposed buildings to the existing main lines. The proposed project includes a proposed 6-inch sewer line connection to the main 15-inch sewer line located in California Avenue. Additionally, the proposed project would include a 2-inch domestic service connection to the domestic water supply located in California Avenue. A 12 ft-wide Los Angeles County Flood Control District easement is located along the northern-most boundary of the project site.

Construction and Grading

Development of the proposed project would require excavation and grading of the site; delivery of materials and personnel; construction of the building area and proposed parking lot; and landscaping of the project site. Construction of the proposed project is anticipated to commence in 2023 and take approximately 6 months. It is anticipated that an average of 8 construction workers onsite per day.

Based on the preliminary grading plans, approximately 350 cubic yards would be exported from the project site. Demolition, grading, and building activities would involve the use of standard construction equipment such as scissor lifts, grading equipment, water truck, street sweeper, large forklift, standard trade trucks.

Discretionary Actions, Permits, and Other Approvals

In accordance with Sections 15050 and 15367 of the *State CEQA Guidelines*, the City is the designated Lead Agency for the proposed project and has principal authority and jurisdiction for CEQA actions and project approval. Responsible Agencies are those agencies that have jurisdiction or authority over one or more aspects associated with the development of a proposed project and/or mitigation. Trustee Agencies are State agencies that have jurisdiction by law over natural resources affected by a proposed project.

The discretionary actions to be considered by the City as a part of the proposed project include:

- Approval of the CE;
- Site Plan Review; and
- A General Plan Amendment to change the PlaceType designation for the project site to Neo-Industrial (NI).

CALIFORNIA ENVIRONMENTAL QUALITY ACT

Class 3 Categorical Exemption: New Construction or Conversion of Small Structures

Under *State CEQA Guidelines* Section 15303, a Class 3 CE is applicable to projects that include construction and location of limited numbers of new, small facilities or structures; installation of small new equipment and facilities in small structures; and the conversion of existing small structures from one use to another where only minor modifications are made in the exterior of the structure. The numbers of structures described in this section are the maximum allowable on any legal parcel but cannot involve the use of significant amounts of hazardous substances. A Class 3 CE allows for the construction and operation of projects including but not limited to the following:

a. One single-family residence, or a second dwelling unit in a residential zone. In urbanized areas, up to three single-family residences may be constructed or converted under this exemption.

b. A duplex or similar multi-family residential structure totaling no more than four dwelling units. In urbanized areas, this exemption applies to apartments, duplexes, and similar structures designed for not more than six dwelling units.

c. A store, motel, office, restaurant, or similar structure not involving the use of significant amounts of hazardous substances, and not exceeding 2500 sf in floor area. In urbanized areas, the exemption also applies to up to four such commercial buildings not exceeding 10,000 sf in floor area on sites zoned for such use if not involving the use of significant amounts of hazardous substances where all necessary public services and facilities are available, and the surrounding area is not environmentally sensitive.

d. Water main, sewage, electrical, gas, and other utility extensions, including street improvements, of reasonable length to serve such construction.

e. Accessory (appurtenant) structures including garages, carports, patios, swimming pools, and fences.

f. An accessory steam sterilization unit for the treatment of medical waste at a facility occupied by a medical waste generator, provided that the unit is installed and operated in accordance with the Medical Waste Management Act (Section 117600, et seq., of the California Health and Safety Code) and accepts no off-site waste.

QUALIFICATION OF THE PROPOSED PROJECT

As the proposed project does not include any residential uses, accessory residential structures, or an accessory steam sterilization unit, subsections (a), (b), (d), (e), and (f) are not applicable to the proposed project. Under subsection (c) of Section 15303, the proposed project qualifies for a Class 3

CE because it is a commercial office building in an urbanized area and would be less than 10,000 sf. A Class 3 CE requires that the proposed project does not involve the use of significant amounts of hazardous substances. The proposed medical building may use small amounts of hazardous substances associated with the common medical uses but would not require a significant amount of hazardous substances. The proposed project would be consistent with the project site's current zoning designation as permitted uses in the Institutional Zoning District include medical buildings and complexes. The project would not have any significant impacts related to traffic, noise, air quality, and water quality as discussed in the following sections. Therefore, the proposed project would be consistent with subsection (c) of Section 15303 and qualifies for a Class 3 CE.

Traffic

A *Traffic Analysis for Medical Building Project at 2600 California Avenue* (LSA, August 2022) (Attachment B) was prepared to identify the trip generation and potential vehicle miles traveled (VMT) impacts associated with the proposed project.

Trip Generation

The proposed project would not alter regional traffic patterns because existing surface parking spaces are being retained. New traffic generated by the proposed project was calculated using the Institute of Transportation Engineers' (ITE) *Trip Generation Manual*, 11th Edition.[1] Table A, below, presents the trip generation summary for the project. As Table A indicates, the proposed project is anticipated to generate 108 average daily trips (ADT), including 9 trips in the a.m. peak hour and 12 trips in the p.m. peak hour.

Table A: Project Trip Generation

Land Use	Size	Unit	ADT	AM Peak Hour			PM Peak Hour		
				In	Out	Total	In	Out	Total
Trip Rates[1]									
Medical-Dental Office		TSF	36.00	2.45	0.65	3.10	1.18	2.75	3.93
Project Trip Generation									
Medical Office Building	3.000	TSF	108	7	2	9	4	8	12

[1] Trip rates from the Institute of Transportation Engineers' (ITE) *Trip Generation* Manual, 11th Edition (2021). Land Use Code (720) – Medical-Dental Office Building

ADT = average daily trips

TSF = thousand square feet

The *City of Long Beach Traffic Impact Analysis Guidelines* (June 2020) establish thresholds for analysis of a project's vehicle level of service impacts. A project's study area is determined by the facilities at which the project adds 50 or more peak-hour trips. Below this threshold, a project's traffic impact on intersection performance is expected to be below the significance threshold. Based on the trip generation shown in Table A, the project would generate 12 or fewer trips per hour, which is well below the study area threshold. Therefore, the project would have a less than significant impact on vehicle level of service.

[1] Institute of Transportation Engineers (ITE). 2021. *Trip Generation Manual,* 11th Edition.

Vehicle Miles Traveled Analysis

As a result of Senate Bill (SB) 743, the California Office of Administrative Law cleared the revised *State CEQA Guidelines* for use on December 28, 2018. Concurrent with the revised *State CEQA Guidelines*, the Governor's Office of Planning and Research released the *Technical Advisory on Evaluating Transportation Impacts in CEQA* (December 2018). As currently adopted, the *State CEQA Guidelines* indicate that VMT generated by a land use project is generally the most appropriate measure of transportation impacts. The *City of Long Beach Traffic Impact Analysis Guidelines* (June 2020) establish screening thresholds, analysis methodology, and significance thresholds for VMT analyses in Long Beach.

Both the City guidelines and the State's Technical Advisory provide screening thresholds for small projects. The City guidelines screen out projects generating fewer than 500 daily trips as the greenhouse gas emissions resulting from this level of vehicle traffic would be less than comparable to greenhouse gas emissions thresholds. The State's Technical Advisory recommends that development with fewer than 110 daily trips be presumed to have a less than significant impact because projects with this level of traffic are likely to fit the criteria established for a categorical exemption for CEQA analysis.

Based on the trip generation shown in Table A, the project would generate 108 daily trips, which is below the screening thresholds described above. Therefore, the project is presumed to have a less than significant impact on VMT.

Noise

The *Noise and Vibration Impact Analysis for the Medical Office Building Project at 2600 California Avenue* (Noise and Vibration Impact Analysis) (LSA, August 2022) prepared for the proposed project is provided in Attachment C.

Construction Noise Impacts

Two types of short-term noise impacts would occur during project construction, including: (1) equipment delivery and construction worker commutes; and (2) project construction activities.

The first type of short-term construction noise would result from transport of construction equipment and materials to the project site and construction worker commutes. These transportation activities would incrementally raise noise levels on access roads leading to the site. It is expected that larger trucks used in equipment delivery would generate higher noise impacts than trucks associated with worker commutes. The single-event noise from equipment trucks passing at a distance of 50 ft from a sensitive noise receptor would reach a maximum level of 84 dBA L_{max}. However, the pieces of heavy equipment for grading and construction activities would be moved on site only one time and would remain on site for the duration of each construction phase. This one-time trip, when heavy construction equipment is moved on and off site, would not significantly add to the traffic noise experienced over a 24-hour period in the project vicinity. The total number of daily vehicle trips would be minimal when compared to existing traffic volumes on the affected streets, and the long-term noise level change associated with these trips would not be perceptible. Therefore, equipment transport noise and construction-related worker commute impacts would be short-term and would not result in a significant off-site noise impact.

The second type of short-term noise impact is related to noise generated during site preparation, grading, building construction, architectural coating, and paving on the project site. Construction is undertaken in discrete steps, each of which has its own mix of equipment, and consequently its own noise characteristics. These various sequential phases would change the character of the noise generated on the project site. Therefore, the noise levels vary as construction progresses. Despite the variety in the type and size of construction equipment, similarities in the dominant noise sources and patterns of operation allow construction-related noise ranges to be categorized by work phase. Table B lists the maximum noise levels recommended for noise impact assessments for typical construction equipment based on a distance of 50 ft between the equipment and a noise receptor. Typical operating cycles for these types of construction equipment may involve 1 to 2 minutes of full power operation followed by 3 to 4 minutes at lower power settings.

Table B: Typical Construction Equipment Noise Levels

Equipment Description	Acoustical Usage Factor (%)[1]	Maximum Noise Level (L_{max}) at 50 Ft[2]
Backhoes	40	80
Compactor (ground)	20	80
Compressor	40	80
Cranes	16	85
Dozers	40	85
Dump Trucks	40	84
Excavators	40	85
Flat Bed Trucks	40	84
Forklift	20	85
Front-end Loaders	40	80
Graders	40	85
Impact Pile Drivers	20	95
Jackhammers	20	85
Pick-up Truck	40	55
Pneumatic Tools	50	85
Pumps	50	77
Rock Drills	20	85
Rollers	20	85
Scrapers	40	85
Tractors	40	84
Welder	40	73

Source: Roadway Construction Noise Model (FHWA 2006).
Note: Noise levels reported in this table are rounded to the nearest whole number.
[1] The usage factor is the percentage of time during a construction noise operation that a piece of construction equipment is operating at full power.
[2] The maximum noise levels were developed based on Specification 721.560 from the Central Artery/Tunnel (CA/T) program to be consistent with the City of Boston's Noise Code for the "Big Dig" project.
CA/T = Central Artery/Tunnel
FHWA = Federal Highway Administration
ft = foot/feet
L_{max} = maximum instantaneous noise level

The project construction composite noise levels at a distance of 50 ft would range from 74 dBA L_{eq} to 85 dBA L_{eq} based on a 40 percent usage factor, with the highest noise levels occurring during the grading phase.

Construction noise levels will fluctuate throughout the construction period as equipment moves between the various areas on the project site. In order to assess the specific noise levels at the surrounding receptors, the average noise level experienced during construction was assessed based

on the average distance of activities to the surrounding receptors that would be approximately 185 ft from the property line of the existing Long Beach Islamic Center to the northwest and approximately 30 ft from the property line of the existing sensitive Sunnyside Cemetery to the east. At the estimated distances, construction noise levels experienced would be 73.0 dBA and 78.0 dBA for the Islamic center and the cemetery, respectively.

Although the project construction noise would be higher than the ambient noise in the project vicinity, it would cease to occur once the project construction is completed. The proposed project would comply with the requirements of the City of Long Beach Noise Ordinance, which states that construction activities shall only occur between the hours of 7:00 a.m. to 7:00 p.m., Monday through Friday and federal holidays; or between 9:00 a.m. to 6:00 p.m. on Saturdays. Construction shall not occur on Sundays. Additionally, construction noise levels on average are expected to be below the FTA's recommended 90 dBA L_{eq} standard. Compliance with the Noise Ordinance would ensure that construction noise does not disturb surrounding receptors during hours when ambient noise levels are likely to be lower (i.e., at night). In addition, the proposed project would implement several best practices for reducing construction noise, including, but not limited to, maximizing the distance between noise sources and sensitive receptors during construction activities, and equipping construction equipment with properly operating and maintained noise mufflers. In conclusion, construction noise would be reduced to a less than significant level with compliance with the Title 21 of the Long Beach Municipal Code. allowable construction hours, and incorporation of the recommended best business practices.

Construction Vibration Impacts

Ground-borne noise and vibration from construction activity would be mostly low to moderate. While there is currently limited information regarding vibration source levels, to provide a comparison of vibration levels expected for a project of this size, a small bulldozer and loaded truck, as shown in Table C would generate approximately 0.003 in/sec in PPV and 0.076 in/sec in PPV, respectively, of ground-borne vibration when measured at 25 ft. Table D further shows the PPV values from other construction vibration sources at 25 ft from construction vibration sources for comparison purposes.

Table C: Vibration Source Amplitudes for Construction Equipment

Equipment	Reference Level at 25 ft PPV (in/sec)
Vibratory Roller	0.210
Large Bulldozer / Caisson Drilling	0.089
Loaded Trucks	0.076
Jackhammer	0.035
Small Bulldozer	0.003

Source: *Transit Noise and Vibration Impact Assessment Manual* (FTA 2018).
FTA = Federal Transit Administration
ft = foot/feet
PPV = peak particle velocity
in/sec = inches per second

Table D: Construction Vibration Damage Criteria

Building Category	PPV (in/sec)
Reinforced concrete, steel, or timber (no plaster)	0.50
Engineered concrete and masonry (no plaster)	0.30
Non-engineered timber and masonry buildings	0.20
Buildings extremely susceptible to vibration damage	0.12

Source: *Transit Noise and Vibration Impact Assessment Manual* (FTA 2018).
FTA = Federal Transit Administration
in/sec = inches per second
PPV = peak particle velocity

The distance to the nearest buildings for vibration impact analysis is measured between the nearest off-site buildings and the project boundary (assuming the construction equipment would be used at or near the project boundary) because vibration impacts occur at the buildings.

As shown in Table D, vibration levels exceeding 0.5 in/sec in PPV would result in building damage to structures constructed of non-engineered timber and masonry buildings. The closest receptor to the proposed construction activities is the existing Long Beach Islamic Center at 995 E 27th Street, Signal Hill, which is located 160 ft northwest of the boundary of the proposed project.

Utilizing the equations above, it is expected that vibration levels generated by dump trucks and other large equipment that would be as close as approximately 160 ft would approach 0.005 in/sec in PPV, which would be below the 0.2 PPV in/sec threshold. Therefore, no construction vibration impacts would occur. No vibration reduction measures are required.

Long-Term Traffic Noise Impacts

In order to assess the potential traffic impacts related to the proposed project, LSA prepared the *Traffic Analysis for Medical Building Project at 2600 California Avenue in Long Beach, California* (2022). Based on the traffic analysis results, it was determined that a net additional 108 average daily trips (ADT) would be generated by the proposed project. The existing traffic volume on the adjacent segment of East Willow Street from Atlantic Avenue to Cherry Avenue is 29,350 (Southern California Association of Governments [SCAG] 2017). With an increase of 108 ADT, the noise level increase would be less than 0.1 dBA CNEL. A noise level increase of less than 1 dBA would not be perceptible to the human ear; therefore, the traffic noise increase along East Willow Street resulting from the project would be less than significant.

Long-Term Stationary Noise Impacts

The proposed project would include mechanical equipment related to heating, ventilation, and air conditioning (HVAC) equipment which could operate 24 hours per day. Rooftop HVAC would generate noise levels of 66.6 dBA L_{eq} at 5 ft per HVAC unit based on previous measurements conducted by LSA. Based on the site plan, two HVAC units will be installed and would generate noise levels of 69.6 dBA L_{eq} at 5 ft. Table E presents the noise levels from HVAC equipment at the nearest noise-sensitive location.

Table E: Summary of HVAC Noise Levels

Off-Site Land Use	Direction	Distance from HVAC Units (ft)[1]	Reference Noise Level (dBA L_{eq}) at 5 ft[2]	Distance Attenuation (dBA)	Average Noise Level (dBA L_{eq})
Long Beach Islamic Center	Northwest	185	69.6	31.4	38.2
Cemetery	East	30	69.6	15.6	54.0

Source: Compiled by LSA (2022).
[1] Distances are measured from the property line of the receiving land use to the closest source of HVAC noise.
[2] Reference noise levels are associated with an assumption of 2 HVAC units.
dBA = A-weighted decibels
ft = foot/feet
HVAC = heating, ventilation, and air conditioning
L_{eq} = equivalent continuous sound level

With two HVAC units installed, noise generated from on-site HVAC equipment would potentially reach up to 38.2 dBA L_{eq} at the Long Beach Islamic Center, which would not exceed the City of Signal Hill's daytime and nighttime noise level standards of 65.0 dBA L_{eq} and 60.0 dBA L_{eq}, respectively. In addition, noise levels to the adjacent cemetery to the east would approach 54.0 dBA L_{eq}, which would be below the exterior noise level standard of 70 dBA L_{eq} for District Four land uses. In addition, on-site HVAC equipment would be shielded by a parapet and roofline that would provide a further noise level reduction. Therefore, long-term stationary noise impacts from the project would be less than significant.

Long-Term Ground-Borne Noise and Vibration from Vehicular Traffic

Vibration levels generated from project-related traffic are unusual for on-road vehicles because the rubber tires and suspension systems of on-road vehicles provide vibration isolation. Therefore, project-related vehicular traffic on adjacent roadways (California Avenue and East Willow Street) would not result in significant ground-borne noise or vibration impacts.

Land Use Compatibility Analysis

The proposed project would not contain any sensitive outdoor use areas. Therefore, this analysis focuses on the potential interior noise impacts, as described below.

The project proposes a form of air conditioning that would allow windows to remain closed. Exterior noise levels associated with traffic noise along California Avenue at the nearest façade have the potential to approach 71 dBA CNEL, requiring a minimum reduction of 26 dBA to meet 45 dBA CNEL. The current elevation within the project plans shows that the majority of each façade would be composed of glass. Based on specifications provided, the project would install dual glazed, Solarban 90 glazing. This assembly is made up of two approximately 0.25-inch glass panels separated by a 0.5-inch air space. Typically, this glazing construction would result in a Sound Transmission Class (STC) rating of 35 and Outdoor to Indoor Transmission Coefficient (OITC) of 28 based on specifications of similar glass panels (Vitro Architectural Glass). A minimum noise reduction of 28 dBA would be expected, resulting in an interior noise level of 43 dBA CNEL, which is below the 45 dBA threshold. Therefore, the proposed project would not conflict with any surrounding land uses and no land use impact would occur.

Air Quality

The *Air Quality and Greenhouse Gas Technical Memorandum for the Medical Office Building Project at 2600 California Avenue* (LSA, August 2022) prepared for the proposed project is provided in Attachment D.

The project site is in the South Coast Air Basin (Basin). Air quality in the Basin is under the jurisdiction of the South Coast Air Quality Management District (SCAQMD). The California Emissions Estimator Model (CalEEMod) was used to calculate emissions from construction and operation of the proposed project.

Construction Emissions

During construction, short-term degradation of air quality may occur due to the release of particulate matter emissions (i.e., fugitive dust) generated by grading, building construction, paving, and other activities. Emissions from construction equipment are also anticipated and would include carbon monoxide (CO), nitrogen oxides (NOx), volatile organic compounds (VOCs), directly emitted particulate matter less than 2.5 microns in size ($PM_{2.5}$) or particulate matter less than 10 microns in size (PM_{10}), and toxic air contaminants such as diesel exhaust particulate matter.

Project construction activities would include grading, site preparation, building construction, architectural coating, and paving activities. Construction-related effects on air quality from the proposed project would be greatest during the site preparation phase due to the disturbance of soils. If not properly controlled, these activities would temporarily generate particulate emissions. Sources of fugitive dust would include disturbed soils at the construction site. Unless properly controlled, vehicles leaving the site would deposit dirt and mud on local streets, which could be an additional source of airborne dust after it dries. PM_{10} emissions would vary from day to day, depending on the nature and magnitude of construction activity and local weather conditions. PM10 emissions would depend on soil moisture, silt content of soil, wind speed, and amount of operating equipment. Larger dust particles would settle near the source, whereas fine particles would be dispersed over greater distances from the construction site.

Water or other soil stabilizers can be used to control dust, resulting in emission reductions of 50 percent or more. SCAQMD has established Rule 403: Fugitive Dust, which would require the Applicant to implement measures that would reduce the amount of particulate matter generated during the construction period. The Rule 403 measures that were incorporated in this analysis include:

- Water active sites at least three times daily (locations where grading is to occur shall be thoroughly watered prior to earthmoving).

- Cover all trucks hauling dirt, sand, soil, or other loose materials, or maintain at least 2 feet (ft) (0.6 meter) of freeboard (vertical space between the top of the load and the top of the trailer) in accordance with the requirements of California Vehicle Code Section 23114.

- Reduce traffic speeds on all unpaved roads to 15 miles per hour or less.

In addition to dust-related PM_{10} emissions, heavy trucks and construction equipment powered by gasoline and diesel engines would generate CO, sulfur oxides (SOx), NOx, VOCs and some soot particulate ($PM_{2.5}$ and PM_{10}) in exhaust emissions. If construction activities were to increase traffic congestion in the area, CO and other emissions from traffic would increase slightly while those vehicles idle in traffic. These emissions would be temporary in nature and limited to the immediate area surrounding the construction site.

Construction emissions were estimated for the project using CalEEMod and summarized in Table F.

Table F: Short-Term Regional Construction Emissions

	Maximum Daily Regional Pollutant Emissions (lbs/day)							
Construction Phase	**VOC**	**NO_X**	**CO**	**SO_X**	**Fugitive PM_{10}**	**Exhaust PM_{10}**	**Fugitive $PM_{2.5}$**	**Exhaust $PM_{2.5}$**
Site Preparation	0.3	8.6	6.0	<0.1	0.3	0.2	<0.1	0.2
Grading	0.5	15.1	9.1	<0.1	2.9	0.3	1.3	0.3
Building Construction	0.5	10.9	8.5	<0.1	0.2	0.4	<0.1	0.4
Paving	0.7	8.4	7.5	<0.1	0.2	0.3	0.1	0.3
Architectural Coating	7.0	2.4	1.9	<0.1	<0.1	<0.1	<0.1	0.1
Peak Daily Emissions	**7.5**	**15.1**	**10.4**	**<0.1**	**3.2**		**1.6**	
SCAQMD Threshold	**75.0**	**100.0**	**550.0**	**150.0**	**150.0**		**55.0**	
Significant?	**No**	**No**	**No**	**No**	**No**		**No**	

Source: Compiled by LSA (May 2022).
Note = Values may not appear to add up correctly due to rounding.
CO = carbon monoxide
lbs/day = pounds per day
NO+ = nitrogen oxides
$PM_{2.5}$ = particulate matter less than 2.5 microns in size
PM_{10} = particulate matter less than 10 microns in size
SCAQMD = South Coast Air Quality Management District
SO+ = sulfur oxides
VOC = volatile organic compounds

The results shown in Table F indicate the proposed project would not exceed the significance criteria for daily VOCs, NO_x, CO, SO_x, PM_{10}, or $PM_{2.5}$ emissions. Therefore, construction of the proposed project would not result in a cumulatively considerable net increase of any criteria pollutant for which the project region is in nonattainment under an applicable federal or State ambient air quality standards (AAQS).

Operational Air Quality Impacts

Long-term air pollutant emissions associated with operation of the proposed project include emissions from area, energy, and mobile sources. Area-source emissions include architectural coatings, consumer products, and landscaping. Energy-source emissions result from activities in buildings that use electricity and natural gas. Mobile-source emissions are from vehicle trips associated with operation of the project. Area-source emissions consist of direct sources of air emissions at the project site, including architectural coatings, consumer products, and use of landscape maintenance equipment. PM_{10} emissions result from running exhaust, tire and brake wear, and the entrainment of dust into the atmosphere from vehicles traveling on paved roadways. Entrainment of PM_{10} occurs when vehicle tires pulverize small rocks and pavement and the vehicle wakes generate airborne dust. The contribution of tire and brake wear is small compared to the other PM emission processes. Gasoline-powered engines have small rates of particulate matter emissions compared with diesel-powered vehicles.

Energy-source emissions result from activities in buildings that use electricity and natural gas. The quantity of emissions is the product of usage intensity (i.e., the amount of electricity or natural gas) and the emission factor of the fuel source. The primary sources of energy demand for the proposed project would include building mechanical systems such as heating and air conditioning, lighting, and plug-in electronics, such as refrigerators or computers. Greater building or appliance efficiency reduces the amount of energy for a given activity and thus lowers the resultant emissions. The emission factor is determined by the fuel source, with cleaner energy sources, like renewable energy, producing fewer emissions than conventional sources.

Long-term operational emissions associated with the proposed project were calculated using CalEEMod. Table G provides the proposed project's estimated operational emissions.

Table G: Project Operational Emissions

Emission Type	Pollutant Emissions (lbs/day)					
	VOC	NO_X	CO	SO_X	PM_{10}	$PM_{2.5}$
Area Sources	0.1	<0.1	<0.1	0.0	<0.1	<0.1
Energy Sources	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Mobile Sources	0.3	0.3	2.7	<0.1	0.6	0.2
Total Project Emissions	**0.4**	**0.3**	**2.7**	**<0.1**	**0.6**	**0.2**
SCAQMD Threshold	**55.0**	**55.0**	**550.0**	**150.0**	**150.0**	**55.0**
Exceeds Threshold?	**No**	**No**	**No**	**No**	**No**	**No**

Source: Compiled by LSA (May 2022).
Note: Some values may not appear to add correctly due to rounding.
CO = carbon monoxide
lbs/day = pounds per day
NO_x = nitrogen oxides
$PM_{2.5}$ = particulate matter less than 2.5 microns in size
PM_{10} = particulate matter less than 10 microns in size
SCAQMD = South Coast Air Quality Management District
SO_X = sulfur oxides
VOC = volatile organic compounds

The results shown in Table G indicate the proposed project would not exceed the significance criteria for daily VOC, NO_x, CO, SO_x, PM_{10}, or $PM_{2.5}$ emissions. Therefore, operation of the proposed project would not result in a cumulatively considerable net increase of any criteria pollutant for which the project region is in nonattainment under an applicable federal or State AAQS.

Long-Term Microscale (CO Hot Spot) Analysis

Vehicular trips associated with the proposed project would contribute to congestion at intersections and along roadway segments in the vicinity of the proposed project site. Localized air quality impacts would occur when emissions from vehicular traffic increase as a result of the proposed project. The primary mobile-source pollutant of local concern is CO, a direct function of vehicle idling time and, thus, of traffic flow conditions. CO transport is extremely limited; under normal meteorological conditions, it disperses rapidly with distance from the source. However, under certain extreme meteorological conditions, CO concentrations near a congested roadway or intersection may reach unhealthful levels, affecting local sensitive receptors (e.g., residents, schoolchildren, the elderly, and hospital patients).Typically, high CO concentrations are associated with roadways or intersections operating at unacceptable levels of service or with extremely high traffic volumes. In areas with high ambient background CO concentrations, modeling is recommended to determine a project's effect on local CO levels.

An assessment of project-related impacts on localized ambient air quality requires that future ambient air quality levels be projected. Existing CO concentrations in the immediate project vicinity are not available. Ambient CO levels monitored at the Los Angeles Monitoring Station located at 7201 W. Westchester Parkway (the closest station to the project site), showed a highest recorded 1-hour concentration of 1.8 parts per million (ppm) (the State standard is 20 ppm) and a highest 8-hour concentration of 1.3 ppm (the State standard is 9 ppm) from 2019 to 2021. The highest CO concentrations would normally occur during peak traffic hours; hence, CO impacts calculated under peak traffic conditions represent a worst-case analysis. Reduced speeds and vehicular congestion at intersections result in increased CO emissions.

The proposed project is expected to generate 108 average daily trips, with nine trips occurring in the AM peak hour and 12 trips occurring in the PM peak hour. The CO concentrations are not expected to significantly increase as a result of the proposed project. Therefore, given the extremely low level of CO concentrations in the project area and the lack of traffic impacts at any intersections, project-related vehicles are not expected to result in CO concentrations exceeding the State or federal CO standards. No CO hot spots would occur and the project would not result in any project-related impacts on CO concentrations.

Health Risk on Nearby Sensitive Receptors

Sensitive receptors are defined as people who have an increased sensitivity to air pollution or environmental contaminants. Sensitive receptor locations include schools, parks and playgrounds, daycare centers, nursing homes, hospitals, and residential dwelling units. As discussed above, the closest sensitive air quality receptors include single family residential uses located approximately 400 ft southwest of the project site. The Localized Significance Threshold (LST) analysis was completed to show the construction and operational impacts at 120 meters (400 ft) to the nearest sensitive receptors to the project site in SRA 4, based on a 2-acre project size per the table notes. Tables H and I show the results of the LST analysis during project construction and operation, respectively.

Table H: Project Localized Construction Emissions

Source	Pollutant Emissions (lbs/day)			
	NO_X	CO	PM_{10}	$PM_{2.5}$
On-Site Emissions	12.3	8.1	2.7	1.5
Localized Significance Threshold	**91.0**	**1,888.0**	**44.0**	**17.0**
Significant?	**No**	**No**	**No**	**No**

Source: Compiled by LSA (May 2022).
Note: Source Receptor Area 4, based on a 2-acre construction disturbance daily area, at a distance of 650 feet from the project boundary.
CO = carbon monoxide
lbs/day = pounds per day
NO_X = nitrogen oxides
$PM_{2.5}$ = particulate matter less than 2.5 microns in size
PM_{10} = particulate matter less than 10 microns in size

Table I: Project Localized Operational Emissions

Source	Pollutant Emissions (lbs/day)			
	NO_x	CO	PM_{10}	$PM_{2.5}$
On-Site Emissions	<1.0	<1.0	<1.0	<1.0
Localized Significance Thresholds	**91.0**	**1,888.0**	**11.0**	**4.9**
Significant?	**No**	**No**	**No**	**No**

Source: Compiled by LSA (May 2022).
Note: Source Receptor Area 4, based on a 2-acre operational daily area, distance of 650 feet from project boundary.
CO = carbon monoxide
lbs/day = pounds per day
NO_X = nitrogen oxides
$PM_{2.5}$ = particulate matter less than 2.5 microns in size
PM_{10} = particulate matter less than 10 microns in size

As detailed in Tables H and I, the emission levels indicate that the project would not exceed SCAQMD LSTs during project construction or operation. The project's peak operational on-site NO_x emissions are less than 1.0 lbs/day. Due to the small size of the proposed project in relation to the overall Basin, the level of emissions is not sufficiently high to use a regional modeling program to correlate health effects on a Basin-wide level. On a regional scale, the quantity of emissions from the project is incrementally minor. Because the SCAQMD has not identified any other methods to quantify health impacts from small projects and due to the size of the project, it is speculative to assign any specific health effects to small project-related emissions. However, based on this localized analysis, the proposed project would not expose sensitive receptors to substantial pollutant concentrations. Therefore, the project would not expose sensitive receptors to substantial levels of pollutant concentrations.

Odors

Heavy-duty equipment on the project site during construction would emit odors, primarily from equipment exhaust. However, the construction activity would cease after individual construction is completed. No other sources of objectionable odors have been identified for the proposed project.

SCAQMD Rule 402 regarding nuisances states: "A person shall not discharge from any source whatsoever such quantities of air contaminants or other material which cause injury, detriment, nuisance, or annoyance to any considerable number of persons or to the public, or which endanger the comfort, repose, health or safety of any such persons or the public, or which cause, or have a natural tendency to cause, injury or damage to business or property." The proposed uses are not anticipated to emit any objectionable odors. Therefore, the proposed project would not result in other emissions (such as those leading to odors) adversely affecting a substantial number of people and no impact would occur.

Greenhouse Gas

This section describes the proposed project's construction- and operation- related greenhouse gas (GHG) emissions and contribution to global climate change. SCAQMD has not addressed emission thresholds for construction in its CEQA Handbook; however, SCAQMD requires quantification and disclosure. Thus, this section discusses construction emissions.

Construction Greenhouse Gas Emissions

Construction activities associated with the proposed project would produce combustion emissions from various sources. Construction would emit GHGs through the operation of construction equipment and from worker and builder supply vendor vehicles for the duration of the approximately 6-month construction period. The combustion of fossil-based fuels creates GHGs such as carbon dioxide (CO_2), methane (CH_4), and nitrous oxide (N_2O). Furthermore, the fueling of heavy equipment emits CH_4. Exhaust emissions from on-site construction activities would vary daily as construction activity levels change.As indicated above, SCAQMD does not have an adopted threshold of significance for construction-related GHG emissions. However, lead agencies are required to quantify and disclose GHG emissions that would occur during construction. The SCAQMD then requires the construction GHG emissions to be amortized over the life of the project, defined as 30 years, added to the operational emissions, and compared to the applicable interim GHG significance threshold tier. Table J shows carbon dioxide equivalent (CO_2e) emissions calculations for each respective construction phase of the proposed project.

Table J: Construction Greenhouse Gas Emissions

Construction Phase	Greenhouse Gas Emissions, CO_2e (metric tons per year)
Site Preparation	<1.0
Grading	2.6
Building Construction	60.8
Paving	2.8
Architectural Coating	<1.0
Total Project Emissions	**67.3**
Total Construction Emissions Amortized over 30 years	**2.2**

Source: Compiled by LSA (May 2022).
Note: Numbers may not appear to add correctly due to rounding.
CO_2e = carbon dioxide equivalent

As indicated in Table J, it is estimated that the project would generate 67.3 metric tons (MT) of CO_2e during construction of the project. When amortized over the 30-year life of the project, annual emissions would be 2.2 MT of CO_2e.

Operational Greenhouse Gas Emissions

Long-term operation of the proposed project would generate GHG emissions from area, mobile, waste, and water sources as well as indirect emissions from sources associated with energy consumption. Mobile-source GHG emissions would include project-generated vehicle trips associated with trips to the proposed project. Area-source emissions would be associated with activities such as landscaping and maintenance on the project site and other sources. Waste source emissions generated by the proposed project include energy generated by landfilling and other methods of disposal related to transporting and managing project-generated waste. In addition, water source emissions associated with the proposed project are generated by water supply and conveyance, water treatment, water distribution, and wastewater treatment.

GHG emissions were estimated using CalEEMod. Table K shows the estimated operational GHG emissions for the proposed project. Motor vehicle emissions are the largest source of GHG emissions for the project at approximately 77 percent of the project total. Waste sources are the next largest

category at approximately 13 percent. Energy and water sources are about 8 percent and 2 percent of the total emissions, respectively.

Table K: GHG Emissions (Metric Tons per Year)

Emission Type	Operational Emissions				
	CO_2	CH_4	N_2O	CO_2e	Percentage of Total
Area Source	<0.1	0.0	0.0	<0.1	<1
Energy Source	9.8	<0.1	<0.1	9.8	8
Mobile Source	94.4	<0.1	<0.1	95.9	77
Waste Source	6.6	0.4	0.0	16.3	13
Water Source	1.3	<0.1	<0.1	1.7	2
Total Operational Emissions				**123.8**	**100.0**
Amortized Construction Emissions				2.2	—
Total Annual Emissions				**126.0**	**—**
SCAQMD Tier 3 GHG Numerical Screening Threshold for 2023				**2,640.0**	
Exceedance?				**No**	

Source: LSA (May 2022).
CH_4 = methane
CO_2 = carbon dioxide
CO_2e = carbon dioxide equivalent
GHG = greenhouse gas
N_2O = nitrous oxide
SCAQMD = South Coast Air Quality Management District

As discussed above, a project would have less than significant GHG emissions if it would result in operational-related GHG emissions of less than the scaled SCAQMD threshold of 2,640 MT of CO_2e per year. Based on the analysis results, the proposed project would result in 126.0 CO_2e per year, which would be below the numeric threshold of 2,640 MT of CO_2e per year. Therefore, operation of the proposed project would not generate significant GHG emissions that would have a significant effect on the environment.

Water Quality

The following analysis relies on the *Low Impact Development (LID) Plan*[2] and the *Hydrology Report*[3] prepared for the proposed project (Attachments E and F, respectively). Both reports defined the project site as the northern region of the project site which contains an existing passive park 0.26 acre in size and omitted the existing surface parking lot from the analysis, which is located on the southern region because physical development associated with the proposed project would be restricted to the northern area. Therefore, the following analysis is only applicable to the northern area of the project site (0.26 acre).

Construction Water Quality Impacts

Construction activities would involve disturbance, grading, and excavation of soil, which could result in temporary erosion and movement of sediments into the storm drain system, particularly during precipitation events. However, the proposed project would comply with all applicable National Pollutant Discharge Elimination System (NPDES) requirements to reduce impacts to water quality. Projects that disturb greater than 1 acre of soil are subject to the requirements of the State Water Resources Control Board (SWRCB) Waste Discharge Requirements for Discharges of Storm Water

2 MilaniCo. August 2020. *Low Impact Development Plan*.
3 MilaniCo. May 2022. *Hydrology Report*.

Runoff Associated with Construction and Land Disturbance Activities (Order No. 2009-0009-DWQ, NPDES No. CAS000002, as amended by Order Nos. 2010-0014-DWQ and 2012-0006-DWQ) (Construction General Permit). The proposed project would disturb less than 1 acre of soil, and therefore, is not required to comply with the requirements of the SWRCB's Construction General Permit. However, Section 5.106 of the 2019 California Green Building Standards Code (CALGreen Code)[4] requires projects that disturb less than 1 acre of soil and that are not part of a larger common plan to prevent pollution of stormwater runoff during construction activities to comply with the local municipal code and/or implement a combination of erosion and sediment control and good housekeeping best management practices (BMPs). The City of Long Beach Municipal Code, Chapter 8.96, Stormwater and Runoff Pollution Control, also requires projects to implement BMPs associated with construction activities to ensure that the potential for soil erosion and sedimentation is minimized and to reduce pollutant discharges. Therefore, impacts to water quality during construction would be less than significant.

According to the Preliminary Geotechnical Investigation[5] prepared for the proposed project, the depth to groundwater at the project site is anticipated to be greater than 20 ft below ground surface (bgs). At one boring, locating perched groundwater was encountered at a depth of 12 ft. Excavation during construction would be to a maximum depth of 18 to 24 inches bgs.[6] Therefore, due to the depth of groundwater and the proposed depth of excavation, it is not anticipated that groundwater would be encountered during construction; therefore, groundwater dewatering would not be required during construction, and construction-related impacts to groundwater would be less than significant.

Operation Water Quality Impacts

Pollutants of concern during operation of the proposed project include suspended solids/sediments, nutrients, pesticides, heavy metals, oil and grease, toxic organic compounds, and trash and debris. According to the LID, which only addresses the northern 0.26-acre portion of the project site being developed, the existing project site is 100 percent pervious.[7] With the development of a medical building and associated parking lot, the proposed project would add approximately 2,100 sf of impervious surface area. An increase in impervious surface area would increase the volume of runoff during a storm, which would potentially increase the amount of pollutants discharged into downstream receiving waters.

The proposed project is subject to the requirements of the Los Angeles Regional Water Quality Control Board's (RWQCB) *Waste Discharge Requirements For Municipal Separate Storm Sewer System (Ms4) Discharges From The City Of Long Beach* Order No R4-2014-0024, NPDES No. CAS004003, as Amended By Order No. R4-2014-0024-A01 (Long Beach MS4 Permit). In addition to the Long Beach MS4, the proposed project would be required to comply with Long Beach Municipal Code Section 8.96.130, which requires the development and implementation of structural and nonstructural BMPs to be implemented on a post-construction basis, a maintenance agreement to assure the proper performance of BMPs, and Long Beach Municipal Code Section 18.74, which requires the preparation

4 California Building Standards Commission. 2019 California Green Building Standards Code (CALGreen Code), California Code of Regulations, Title 24, Part 11.

5 Associated Soils Engineering. 2017. *Report of Preliminary Geotechnical Investigation.*

6 Personal Correspondence, email from the Applicant dated August 5, 2022

7 Personal Correspondence, email from the Applicant dated August 5, 2022

of a Low Impact Development (LID) plan. The LID must demonstrate how the project will manage stormwater runoff to prevent stormwater runoff from leaving the site to the maximum extent feasible, for at least the volume of water produced by a storm event that results from:

- The volume of runoff produced from a 0.75-inch storm event; or
- The eighty-fifth (85th) percentile twenty-four (24) hour runoff event determined as the maximized capture stormwater volume for the area using a forty-eight (48) to seventy-two (72) hour draw down time, from the formula recommended in *Urban Runoff Quality Management, WEF Manual of Practice* No. 23/ASCE Manual of Practice No. 87, (1998); or
- The volume of annual runoff based on unit basin storage water quality volume, to achieve eighty percent (80%) or more volume treatment by the method recommended in the California Stormwater Quality Association*, Best Management Practices Handbook – Industrial/Commercial* (2003).

According to the LID that was prepared for the proposed project, in the existing condition, stormwater runoff from the northern portion of the project site flows generally to the north and enters the City storm drain system along California Avenue. In the post project condition, the project site would be divided into three drainage management areas (DMAs) that would each surface drain into a single bioretention basin to treat stormwater runoff. The bioretention basin would include a slotted underdrain which would collect treated stormwater and discharge runoff to the City's storm drain along California Avenue via a curb drain along the northern edge of the property. Any overflow runoff would be collected by curb drains located on California Avenue. The City's municipal storm drain outfalls to the Los Angeles River, which drains to San Pedro Bay which is hydraulically connected to the Pacific Ocean. Implementation of a drainage system and operational BMPs in compliance with the requirements of the Long Beach MS4 Permit and City Municipal Code would ensure project operational impacts to water quality would be less than significant.

Due to the small increase in impervious surface area (2,100 sf), stormwater runoff from the proposed project site would not exceed the capacity of the existing storm drain system.

Project operation would not require groundwater extraction. Water usage for the proposed project would primarily be associated with irrigation for landscaping and fire suppression systems. Because the proposed project would require minimal water use, the proposed project would not generate additional demand for water that would affect groundwater supplies.

In the existing condition, the entire northern portion of the project site is entirely pervious surface area. An increase in impervious surface area decreases infiltration, which can decrease the amount of water that is able to recharge the aquifer/groundwater. However according to the *Preliminary Geotechnical Investigation Report*[8], the soils underlying the project site do not have a high infiltration rate. Therefore, the small increase in impervious surface area (2,100 sf) would not substantially decrease any infiltration that currently may occur on the project site. Furthermore, the groundwater basin (the West Coast Groundwater Basin of the Los Angeles Coastal Plain in Los Angeles County) underlies 160 square miles and any reduction in on-site infiltration would not be substantial.

[8] 2H Construction Inc. 2017. *Preliminary Geotechnical Investigation.*

Therefore, the project would not significantly decrease groundwater supplies or interfere with groundwater recharge.

According to the Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map (FIRM) No. 06037C1966G (April 21, 2021), the project site is not located within a 100-year floodplain. Specifically, the project site is located within Zone X, an area of minimal flood hazard (outside the 500-year floodplain). According to the Department of Conservation Tsunami Hazard Area Maps, the project site is not located within a Hazard Area.[9] Therefore, there is no risk of tsunami or seiche on the project site. No project-related impacts associated with flood flows or release of pollutants from inundation would occur.

Overall, the proposed project would not result in impacts associated with hydrology and water quality.

CALIFORNIA ENVIRONMENTAL QUALITY ACT CATEGORICAL EXEMPTIONS—EXCEPTIONS

State CEQA Guidelines Section 15300.2 provides exceptions that apply to specific types of projects and/or projects where substantial evidence exists that the proposed project involves unusual circumstances. The exceptions to the categorical exemptions pursuant to Section 15300.2 of the *State CEQA Guidelines* are the following:

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

The proposed project relies on a Class 3 Exemption, but does not qualify as an exception to the exemption under exception A. The project site is located in the City of Long Beach which is an essentially built out urban area. The project site is surrounded on all sides by urban development and is zoned for Institutional Use (I), which allows medical offices. The project site is not designated by any federal state or local agencies to contain an environmental resource. In addition, the proposed project, like all projects, would be subject to the provisions of the MBTA, which prohibits disturbing or destroying active nests, and California Fish and Game Code Section 3503, which protects nests and eggs. Additionally, the proposed project is not located on a site that is included on a list of hazardous-materials sites compiled pursuant to Government Code Section 65962.5.

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

The proposed project is a commercial office building in an urbanized area and would be less than 10,000 sf. The proposed project is an in-fill development project in an urban area. According to the Governor's Office of Planning and Research, the term "infill development" refers to building within unused and underutilized lands within existing development patterns, typically but not exclusively in

[9] Department of Conservation. 2021. Los Angeles County Tsunami Hazard Areas.

urban areas. Surrounding areas were previously developed with a surface parking lot and small open space area for qualified urban uses as defined by PRC Section 21072. The proposed project would be consistent with existing land use and visual patterns typical of an urban built environment. While a General Plan Amendment would be required to change the PlaceType designation from Open Space to Neo-Industrial (NI), this change would not conflict with surrounding land use patterns or divide an established community. Therefore, the proposed project would not contribute to a significant cumulative land use impact. The proposed project would be visually compatible with surrounding land uses and would not result in or contribute to a significant aesthetic impact.

Neither the project site nor any other project site in the City is currently used for agricultural or farmland production. Neither the project site nor the local area is particularly sensitive in terms of biological resources, and there are no mapped environmentally sensitive habitat areas within or in close proximity to the project site. The proposed project would not result in the loss of known mineral resources or a locally important mineral resource recovery site.

The proposed project would contribute criteria pollutants to the area during project construction. A number of individual projects in the area may be under construction simultaneously with the proposed project. Depending on construction schedules and actual implementation of projects in the area, generation of fugitive dust and pollutant emissions during construction could result in substantial short-term increases in air pollutants. However, each project would be required to comply with SCAQMD's standard construction measures. The proposed project's short-term construction CO, NO_2, PM_{10}, and $PM_{2.5}$ emissions would not exceed the LSTs. Therefore, construction of the proposed project would have a less than significant impact with regard to regional and localized emissions, and impacts would not be cumulatively considerable.

As climate change impacts are cumulative in nature, no typical single project can result in emissions of such a magnitude that it, in and by itself, would be significant on a project basis. The proposed project complies with performance-based standards included in the California Green Building Standards Code (CALGreen Code) (e.g., the 2022 Building Energy Efficiency Standards). As GHG emissions would not exceed the SCAQMD Tier 3 numerical screening threshold, the proposed project would result in a less than significant cumulative impact related to GHG emissions. The proposed project was analyzed for consistency with the goals of Assembly Bill (AB) 32, the AB 32 Scoping Plan, Executive Order (EO) B-30-15, SB 32, and AB 197 and SCAG's 2020–2045 Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS). The proposed project's GHG reduction measures make the proposed project consistent with AB 32, the AB 32 Scoping Plan, EO B-30-15, SB 32, and AB 197 and SCAG's 2020–2045 RTP/SCS. Therefore, the proposed project would not conflict with any applicable plan, policy, or regulation of an agency adopted for the purpose of reducing the GHG emissions. Given this consistency, it is concluded that the proposed project's impacts are not cumulatively considerable.

Energy usage on the project site during construction would be temporary in nature. In addition, energy usage associated with operation of the proposed project would be relatively small in comparison to the State's available energy sources, and energy impacts would be negligible at the regional level. Because California's energy conservation planning actions are conducted at a regional level, and because the project's total impact to regional energy supplies would be minor, the proposed project would not conflict with California's energy conservation plans as described in the California

Energy Commission's *Final 2021 Integrated Energy Policy Report*[10]. In addition, as indicated above, the proposed project would comply with Title 24 and CALGreen Code standards, consistent with the City's General Plan. Thus, as shown above, the project would avoid or reduce the inefficient, wasteful, and unnecessary consumption of energy and not result in any irreversible or irretrievable commitments of energy. Therefore, the proposed project would not result in the wasteful, inefficient, or unnecessary consumption of energy resources during project construction or operation. Impacts would not be cumulatively considerable.

There are no buildings on the project site and the site itself is not considered a Historic Landmark. Additionally, the proposed project would not conflict with any policies set forth by the Historic Preservation element of the General Plan. As there are no existing buildings they do not need to be evaluated as historical resources pursuant to CEQA. As such, project construction and operation would have no impacts to "historical resources" pursuant to *State CEQA Guidelines* Section 15064.5.

The project site was previously disturbed and developed with a surface parking lot. As such, ground-disturbing activities associated with project construction activities are not likely to directly or indirectly destroy a unique paleontological resource or site or unique geological feature due to the disturbed nature of the project site.

The project site, like all of Southern California, would be subject to seismic ground shaking in the event of an earthquake. The proposed project would be required to comply with the California Building Code in effect at the time of construction and would not exacerbate an existing geologic or seismic hazard.

The proposed project is located in within 2 miles of the Long Beach Airport located at 4100 Donald Douglas Drive in the City of Long Beach. The project site is located outside the boundaries of the Long Beach Airport Planning Boundary/Airport Influence Area.[11] However, according to the Los Angeles County Airport Land Use Plan (1991, revised in 2004), the project site is located in the Federal Aviation Administration's (FAA) Part 77 Notification Area. The purpose of the FAA Part 77 Notification process is to ensure protection of the airspace essential to the safe operation of aircraft at and around airports. Construction of structures within the FAA's Part 77 Notification Area require that the FAA be notified of construction of any proposed structure(s) which exceed a 50 to 1 imaginary surface slope ratio within 10,000 ft of the nearest runway at a public use airport. The proposed project does not exceed a 50 to 1 imaginary surface slope ratio and therefore does not require Part 77 notification**.** In addition, due to the nature of this project (i.e., medical office), it would not contribute to the creation of a hazard to the public or the environment involving the transport, use, or disposal of hazardous materials.

As discussed above, with compliance with the applicable NPDES permit requirements and implementation of BMPs, project impacts to hydrology and water quality would be less than significant. It is assumed for the purposes of this analysis that the other projects would also comply

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10 California Energy Commission (CEC). 2021. Integrated Energy Policy Report. (Website: https://www.energy.ca.gov/data-reports/reports/integrated-energy-policy-report/2021-integrated-energy-policy-report accessed June 2022).

11 Los Angeles County Airport Land Use Commission. Long Beach Airport Influence Area. Website: https://planning.lacounty.gov/assets/upl/project/aluc_airport-long-beach.pdf (accessed August 2022).

with applicable NPDES permit requirements and would also result in less than significant impacts related to hydrology and water quality.

The proposed project would not induce substantial population growth or displace housing or substantial numbers of people. The proposed project would not provide new housing opportunities or extend roads or other infrastructure to areas not previously served. The project would include the construction of a 3,000 sf single-story medical office building. The proposed project would represent a negligible increase of jobs. Therefore, no significant impacts to population growth would occur. It is unlikely that the creation of these new jobs would cause any population relocation. Because the proposed project would not increase population in the City, construction and operation of the self-storage facility would not be anticipated to increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated.

The City is a completely urbanized built out area. The addition of a 3,000 single-story medical office building within a highly developed region would not alter cumulative regional demand for fire protection services. Nor would the proposed project decrease the officer-to-resident ratio in the City or trigger the need for new or physically altered police facilities. Pursuant to California Education Code Section 17620(a)(1), the governing board of any school district is authorized to levy a fee, charge, dedication, or other requirement against any construction within the boundaries of the district for the purpose of funding the construction or reconstruction of school facilities. Applicant/developers for all projects would be required to pay such fees to reduce any impacts associated with new commercial development on school services.

As stated above, surrounding areas were previously developed for qualified urban uses as defined by PRC Section 21072. As such, the sites are served by all utilities in the existing condition. The LADWP is the water provider for the project site. LADWP maintains and operates the sewer collection system including storm drains, catch basins, and sewer lines. Installation of water and sewer facilities sufficient to serve a proposed project is a standard condition for development projects. The proposed project would also pay any required water and sewer connection fees. The project site and other regional projects in the City would be provided waste disposal from private contractors and existing landfills. Disposal capacity at these landfills is not constrained at this time, and the proposed project would not be expected to result in or contribute to a significant impact related to waste disposal.

According to the Safety Element of the Public Safety Element of the General Plan (adopted 1975), as a built- out community in an urbanized area, the City of Long Beach is not subject to substantial wildfire risk.

In summary, the proposed project is a 3,000 sf single-story office building in an urban area. The proposed project would rely on and can be accommodated by the existing road system, public services, and utilities. Impacts of the proposed project would not be cumulatively considerable in connection with the effects of past projects, the effects of other current projects, or the effects of probable future projects.

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

The Air Quality and Greenhouse Gas Analysis and the Noise and Vibration Impact Analysis for the proposed project conclude that the proposed project would not result in a significant impact related to these topics. The proposed project would be consistent with the City's Municipal Code requirements. While the proposed project would include a General Plan Amendment to change the project site's PlaceType designation from Open Space to Neo-industrial (NI), this change would not result in a significant effects on the environment due to unusual circumstances. Given the urban nature of the project site and the compatibility of the proposed project with the character of the surrounding uses, there is no evidence to indicate that the proposed project would have a significant effect on the environment due to unusual circumstances.

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

The nearest State-designated scenic highway to the project site is Pacific Coast Highway (SR-1), which is approximately 2.4 miles southeast of the project site (Caltrans 2022)[12]. Therefore, the proposed project does not have the potential to damage resources within a State-designated scenic highway. No existing scenic rock outcroppings are located within the project limits. The project site is developed with a surface parking lot, which is not eligible for listing as a historic resource.

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

Pursuant to Government Code Section 65962.5, the Hazardous Waste and Substances Sites List (Cortese List) has been compiled by the California Environmental Protection Agency (CalEPA) Hazardous Materials Data Management Program. The California Department of Toxic Substances Control (DTSC) compiles information from subsets of the following databases to make up the Cortese List:

1. The DTSC list of contaminated or potentially contaminated hazardous waste sites listed in the California Sites database (formerly known as ASPIS)

2. The California SWRCB listing of leaking underground storage tanks

3. The California Integrated Waste Management Board list of sanitary landfills that have evidence of groundwater contamination or known migration of hazardous materials (formerly WB-LF, now Assembly Bill 3750)

[12] Caltrans. 2022. Scenic Highways. Website: https://dot.ca.gov/programs/design/lap-landscape-architecture-and-community-livability/lap-liv-i-scenic-highways (accessed June 2022)

The proposed project is not located on a site that is included on a list of hazardous-materials sites compiled pursuant to Government Code Section 65962.5. Within one-quarter mile of the project site there are four nonactive Leaking Underground Storage Tanks (LUST) cleanup sites[13].

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

The project site is currently developed with a surface parking lot and an open space area with walking trail. As there are no existing buildings on the project site there are no resources which need to be evaluated as historical resources pursuant to CEQA. As such, project construction and operation would have no impacts to "historical resources" pursuant to *State CEQA Guidelines* Section 5064.5.

CONCLUSION

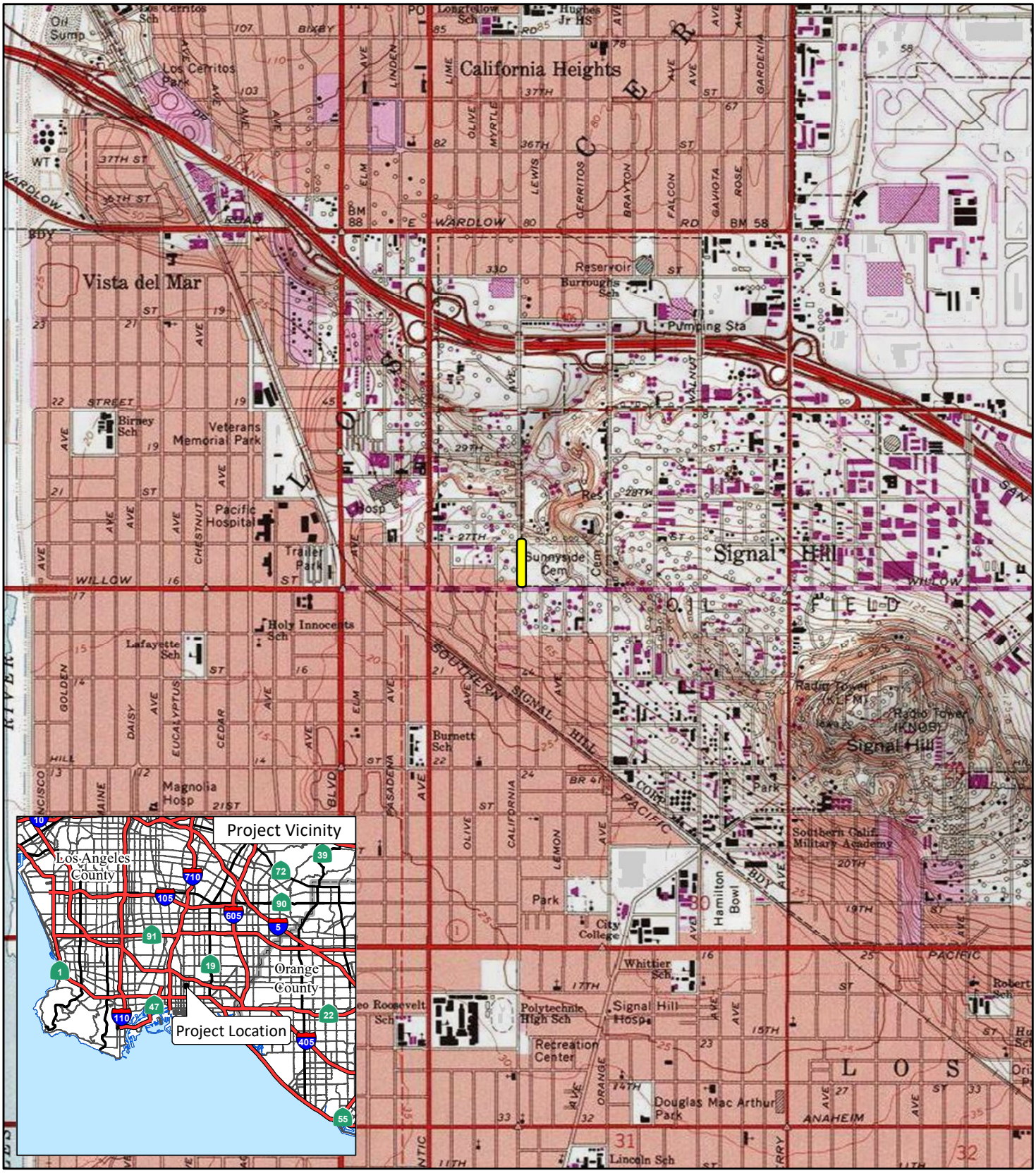
In summary, the proposed project would not result in any specific or general exceptions to the use of a Categorical Exemption as detailed under *State CEQA Guidelines* Section 15332. The proposed project is an office building, in an urbanized area, not exceeding 10,000 sf in floor area on a site zoned for such use. Additionally, the proposed project would not involve the use of significant amounts of hazardous substances where all necessary public services and facilities are available, and the surrounding area is not an environmentally sensitive area. The proposed project would not cause any impacts to traffic, noise, air quality, or water quality. The project site does not have value as habitat for endangered, rare, or threatened species. The proposed project would not result in damage to a scenic resource within a highway officially designated as a State Scenic Highway. The project site is not on any list compiled pursuant to Section 65962.5 of the Government Code. Furthermore, no unusual circumstances or potential cumulative impacts would occur that may reasonably create an environmental impact. Therefore, the proposed project is exempt from the provisions of CEQA as specified by the *State CEQA Guidelines* identified above.

Attachments:
- A: Figures 1 through 3
- B: *Traffic Analysis for Medical Building Project at 2600 California* Avenue (LSA, August 2022)
- C: *Noise and Vibration Impact Analysis Memorandum for the Medical Office Building Project at 2600 California Avenue* (LSA, August 2022)
- D: *Air Quality and Greenhouse Gas Technical Memorandum for the Medical Office Building Project at 2600 California Avenue* (LSA, August 2022)
- E: *Low Impact Development Plan* (LID) (MilaniCo, May 2022)
- F: *Hydrology Report* (MilaniCo, May 2022).

[13] State Water Resources Control Board (SWRCB). 2022. Geotracker Map. Website: https://geotracker.waterboards.ca.gov/ accessed June 2022)

ATTACHMENT A

FIGURES 1 THROUGH 3



LSA

LEGEND

Project Location

FIGURE 1

N

0 1000 2000

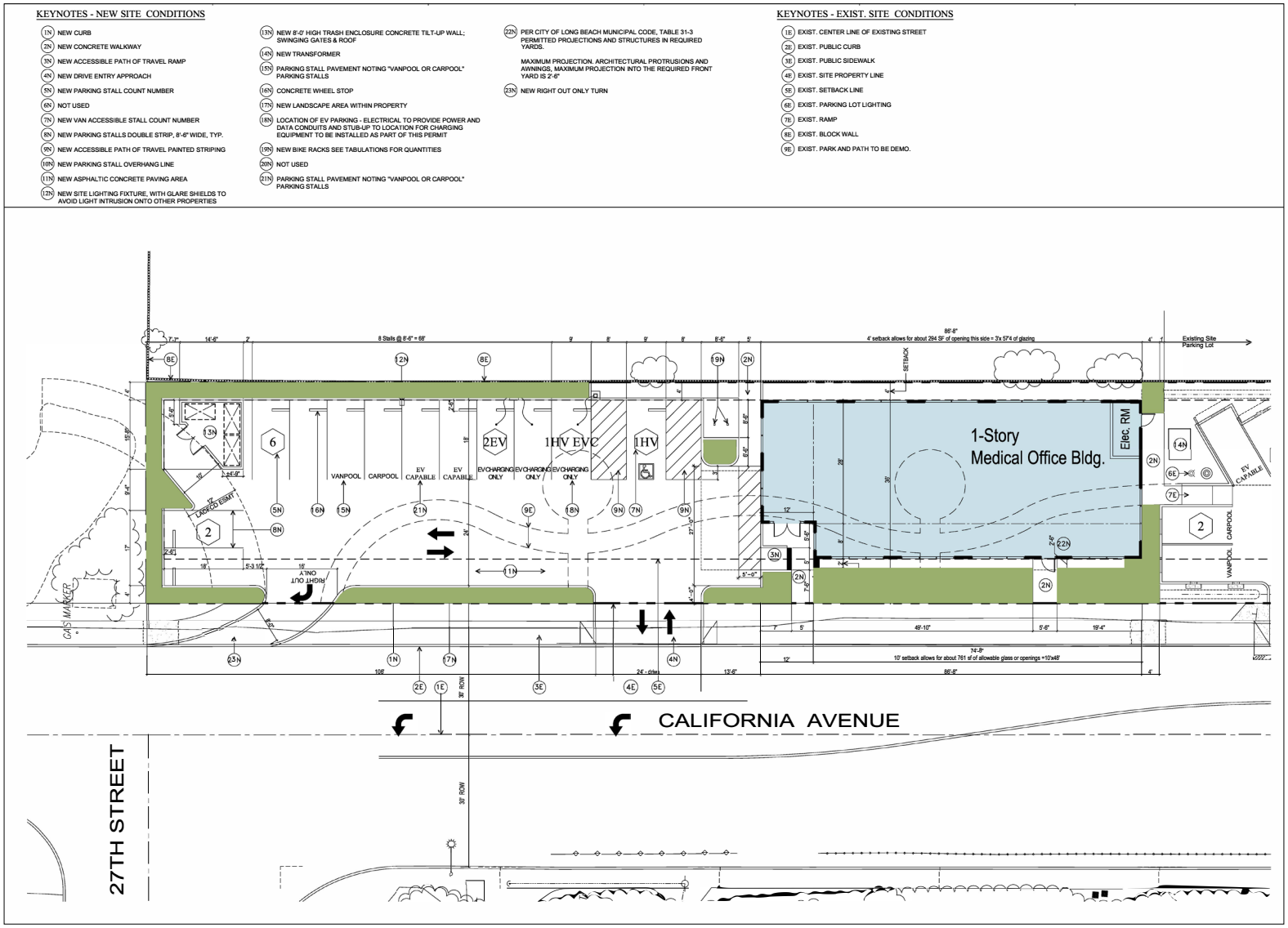
FEET

Medical Building
at 2600 California Avenue

Project Location

SOURCE: USGS 7.5' Quad - *Long Beach* (1978), CA

I:\CLB1904.39\GIS\MXD\ProjectLoc_USGS.mxd (8/10/2022)



LSA

FIGURE 2

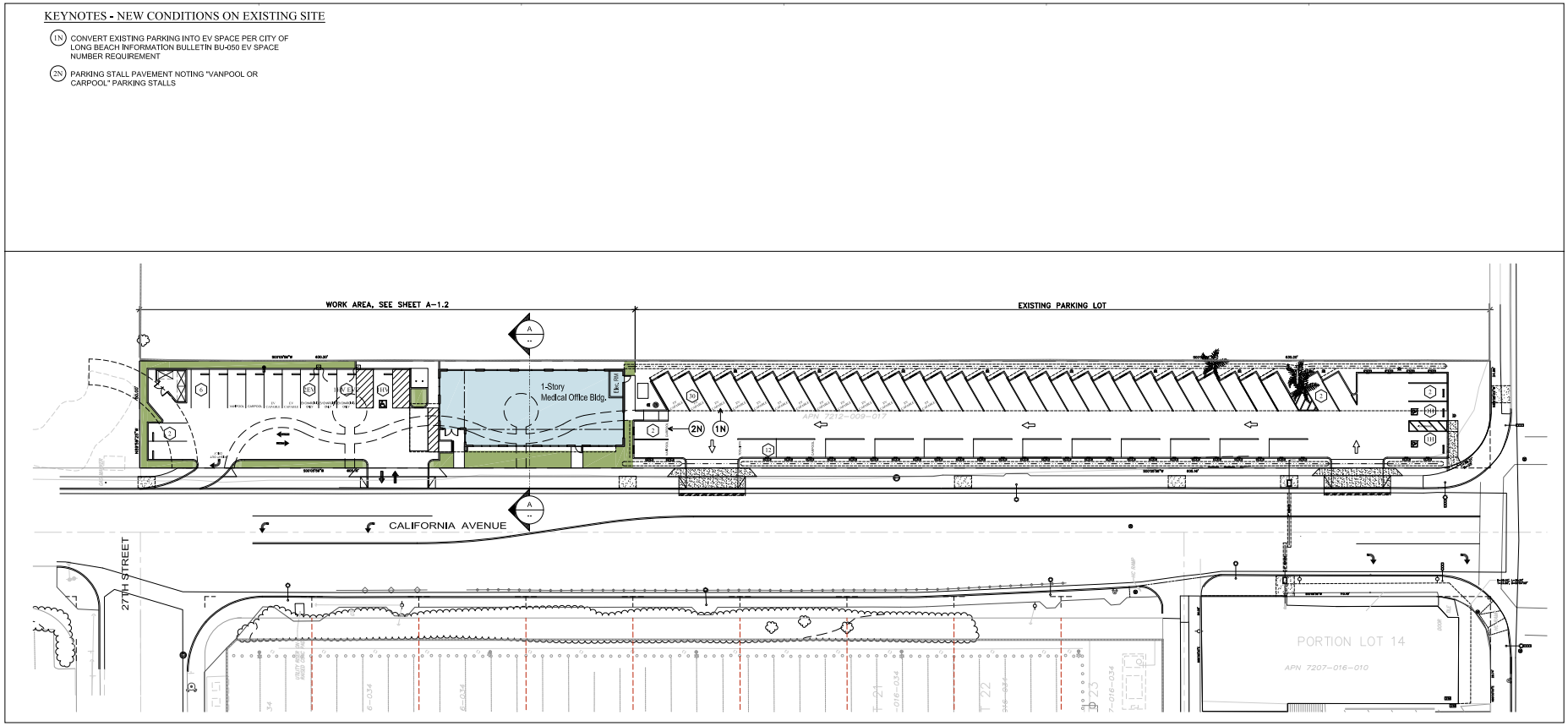
0 18 36
FEET

SOURCE: DRA Architects

I:\CLB1904.39\G\Site_Plans.ai (8/29/2022)

Medical Building at 2600 California Avenue

Enlarged Site Plan



LSA

FIGURE 3

0 40 80
FEET

SOURCE: DRA Architects

I:\CLB1904.39\G\Site_Plans.ai (8/9/2022)

Medical Building at 2600 California Avenue

Overall Site Plan

ATTACHMENT B

TRAFFIC ANALYSIS FOR MEDICAL BUILDING PROJECT AT 2600 CALIFORNIA AVENUE (LSA, AUGUST 2022)

LSA

CARLSBAD
CLOVIS
IRVINE
LOS ANGELES
PALM SPRINGS
POINT RICHMOND
RIVERSIDE
ROSEVILLE
SAN LUIS OBISPO

MEMORANDUM

DATE: August 12, 2022

TO: Alexis Oropeza, Current Planning Officer, City of Long Beach

FROM: Arthur Black, Principal Transportation Planner, LSA

SUBJECT: Traffic Analysis for Medical Building Project at 2600 California Avenue in Long Beach, California

LSA has prepared this traffic analysis for the proposed construction of an approximately 3,000-square-foot (sf) medical office building (project) at 2600 California Avenue in Long Beach, California. The proposed project would be constructed on the northern portion of the project site, adjacent to an existing surface parking lot. The existing project site is developed with a surface parking lot, a small portion of open space with a walking path, and associated landscaping. The project site is generally flat in elevation. Access to the project site would be provided via two driveways on the west side of the project site. The project site would also include an exit-only driveway onto California Avenue, with a right-turn-only restriction. The proposed project would include a passenger drop-off zone directly adjacent to the building entrance.

The proposed project would include 61 parking spaces in total, 49 of which are maintained as off-site parking for the office building located at 999 East Willow Street. The southern portion of the project site includes existing parking, lighting, and landscaping that would continue to provide on-site parking. The proposed project would include four bicycle parking stalls.

The purpose of this traffic analysis is to identify the potential traffic and circulation effects, as well as the potential California Environmental Quality Act (CEQA) transportation impacts, associated with the proposed project. This traffic analysis identifies the trip generation of the proposed project and determines the vehicle miles traveled (VMT) implications of the proposed project.

Trip Generation

LSA does not believe regional traffic patterns would be altered by the project because existing surface parking spaces are being retained. New traffic generated by the proposed project was calculated using the Institute of Transportation Engineers' (ITE) *Trip Generation Manual*, 11th Edition.[1] Table A, below, presents the trip generation summary for the project. As Table A indicates, the proposed project is anticipated to generate 108 average daily trips (ADT), including 9 trips in the a.m. peak hour and 12 trips in the p.m. peak hour.

[1] Institute of Transportation Engineers (ITE). 2021. *Trip Generation Manual,* 11th Edition.

Table A: Project Trip Generation

Land Use	Size	Unit	ADT	AM Peak Hour			PM Peak Hour		
				In	Out	Total	In	Out	Total
Trip Rates[1]									
Medical-Dental Office		TSF	36.00	2.45	0.65	3.10	1.18	2.75	3.93
Project Trip Generation									
Medical Office Building	3.000	TSF	108	7	2	9	4	8	12

Source: LSA (2022).

[1] Trip rates from the Institute of Transportation Engineers' (ITE) *Trip Generation* Manual, 11th Edition (2021). Land Use Code (720) – Medical-Dental Office Building

ADT = average daily trips

TSF = thousand square feet

The *City of Long Beach Traffic Impact Analysis Guidelines* (June 2020) establish thresholds for analysis of a project's vehicle level of service impacts. A project's study area is determined by the facilities at which the project adds 50 or more peak-hour trips. Below this threshold, a project's traffic impact on intersection performance is expected to be below the significance threshold. Based on the trip generation shown in Table A, the project would generate 12 or fewer trips per hour, which is well below the study area threshold. Therefore, the project would have a less than significant impact on vehicle level of service.

Vehicle Miles Traveled Analysis

As a result of Senate Bill (SB) 743, the California Office of Administrative Law cleared the revised *State CEQA Guidelines* for use on December 28, 2018. Concurrent with the revised *State CEQA Guidelines*, the Governor's Office of Planning and Research released the *Technical Advisory on Evaluating Transportation Impacts in CEQA* (December 2018). As currently adopted, the CEQA guidelines indicate that VMT generated by a land use project is generally the most appropriate measure of transportation impacts. The *City of Long Beach Traffic Impact Analysis Guidelines* (June 2020) establish screening thresholds, analysis methodology, and significance thresholds for VMT analyses in Long Beach.

Both the City guidelines and the State's Technical Advisory provide screening thresholds for small projects. The City guidelines screen out projects generating fewer than 500 daily trips as the greenhouse gas emissions resulting from this level of vehicle traffic would be less than comparable to greenhouse gas emissions thresholds. The State's Technical Advisory recommends that development with fewer than 110 daily trips be presumed to have a less than significant impact because projects with this level of traffic are likely to fit the criteria established for a categorical exemption for CEQA analysis.

Based on the trip generation shown in Table A, the project would generate 108 daily trips, which is below the screening thresholds described above. Therefore, the project is presumed to have a less than significant impact on VMT.

Conclusion

Based on the results of this traffic analysis, the project would have a less than significant impact on vehicle level of service and VMT.

ATTACHMENT C

NOISE AND VIBRATION IMPACT ANALYSIS MEMORANDUM FOR THE MEDICAL OFFICE BUILDING PROJECT AT 2600 CALIFORNIA AVENUE (LSA, AUGUST 2022)

LSA

CARLSBAD
CLOVIS
IRVINE
LOS ANGELES
PALM SPRINGS
POINT RICHMOND
RIVERSIDE
ROSEVILLE
SAN LUIS OBISPO

MEMORANDUM

DATE: August 12, 2022

TO: Alexis Oropeza, Current Planning Officer, City of Long Beach

FROM: J.T. Stephens, Principal
Moe Abushanab, Noise Engineer

SUBJECT: Noise and Vibration Impact Analysis Memorandum for the Medical Office Building Project at 2600 California Avenue in the City of Long Beach, California

INTRODUCTION

This noise and vibration impact analysis has been prepared to evaluate the potential impacts associated with the proposed Medical Office Building (project) located at 2600 California Avenue in the City of Long Beach (City), California, in support of a Categorical Exemption (CE). This report is intended to satisfy the City's requirement for a project-specific noise and vibration impact analysis by examining the short-term and long-term noise and vibration impacts on sensitive uses adjacent to the project site. This report also evaluates noise impacts to the proposed sensitive uses that would be developed as part of the project and identifies the necessary project design features and standard project conditions.

PROJECT LOCATION

The 0.72-acre project site is a long, thin, rectangular parcel located on the northeast corner of California Avenue and East Willow Street on Assessor's Parcel Number (APN) 7212-009-017 in Long Beach, California. The existing project site is developed with a surface parking lot, a small portion of open space with a walking path, and associated landscaping. The project site is generally flat in elevation. In the project site's existing condition, vehicular access is provided via two one-way driveways on California Avenue.

The project site is surrounded by a mixture of open space, office, and retail uses. The project site is bounded to the east by a cemetery, to the north by an urban farm, to the west by California Avenue and office uses, and to the south by East Willow Street and retail uses. Regional access to the project site is provided by Interstates 405 (I-405) and 710 (I-710), which are located approximately 0.6 mile north and 1.5 miles west of the project site, respectively. Local access to the project site is provided by California Avenue and East Willow Street. The project location and conceptual site plan are presented on Figures 1 and 2, respectively. All figures are provided in Attachment B of this memorandum.

PROJECT DESCRIPTION

The proposed project would construct an approximately 3,000-square-foot (sf) single-story medical office building located towards the northern end of the project site. Figure 2, Conceptual Site Plan,

provides an overview of the proposed site plan, including the location of the proposed building, parking areas, trash enclosure, transformer, and associated landscaping.

A trash enclosure, 8 feet (ft) in height, would be included on the northeastern corner of the project site. The trash enclosure would include a concrete tilt-up roof along with swinging gates and a roof. A proposed transformer would be located immediately south of the building's exterior southeast corner. The proposed project would include 61 parking spaces in total, 49 of which are maintained as off-site parking for the office building located at 999 East Willow Street.

The proposed building would have a building footprint of 9.64 percent of the total project site (31,275 sf). The overall height of the medical office building is proposed to be a maximum of 24 ft, 8 inches. The building entrance would be provided at the northwest corner and would be Americans with Disabilities Act (ADA) accessible. The proposed building windows would be a dual-pane storefront system, with 65 percent visible light transmittance.

Construction would include vegetation removal, excavation, grading, building construction, and the installation of landscaping and irrigation, lighting, storm drain facilities, and underground utilities. Construction of the proposed project is anticipated to commence in 2023 and would take approximately 6 months.

Based on the preliminary grading plans, approximately 350 cubic yards would be exported from the project site. Demolition, grading, and building activities would involve the use of standard earthmoving equipment such as large excavators, cranes, and other related equipment.

METHODOLOGY

Evaluation of noise and vibration impacts associated with the proposed project will include the following:

- Determine the short-term construction noise levels at off-site sensitive uses and compare those levels to the City's Municipal Code Ordinance requirements;
- Determine the long-term noise levels at off-site sensitive uses and compare those levels to the City's pertinent noise standards;
- Determine the short-term construction-related vibration levels at off-site sensitive uses and compare those levels to the Federal Transit Administration's (FTA) vibration thresholds[1]; and
- Determine the required project design features, such as mechanical ventilation or building façade enhancements, to reduce long-term, on-site noise impacts from all sources.

[1] The City's General Plan Noise Element does not include standard criteria for assessing vibration impacts but suggests, for the purpose of determining the significance of vibration impacts experienced at sensitive uses surrounding the project, the use of the guidelines within the FTA's *Transit Noise and Vibration Impact Assessment Manual* (FTA 2018).

CHARACTERISTICS OF SOUND

Noise is usually defined as unwanted sound. Noise consists of any sound that may produce physiological or psychological damage and/or interfere with communication, work, rest, recreation, and sleep.

To the human ear, sound has two significant characteristics: pitch and loudness. Pitch is generally an annoyance, while loudness can affect the ability to hear. Pitch is the number of complete vibrations, or cycles per second, of a wave resulting in the tone's range from high to low. Loudness is the strength of a sound that describes a noisy or quiet environment and is measured by the amplitude of the sound wave. Loudness is determined by the intensity of the sound waves combined with the reception characteristics of the human ear. Sound intensity is the average rate of sound energy transmitted through a unit area perpendicular to the direction in which the sound waves are traveling. This characteristic of sound can be precisely measured with instruments. The analysis of a project defines the noise environment of the project area in terms of sound intensity and its effect on adjacent sensitive land uses.

Measurement of Sound

Sound intensity is measured through the A-weighted scale to correct for the relative frequency response of the human ear. That is, an A-weighted noise level de-emphasizes low and very high frequencies of sound similar to the human ear's de-emphasis of these frequencies. Unlike linear units (e.g., inches or pounds), decibels are measured on a logarithmic scale, which is a scale based on multiples of 10.

For example, 10 decibels (dB) is 10 times more intense than 0 dB, 20 dB is 100 times more intense than 0 dB, and 30 dB is 1,000 times more intense than 0 dB. Thirty decibels (30 dB) represents 1,000 times as much acoustic energy as 0 dB. The decibel scale increases as the square of the change, representing the sound pressure energy. A sound as soft as human breathing is about 10 times greater than 0 dB. The decibel system of measuring sound gives a rough connection between the physical intensity of sound and its perceived loudness to the human ear. A 10 dB increase in sound level is perceived by the human ear as only a doubling of the sound's loudness. Ambient sounds generally range from 30 dB (very quiet) to 100 dB (very loud).

Sound levels are generated from a source, and their decibel level decreases as the distance from that source increases. Sound dissipates exponentially with distance from the noise source. For a single-point source, sound levels decrease approximately 6 dB for each doubling of distance from the source. This drop-off rate is appropriate for noise generated by stationary equipment. If noise is produced by a line source (e.g., highway traffic or railroad operations) the sound decreases 3 dB for each doubling of distance in a hard site environment. Similarly, line sources with intervening absorptive vegetation or line sources which are located at a great distance to the receptor would decrease 4.5 dB for each doubling of distance.

There are many ways to rate noise for various time periods, but an appropriate rating of ambient noise affecting humans also accounts for the annoying effects of sound. The equivalent continuous sound level (L_{eq}) is the total sound energy of time-varying noise over a sample period. However, the predominant rating scales for human communities in the State of California are the L_{eq} and Community Noise Equivalent Level (CNEL) or the day-night average noise level (L_{dn}) based on

A-weighted decibels (dBA). CNEL is the time-weighted average noise over a 24-hour period, with a 5 dBA weighting factor applied to the hourly L_{eq} for noises occurring from 7:00 p.m. to 10:00 p.m. (defined as relaxation hours), and a 10 dBA weighting factor applied to noises occurring from 10:00 p.m. to 7:00 a.m. (defined as sleeping hours). L_{dn} is similar to the CNEL scale but without the adjustment for events occurring during the relaxation hours. CNEL and L_{dn} are within 1 dBA of each other and are normally interchangeable. The City of Long Beach uses the CNEL noise scale for long-term noise impact assessment.

Other noise rating scales of importance when assessing the annoyance factor include the maximum instantaneous noise level (L_{max}), which is the highest sound level that occurs during a stated time period. The noise environments discussed in this analysis for short-term noise impacts are specified in terms of maximum levels denoted by L_{max}, which reflects peak operating conditions and addresses the annoying aspects of intermittent noise. It is often used together with another noise scale or noise standards in terms of percentile noise levels in noise ordinances for enforcement purposes. For example, the L_{10} noise level represents the noise level exceeded 10 percent of the time during a stated period. The L_{50} noise level represents the median noise level (i.e., half the time the noise level exceeds this level, and half the time it is less than this level). The L_{90} noise level represents the noise level exceeded 90 percent of the time and is considered the background noise level during a monitoring period. For a relatively constant noise source, the L_{eq} and L_{50} are approximately the same.

Noise impacts can be described in three categories. The first is audible impacts that refer to increases in noise levels noticeable to humans. Audible increases in noise levels generally refer to a change of 3.0 dB or greater because this level has been found to be barely perceptible in exterior environments. The second category, potentially audible, refers to a change in the noise level between 1.0 and 3.0 dB. This range of noise levels has been found to be noticeable only in laboratory environments. The last category is changes in noise levels of less than 1.0 dB, which are inaudible to the human ear. Only audible changes in existing ambient or background noise levels (3.0 dB or greater) are considered potentially significant.

Physiological Effects of Noise

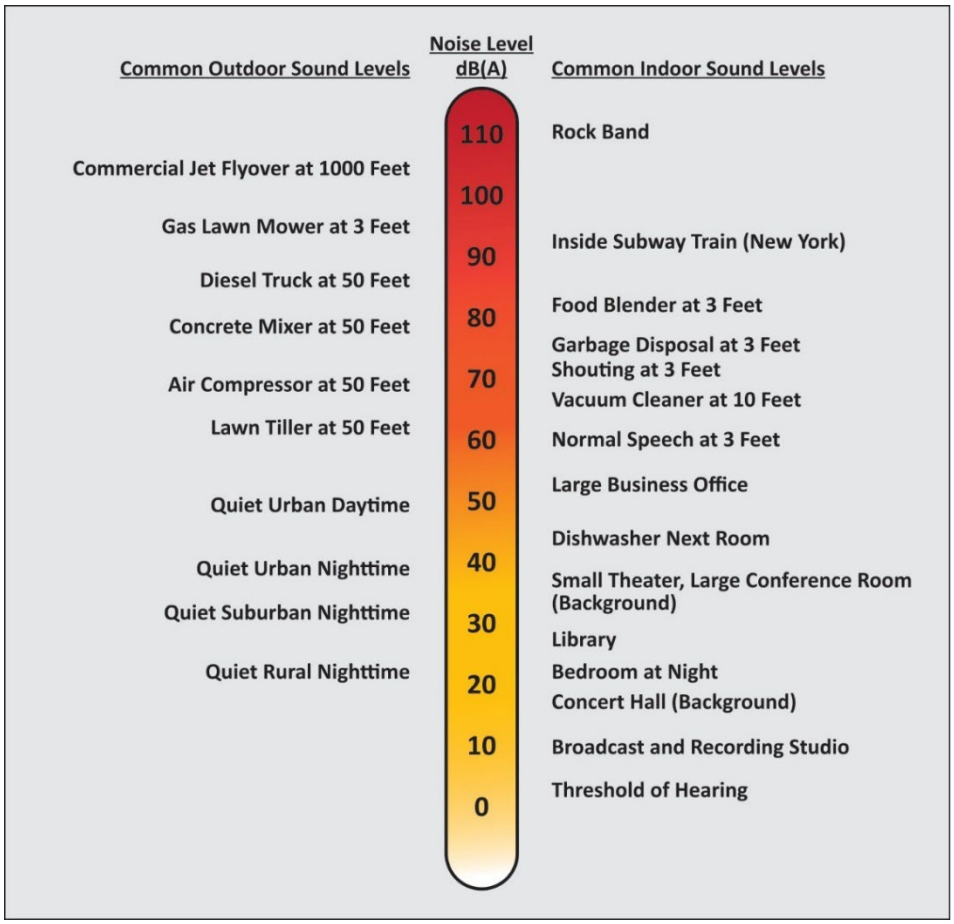
Physical damage to human hearing begins at prolonged exposure to noise levels higher than 85 dBA. Exposure to high noise levels affects the entire system, with prolonged noise exposure in excess of 75 dBA increasing body tensions, thereby affecting blood pressure and functions of the heart and the nervous system. In comparison, extended periods of noise exposure above 90 dBA would result in permanent cell damage. When the noise level reaches 120 dBA, a tickling sensation occurs in the human ear even with short-term exposure. This level of noise is called the threshold of feeling. As the sound reaches 140 dBA, the tickling sensation is replaced by the feeling of pain in the ear. This is called the threshold of pain. A sound level of 160–165 dBA will result in dizziness or loss of equilibrium. The ambient or background noise problem is widespread and generally more concentrated in urban areas than in outlying less developed areas. Table A lists definitions of acoustical terms, and Table B shows common sound levels and their sources.

Table A: Definitions of Acoustical Terms

Term	Definitions
Decibel, dB	A unit of level that denotes the ratio between two quantities proportional to power, the number of decibels is 10 times the logarithm (to the base 10) of this ratio.
Frequency, Hz	Of a function periodic in time, the number of times that the quantity repeats itself in one second (i.e., number of cycles per second).
A-Weighted Sound Level, dBA	The sound level obtained by use of A-weighting. The A-weighting filter deemphasizes the very low and very high frequency components of the sound in a manner similar to the frequency components of the sound in a manner similar to the frequency response of the human ear and correlates well with subjective reactions to noise. All sound levels in this assessment are A-weighted, unless reported otherwise.
L_{01}, L_{10}, L_{50}, L_{90}	The fast A-weighted noise levels equaled or exceeded by a fluctuating sound level for 1 percent, 10 percent, 50 percent, and 90 percent of a stated time period.
Equivalent Continuous Noise Level, L_{eq}	The level of a steady sound that, in a stated time period and at a stated location, has the same A-weighted sound energy as the time varying sound.
Community Noise Equivalent Level, CNEL	The 24-hour A-weighted average sound level from midnight to midnight, obtained after the addition of 5 dB to sound levels occurring in the evening from 7:00 p.m. to 10:00 p.m. and after the addition of 10 dB to sound levels occurring in the night between 10:00 p.m. and 7:00 a.m.
Day/Night Noise Level, L_{dn}	The 24-hour A-weighted average sound level from midnight to midnight, obtained after the addition of 10 dB to sound levels occurring in the night between 10:00 p.m. and 7:00 a.m.
L_{max}, L_{min}	The maximum and minimum A-weighted sound levels measured on a sound level meter, during a designated time interval, using fast time averaging.
Ambient Noise Level	The all-encompassing noise associated with a given environment at a specified time, usually a composite of sound from many sources at many directions, near and far; no particular sound is dominant.
Intrusive	The noise that intrudes over and above the existing ambient noise at a given location. The relative intrusiveness of a sound depends upon its amplitude, duration, frequency, and time of occurrence and tonal or informational content, as well as the prevailing ambient noise level.

Source: *Handbook of Acoustical Measurements and Noise Control* (Harris, Cyril M., editor, 1991).

Table B: Common Sound Levels and Noise Sources



Source: LSA (2016).

CHARACTERISTICS OF VIBRATION

Vibration refers to ground-borne noise and perceptible motion. Ground-borne vibration is almost exclusively a concern inside buildings and is rarely perceived as a problem outdoors, where the motion may be discernible. Typically, there is more adverse reaction to effects associated with the shaking of a building. Vibration energy propagates from a source through intervening soil and rock layers to the foundations of nearby buildings. The vibration then propagates from the foundation throughout the remainder of the structure. Building vibration may be perceived by occupants as the motion of building surfaces, the rattling of items on shelves or hanging on walls, or a low-frequency rumbling noise. The rumbling noise is caused by the vibration of walls, floors, and ceilings that radiate sound waves. Annoyance from vibration often occurs when the vibration exceeds the threshold of perception by 10 dB or less. This is an order of magnitude below the damage threshold for normal buildings.

Typical sources of ground-borne vibration are construction activities (e.g., blasting, pile driving, and operating heavy-duty earthmoving equipment), steel-wheeled trains, and occasional traffic on rough roads. Problems with both ground-borne vibration and noise from these sources are usually localized

to areas within approximately 100 ft from the vibration source, although there are examples of ground-borne vibration causing interference out to distances greater than 200 ft (Caltrans 2013). When roadways are smooth, vibration from traffic, even heavy trucks, is rarely perceptible. It is assumed for most projects that the roadway surface will be smooth enough that ground-borne vibration from street traffic will not exceed the impact criteria; however, the construction of the project could result in ground-borne vibration that may be damaging.

Ground-borne vibration has the potential to damage buildings. Although it is very rare for typical construction activities to cause even cosmetic building damage, it is not uncommon for construction processes such as blasting and pile driving to cause vibration of sufficient amplitudes to damage nearby buildings (Caltrans 2013). Ground-borne vibration is usually measured in terms of vibration velocity, either the root-mean-square (RMS) velocity or peak particle velocity (PPV). The PPV is used to characterize potential for structure damage.

THRESHOLDS OF SIGNIFICANCE

Based on the *Guidelines for the Implementation of the California Environmental Quality Act* (CEQA), Appendix G, Public Resources Code, Sections 15000–15387, a project will normally have a significant effect on the environment related to noise if it will substantially increase the ambient noise levels for adjoining areas or conflict with adopted environmental plans and the goals of the community in which it is located. The following are the thresholds for potential noise impacts.

REGULATORY SETTING

The following section summarizes the regulatory framework related to noise, including federal, State, and City of Long Beach plans, policies, and standards.

Federal Regulations

In 1972, Congress enacted the United States Noise Control Act. This act authorized the United States Environmental Protection Agency (USEPA) to publish descriptive data on the effects of noise and establish levels of sound "requisite to protect the public welfare with an adequate margin of safety." These levels are separated into health (hearing loss levels) and welfare (annoyance levels). For protection against hearing loss, 96 percent of the population would be protected if sound levels are less than or equal to 70 dBA during a 24-hour period of time. At 55 dBA L_{dn}, 95 percent sentence clarity (intelligibility) may be expected at 11 ft, with no community reaction. However, 1 percent of the population may complain about noise at this level and 17 percent may indicate annoyance. The USEPA cautions that these identified levels are guidelines, not standards.

State Regulations

The State of California has established regulations that help prevent adverse impacts to occupants of buildings located near noise sources. Referred to as the *State Noise Insulation Standard*, it requires buildings to meet performance standards through design and/or building materials that would offset any noise source in the vicinity of the receptor. State regulations include requirements for the construction of new hotels, motels, apartment houses, and dwellings other than detached single-family dwellings that are intended to limit the extent of noise transmitted into habitable spaces. These requirements are found in the California Code of Regulations, Title 24 (known as the Building Standards Administrative Code), Part 2 (known as the California Building Code), Appendix Chapters

12 and 12A. For limiting noise transmitted between adjacent dwelling units, the noise insulation standards specify the extent to which walls, doors, and floor-ceiling assemblies must block or absorb sound. For limiting noise from exterior noise sources, the noise insulation standards set an interior standard of 45 dBA CNEL in any habitable room with all doors and windows closed.

Local and Regional Policies and Regulations

City of Long Beach Noise Element

The City of Long Beach General Plan addresses noise in its Noise Element. The proposed Draft Noise Element, released in May 2019, has not yet been adopted. The Noise Element contains goals and policies for noise control and abatement in the City. The goals and policies contained in the Noise Element address noise in relation to land use planning, the noise environment, transportation noise, construction and industrial noise, population and housing noise, and public health and safety. General noise goals for Long Beach aim to attain a healthier and quieter environment for all citizens while maintaining a reasonable level of economic progress and development.

The City, consistent with the California Office of Planning and Research, has established land use compatibility guidelines for determining acceptable noise levels for specified land uses as shown in Table C. These land use compatibility guidelines are intended to be an advisory resource when considering changes in land use and policies, such as zoning modifications.

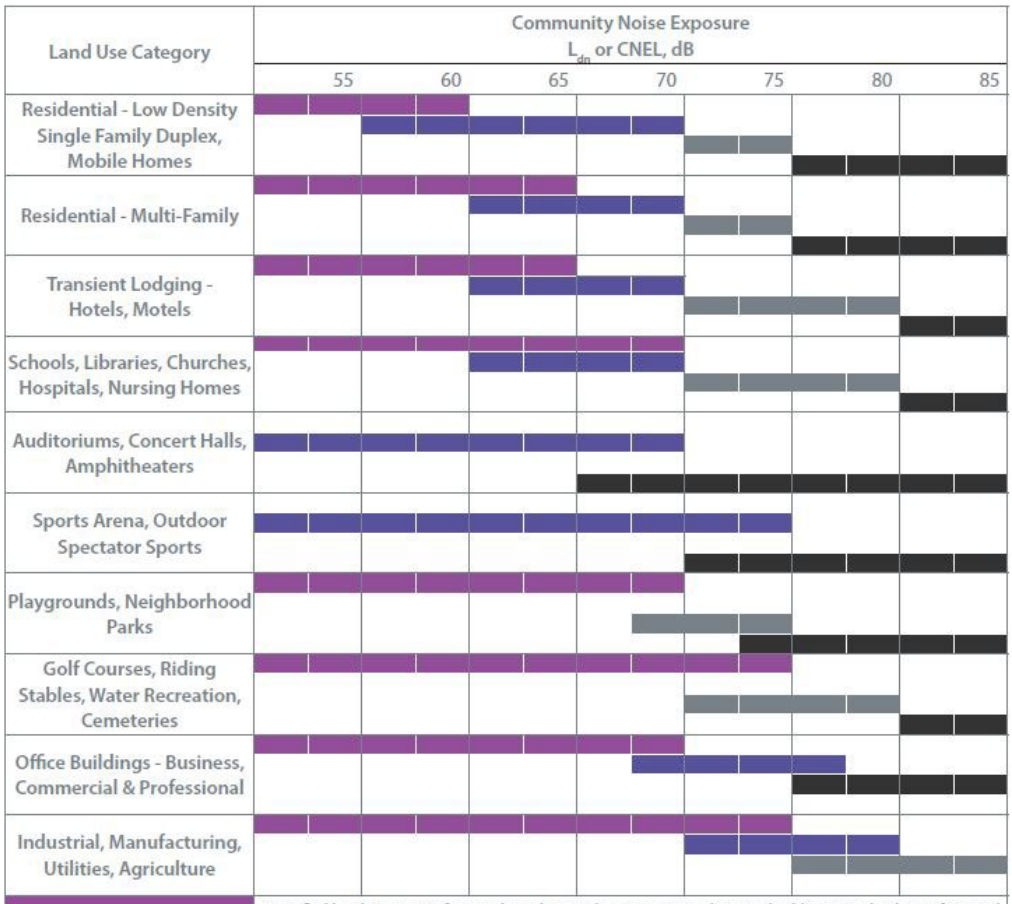
City of Long Beach Municipal Code

The City of Long Beach addresses noise impacts in Title 8: Health and Safety, Chapter 8.80, Noise, of its Municipal Code. Chapter 8.80, Noise, establishes exterior noise limits for the generation of sound within the City. The maximum noise levels vary based on the receiving land use type and the cumulative duration of noise. Table D summarize those noise limits.

In addition, Section 8.80.150(C) states the following:

> *"If the measured ambient level exceeds that permissible within any of the first four (4) noise limit categories in Subsection B of this Section, the allowable noise exposure standard shall be increased in five (5) decibels increments in each category as appropriate to encompass or reflect the ambient noise level. In the event the ambient noise level exceeds the fifth noise limit category in Subsection B of this Section, the maximum allowable noise level under said category shall be increased to reflect the maximum ambient noise level."*

Table C: Community Noise Exposure L_{dn} or CNEL (dB)



Normally Acceptable	*Specified land use is satisfactory, based upon the assumption that any buildings involved are of normal conventional construction, without any special noise insulation requirements.*
Conditionally Acceptable	*New construction or development should be undertaken only after a detailed 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.*
Normally Unacceptable	*New construction or development should generally be discouraged. If new construction or development does proceed, a detailed analysis of the noise reduction requirements must be made and needed noise insulation features included in the design.*
Clearly Unacceptable	*New construction or development should generally not be undertaken.*

Source: California Office of Planning and Research, General Plan Guidelines (2017), Appendix D.

CNEL = Community Noise Equivalent Level
dB = decibel(s)
L_{dn} = day-night average noise level

Table D: City of Long Beach Exterior Noise Limits

Receiving Land Use District	Time Period	Noise Level (dBA)	L_{max} (dBA)
District One	Night (10:00 p.m. to 7:00 a.m.)	45	65
	Day (7:00 a.m. to 10:00 p.m.)	50	70
District Two	Night (10:00 p.m. to 7:00 a.m.)	55	75
	Day (7:00 a.m. to 10:00 p.m.)	60	80
District Three	Any time	65	85
District Four	Any time	70	90
District Five	Regulated by other agencies and laws		

Source: City of Long Beach Municipal Code.
Notes: District One – Predominantly residential with other land use types also present.
District Two – Predominantly commercial with other land use types also present.
District Three and Four – Predominantly industrial with other land use types also present. Limits are intended primarily for use at their boundaries rather for noise control within those districts.
District Five – Airports, freeways, and waterways regulated by other agencies.
dBA = A-weighted decibels
L_{max} = maximum noise level

City of Signal Hill Municipal Code

The nearest sensitive receptor, the Long Beach Islamic Center, is located within the City of Signal Hill. The City of Signal Hill addresses noise impacts in its Municipal Code, Chapter 9.16, Noise. Section 9.16.020 establishes ambient base noise levels at receiving land uses, as presented in Table E, below. The ambient noise level is defined as "*the level obtained when the noise level is averaged over a period of fifteen minutes without inclusion of noise from isolated identifiable sources, at the location and time of day near that at which a comparison is to be made*."

Table E: City of Signal Hill Ambient Base Noise Limits

Zone	Night (10:00 p.m. to 7:00 a.m.)	Day (7:00 a.m. to 10:00 p.m.)
Residential	50	60
Commercial	60	65
Industrial	70	70

Source: City of Signal Hill Municipal Code.
Note: Noise levels presented are in dBA (A-weighted decibels)

In addition, Section 9.16.060 states the following:

> *"It is unlawful for any person to operate any machinery, equipment, compressor, pump, generator, fan, air conditioning apparatus, or similar mechanical device, or provide boarding or daycare to animals in an enclosed building (kennel) in any manner so as to create any noise which would cause the noise level at the property line of any property to exceed the ambient noise level by more than five decibels."*

Noise regulations established by the City of Long Beach also affect noise levels in Signal Hill. As discussed in the previous section, the City of Long Beach has implemented an Airport Noise Compatibility Ordinance which effectively limits noise for neighborhoods in both Long Beach and Signal Hill.

Applicable Vibration Standards

The City's Noise Element does not include specific criteria for assessing vibration impacts; it suggests that for the purpose of determining the significance of vibration impacts experienced at sensitive uses surrounding the project, the guidelines within the FTA's 2018 *Transit Noise and Vibration Impact Assessment Manual* (FTA Manual) should be used to determine vibration impacts.

The criteria for environmental impacts from ground-borne vibration and noise are based on the maximum levels for a single event. Table F lists the potential vibration building damage criteria associated with construction activities, as suggested in the FTA Manual. FTA guidelines show that a vibration level of up to 0.5 inches per second (in/sec) in PPV is considered safe for buildings consisting of reinforced concrete, steel, or timber (no plaster), and would not result in any construction vibration damage. For a nonengineered timber and masonry building, the construction building vibration damage criterion is 0.2 in/sec in PPV.

Table F: Construction Vibration Damage Criteria

Building Category	PPV (in/sec)
Reinforced concrete, steel, or timber (no plaster)	0.50
Engineered concrete and masonry (no plaster)	0.30
Non-engineered timber and masonry buildings	0.20
Buildings extremely susceptible to vibration damage	0.12

Source: *Transit Noise and Vibration Impact Assessment Manual* (FTA 2018).
FTA = Federal Transit Administration
in/sec = inches per second
PPV = peak particle velocity

EXISTING SETTING

Sensitive Receptors and Land Uses in the Project Vicinity

Certain land uses are considered more sensitive to noise and vibration than others. Examples of these include residential areas, educational facilities, hospitals, childcare facilities, places of worship, and senior housing. The project site is surrounded primarily by open space, office, and commercial uses. The closest sensitive receptors include the following:

- **Northwest:** Long Beach Islamic Center across East 27th Street
- **East:** Sunnyside Cemetery (Per the City's Municipal Code, this land use falls under District Four.)

The project site has a current General Plan PlaceType designation of Open Space. The proposed project would require a General Plan Amendment to change the PlaceType designation to Neo Industrial (NI). The NI PlaceType designation permits land uses associated with offices. According to the City's 2017 Land Use Zoning Map, the project site is currently zoned for Institutional Use (I). The proposed project would be consistent with the project site's current zoning designation as permitted uses in the Institutional Zoning District include medical offices and complexes.

Overview of the Existing Noise Environment

The primary existing noise sources in the project area are traffic noise on California Avenue and East Willow Street, parking lot activities, and commercial activities. Also, aircraft takeoffs associated with the Long Beach Airport contribute to the existing noise environment in the project vicinity.

Long-Term Noise Measurements

Long-term (24-hour) noise level measurements were conducted on May 5 and May 6, 2022, using two (2) Larson Davis Spark 706RC Dosimeters. Table G provides a summary of the measured hourly noise levels and calculated CNEL levels from the long-term noise level measurements. As shown in Table G, the calculated CNEL levels range from 65.1 dBA CNEL to 68.2 dBA CNEL. Hourly noise levels at surrounding sensitive uses are as low as 54.0 dBA L_{eq} during nighttime hours and 60.1 dBA L_{eq} during daytime hours. Long-term noise monitoring data results are provided in Attachment C. Figure 3 shows the long-term monitoring locations. Because the measured noise levels are below the ambient noise levels established by the City of Signal Hill Municipal Code, the noise levels from Signal Hill's Municipal Code presented in Table E will be utilized as the noise limits in the assessment of noise impacts to the Long Beach Islamic Center as it is located within the City of Signal Hill boundary, while the noise limits presented in Table D for the City of Long Beach will be utilized for the assessment of noise impacts to Sunnyside Cemetery.

Table G: Long-Term 24-Hour Ambient Noise Monitoring Results

Location		Daytime Noise Levels[1] (dBA L_{eq})	Evening Noise Levels[2] (dBA L_{eq})	Nighttime Noise Levels[3] (dBA L_{eq})	Daily Noise Levels (dBA CNEL)
LT-1	Parking lot across 999 East Willow Street, northeast of East Willow Street and California Avenue. Approximately 75 ft from California Avenue centerline and 120 ft from East Willow Street centerline.	65.6–67.3	62.4–65.0	55.3–63.6	68.2
LT-2	Northeast corner of project site. Next to existing benches on a tree nearest the retaining wall. Approximately 90 ft from California Avenue centerline.	60.1–63.5	58.6–61.8	54.0–61.4	65.1

Source: Compiled by LSA (2022).
Note: Noise measurements were conducted from May 4 to May 5, 2022, starting at 11:00 a.m.
[1] Daytime Noise Levels = noise levels during the hours from 7:00 a.m. to 7:00 p.m.
[2] Evening Noise Levels = noise levels during the hours from 7:00 p.m. to 10:00 p.m.
[3] Nighttime Noise Levels = noise levels during the hours from 10:00 p.m. to 7:00 a.m.
CNEL = Community Noise Equivalent Level
dBA = A-weighted decibels
ft = foot/feet
L_{eq} = equivalent continuous sound level

Aircraft Noise

Long Beach Airport is located approximately 1.25 miles northeast of the project site. The Los Angeles County Airport Land Use Plan (ALUC 2004) shows that the project site is well outside the 65 dBA CNEL noise contour for the airports. While aircraft operations may contribute to the noise in the project area from this airport, the project site is not expected to experience airport-related noise levels in excess of the City of Long Beach exterior standards.

PROJECT IMPACT ANALYSIS

The project would result in short-term construction noise and vibration impacts and long-term mobile and stationary source noise and vibration impacts as described below.

Short-Term Construction-Related Impacts

Project construction would result in short-term noise and vibration impacts on adjacent land uses. Maximum construction impacts would be short-term, generally intermittent depending on the construction phase, and variable depending on receptor distance from the active construction area. The duration of impacts generally would be from one day to several days depending on the phase of construction. The levels and types of impacts that would occur during construction are described below.

Construction Noise Impacts

Two types of short-term noise impacts would occur during project construction, including: (1) equipment delivery and construction worker commutes; and (2) project construction activities.

The first type of short-term construction noise would result from transport of construction equipment and materials to the project site and construction worker commutes. These transportation activities would incrementally raise noise levels on access roads leading to the site. It is expected that larger trucks used in equipment delivery would generate higher noise impacts than trucks associated with worker commutes. The single-event noise from equipment trucks passing at a distance of 50 ft from a sensitive noise receptor would reach a maximum level of 84 dBA L_{max}. However, the pieces of heavy equipment for grading and construction activities would be moved on site only one time and would remain on site for the duration of each construction phase. This one-time trip, when heavy construction equipment is moved on and off site, would not significantly add to the traffic noise experienced over a 24-hour period in the project vicinity. The total number of daily vehicle trips would be minimal when compared to existing traffic volumes on the affected streets, and the long-term noise level change associated with these trips would not be perceptible. Therefore, equipment transport noise and construction-related worker commute impacts would be short-term and would not result in a significant off-site noise impact.

The second type of short-term noise impact is related to noise generated during site preparation, grading, building construction, architectural coating, and paving on the project site. Construction is undertaken in discrete steps, each of which has its own mix of equipment, and consequently its own noise characteristics. These various sequential phases would change the character of the noise generated on the project site. Therefore, the noise levels vary as construction progresses. Despite the variety in the type and size of construction equipment, similarities in the dominant noise sources and patterns of operation allow construction-related noise ranges to be categorized by work phase. Table H lists the maximum noise levels recommended for noise impact assessments for typical construction equipment based on a distance of 50 ft between the equipment and a noise receptor. Typical operating cycles for these types of construction equipment may involve 1 to 2 minutes of full power operation followed by 3 to 4 minutes at lower power settings.

Table H: Typical Construction Equipment Noise Levels

Equipment Description	Acoustical Usage Factor (%)[1]	Maximum Noise Level (L_{max}) at 50 Ft[2]
Backhoes	40	80
Compactor (ground)	20	80
Compressor	40	80
Cranes	16	85
Dozers	40	85
Dump Trucks	40	84
Excavators	40	85
Flat Bed Trucks	40	84
Forklift	20	85
Front-end Loaders	40	80
Graders	40	85
Impact Pile Drivers	20	95
Jackhammers	20	85
Pick-up Truck	40	55
Pneumatic Tools	50	85
Pumps	50	77
Rock Drills	20	85
Rollers	20	85
Scrapers	40	85
Tractors	40	84
Welder	40	73

Source: Roadway Construction Noise Model (FHWA 2006).
Note: Noise levels reported in this table are rounded to the nearest whole number.
[1] The usage factor is the percentage of time during a construction noise operation that a piece of construction equipment is operating at full power.
[2] The maximum noise levels were developed based on Specification 721.560 from the Central Artery/Tunnel (CA/T) program to be consistent with the City of Boston's Noise Code for the "Big Dig" project.
CA/T = Central Artery/Tunnel
FHWA = Federal Highway Administration
ft = foot/feet
L_{max} = maximum instantaneous noise level

In addition to the reference maximum noise level, the usage factor provided in Table H is employed to calculate the hourly noise level impact for each piece of equipment based on the following equation:

$$L_{eq}(equip) = E.L. + 10\log(U.F.) - 20\log\left(\frac{D}{50}\right)$$

where: $L_{eq}(equip)$ = L_{eq} at a receiver resulting from the operation of a single piece of equipment over a specified time period
E.L. = noise emission level of the particular piece of equipment at a reference distance of 50 ft
U.F. = usage factor that accounts for the fraction of time that the equipment is in use over the specified period of time
D = distance from the receiver to the piece of equipment

Each piece of construction equipment operates as an individual point source. Utilizing the following equation, a composite noise level can be calculated when multiple sources of noise operate simultaneously:

$$Leq\ (composite) = 10 * \log_{10}\left(\sum_{1}^{n} 10^{\frac{Ln}{10}}\right)$$

Utilizing the equations from the methodology above and the reference information in Table E, the composite noise level of each construction phase was calculated. The project construction composite noise levels at a distance of 50 ft would range from 74 dBA L_{eq} to 85 dBA L_{eq} based on a 40 percent usage factor, with the highest noise levels occurring during the grading phase.

Construction noise levels will fluctuate throughout the construction period as equipment moves between the various areas on the project site. In order to assess the specific noise levels at the surrounding receptors, the average noise level experienced during construction was assessed based on the average distance of activities to the surrounding receptors that would be approximately 185 ft from the property line of the existing Long Beach Islamic Center to the northwest and approximately 30 ft from the property line of the existing sensitive Sunnyside Cemetery to the east. At the estimated distances, construction noise levels experienced would be 73.0 dBA and 78.0 dBA for the Islamic center and the cemetery, respectively.

Although the project construction noise would be higher than the ambient noise in the project vicinity, it would cease to occur once the project construction is completed. The proposed project would comply with the requirements of the City of Long Beach Noise Ordinance, which states that construction activities shall only occur between the hours of 7:00 a.m. to 7:00 p.m., Monday through Friday and federal holidays; or between 9:00 a.m. to 6:00 p.m. on Saturdays. Construction shall not occur on Sundays. Additionally, construction noise levels on average are expected to be below the FTA's recommended 90 dBA L_{eq} standard. Compliance with the Noise Ordinance would ensure that construction noise does not disturb surrounding receptors during hours when ambient noise levels are likely to be lower (i.e., at night). In addition, the proposed project would implement several best practices for reducing construction noise, including, but not limited to, maximizing the distance between noise sources and sensitive receptors during construction activities, and equipping construction equipment with properly operating and maintained noise mufflers. In conclusion, construction noise would be reduced to a less than significant level with compliance with the City's Municipal Code allowable construction hours, and incorporation of the recommended best business practices. No mitigation is required.

Construction Vibration Impacts

Ground-borne noise and vibration from construction activity would be mostly low to moderate. While there is currently limited information regarding vibration source levels, to provide a comparison of vibration levels expected for a project of this size, a small bulldozer and loaded truck, as shown in Table I, would generate approximately 0.003 in/sec in PPV and 0.076 in/sec in PPV, respectively, of ground-borne vibration when measured at 25 ft. Table F further shows the PPV values from other construction vibration sources at 25 ft from construction vibration sources for comparison purposes.

Table I: Vibration Source Amplitudes for Construction Equipment

Equipment	Reference Level at 25 ft PPV (in/sec)
Vibratory Roller	0.210
Large Bulldozer / Caisson Drilling	0.089
Loaded Trucks	0.076
Jackhammer	0.035
Small Bulldozer	0.003

Source: FTA. *Transit Noise and Vibration Impact Assessment Manual* (2018).
FTA = Federal Transit Administration
ft = foot/feet
PPV = peak particle velocity
in/sec = inches per second

The distance to the nearest buildings for vibration impact analysis is measured between the nearest off-site buildings and the project boundary (assuming the construction equipment would be used at or near the project boundary) because vibration impacts occur at the buildings. The formula for vibration transmission is provided below:

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

As shown in Table F, vibration levels exceeding 0.5 in/sec in PPV would result in building damage to structures constructed of non-engineered timber and masonry buildings. The closest receptor to the proposed construction activities is the existing Long Beach Islamic Center at 995 East 27th Street, Signal Hill, which is located 160 ft northwest of the boundary of the proposed project.

Utilizing the equations above, it is expected that vibration levels generated by dump trucks and other large equipment that would be as close as approximately 160 ft would approach 0.005 in/sec in PPV, which would be below the 0.2 PPV in/sec threshold. Therefore, no construction vibration impacts would occur. No vibration reduction measures are required.

Long-Term Traffic Noise Impacts

In order to assess the potential traffic impacts related to the proposed project, LSA prepared the *Traffic Analysis for Medical Building Project at 2600 California Avenue in Long Beach, California* (2022). Based on the traffic analysis results, it was determined that a net additional 108 average daily trips (ADT) would be generated by the proposed project. The Existing traffic volume on the adjacent segment of East Willow Street from Atlantic Avenue to Cherry Avenue is 29,350 (Southern California Association of Governments [SCAG] 2017). Using the equation below, with an increase of 108 ADT, the noise level increase would be less than 0.1 dBA CNEL.

$$\text{Change in CNEL} = 10 \log_{10} [V_{e+p}/V_{existing}]$$

Where: $V_{existing}$ = the existing daily volume
V_{e+p} = existing daily volumes plus project
Change in CNEL = the increase in noise level due to the project

A noise level increase of less than 1 dBA would not be perceptible to the human ear; therefore, the traffic noise increase along East Willow Street resulting from the project would be less than significant.

Long-Term Stationary Noise Impacts

The proposed project would include mechanical equipment related to heating, ventilation, and air conditioning (HVAC) equipment which could operate 24 hours per day. Rooftop HVAC would generate noise levels of 66.6 dBA L_{eq} at 5 ft per HVAC unit based on previous measurements conducted by LSA. Based on the site plan, two HVAC units will be installed and would generate noise levels of 69.6 dBA L_{eq} at 5 ft. Table J presents the noise levels from HVAC equipment at the nearest noise-sensitive location.

Table J: Summary of HVAC Noise Levels

Off-Site Land Use	Direction	Distance from HVAC Units (ft)[1]	Reference Noise Level (dBA L_{eq}) at 5 ft[2]	Distance Attenuation (dBA)	Average Noise Level (dBA L_{eq})
Long Beach Islamic Center	Northwest	185	69.6	31.4	38.2
Cemetery	East	30	69.6	15.6	54.0

Source: Compiled by LSA (2022).
[1] Distances are measured from the property line of the receiving land use to the closest source of HVAC noise.
[2] Reference noise levels are associated with an assumption of 2 HVAC units.
dBA = A-weighted decibels
ft = foot/feet
HVAC = heating, ventilation, and air conditioning
L_{eq} = equivalent continuous sound level

With two HVAC units installed, noise generated from on-site HVAC equipment would potentially reach up to 38.2 dBA L_{eq} at the Long Beach Islamic Center, which would not exceed the City of Signal Hill's daytime and nighttime noise level standards of 65.0 dBA L_{eq} and 60.0 dBA L_{eq}, respectively. In addition, noise levels to the adjacent cemetery to the east would approach 54.0 dBA L_{eq}, which would be below the exterior noise level standard of 70 dBA L_{eq} for District Four land uses, as identified in Table D previously. In addition, on-site HVAC equipment would be shielded by a parapet and roofline that would provide a further noise level reduction.

Long-Term Ground-Borne Noise and Vibration from Vehicular Traffic

Vibration levels generated from project-related traffic are unusual for on-road vehicles because the rubber tires and suspension systems of on-road vehicles provide vibration isolation. Therefore, project-related vehicular traffic on adjacent roadways (California Avenue and East Willow Street) would not result in significant ground-borne noise or vibration impacts.

Land Use Compatibility Analysis

The proposed project would not contain any sensitive outdoor use areas. Therefore, this analysis focuses on the potential interior noise impacts, as described below.

Interior Noise Analysis

The project proposes a form of air conditioning that would allow windows to remain closed. Exterior noise levels associated with traffic noise along California Avenue at the nearest façade have the potential to approach 71 dBA CNEL, requiring a minimum reduction of 26 dBA to meet 45 dBA CNEL. The current elevation within the project plans shows that the majority of each façade would be

composed of glass. Based on specifications provided, the project would install dual glazed, Solarban 90 glazing. This assembly is made up of two approximately 0.25-inch glass panels separated by a 0.5-inch air space. Typically, this glazing construction would result in a Sound Transmission Class (STC) rating of 35 and Outdoor to Indoor Transmission Coefficient (OITC) of 28 based on specifications of similar glass panels (Vitro Architectural Glass). A minimum noise reduction of 28 dBA would be expected, resulting in an interior noise level of 43 dBA CNEL, which is below the 45 dBA threshold.

SUMMARY

Based on the analysis above, the proposed project would be in compliance with the City of Long Beach and the City of Signal Hill noise standards with the implementation of the following project design features and regulatory compliance measures. The Project Applicant should verify that final design plans reflect the following design features:

- The proposed project includes installation of central air conditioning which allows windows to remain closed.
- Windows and glass doors with rating of STC 35 or higher for the exterior façades.

In addition, during project construction, the following best business practices would reduce potential noise increases to the extent feasible:

- The project shall comply with the City's permitted hours of construction, which is 7:00 a.m. to 7:00 p.m., Monday through Friday and on federal holidays; and 9:00 a.m. to 6:00 p.m. on Saturdays. Construction shall not occur on Sundays.
- The project construction contractor shall ensure that the greatest distance between noise sources and sensitive receptors during construction activities is achieved.
- The project construction contractor shall equip construction equipment, fixed or mobile, with properly operating and maintained noise mufflers consistent with manufacturers' standards.
- The project contractor shall place all stationary construction equipment so that emitted noise is directed away from sensitive receptors nearest the project site whenever feasible.
- The project construction contractor shall use on-site electrical sources to power equipment rather than diesel generators whenever feasible.
- The project construction contractor shall reduce non-essential idling of construction equipment to no more than five minutes per hour.

ATTACHMENT A

REFERENCES

REFERENCES

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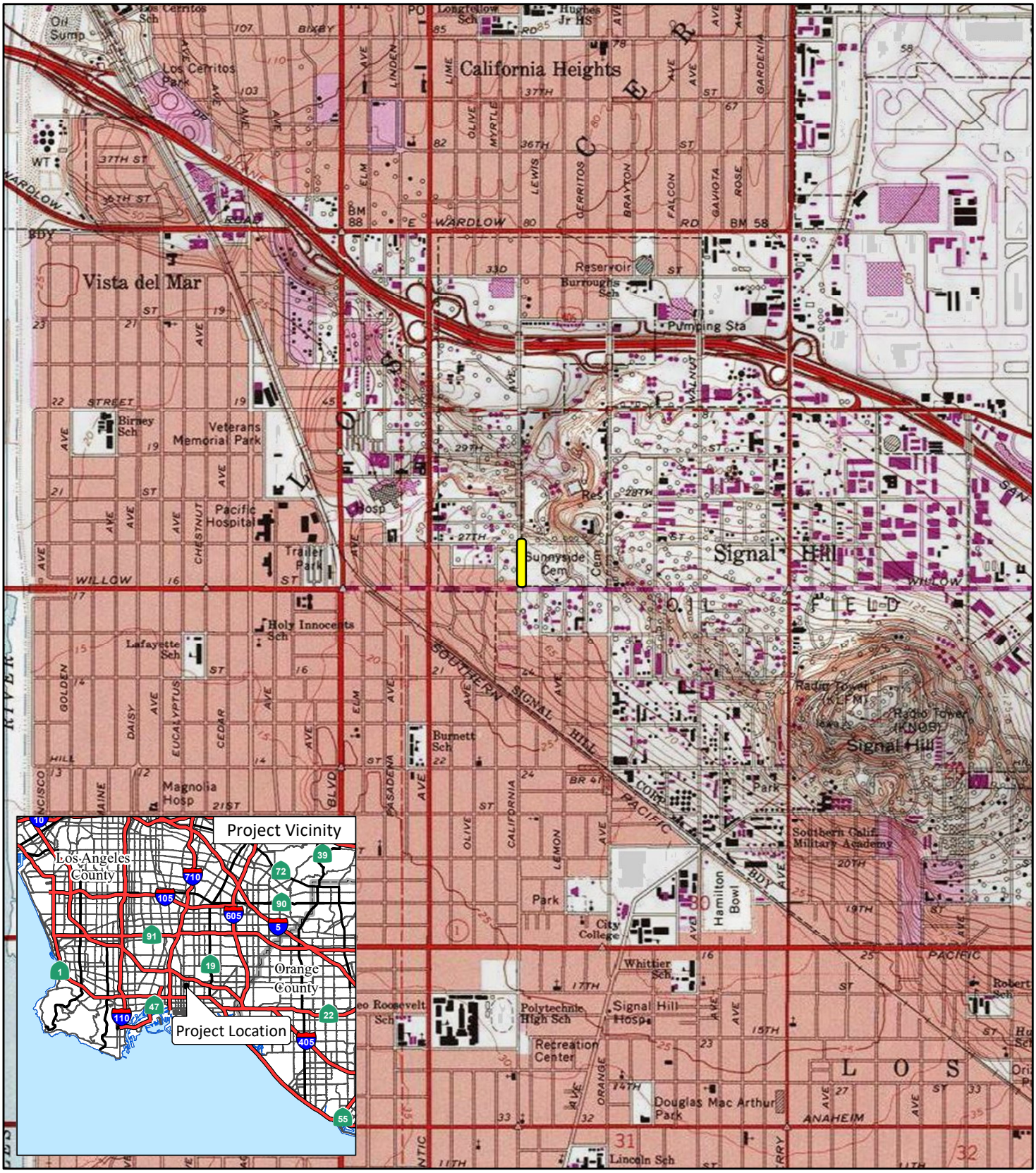
ATTACHMENT B

FIGURES



LSA

LEGEND

Project Location

FIGURE 1

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0 1000 2000

FEET

Medical Building
at 2600 California Avenue

Project Location

SOURCE: USGS 7.5' Quad - *Long Beach* (1978), CA

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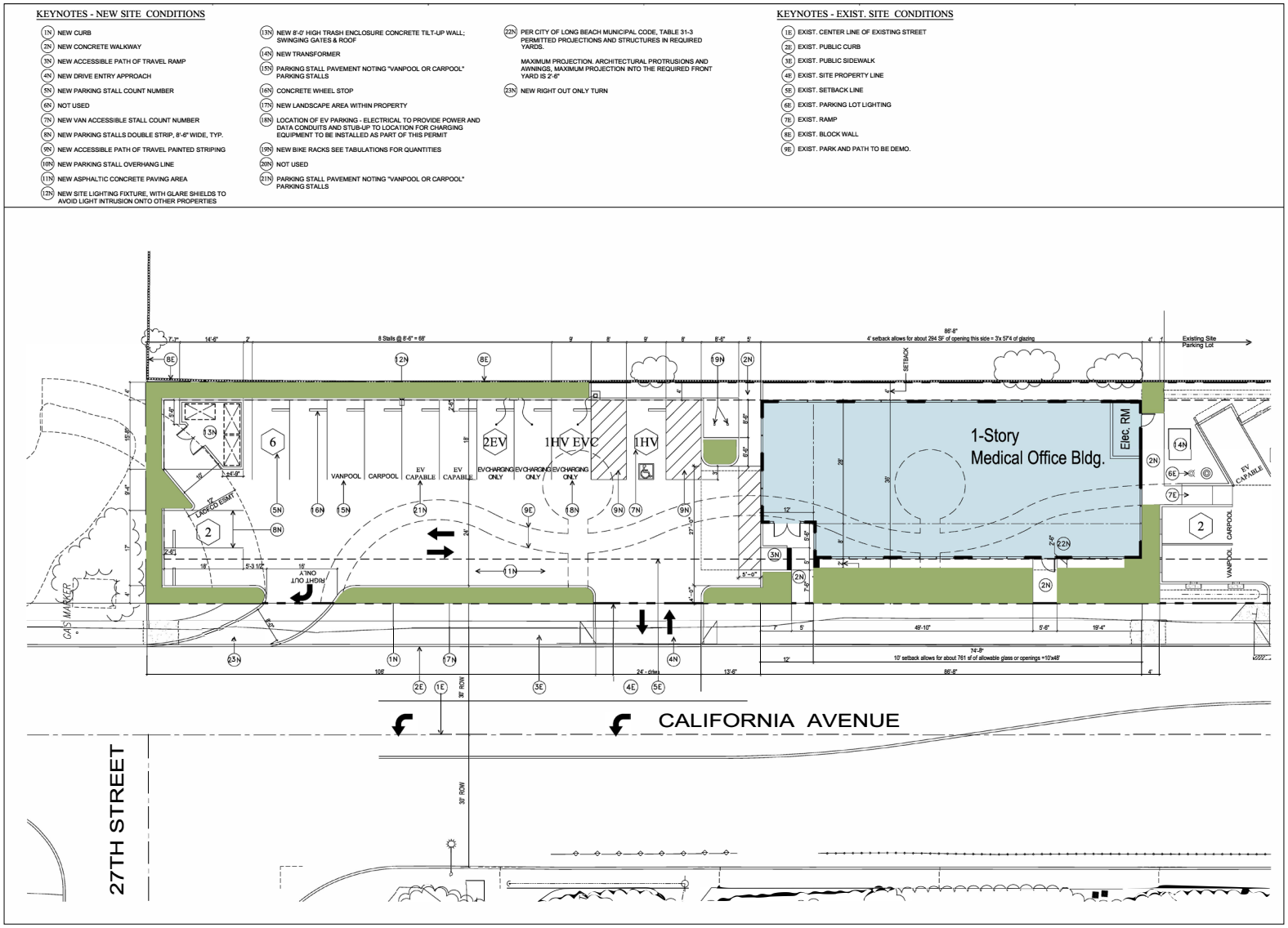

LSA

FIGURE 2

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SOURCE: DRA Architects

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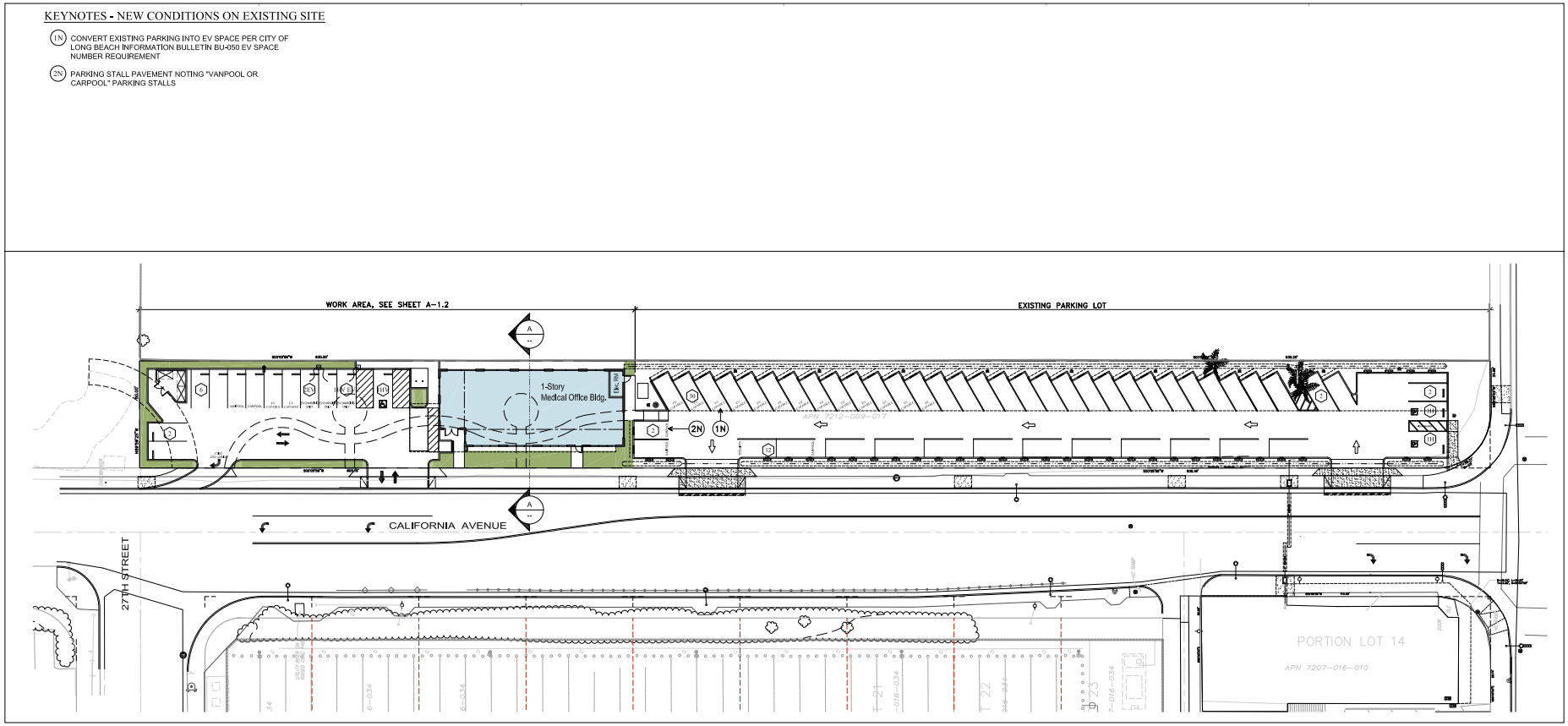
Medical Building at 2600 California Avenue

Enlarged Site Plan



LSA

FIGURE 3

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SOURCE: DRA Architects

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Medical Building at 2600 California Avenue

Overall Site Plan

ATTACHMENT C

NOISE MEASUREMENTS

Noise Measurement Survey – 24 HR

Project Number: CLB1904.39
Project Name: Cal Med Office

Test Personnel: Kevin Nguyendo
Equipment: Spark 706RC (SN:18906)

Site Number: LT-1 Date: 5/5/22

Time: From 11:00 a.m. To 11:00 a.m.

Site Location: Located in a parking lot across 999 E Willow St. Northeast of Willow St and California Ave. Near a black light pole nearest the retaining wall.

Primary Noise Sources: Busy traffic noise on California and Willow. Intermittent airplane Flyover.

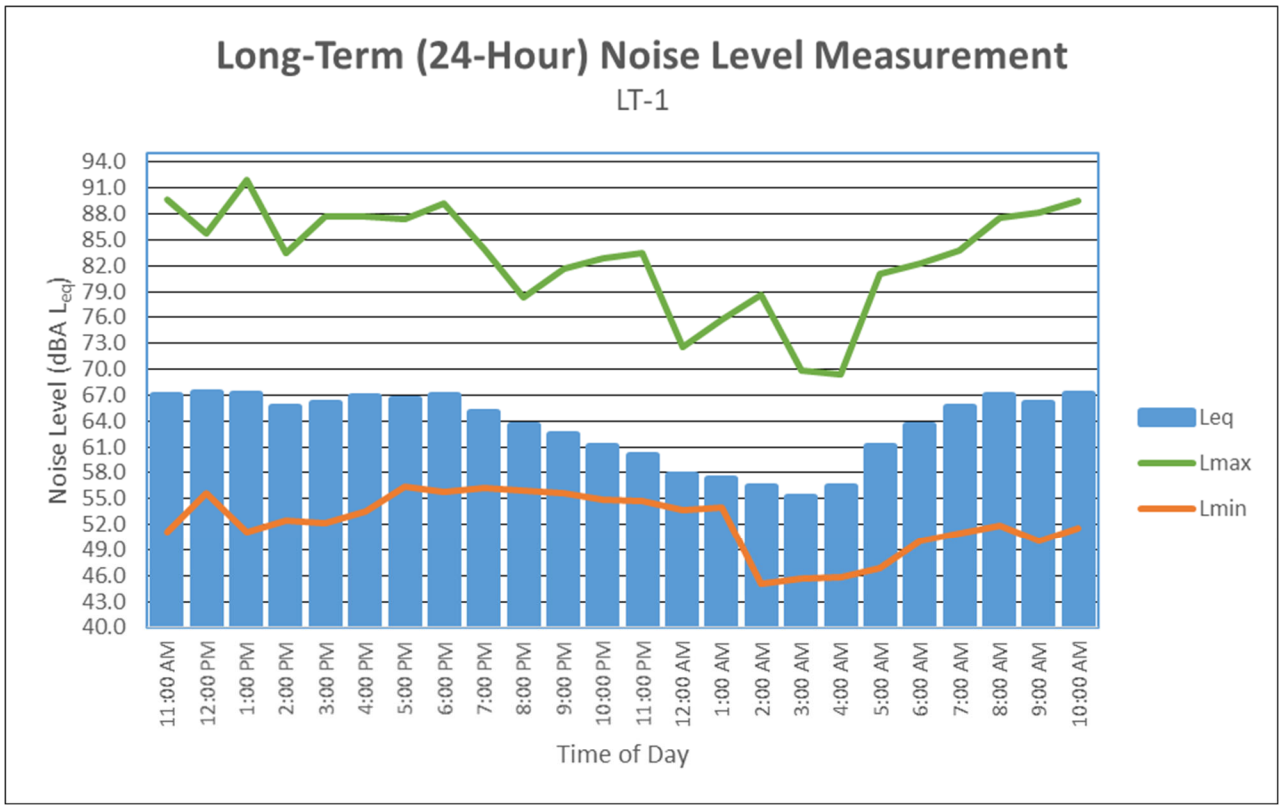
Comments: Nearby retaining wall has a 7 inch block height.

Photo:

Long-Term (24-Hour) Noise Level Measurement Results at LT-1

Start Time	Date	Noise Level (dBA)		
		L_{eq}	L_{max}	L_{min}
11:00 AM	5/5/22	67.0	89.7	51.1
12:00 PM	5/5/22	67.3	85.8	55.6
1:00 PM	5/5/22	67.2	92.0	51.1
2:00 PM	5/5/22	65.6	83.5	52.4
3:00 PM	5/5/22	66.1	87.7	52.1
4:00 PM	5/5/22	66.9	87.7	53.5
5:00 PM	5/5/22	66.6	87.4	56.4
6:00 PM	5/5/22	66.9	89.2	55.8
7:00 PM	5/5/22	65.0	84.0	56.2
8:00 PM	5/5/22	63.4	78.3	55.9
9:00 PM	5/5/22	62.4	81.7	55.7
10:00 PM	5/5/22	61.1	82.8	54.9
11:00 PM	5/5/22	60.1	83.4	54.8
12:00 AM	5/6/22	57.8	72.6	53.7
1:00 AM	5/6/22	57.4	75.7	54.0
2:00 AM	5/6/22	56.4	78.7	45.1
3:00 AM	5/6/22	55.3	69.9	45.6
4:00 AM	5/6/22	56.4	69.4	45.8
5:00 AM	5/6/22	61.1	81.1	46.8
6:00 AM	5/6/22	63.6	82.3	50.0
7:00 AM	5/6/22	65.6	83.7	51.0
8:00 AM	5/6/22	66.9	87.6	51.9
9:00 AM	5/6/22	66.1	88.1	50.1
10:00 AM	5/6/22	67.1	89.5	51.6

Source: Compiled by LSA Associates, Inc. (2022).
dBA = A-weighted decibel
L_{eq} = equivalent continuous sound level
L_{max} = maximum instantaneous noise level
L_{min} = minimum measured sound level


Long-Term (24-Hour) Noise Level Measurement
LT-1
Noise Level (dBA Leq)
94.0
91.0
88.0
85.0
82.0
79.0
76.0
73.0
70.0
67.0
64.0
61.0
58.0
55.0
52.0
49.0
46.0
43.0
40.0
11:00 AM
12:00 PM
1:00 PM
2:00 PM
3:00 PM
4:00 PM
5:00 PM
6:00 PM
7:00 PM
8:00 PM
9:00 PM
10:00 PM
11:00 PM
12:00 AM
1:00 AM
2:00 AM
3:00 AM
4:00 AM
5:00 AM
6:00 AM
7:00 AM
8:00 AM
9:00 AM
10:00 AM
Time of Day
Leq
Lmax
Lmin

Noise Measurement Survey – 24 HR

Project Number: CLB1904.39
Project Name: Cal Med Office

Test Personnel: Kevin Nguyendo
Equipment: Spark 706RC (SN:18906)

Site Number: LT-2 Date: 5/5/22

Time: From 11:00 a.m. To 11:00 a.m.

Site Location: Near Northeast corner of project site. Next to existing benches on a tree, on the grave site property nearest the retaining wall.

Primary Noise Sources: Regular traffic on California, intermittent airplanes and operational loading/unloading noise across the street from garbage disposal property.

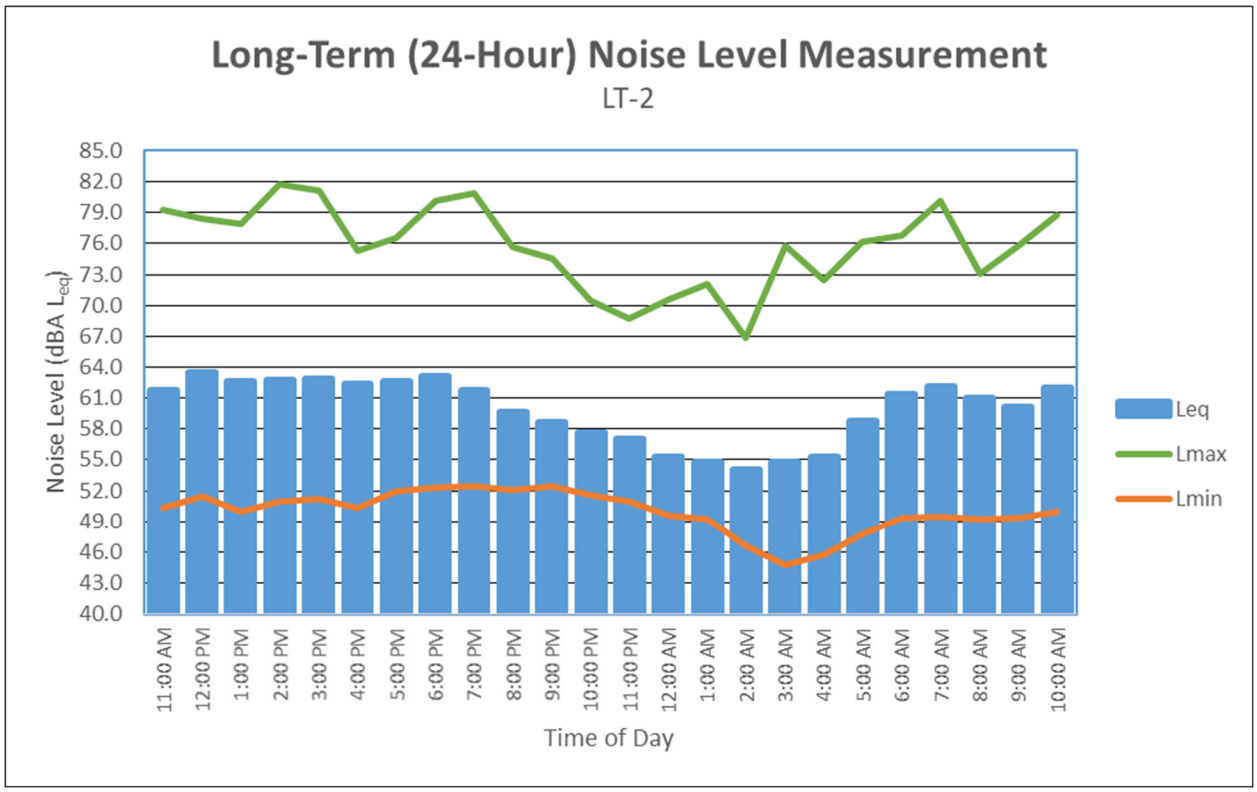
Comments: Nearby retaining wall has a 7 inch block height.

Photo:

Long-Term (24-Hour) Noise Level Measurement Results at LT-2

Start Time	Date	Noise Level (dBA)		
		L_{eq}	L_{max}	L_{min}
11:00 AM	5/5/22	61.8	79.3	50.3
12:00 PM	5/5/22	63.5	78.4	51.4
1:00 PM	5/5/22	62.7	77.9	50.0
2:00 PM	5/5/22	62.7	81.8	50.9
3:00 PM	5/5/22	62.8	81.2	51.2
4:00 PM	5/5/22	62.4	75.3	50.3
5:00 PM	5/5/22	62.7	76.5	51.9
6:00 PM	5/5/22	63.1	80.2	52.3
7:00 PM	5/5/22	61.8	80.9	52.5
8:00 PM	5/5/22	59.7	75.7	52.1
9:00 PM	5/5/22	58.6	74.6	52.5
10:00 PM	5/5/22	57.7	70.5	51.6
11:00 PM	5/5/22	57.1	68.7	50.9
12:00 AM	5/6/22	55.2	70.6	49.6
1:00 AM	5/6/22	54.8	72.1	49.2
2:00 AM	5/6/22	54.0	66.9	46.6
3:00 AM	5/6/22	54.8	75.8	44.8
4:00 AM	5/6/22	55.3	72.4	45.7
5:00 AM	5/6/22	58.7	76.2	47.7
6:00 AM	5/6/22	61.4	76.8	49.3
7:00 AM	5/6/22	62.1	80.2	49.5
8:00 AM	5/6/22	61.1	73.1	49.2
9:00 AM	5/6/22	60.1	75.8	49.3
10:00 AM	5/6/22	62.0	78.8	50.0

Source: Compiled by LSA Associates, Inc. (2022).
dBA = A-weighted decibel
L_{eq} = equivalent continuous sound level
L_{max} = maximum instantaneous noise level
L_{min} = minimum measured sound level


Long-Term (24-Hour) Noise Level Measurement
LT-2
Noise Level (dBA Leq)
85.0
82.0
79.0
76.0
73.0
70.0
67.0
64.0
61.0
58.0
55.0
52.0
49.0
46.0
43.0
40.0
11:00 AM
12:00 PM
1:00 PM
2:00 PM
3:00 PM
4:00 PM
5:00 PM
6:00 PM
7:00 PM
8:00 PM
9:00 PM
10:00 PM
11:00 PM
12:00 AM
1:00 AM
2:00 AM
3:00 AM
4:00 AM
5:00 AM
6:00 AM
7:00 AM
8:00 AM
9:00 AM
10:00 AM
Time of Day
Leq
Lmax
Lmin

ATTACHMENT D

AIR QUALITY AND GREENHOUSE GAS TECHNICAL MEMORANDUM FOR THE MEDICAL OFFICE BUILDING PROJECT AT 2600 CALIFORNIA AVENUE (LSA, AUGUST 2022)

LSA

CARLSBAD
CLOVIS
IRVINE
LOS ANGELES
PALM SPRINGS
POINT RICHMOND
RIVERSIDE
ROSEVILLE
SAN LUIS OBISPO

MEMORANDUM

DATE: August 12, 2022

TO: Alexis Oropeza, Current Planning Officer

FROM: Amy Fischer, Principal
Cara Carlucci, Senior Planner

SUBJECT: Air Quality and Greenhouse Gas Technical Memorandum for the Medical Office Building Project at 2600 California Avenue in the City of Long Beach, California

INTRODUCTION

LSA has prepared this Air Quality and Greenhouse Gas Technical Memorandum to evaluate the impacts associated with construction and operation of the proposed Medical Building Project (project) located at 2600 California Avenue in the City of Long Beach (City), Los Angeles County, California. This analysis was prepared using methods and assumptions recommended in the air quality impact assessment guidelines of the South Coast Air Quality Management District (SCAQMD) in its *CEQA Air Quality Handbook* (1993) and associated updates. This analysis includes an assessment of criteria pollutant emissions, an assessment of carbon monoxide (CO) hot-spot impacts, and an assessment of the project's greenhouse gas (GHG) emissions.

PROJECT LOCATION

The 0.72-acre project site is located on the northeast corner of California Avenue and East Willow Street (Assessor's Parcel Number [APN] 7212-009-017) in the City of Long Beach, Los Angeles County, California. The existing project site is developed with a surface parking lot, a small open space area with a walking path, and associated landscaping. The project site is generally flat in elevation.

The project site is surrounded by a mixture of open space, office, and retail uses. The project site is bounded to the east by a cemetery, to the north by an urban farm, to the west by California Avenue and office uses, and to the south by East Willow Street and retail uses. Regional access to the project site is provided by Interstates 405 (I-405) and 710 (I-710), which are located approximately 0.6 mile north and 1.5 miles west of the project site, respectively. Local access to the project site is provided by California Avenue and East Willow Street. The project location is shown in Figure 1 (provided in Attachment A).

PROJECT DESCRIPTION

The proposed project would include the construction of a 3,000-square-foot medical office and associated improvements located towards the northern end of the project site. The southern portion of the project site includes existing parking and associated landscaping, which would not include physical development besides the inclusion of the proposed transformer. The proposed transformer

would be located immediately south of the building's exterior on the southeast corner. The proposed project would include 61 parking spaces in total, 49 of which are maintained as off-site parking for the office building located at 999 East Willow Street.

Typical operational characteristics include employees and patients traveling to and from the site. The project is assumed to operate 24 hours per day, 7 days per week; however, this may shift depending on the tenant, as the hours of operation are unknown. The proposed project is expected to generate approximately 108 average daily trips.

Construction would include vegetation removal, excavation, grading, building construction, and the installation of landscaping and irrigation, lighting, storm drain facilities, and underground utilities. Construction of the proposed project is anticipated to commence in 2023 and would take approximately 6 months. Based on the preliminary grading plans, approximately 350 cubic yards would be exported from the project site. Demolition, grading, and building activities would involve the use of standard earthmoving equipment such as large excavators, cranes, and other related equipment.

EXISTING LAND USES IN THE PROJECT AREA

For the purposes of this analysis, sensitive receptors are areas of the population that have an increased sensitivity to air pollution or environmental contaminants. Sensitive receptor locations include residences, schools, daycare centers, hospitals, parks, and similar uses that are sensitive to air quality. Impacts on sensitive receptors are of particular concern because those receptors are the population most vulnerable to the effects of air pollution. The project site is surrounded primarily by open space, office, and retail uses. The areas adjacent to the project site include the following uses: Sunnyside Cemetery to the east, an urban farm to the north opposite E 27th Street, California Avenue and office uses to the west, and retail uses to the south by East Willow Street. The closest sensitive receptors to the project site include single family residential uses located approximately 400 feet southwest of the project site.

ENVIRONMENTAL SETTING

Air Quality Background

Air quality is primarily a function of local climate, local sources of air pollution, and regional pollution transport. The amount of a given pollutant in the atmosphere is determined by the amount of the pollutant released and the atmosphere's ability to transport and dilute the pollutant. The major determinants of transport and dilution are wind, atmospheric stability, terrain and, for photochemical pollutants, sunshine.

A region's topographic features have a direct correlation with air pollution flow and therefore are used to determine the boundary of air basins. The proposed project is in Long Beach, Los Angeles County, and is within the jurisdiction of SCAQMD, which regulates air quality in the South Coast Air Basin (Basin).

The Basin comprises approximately 10,000 square miles and covers all of Orange County and the urban parts of Los Angeles, Riverside, and San Bernardino Counties. The Basin is on a coastal plain

with connecting broad valleys and low hills to the east. Regionally, the Basin is bounded by the Pacific Ocean to the southwest and high mountains to the east, forming the inland perimeter.

Both State and federal governments have established health-based Ambient Air Quality Standards for six criteria air pollutants: CO, ozone (O_3), nitrogen dioxide (NO_2), sulfur dioxide (SO_2), lead (Pb), and suspended particulate matter. In addition, the State has set standards for sulfates, hydrogen sulfide, vinyl chloride, and visibility-reducing particles. These standards are designed to protect the health and welfare of the populace with a reasonable margin of safety. Two criteria pollutants, O_3 and NO_2, are considered regional pollutants because they (or their precursors) affect air quality on a regional scale. Pollutants such as CO, SO_2, and Pb are considered local pollutants that tend to accumulate in the air locally.

Air quality monitoring stations are located throughout the nation and are maintained by the local air districts and State air quality regulating agencies. Data collected at permanent monitoring stations are used by the United State Environmental Protection Agency (EPA) to identify regions as "attainment" or "nonattainment" depending on whether the regions meet the requirements stated in the applicable National Ambient Air Quality Standards (NAAQS). Nonattainment areas are imposed with additional restrictions as required by the EPA. In addition, different classifications of attainment (e.g., marginal, moderate, serious, severe, and extreme) are used to classify each air basin in the State on a pollutant-by-pollutant basis. The classifications are used as a foundation to create air quality management strategies to improve air quality and to comply with the NAAQS. As shown in Table A, the Basin is designated as nonattainment by federal standards for O_3 and particulate matter less than 2.5 microns in diameter ($PM_{2.5}$) and nonattainment by State standards for O_3, particulate matter less than 10 microns in diameter (PM_{10}), and $PM_{2.5}$.

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

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

Source 1: NAAQS and CAAQS Attainment Status for South Coast Air Basin (SCAQMD 2016). Website: www.aqmd.gov/docs/default-source/clean-air-plans/air-quality-management-plans/naaqs-caaqs-feb2016.pdf (accessed May 2022).
Source 2: Nonattainment Areas for Criteria Pollutants (Green Book) (EPA 2019). Website: https://www.epa.gov/green-book (accessed May 2022).

[1] Only the Los Angeles County portion of the South Coast Air Basin is in nonattainment for lead.

CAAQS = California ambient air quality standards
CO = carbon monoxide
EPA = United States Environmental Protection Agency
N/A = not applicable
NAAQS = national ambient air quality standards
NO_2 = nitrogen dioxide
O_3 = ozone
PM_{10} = particulate matter less than 10 microns in diameter
$PM_{2.5}$ = particulate matter less than 2.5 microns in diameter
SCAQMD = South Coast Air Quality Management District
SO_2 = sulfur dioxide

O_3 levels, as measured by peak concentrations and the number of days over the State 1-hour standard, have declined substantially as a result of aggressive programs by SCAQMD and other regional, State, and federal agencies. The reduction of peak concentrations represents progress in improving public health; however, the Basin still exceeds the State standard for 1-hour and 8-hour O_3 levels. The EPA lowered the 1997 0.80 parts per million (ppm) national 8-hour ozone standard to 0.75 ppm in 2008 and then to 0.70 ppm on October 1, 2015. The Basin is classified nonattainment for the 1-hour and 8-hour ozone standards at the State and federal level. 2019 data were not available; therefore, in 2020 and 2021, the Signal Hill Air Monitoring Station located at 1710 E 20th Street (the closest monitoring station to the project site) recorded the following exceedances of the State and federal 1-hour and 8-hour O_3 standards.[1]

- The federal 8-hour ozone standard had 4 exceedances in 2020 and no exceedances in 2021.
- The State 8-hour ozone standard had 4 exceedances in 2020 and no exceedances in 2021.
- The State 1-hour ozone standard had 4 exceedances in 2020 and an unknown number of exceedances in 2021.

National and State standards have also been established for $PM_{2.5}$ over 24-hour and yearly averaging periods. $PM_{2.5}$, because of the small size of individual particles, can be especially harmful to human health. $PM_{2.5}$ is emitted by common combustion sources such as cars, trucks, buses, and power plants, in addition to ground-disturbing activities. On December 17, 2006, the EPA strengthened the 24-hour $PM_{2.5}$ NAAQS from 65 micrograms per cubic meter ($\mu g/m^3$) to 35 $\mu g/m^3$, and the Basin was subsequently designated "moderate" nonattainment for 2006 24-hour $PM_{2.5}$ NAAQS on December 14, 2009. The Basin is also considered a nonattainment area for the $PM_{2.5}$ standard at the State level. No exceedances of the federal 24-hour $PM_{2.5}$ were recorded at the Long Beach Monitoring Station located at 1305 E. Pacific Coast Highway (the closest station to the project site monitoring $PM_{2.5}$) during the 2019 to 2021 time period.

The Basin is classified as a PM_{10} nonattainment area at the State level and was redesignated from serious nonattainment to attainment of the federal PM_{10} standard on July 26, 2013. Because the Basin was redesignated from nonattainment to attainment, a PM_{10} maintenance plan was adopted in 2013 and is required to be updated every 10 years. From 2019 to 2021, the Long Beach Air Monitoring Station located at 1305 E. Pacific Coast Highway (the closest monitoring station to the project site) recorded no exceedances of the federal 24-hour PM_{10} standard were measured at the Long Beach Air Monitoring Station during the 2019–2021 time period.

All areas of the Basin have continued to remain below the federal CO standards (35 ppm 1-hour and 9 ppm 8-hour standards) since 2003. The EPA redesignated the Basin to attainment of the federal CO standards, effective June 11, 2017. The Basin is also well below the State CO standards (20 ppm 1-hour CO and 9 ppm 8-hour CO).

[1] California Air Resources Board (CARB). 2020. iADAM Air Quality Data Statistics. Website: https://www.arb.ca.gov/adam/topfour/topfour1.php (accessed May 2022).

Greenhouse Gas and Global Climate Change Background

GHGs are present in the atmosphere naturally, are released by natural sources, or form from secondary reactions taking place in the atmosphere. Over the last 200 years, humans have caused substantial quantities of GHGs to be released into the atmosphere. These extra emissions are increasing GHG concentrations in the atmosphere and enhancing the natural greenhouse effect, which is believed to be causing global warming. Although manmade GHGs include naturally occurring GHGs such as carbon dioxide (CO_2), methane (CH_4), and nitrous oxide (N_2O), some gases like hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), nitrogen trifluoride (NF_3), and sulfur hexafluoride (SF_6) are completely new to the atmosphere.

Certain gases, such as water vapor, are short-lived in the atmosphere. Others remain in the atmosphere for significant periods of time, contributing to climate change in the long term. Water vapor is excluded from the list of GHGs above because it is short-lived in the atmosphere and its atmospheric concentrations are largely determined by natural processes, such as oceanic evaporation.

These gases vary considerably in terms of Global Warming Potential (GWP), which is a concept developed to compare the ability of each GHG to trap heat in the atmosphere relative to another gas. The GWP is based on several factors, including the relative effectiveness of a gas to absorb infrared radiation and length of time that the gas remains in the atmosphere ("atmospheric lifetime"). The GWP of each gas is measured relative to CO_2, the most abundant GHG; the definition of GWP for a particular GHG is the ratio of heat trapped by one unit mass of the GHG to the ratio of heat trapped by one unit mass of CO_2 over a specified time period. GHG emissions are typically measured in terms of pounds or tons of "CO_2 equivalents" (CO_2e).

REGULATORY SETTING

This section provides regulatory background information for air quality, GHGs, and energy.

Air Quality

Applicable federal, State, regional, and local air quality regulations are discussed below.

Federal Regulations

The 1970 Federal Clean Air Act (CAA) authorized the establishment of national health-based air quality standards and set deadlines for their attainment. The CAA Amendments of 1990 changed deadlines for attaining national standards as well as the remedial actions required for areas of the nation that exceed the standards. Under the CAA, State and local agencies in areas that exceed the national standards are required to develop State Implementation Plans to demonstrate how they will achieve the national standards by specified dates.

State Regulations

In 1988, the California Clean Air Act (CCAA) required that all air districts in the State endeavor to achieve and maintain California Ambient Air Quality Standards (CAAQS) for CO, O_3, SO_2, and NO_2 by the earliest practical date. The CCAA provides districts with the authority to regulate indirect sources and mandates that air quality districts focus particular attention on reducing emissions from

transportation and area-wide emission sources. Each nonattainment district is required to adopt a plan to achieve a 5 percent annual reduction, averaged over consecutive 3-year periods, in district-wide emissions of each nonattainment pollutant or its precursors. A Clean Air Plan shows how a district would reduce emissions to achieve air quality standards. Generally, the State standards for these pollutants are more stringent than the national standards.

The California Air Resources Board (CARB) is the State's "clean air agency." The CARB's goals are to attain and maintain healthy air quality, protect the public from exposure to toxic air contaminants, and oversee compliance with air pollution rules and regulations.

Regional Regulations

The proposed project would be required to comply with regional rules that assist in reducing short-term air pollutant emissions. SCAQMD Rule 403 requires that fugitive dust be controlled with best available control measures so the presence of such dust does not remain visible in the atmosphere beyond the property line of the emissions source. In addition, SCAQMD Rule 403 requires implementation of dust suppression techniques to prevent fugitive dust from creating a nuisance off site. SCAQMD Rule 1113 limits the volatile organic compound (VOC) content of architectural coatings. Applicable dust suppression techniques from SCAQMD Rule 403 and low VOC content in paints under SCAQMD Rule 1113 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.

South Coast Air Quality Management District Rule 403 Measures.

- Water active sites at least twice daily (locations where grading is to occur will be thoroughly watered prior to earthmoving).
- All trucks hauling dirt, sand, soil, or other loose materials are to be covered or should maintain at least 2 feet (ft) of freeboard in accordance with the requirements of California Vehicle Code Section 23114 (freeboard means vertical space between the top of the load and top of the trailer).
- Traffic speeds on all unpaved roads shall be reduced to 15 miles per hour or less.

South Coast Air Quality Management District Rule 1113 Measures. SCAQMD Rule 1113 governs the sale, use, and manufacture of architectural coating and limits the VOC content in paints and paint solvents. This rule regulates the VOC content of paints available during construction and operation of the proposed project. Therefore, all paints and solvents used during construction and operation of the proposed project must comply with SCAQMD Rule 1113.

Local Regulations

City of Long Beach General Plan Air Quality Element (1996). The adopted City of Long Beach General Plan addresses air quality in its Air Quality Element and contains goals and policies and actions in relation to government organization roles and responsibilities, ground transportation, air transportation, land use, particulate emissions, energy conservation, and education. The following

policies related to air quality are presented in the Air Quality Element[2] and are applicable to the proposed project:

- **Policy 2.1.1:** Reduce Vehicle Trips. Use incentives, regulations, and transportation demand management techniques, in cooperation with other jurisdictions in the South Coast Air Basin to eliminate vehicle trips that would otherwise occur.

- **Policy 2.1.2:** Reduce Vehicle Miles Traveled. Use incentives, regulations, and transportation demand management in cooperation with other jurisdictions in the South Coast Air Basin, to reduce vehicle miles traveled.

- **Policy 7.1:** Energy Conservation. Reduce energy consumption through conservation improvements and requirements.

- **Policy 7.2:** Recycle Wastes. Promote local recycling of wastes and the use of recycled materials.

Greenhouse Gas Emissions

This section describes regulations related to global climate change at the federal, State, and local level.

Federal Regulations

The United States has historically had a voluntary approach to reducing GHG emissions. However, on April 2, 2007, the United States Supreme Court ruled that the EPA has the authority to regulate CO_2 emissions under the CAA.

Although there currently are no adopted federal regulations for the control or reduction of GHG emissions, the EPA commenced several actions in 2009 to implement a regulatory approach to global climate change, including the 2009 EPA final rule for mandatory reporting of GHGs from large GHG emission sources in the United States. Additionally, the EPA Administrator signed an endangerment finding action in 2009 under the CAA, finding that seven GHGs (CO_2, CH_4, N_2O, HFCs, NF_3, PFCs, and SF_6) constitute a threat to public health and welfare, and that the combined emissions from motor vehicles cause and contribute to global climate change, leading to national GHG emission standards.

State Regulations

CARB is the lead agency for implementing climate change regulations in the State. Since its formation, CARB has worked with the public, the business sector, and local governments to find solutions to California's air pollution problems. Key efforts by the State are described below.

Assembly Bill 32 (2006), California Global Warming Solutions Act. California's major initiative for reducing GHG emissions is Assembly Bill (AB) 32, passed by the State legislature on August 31, 2006. This effort set a GHG emission reduction target to reduce GHG emissions to 1990 levels by 2020. The CARB has established the level of GHG emissions in 1990 at 427 million metric tons (MMT) of CO_2e. The emissions target of 427 MMT requires the reduction of 169 MMT from the State's projected

[2] City of Long Beach. 1996. Long Beach General Plan. December. Website: https://www.longbeach.gov/lbds/planning/advance/general-plan/ (accessed May 2022).

business-as-usual 2020 emissions of 596 MMT. AB 32 requires the CARB to prepare a Scoping Plan that outlines the main State strategies for meeting the 2020 deadline and to reduce GHGs that contribute to global climate change. The CARB approved the Scoping Plan on December 11, 2008. It contains the main strategies California will implement to achieve the reduction of approximately 169 MMT of CO_2e, or approximately 30 percent, from the State's projected 2020 emissions level of 596 MMT of CO_2e under a business-as-usual scenario (this is a reduction of 42 MMT of CO_2e, or almost 10 percent from 2002–2004 average emissions). The Scoping Plan also includes CARB recommended GHG reductions for each emissions sector of the State's GHG inventory. The Scoping Plan calls for the largest reductions in GHG emissions to be achieved by implementing the following measures and standards:

- Improved emissions standards for light-duty vehicles (estimated reduction of 31.7 MMT of CO_2e);
- The Low-Carbon Fuel Standard (15.0 MMT of CO_2e);
- Energy efficiency measures in buildings and appliances and the widespread development of combined heat and power systems (26.3 MMT of CO_2e); and
- A renewable portfolio standard for electricity production (21.3 MMT of CO_2e).

The Scoping Plan identifies 18 emission reduction measures that address cap-and-trade programs, vehicle gas standards, energy efficiency, low carbon fuel standards, renewable energy, regional transportation-related GHG targets, vehicle efficiency measures, goods movement, solar roof programs, industrial emissions, high-speed rail, green building strategies, recycling, sustainable forests, water, and air. The measures would result in a total reduction of 174 MMT of CO_2e by 2020.

On August 24, 2011, the CARB unanimously approved both the new supplemental assessment and reapproved its Scoping Plan, which provides the overall roadmap and rule measures to carry out AB 32. The CARB also approved a more robust California Environmental Quality Act (CEQA) equivalent document supporting the supplemental analysis of the cap-and-trade program. The cap-and-trade took effect on January 1, 2012, with an enforceable compliance obligation that began January 1, 2013.

The CARB approved the First Update to the Climate Change Scoping Plan on May 22, 2014. The First Update identifies opportunities to leverage existing and new funds to further drive GHG emissions reductions through strategic planning and targeted low carbon investments. The First Update defines CARB climate change priorities until 2020 and sets the groundwork to reach long-term goals set forth in Executive Orders (EOs) S-3-05 and B-16-2012. The Update highlights California's progress toward meeting the "near-term" 2020 GHG emission reduction goals as defined in the initial Scoping Plan. It also evaluates how to align the State's "longer-term" GHG reduction strategies with other State policy priorities for water, waste, natural resources, clean energy, transportation, and land use. CARB released a second update to the Scoping Plan, the 2017 Scoping Plan,[3] to reflect the 2030 target set by EO B-30-15 and codified by Senate Bill (SB) 32.

Senate Bill 375 (2008). Signed into law on October 1, 2008, SB 375 supplements GHG reductions from new vehicle technology and fuel standards with reductions from more efficient land use patterns and

[3] CARB. 2017. *California's 2017 Climate Change Scoping Plan*. November.

improved transportation. Under the law, the CARB approved GHG reduction targets in February 2011 for California's 18 federally designated regional planning bodies, known as Metropolitan Planning Organizations (MPOs). The CARB may update the targets every 4 years and must update them every 8 years. MPOs, in turn, must demonstrate how their plans, policies, and transportation investments meet the targets set by the CARB through Sustainable Community Strategies (SCS). The SCSs are included with the Regional Transportation Plan, a report required by State law. However, if an MPO finds that its SCS will not meet the GHG reduction target, it may prepare an Alternative Planning Strategy. The Alternative Planning Strategy identifies the impediments to achieving the targets.

Executive Order B-30-15 (2015). Governor Jerry Brown signed EO B-30-15 on April 29, 2015, which added the immediate target of:

- GHG emissions should be reduced to 40 percent below 1990 levels by 2030.

All State agencies with jurisdiction over sources of GHG emissions were directed to implement measures to achieve reductions of GHG emissions to meet the 2030 and 2050 targets. CARB was directed to update the AB 32 Scoping Plan to reflect the 2030 target, and, therefore, is moving forward with the update process. The mid-term target is critical to help frame the suite of policy measures, regulations, planning efforts, and investments in clean technologies and infrastructure needed to continue reducing emissions.

Senate Bill 350 (2015) Clean Energy and Pollution Reduction Act. SB 350, signed by Governor Jerry Brown on October 7, 2015, updates and enhances AB 32 by introducing the following set of objectives in clean energy, clean air, and pollution reduction for 2030:

- Raise California's renewable portfolio standard from 33 percent to 50 percent
- Increase energy efficiency in buildings by 50 percent by the year 2030.

The 50 percent renewable energy standard will be implemented by the California Public Utilities Commission (CPUC) for the private utilities and by the CEC for municipal utilities. Each utility must submit a procurement plan showing it will purchase clean energy to displace other nonrenewable resources. The 50 percent increase in energy efficiency in buildings must be achieved through the use of existing energy efficiency retrofit funding and regulatory tools already available to State energy agencies under existing law. The addition made by this legislation requires State energy agencies to plan for and implement those programs in a manner that achieves the energy efficiency target.

Senate Bill 32, California Global Warming Solutions Act of 2016, and Assembly Bill 197. In summer 2016, the Legislature passed, and the Governor signed, SB 32 and AB 197. SB 32 affirms the importance of addressing climate change by codifying into statute the GHG emissions reductions target of at least 40 percent below 1990 levels by 2030 contained in Governor Brown's April 2015 EO B-30-15. SB 32 builds on AB 32 and keeps us on the path toward achieving the State's 2050 objective of reducing emissions to 80 percent below 1990 levels, consistent with an Intergovernmental Panel on Climate Change analysis of the emission trajectory that would stabilize atmospheric GHG concentrations at 450 ppm CO_2e and reduce the likelihood of catastrophic impacts from climate change.

The companion bill to SB 32, AB 197, provides additional direction to CARB related to the adoption of strategies to reduce GHG emissions. Additional direction in AB 197 meant to provide easier public access to air emissions data that are collected by CARB was posted in December 2016.

Senate Bill 100. On September 10, 2018, Governor Brown signed SB 100, which raises California's renewable portfolio standard requirements to 60 percent by 2030, with interim targets, and 100 percent by 2045. The bill also establishes a State policy that eligible renewable energy resources and zero-carbon resources supply 100 percent of all retail sales of electricity to California end-use customers and 100 percent of electricity procured to serve all State agencies by December 31, 2045. Under the bill, the State cannot increase carbon emissions elsewhere in the Western grid or allow resource shuffling to achieve the 100 percent carbon-free electricity target.

Executive Order B-55-18. EO B-55-18, signed September 10, 2018, sets a goal "to achieve carbon neutrality as soon as possible, and no later than 2045, and achieve and maintain net negative emissions thereafter." EO B-55-18 directs CARB to work with relevant State agencies to ensure future Scoping Plans identify and recommend measures to achieve the carbon neutrality goal. The goal of carbon neutrality by 2045 is in addition to other Statewide goals, meaning not only should emissions be reduced to 80 percent below 1990 levels by 2050, but that, by no later than 2045, the remaining emissions be offset by equivalent net removals of CO_2e from the atmosphere, including through sequestration in forests, soils, and other natural landscapes.

Title 24, Building Efficiencies Standards, and the California Green Building Standards Code. In November 2008, the California Building Standards Commission established the California Green Building Standards Code (CALGreen Code) (California Code of Regulations, Title 24, Part 11), which sets performance standards for residential and nonresidential development to reduce environmental impacts and to encourage sustainable construction practices. The CALGreen Code addresses 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 January 1, 2020.

Regional Regulations

Southern California Association of Governments. SCAG is a regional council consisting of the following six counties: Imperial, Los Angeles, Orange, Riverside, San Bernardino, and Ventura. In total, the SCAG region encompasses 191 cities and over 38,000 square miles within Southern California. SCAG is the MPO serving the region under federal law and serves as the Joint Powers Authority, the Regional Transportation Planning Agency, and the Council of Governments under State law. As the

Regional Transportation Planning Agency, SCAG prepares long-range transportation plans for the Southern California region, including the RTP/SCS and the 2008 Regional Comprehensive Plan (RCP).

On September 3, 2020, SCAG adopted Connect SoCal–The 2020–2045 Regional Transportation Plan/Sustainable Communities Strategy (2020–2045 RTP/SCS).[4] In general, the SCS outlines a development pattern for the region, which, when integrated with the transportation network and other transportation measures and policies, would reduce vehicle miles traveled (VMT) from automobiles and light-duty trucks and thereby reduce GHG emissions from these sources. For the SCAG region, CARB has set GHG reduction targets at 8 percent below 2005 per capita emissions levels by 2020, and 19 percent below 2005 per capita emissions levels by 2035. The RTP/SCS lays out a strategy for the region to meet these targets. Overall, the SCS is meant to provide growth strategies that will achieve the regional GHG emissions reduction targets. Land use strategies to achieve the region's targets include planning for new growth around high-quality transit areas and livable corridors, and creating neighborhood mobility areas to integrate land use and transportation and plan for more active lifestyles.[5] However, the SCS does not require that local General Plans, Specific Plans, or zoning be consistent with the SCS; instead, it provides incentives to governments and developers for consistency.

South Coast Air Quality Management District. In 2008, SCAQMD formed a Working Group to identify GHG emissions thresholds for land use projects that could be used by local lead agencies in the Basin. The Working Group developed several different options that are contained in the SCAQMD 2008 draft guidance document titled *Interim CEQA GHG Significance Threshold for Stationary Sources, Rules and Plans* (2008) that could be applied by lead agencies. On September 28, 2010, SCAQMD Working Group Meeting #15 provided further guidance, including a tiered approach for evaluating GHG emissions for development projects where SCAQMD is not the lead agency. SCAQMD has not presented a finalized version of these thresholds to the governing board.

SCAQMD identifies the emissions level for which a project would not be expected to substantially conflict with any State legislation adopted to reduce statewide GHG emissions. As such, the utilization of a service population represents the rates of emissions needed to achieve a fair share of the State's mandated emissions reductions. Overall, SCAQMD identifies a GHG efficiency level that, when applied Statewide or to a defined geographic area, would meet the 2020 and post-2020 emission targets as required by AB 32 and SB 32. If projects are able to achieve targeted rates of emissions per the service population, the State would be able to accommodate expected population growth and achieve economic development objectives while also abiding by AB 32's emissions target and future post-2020 targets. The SCAQMD has established a flow chart for evaluating GHG significance and indicates that when a project is exempt from CEQA, no further analysis is required.

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4 Southern California Association of Governments (SCAG). 2020. Connect SoCal: The 2020–2045 Regional Transportation Plan/Sustainable Communities Strategy of the Southern California Association of Governments. Website: https://scag.ca.gov/sites/main/files/file-attachments/0903fconnectsocal-plan_0.pdf?1606001176 (accessed November 2021).

5 SCAG. 2020. Connect SoCal: The 2020–2045 Regional Transportation Plan/Sustainable Communities Strategy of the Southern California Association of Governments. Website: https://scag.ca.gov/sites/main/files/file-attachments/0903fconnectsocal-plan_0.pdf?1606001176 (accessed May 2022).

Local Regulations

City of Long Beach Sustainable City Action Plan. The City of Long Beach's Sustainable City Action Plan (SCAP) was adopted in February 2010. The SCAP is intended to guide operational, policy, and financial decisions to create a more sustainable Long Beach. The SCAP includes initiatives, goals, and actions that will move Long Beach toward becoming a sustainable city. These goals and actions included in the SCAP relate to the following:

- Buildings & Neighborhoods
- Energy
- Green Economy & Lifestyle
- Transportation
- Urban Nature
- Waste Reduction
- Water

City of Long Beach Draft Climate Action and Adaptation Plan (CAAP). The City of Long has recently adopted the Climate Action and Adaptation Plan (CAAP).[6] The CAAP is a comprehensive planning document outlining the City's proposed approach both to address climate impacts on Long Beach and to reduce Long Beach's impact on the climate by reducing GHG emissions. The CAAP provides a framework to reduce the City's GHG footprint (climate action) and ensure the community and physical assets are better protected from the impacts of climate change (climate adaptation). The vision of the CAAP is to create a more sustainable, resilient, and equitable city by addressing climate change in a way that remedies existing environmental health disparities while also improving health, quality of life, and enhancing economic vitality throughout Long Beach. The CAAP includes a roadmap for implementing new polices, programs, incentives, requirements, projects, and initiatives in the immediate future, as well as longer-term actions that will need to be studied further while monitoring how the climate continues to change and evaluating the effectiveness of actions taken. The CAAP also includes the CAAP Consistency Review Checklist (CAAP Checklist) which would be used for future projects to determine their consistency with the CAAP.

METHODOLOGY

Construction Emissions

Construction activities can generate a substantial amount of air pollution. Construction activities are considered temporary; however, short-term impacts can contribute to exceedances of air quality standards. Construction activities include site preparation, earthmoving, and general construction. The emissions generated from these common construction activities include fugitive dust from so il disturbance, fuel combustion from mobile heavy-duty, diesel- and gasoline-powered equipment, portable auxiliary equipment, and worker commute trips.

The California Emissions Estimator Model version 2020.4.0 (CalEEMod) computer program was used to calculate emissions from on-site construction equipment and emissions from worker and vehicle trips to the site. This analysis assumes that construction would begin in 2023 and would last approximately 6 months. This analysis also assumes the use of Tier 2 construction equipment and that the proposed project would comply with SCAQMD Rule 403 measures. Based on the preliminary

[6] City of Long Beach. 2020. Draft Climate Action and Adaptation Plan. November. Website: http://longbeach.gov/lbds/planning/caap/ (accessed May 2022).

grading plans, approximately 350 cubic yards would be exported from the project site, which was included in CalEEMod. Demolition, grading, and building activities would involve the use of standard earthmoving equipment such as large excavators, cranes, and other related equipment. All other construction details are not yet known; therefore, default assumptions (e.g., construction worker and truck trips and fleet activities) from CalEEMod were used.

Operational Emissions

This air quality analysis includes estimating emissions associated with long-term operation of the project. Indirect emissions of criteria pollutants with regional impacts would be emitted by project-generated vehicle trips. In addition, localized air quality impacts (i.e., higher carbon monoxide concentrations or "hot-spots") near intersections or roadway segments in the project vicinity would also potentially occur due to project-generated vehicle trips.

Consistent with SCAQMD guidance for estimating emissions associated with land use development projects, the CalEEMod computer program was used to calculate the long-term operational emissions associated with the project. As discussed in the Project Location and Description section, the proposed project would develop a 3,000-square-foot medical office building and associated improvements. The analysis was conducted using land use codes *Medical Office Building*, *City Park*, and *Parking Lot.* Trip generation rates used in CalEEMod for the project were based on the project's estimated trip generation of 108 average daily trips.

Greenhouse Gas Emissions

GHG emissions associated with the project would occur over the short-term from construction activities, consisting primarily of emissions from equipment exhaust. There would also be long-term GHG emissions associated with project-related vehicular trips. Recognizing that the field of global climate change analysis is rapidly evolving, the approaches advocated most recently indicate that, for determining a project's contribution to GHG emissions, lead agencies should calculate, or estimate, emissions from vehicular traffic, energy consumption, water conveyance and treatment, waste generation, construction activities, and any other significant source of emissions within the project area. The CalEEMod results were used to quantify GHG emissions generated by the project.

THRESHOLDS OF SIGNIFICANCE

The *State CEQA Guidelines* indicate that a project would normally have a significant adverse air quality impact if project-generated pollutant emissions would do any of the following:

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

Certain air districts (e.g., SCAQMD) have created guidelines and requirements to conduct air quality analysis. The SCAQMD's current guidelines, the *CEQA Air Quality Handbook*[7] with associated updates, were followed in this assessment of air quality impacts for the proposed project.

Regional Emissions Thresholds

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

Table B: Regional Thresholds for Construction and Operational Emissions

Emissions Source	Pollutant Emissions Threshold (lbs/day)					
	VOCs	NO_X	CO	PM_{10}	$PM_{2.5}$	SO_X
Construction	75	100	550	150	55	150
Operations	55	55	550	150	55	150

Source: SCAQMD Air Quality Significance Thresholds, April 2019.Website: http://www.aqmd.gov/docs/default-source/ceqa/handbook/scaqmd-air-quality-significance-thresholds.pdf?sfvrsn=2 (accessed May 2021).

CO = carbon monoxide
lbs/day = pounds per day
NO_X = nitrogen oxides
$PM_{2.5}$ = particulate matter less than 2.5 microns in size
PM_{10} = particulate matter less than 10 microns in size
SCAQMD = South Coast Air Quality Management District
SO_X = sulfur oxides
VOC = volatile organic compound

Projects in the Basin with construction- or operation-related emissions that exceed any of their respective emission thresholds would be considered significant under SCAQMD guidelines. These thresholds, which the SCAQMD developed and that apply throughout the Basin, apply as both project and cumulative thresholds. If a project exceeds these standards, it is considered to have a project-specific and cumulative impact.

Local Microscale Concentration Standards

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

[7] South Coast Air Quality Management District (SCAQMD). 1993. *CEQA Air Quality Handbook.* Website: http://www.aqmd.gov/home/rules-compliance/ceqa/air-quality-analysis-handbook/ceqa-air-quality-handbook-(1993) (accessed May 2022).

- California State 1-hour CO standard of 20 ppm
- California State 8-hour CO standard of 9 ppm

Localized Impacts Analysis

SCAQMD published its Final Localized Significance Threshold Methodology in July 2008, recommending that all air quality analyses include an assessment of air quality impacts to nearby sensitive receptors.[8] This guidance was used to analyze potential localized air quality impacts associated with construction of the proposed project. Localized significance thresholds (LSTs) are developed based on the size or total area of the emission source, the ambient air quality in the source receptor area, and the distance to the project. Sensitive receptors include residences, schools, hospitals, and similar uses that are sensitive to adverse air quality.

LSTs are based on the ambient concentrations of that pollutant within the project Source Receptor Area (SRA) and the distance to the nearest sensitive receptor. For the proposed project, the appropriate SRA for the LST is the South Coastal Los Angeles County area (SRA 4). SCAQMD provides LST screening tables for 25, 50, 100, 200, and 500-meter (m) source-receptor distances. As identified above, the closest sensitive receptors to the project site include single family residential uses located approximately 400 feet southwest of the project site. An LST analysis was completed to show the construction and operational impacts at a distance of 120 meters (400 ft) to the nearest sensitive receptors. Based on the anticipated construction equipment, the maximum daily disturbed acreage for the proposed project was modeled for 2 acres[9]. Table C lists the emissions thresholds that apply during project construction and operation.

Table C: SCAQMD Localized Significance Thresholds (lbs/day)

Emissions Source	Pollutant Emissions Threshold (lbs/day)			
	NO_x	CO	PM_{10}	$PM_{2.5}$
Construction (2-acres, 400-foot distance)	91.0	1,888.0	44.0	17.0
Operations (2-acres, 400-foot distance)	91.0	1,888.0	11.0	4.9

Source: SCAQMD LST Guidance Manual (July 2008).
CO = carbon monoxide
lbs/day = pounds per day
LST = localized significance threshold
NO_x = nitrogen oxides
PM_{10} = particulate matter less than 10 microns in size
$PM_{2.5}$ = particulate matter less than 2.5 microns in size
SCAQMD = South Coast Air Quality Management District

Global Climate Change

The *State CEQA Guidelines* indicate that a project would normally have a significant adverse GHG emission impact if the project would:

[8] SCAQMD. 2008. *Final Localized Significance Threshold Methodology*. July.

[9] SCAQMD. n.d. *Fact Sheet for Applying CalEEMod to Localized Significance Thresholds*. Website: http://www.aqmd.gov/docs/default-source/ceqa/handbook/localized-significance-thresholds/caleemod-guidance.pdf (accessed July 2022).

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

- Conflict with an applicable plan, policy or regulation adopted for the purpose of reduction the emissions of greenhouse gases.

To provide guidance to local lead agencies on determining significance for GHG emissions in their CEQA documents, SCAQMD has convened a GHG CEQA Significance Threshold Working Group (Working Group). Based on the last Working Group meeting held in September 2010 (Meeting No. 15), SCAQMD proposed to adopt a tiered approach for evaluating GHG emissions for development projects where SCAQMD is not the lead agency:

- **Tier 1. Exemptions:** If a project is exempt from CEQA, project-level and cumulative GHG emissions are less than significant.

- **Tier 2. Consistency with a Locally Adopted GHG Reduction Plan:** If the project complies with a GHG emissions reduction plan or mitigation program that avoids or substantially reduces GHG emissions in the project's geographic area (i.e., city or county), project-level and cumulative GHG emissions are less than significant.

- **Tier 3. Numerical Screening Threshold:** If GHG emissions are less than the numerical screening-level threshold, project-level and cumulative GHG emissions are less than significant.

- **Tier 4. Performance Standards:** If emissions exceed the numerical screening threshold, a more detailed review of the project's GHG emissions is warranted. The SCAQMD has proposed an efficiency target for projects that exceed the bright-line threshold. The current recommended approach is per-capita efficiency targets. The SCAQMD is not recommending use of a percentage emissions reduction target. Instead, the SCAQMD proposes proposed a 2020 efficiency target of 4.8 MT of CO_2e per year per service population for project-level analyses and 6.6 MT of CO_2e per year per service population for plan-level projects (e.g., program-level projects such as General Plans).

Because the project would begin operations in the post-2020 timeframe, the 2020 numerical screening threshold of 3,000 MT of CO_2e and the efficiency target of 4.8 MT of CO_2e per year per service population would need to be adjusted to reflect the State's post-2020 GHG reduction goals.

CARB has completed a Scoping Plan, which will be utilized by the SCAQMD to establish the 2030 GHG efficiency threshold. SCAQMD has yet to publish a quantified GHG efficiency threshold for the 2030 target. A scaled threshold consistent with State goals detailed in SB 32, EO B-30-15, and EO S-3-05 to reduce GHG emissions by 40 percent below 1990 levels by 2030 and 80 percent below 1990 levels by 2050, respectively, was developed for 2023, when construction of the proposed project would be completed. Though the SCAQMD has not published a quantified threshold beyond 2020, this assessment uses a threshold of 2,640 MT of CO_2e per year or 4.2 MT of CO_2e per year per service population, which was calculated for the project operational year of 2023 based on the GHG reduction goals of SB 32 and EO B-30-15.

For the purpose of this analysis, the proposed project will be compared to the adjusted screening-level Tier 3 Numerical Screening Threshold of 2,640 MT of CO_2e per year.

IMPACT ANALYSIS

This section identifies potential air quality and GHG impacts associated with implementation of the proposed project.

Air Quality Impacts

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

Consistency with Applicable Air Quality Plans

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

The proposed project would include a 3,000-square-foot medical office building. The proposed project is not considered a project of Statewide, regional, or area-wide significance (e.g., large-scale projects such as airports, electrical generating facilities, petroleum and gas refineries, residential development of more than 500 dwelling units, shopping center or business establishment employing more than 1,000 persons or encompassing more than 500,000 square feet of floor space) as defined in the California Code of Regulations (Title 14, Division 6, Chapter 3, Article 13, §15206(b)). Because the proposed project would not be defined as a regionally significant project under CEQA, it does not meet the Southern California Association of Governments' (SCAG) Intergovernmental Review criteria.

The City's General Plan is consistent with the SCAG Regional Comprehensive Plan Guidelines and the SCAQMD Air Quality Management Plan (AQMP). Pursuant to the methodology provided in the SCAQMD's *CEQA Air Quality Handbook*, consistency with the Basin 2016 AQMP is affirmed when a project (1) would not increase the frequency or severity of an air quality standards violation or cause a new violation, and (2) is consistent with the growth assumptions in the AQMP. Consistency review is presented as follows:

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

2. The *CEQA Air Quality Handbook* indicates that consistency with AQMP growth assumptions must be analyzed for new or amended General Plan elements, Specific Plans, and significant projects.

Significant projects include airports, electrical generating facilities, petroleum and gas refineries, designation of oil drilling districts, water ports, solid waste disposal sites, and offshore drilling facilities; therefore, the proposed project is not defined as significant.

Based on the consistency analysis presented above, the proposed project would be consistent with the regional AQMP.

Criteria Pollutant Analysis

The Basin is currently designated nonattainment for the federal and State standards for O_3 and $PM_{2.5}$. In addition, the Basin is in nonattainment for the PM_{10} standard. The Basin's nonattainment status is attributed to the region's development history. Past, present, and future development projects contribute to the region's adverse air quality impacts on a cumulative basis. By its very nature, air pollution is largely a cumulative impact. No single project is sufficient in size to, by itself, result in nonattainment of an ambient air quality standard. Instead, a project's individual emissions contribute to existing cumulatively significant adverse air quality impacts. If a project's contribution to the cumulative impact is considerable, then the project's impact on air quality would be considered significant.

In developing thresholds of significance for air pollutants, SCAQMD considered the emission levels for which a project's individual emissions would be cumulatively considerable. If a project exceeds the identified significance thresholds, its emissions would be cumulatively considerable, resulting in significant adverse air quality impacts to the region's existing air quality conditions. Therefore, additional analysis to assess cumulative impacts is not necessary. The following analysis assesses the potential project-level air quality impacts associated with construction and operation of the proposed project.

Construction Emissions. During construction, short-term degradation of air quality may occur due to the release of particulate matter emissions (i.e., fugitive dust) generated by grading, building construction, paving, and other activities. Emissions from construction equipment are also anticipated and would include CO, nitrogen oxides (NO_x), VOC, directly emitted $PM_{2.5}$ or PM_{10}, and toxic air contaminants such as diesel exhaust particulate matter.

Project construction activities would include grading, site preparation, building construction, architectural coating, and paving activities. Construction-related effects on air quality from the proposed project would be greatest during the site preparation phase due to the disturbance of soils. If not properly controlled, these activities would temporarily generate particulate emissions. Sources of fugitive dust would include disturbed soils at the construction site. Unless properly controlled, vehicles leaving the site would deposit dirt and mud on local streets, which could be an additional source of airborne dust after it dries. PM_{10} emissions would vary from day to day, depending on the nature and magnitude of construction activity and local weather conditions. PM_{10} emissions would depend on soil moisture, silt content of soil, wind speed, and amount of operating equipment. Larger dust particles would settle near the source, whereas fine particles would be dispersed over greater distances from the construction site.

Water or other soil stabilizers can be used to control dust, resulting in emission reductions of 50 percent or more. SCAQMD has established Rule 403: Fugitive Dust, which would require the

applicant to implement measures that would reduce the amount of particulate matter generated during the construction period. The Rule 403 measures that were incorporated in this analysis include:

- Water active sites at least three times daily (locations where grading is to occur shall be thoroughly watered prior to earthmoving).
- Cover all trucks hauling dirt, sand, soil, or other loose materials, or maintain at least 2 feet (0.6 meter) of freeboard (vertical space between the top of the load and the top of the trailer) in accordance with the requirements of California Vehicle Code Section 23114.
- Reduce traffic speeds on all unpaved roads to 15 miles per hour or less.

In addition to dust-related PM_{10} emissions, heavy trucks and construction equipment powered by gasoline and diesel engines would generate CO, sulfur oxides (SO_x), NO_x, VOCs and some soot particulate ($PM_{2.5}$ and PM_{10}) in exhaust emissions. If construction activities were to increase traffic congestion in the area, CO and other emissions from traffic would increase slightly while those vehicles idle in traffic. These emissions would be temporary in nature and limited to the immediate area surrounding the construction site.

Construction emissions were estimated for the project using CalEEMod and summarized in Table D. Attachment B provides CalEEMod output sheets.

Table D: Short-Term Regional Construction Emissions

Construction Phase	Maximum Daily Regional Pollutant Emissions (lbs/day)							
	VOC	NO_X	CO	SO_X	Fugitive PM_{10}	Exhaust PM_{10}	Fugitive $PM_{2.5}$	Exhaust $PM_{2.5}$
Site Preparation	0.3	8.6	6.0	<0.1	0.3	0.2	<0.1	0.2
Grading	0.5	15.1	9.1	<0.1	2.9	0.3	1.3	0.3
Building Construction	0.5	10.9	8.5	<0.1	0.2	0.4	<0.1	0.4
Paving	0.7	8.4	7.5	<0.1	0.2	0.3	0.1	0.3
Architectural Coating	7.0	2.4	1.9	<0.1	<0.1	<0.1	<0.1	0.1
Peak Daily Emissions	**7.5**	**15.1**	**10.4**	**<0.1**	**3.2**		**1.6**	
SCAQMD Threshold	**75.0**	**100.0**	**550.0**	**150.0**	**150.0**		**55.0**	
Significant?	**No**	**No**	**No**	**No**	**No**		**No**	

Source: Compiled by LSA (May 2022).
Note = Values may not appear to add up correctly due to rounding.
CO = carbon monoxide
lbs/day = pounds per day
NO+ = nitrogen oxides
$PM_{2.5}$ = particulate matter less than 2.5 microns in size
PM_{10} = particulate matter less than 10 microns in size
SCAQMD = South Coast Air Quality Management District
SO+ = sulfur oxides
VOC = volatile organic compounds

The results shown in Table D indicate the proposed project would not exceed the significance criteria for daily VOC, NO_x, CO, SO_x, PM_{10}, or $PM_{2.5}$ emissions. Therefore, construction of the proposed project would not result in a cumulatively considerable net increase of any criteria pollutant for which the project region is in nonattainment under an applicable federal or State AAQS.

Operational Air Quality Impacts. Long-term air pollutant emissions associated with operation of the proposed project include emissions from area, energy, and mobile sources. Area-source emissions

include architectural coatings, consumer products, and landscaping. Energy-source emissions result from activities in buildings that use electricity and natural gas. Mobile-source emissions are from vehicle trips associated with operation of the project. Area-source emissions consist of direct sources of air emissions at the project site, including architectural coatings, consumer products, and use of landscape maintenance equipment.

PM_{10} emissions result from running exhaust, tire and brake wear, and the entrainment of dust into the atmosphere from vehicles traveling on paved roadways. Entrainment of PM_{10} occurs when vehicle tires pulverize small rocks and pavement and the vehicle wakes generate airborne dust. The contribution of tire and brake wear is small compared to the other PM emission processes. Gasoline-powered engines have small rates of particulate matter emissions compared with diesel-powered vehicles.

Energy-source emissions result from activities in buildings that use electricity and natural gas. The quantity of emissions is the product of usage intensity (i.e., the amount of electricity or natural gas) and the emission factor of the fuel source. The primary sources of energy demand for the proposed project would include building mechanical systems such as heating and air conditioning, lighting, and plug-in electronics, such as refrigerators or computers. Greater building or appliance efficiency reduces the amount of energy for a given activity and thus lowers the resultant emissions. The emission factor is determined by the fuel source, with cleaner energy sources, like renewable energy, producing fewer emissions than conventional sources.

Long-term operational emissions associated with the proposed project were calculated using CalEEMod. Table E provides the proposed project's estimated operational emissions. Attachment B provides CalEEMod output sheets.

Table E: Project Operational Emissions

Emission Type	Pollutant Emissions (lbs/day)					
	VOC	**NO_X**	**CO**	**SO_X**	**PM_{10}**	**$PM_{2.5}$**
Area Sources	0.1	<0.1	<0.1	0.0	<0.1	<0.1
Energy Sources	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Mobile Sources	0.3	0.3	2.7	<0.1	0.6	0.2
Total Project Emissions	**0.4**	**0.3**	**2.7**	**<0.1**	**0.6**	**0.2**
SCAQMD Threshold	**55.0**	**55.0**	**550.0**	**150.0**	**150.0**	**55.0**
Exceeds Threshold?	**No**	**No**	**No**	**No**	**No**	**No**

Source: Compiled by LSA (May 2022).
Note: Some values may not appear to add correctly due to rounding.
CO = carbon monoxide
lbs/day = pounds per day
NO_x = nitrogen oxides
$PM_{2.5}$ = particulate matter less than 2.5 microns in size
PM_{10} = particulate matter less than 10 microns in size
SCAQMD = South Coast Air Quality Management District
SO_X = sulfur oxides
VOC = volatile organic compounds

The results shown in Table E indicate the proposed project would not exceed the significance criteria for daily VOC, NO_x, CO, SO_x, PM_{10}, or $PM_{2.5}$ emissions. Therefore, operation of the proposed project would not result in a cumulatively considerable net increase of any criteria pollutant for which the project region is in nonattainment under an applicable federal or State AAQS.

Long-Term Microscale (CO Hot Spot) Analysis. Vehicular trips associated with the proposed project would contribute to congestion at intersections and along roadway segments in the vicinity of the proposed project site. Localized air quality impacts would occur when emissions from vehicular traffic increase as a result of the proposed project. The primary mobile-source pollutant of local concern is CO, a direct function of vehicle idling time and, thus, of traffic flow conditions. CO transport is extremely limited; under normal meteorological conditions, it disperses rapidly with distance from the source. However, under certain extreme meteorological conditions, CO concentrations near a congested roadway or intersection may reach unhealthful levels, affecting local sensitive receptors (e.g., residents, schoolchildren, the elderly, and hospital patients).

Typically, high CO concentrations are associated with roadways or intersections operating at unacceptable levels of service or with extremely high traffic volumes. In areas with high ambient background CO concentrations, modeling is recommended to determine a project's effect on local CO levels.

An assessment of project-related impacts on localized ambient air quality requires that future ambient air quality levels be projected. Existing CO concentrations in the immediate project vicinity are not available. Ambient CO levels monitored at the Los Angeles Monitoring Station located at 7201 W. Westchester Parkway (the closest station to the project site), showed a highest recorded 1-hour concentration of 1.8 ppm (the State standard is 20 ppm) and a highest 8-hour concentration of 1.3 ppm (the State standard is 9 ppm) from 2019 to 2021. The highest CO concentrations would normally occur during peak traffic hours; hence, CO impacts calculated under peak traffic conditions represent a worst-case analysis. Reduced speeds and vehicular congestion at intersections result in increased CO emissions.

The proposed project is expected to generate 108 average daily trips, with nine trips occurring in the AM peak hour and 12 trips occurring in the PM peak hour. The CO concentrations are not expected to significantly increase as a result of the proposed project. Therefore, given the extremely low level of CO concentrations in the project area and the lack of traffic impacts at any intersections, project-related vehicles are not expected to result in CO concentrations exceeding the State or federal CO standards. No CO hot spots would occur and the project would not result in any project-related impacts on CO concentrations.

Health Risk on Nearby Sensitive Receptors

Sensitive receptors are defined as people who have an increased sensitivity to air pollution or environmental contaminants. Sensitive receptor locations include schools, parks and playgrounds, daycare centers, nursing homes, hospitals, and residential dwelling units. As discussed above, the closest sensitive receptors include single family residential uses located approximately 400 feet southwest of the project site. LST analysis was completed to show the construction and operational impacts at 120 meters (400 feet) to the nearest sensitive receptors to the project site in SRA 4, based on a 2-acre project size. Tables F and G show the results of the LST analysis during project construction and operation, respectively.

Table F: Project Localized Construction Emissions

Source	Pollutant Emissions (lbs/day)			
	NO_X	CO	PM_{10}	$PM_{2.5}$
On-Site Emissions	12.3	8.1	2.7	1.5
Localized Significance Threshold	**91.0**	**1,888.0**	**44.0**	**17.0**
Significant?	**No**	**No**	**No**	**No**

Source: Compiled by LSA (May 2022).
Note: Source Receptor Area 4, based on a 2-acre construction disturbance daily area, at a distance of 650 feet from the project boundary.
CO = carbon monoxide
lbs/day = pounds per day
NO_X = nitrogen oxides
$PM_{2.5}$ = particulate matter less than 2.5 microns in size
PM_{10} = particulate matter less than 10 microns in size

Table G: Project Localized Operational Emissions

Source	Pollutant Emissions (lbs/day)			
	NO_x	CO	PM_{10}	$PM_{2.5}$
On-Site Emissions	<1.0	<1.0	<1.0	<1.0
Localized Significance Thresholds	**91.0**	**1,888.0**	**11.0**	**4.9**
Significant?	**No**	**No**	**No**	**No**

Source: Compiled by LSA (May 2022).
Note: Source Receptor Area 4, based on a 2-acre operational daily area, distance of 650 feet from project boundary.
CO = carbon monoxide
lbs/day = pounds per day
NO_X = nitrogen oxides
$PM_{2.5}$ = particulate matter less than 2.5 microns in size
PM_{10} = particulate matter less than 10 microns in size

As detailed in Tables F and G, the emission levels indicate that the project would not exceed SCAQMD LSTs during project construction or operation. The project's peak operational on-site NO_x emissions are less than 1.0 lb/day. Due to the small size of the proposed project in relation to the overall Basin, the level of emissions is not sufficiently high to use a regional modeling program to correlate health effects on a Basin-wide level. On a regional scale, the quantity of emissions from the project is incrementally minor. Because the SCAQMD has not identified any other methods to quantify health impacts from small projects and due to the size of the project, it is speculative to assign any specific health effects to small project-related emissions. However, based on this localized analysis, the proposed project would not expose sensitive receptors to substantial pollutant concentrations. Therefore, the project would not expose sensitive receptors to substantial levels of pollutant concentrations.

Odors

Heavy-duty equipment on the project site during construction would emit odors, primarily from equipment exhaust. However, the construction activity would cease after individual construction is completed. No other sources of objectionable odors have been identified for the proposed project.

SCAQMD Rule 402 regarding nuisances states: "A person shall not discharge from any source whatsoever such quantities of air contaminants or other material which cause injury, detriment, nuisance, or annoyance to any considerable number of persons or to the public, or which endanger the comfort, repose, health or safety of any such persons or the public, or which cause, or have a

natural tendency to cause, injury or damage to business or property." The proposed uses are not anticipated to emit any objectionable odors. Therefore, the proposed project would not result in other emissions (such as those leading to odors) adversely affecting a substantial number of people.

Greenhouse Gas Emission Impacts

The following sections describe the proposed project's construction- and operation-related GHG impacts and consistency with applicable GHG reduction plans.

Generation of Greenhouse Gas Emissions

This section describes the proposed project's construction- and operational-related GHG emissions and contribution to global climate change. SCAQMD has not addressed emission thresholds for construction in its CEQA Handbook; however, SCAQMD requires quantification and disclosure. Thus, this section discusses construction emissions.

Construction Greenhouse Gas Emissions. Construction activities associated with the proposed project would produce combustion emissions from various sources. Construction would emit GHGs through the operation of construction equipment and from worker and builder supply vendor vehicles for the duration of the approximately 6-month construction period. The combustion of fossil-based fuels creates GHGs such as CO_2, CH_4, and N_2O. Furthermore, the fueling of heavy equipment emits CH_4. Exhaust emissions from on-site construction activities would vary daily as construction activity levels change.

As indicated above, SCAQMD does not have an adopted threshold of significance for construction-related GHG emissions. However, lead agencies are required to quantify and disclose GHG emissions that would occur during construction. The SCAQMD then requires the construction GHG emissions to be amortized over the life of the project, defined as 30 years, added to the operational emissions, and compared to the applicable interim GHG significance threshold tier. Table H shows CO_2e emission calculations for each respective construction phase of the proposed project.

Table H: Construction Greenhouse Gas Emissions

Construction Phase	Greenhouse Gas Emissions, CO_2e (metric tons per year)
Site Preparation	<1.0
Grading	2.6
Building Construction	60.8
Paving	2.8
Architectural Coating	<1.0
Total Project Emissions	**67.3**
Total Construction Emissions Amortized over 30 years	**2.2**

Source: Compiled by LSA (May 2022).
Note: Numbers may not appear to add correctly due to rounding.
CO_2e = carbon dioxide equivalent

As indicated in Table H, it is estimated that the project would generate 67.3 MT of CO_2e during construction of the project. When amortized over the 30-year life of the project, annual emissions would be 2.2 MT of CO_2e.

Operational Greenhouse Gas Emissions. Long-term operation of the proposed project would generate GHG emissions from area, mobile, waste, and water sources as well as indirect emissions from sources associated with energy consumption. Mobile-source GHG emissions would include project-generated vehicle trips associated with trips to the proposed project. Area-source emissions would be associated with activities such as landscaping and maintenance on the project site and other sources. Waste source emissions generated by the proposed project include energy generated by landfilling and other methods of disposal related to transporting and managing project-generated waste. In addition, water source emissions associated with the proposed project are generated by water supply and conveyance, water treatment, water distribution, and wastewater treatment.

GHG emissions were estimated using CalEEMod. Table I shows the estimated operational GHG emissions for the proposed project. Motor vehicle emissions are the largest source of GHG emissions for the project at approximately 77 percent of the project total. Waste sources are the next largest category at approximately 13 percent. Energy and water sources are about 8 percent and 2 percent of the total emissions respectively. Attachment B provides additional calculation details.

Table I: GHG Emissions (Metric Tons per Year)

Emission Type	Operational Emissions				
	CO_2	CH_4	N_2O	CO_2e	Percentage of Total
Area Source	<0.1	0.0	0.0	<0.1	<1
Energy Source	9.8	<0.1	<0.1	9.8	8
Mobile Source	94.4	<0.1	<0.1	95.9	77
Waste Source	6.6	0.4	0.0	16.3	13
Water Source	1.3	<0.1	<0.1	1.7	2
Total Operational Emissions				**123.8**	**100.0**
Amortized Construction Emissions				2.2	—
Total Annual Emissions				**126.0**	**—**
SCAQMD Tier 3 GHG Numerical Screening Threshold for 2023				**2,640.0**	
Exceedance?				**No**	

Source: LSA (May 2022).
CH_4 = methane
CO_2 = carbon dioxide
CO_2e = carbon dioxide equivalent
GHG = greenhouse gas
N_2O = nitrous oxide
SCAQMD = South Coast Air Quality Management District

As discussed above, a project would have less than significant GHG emissions if it would result in operational-related GHG emissions of less than the scaled SCAQMD threshold of 2,640 MT of CO_2e per year. Based on the analysis results, the proposed project would result in 126.0 CO_2e per year, which would be below the numeric threshold of 2,640 MT of CO_2e per year. Therefore, operation of the proposed project would not generate significant GHG emissions that would have a significant effect on the environment.

Consistency with Greenhouse Gas Reduction Plans

As presented above, the City of Long Beach is currently preparing a CAAP, which includes the CAAP Checklist which would be used for future projects to determine their consistency with the CAAP. However, since the CAAP has not yet been approved, the proposed project was analyzed for consistency with the goals of AB 32, the AB 32 Scoping Plan, EO B-30-15, SB 32, and AB 197 and SCAG's 2020–2045 RTP/SCS.

CARB Scoping Plan. As discussed above, California's major initiative for reducing GHG emissions is AB 32, passed by the State Legislature on August 31, 2006. AB 32 is aimed at reducing GHG emissions to 1990 levels by 2020. AB 32 requires CARB to prepare a Scoping Plan that outlines the main State strategies for meeting the 2020 deadline and to reduce GHGs that contribute to global climate change. The AB 32 Scoping Plan has a range of GHG reduction actions, which include direct regulations, alternative compliance mechanisms, monetary and nonmonetary incentives, voluntary actions, market-based mechanisms (e.g., cap-and-trade system), and an AB 32 implementation fee to fund the program.

EO B-30-15 added the immediate target of reducing GHG emissions to 40 percent below 1990 levels by 2030. CARB released a second update to the Scoping Plan, the 2017 Scoping Plan, to reflect the 2030 target set by EO B-30-15 and codified by SB 32. [10]

SB 32 affirms the importance of addressing climate change by codifying into statute the GHG emissions reduction target of at least 40 percent below 1990 levels by 2030 contained in EO B-30-15. SB 32 builds on AB 32 and keeps us on the path toward achieving the State's 2050 objective of reducing emissions to 80 percent below 1990 levels. The companion bill to SB 32, AB 197, provides additional direction to CARB related to the adoption of strategies to reduce GHG emissions. Additional direction in AB 197 that is intended to provide easier public access to air emission data collected by the CARB was posted in December 2016.

As identified above, the AB 32 Scoping Plan contains GHG reduction measures that work towards reducing GHG emissions, consistent with the targets set by AB 32, EO B-30-15, and codified by SB 32 and AB 197. The measures applicable to the proposed project include energy efficiency measures, water conservation and efficiency measures, and transportation and motor vehicle measures, as discussed below.

Energy-efficient measures are intended to maximize energy-efficiency building and appliance standards, pursue additional efficiency efforts including new technologies and new policy and implementation mechanisms, and pursue comparable investment in energy efficiency from all retail providers of electricity in California. In addition, these measures are designed to expand the use of green building practices to reduce the carbon footprint of California's new and existing inventory of buildings. As identified above, the proposed project would comply with the 2019 CALGreen Code standards, regarding energy conservation and green building standards. Therefore, the proposed project would comply with applicable energy measures.

Water conservation and efficiency measures are intended to continue efficiency programs and use cleaner energy sources to move and treat water. Increasing the efficiency of water transport and reducing water use would reduce GHG emissions. As noted above, the project would be required to comply with the 2019 CALGreen Code standards, which includes a variety of different measures, including reduction of wastewater and water use. In addition, the proposed project would be required to comply with the California Model Water Efficient Landscape Ordinance. Therefore, the proposed project would not conflict with any of the water conservation and efficiency measures.

[10] California Air Resources Board (CARB). 2017. *California's 2017 Climate Change Scoping Plan*. November.

The goal of transportation and motor vehicle measures is to develop regional GHG emission reduction targets for passenger vehicles. Specific regional emission targets for transportation emissions would not directly apply to the proposed project. However, vehicles traveling to the project site would comply with the Pavley II (LEV III) Advanced Clean Cars Program. The second phase of Pavley standards will reduce GHG emissions from new cars by 34 percent from 2016 levels by 2025, resulting in a 3 percent decrease in average vehicle emissions for all vehicles by 2020. Therefore, the proposed project would not conflict with the identified transportation and motor vehicle measures.

The proposed project would comply with existing State regulations adopted to achieve the overall GHG emission reduction goals identified in AB 32, the AB 32 Scoping Plan, EO B-30-15, SB 32, and AB 197.

SCAG's Regional Transportation Plan/Sustainable Communities Strategy. SCAG's 2020–2045 RTP/SCS was adopted September 3, 2020. SCAG's RTP/SCS identifies that land use strategies that focus on new housing and job growth in areas served by high-quality transit and other opportunity areas would be consistent with a land use development pattern that supports and complements the proposed transportation network. The core vision in the 2020–2045 RTP/SCS is to better manage the existing transportation system through design management strategies, integrate land use decisions and technological advancements, create complete streets that are safe to all roadway users, preserve the transportation system, and expand transit and foster development in transit-oriented communities. The 2020–2045 RTP/SCS contains transportation projects to help more efficiently distribute population, housing, and employment growth, as well as a forecasted development pattern that is generally consistent with regional-level General Plan data. The forecasted development pattern, when integrated with the financially constrained transportation investments identified in the 2020–2045 RTP/SCS, would reach the regional target of reducing GHG emissions from autos and light-duty trucks by 8 percent per capita by 2020 and 19 percent by 2035 (compared to 2005 levels). The 2020–2045 RTP/SCS does not require that local General Plans, Specific Plans, or zoning be consistent with the 2020–2045 RTP/SCS but provides incentives for consistency for governments and developers.

Implementing SCAG's RTP/SCS will greatly reduce the regional GHG emissions from transportation, helping to achieve statewide emission reduction targets. The proposed project would not conflict with the stated goals of the RTP/SCS; therefore, the proposed project would not interfere with SCAG's ability to achieve the region's GHG reduction targets at 8 percent below 2005 per capita emissions levels by 2020 and 19 percent below 2005 per capita emissions levels by 2035, and it can be assumed that regional mobile emissions will decrease in line with the goals of the RTP/SCS. Furthermore, the proposed project is not regionally significant per *State CEQA Guidelines* Section 15206, and, as such, it would not conflict with the SCAG RTP/SCS targets, since those targets were established and are applicable on a regional level.

The proposed project would include a 3,000-square-foot medical office building. Due to the size of the proposed project, it is anticipated that implementation of the proposed project would not interfere with SCAG's ability to implement the regional strategies outlined in the RTP/SCS. Therefore, the proposed project would not conflict with plans, policies, or regulations adopted for the purpose of reducing GHG emissions.

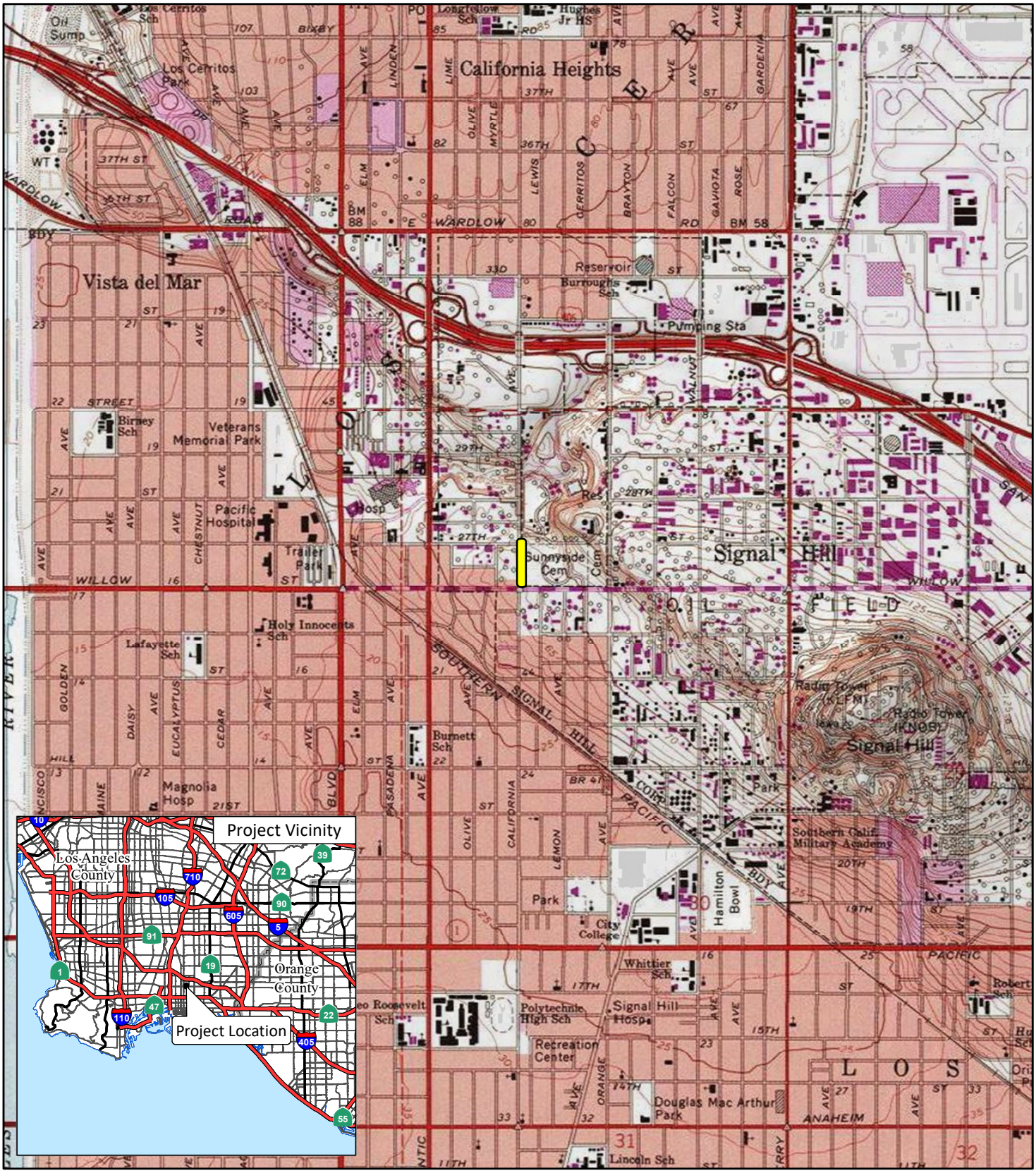
CONCLUSION

Based on the analysis presented above, construction and operation of the proposed project would not result in the generation of criteria air pollutants that would exceed SCAQMD thresholds of significance. Compliance with SCAQMD Rule 403: Fugitive Dust would further reduce construction dust impacts. The proposed project is not expected to produce significant emissions that would affect nearby sensitive receptors. The project would also be consistent with the 2016 AQMP. The project would also not result in objectionable odors affecting a substantial number of people. GHG emissions released during construction and operation of the project are estimated to be minimal and would not be cumulatively considerable. The proposed project would generally be consistent with both the CARB Scoping Plan and the SCAG's RTP/SCS.

Attachments: A: Figure 1: Project Location
B: CalEEMod Output Files

ATTACHMENT A

FIGURE



LSA

LEGEND

Project Location

FIGURE 1

N

0 1000 2000

FEET

Medical Building
at 2600 California Avenue

Project Location

SOURCE: USGS 7.5' Quad - *Long Beach* (1978), CA

I:\CLB1904.39\GIS\MXD\ProjectLoc_USGS.mxd (8/10/2022)

ATTACHMENT B

CALEEMOD OUTPUT FILES

2600 California Avenue Medical Building Project - South Coast AQMD Air District, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

2600 California Avenue Medical Building Project

South Coast AQMD Air District, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
City Park	0.10	Acre	0.10	4,356.00	0
Medical Office Building	3.00	1000sqft	0.07	3,000.00	0
Parking Lot	61.00	Space	0.55	24,400.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	31
Climate Zone	9			**Operational Year**	2023
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	390.98	**CH4 Intensity (lb/MWhr)**	0.033	**N2O Intensity (lb/MWhr)**	0.004

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Total Project Site of 0.72-acres

Construction Phase - Contruction anticipated to begin in 2023 and last 6 months. Overlapping phases for building construction and architectural coating.

Grading - Based on preliminary grading plans, project would require export of 350 cubic yards

Vehicle Trips - Based on a trip generation of 108 trips

Construction Off-road Equipment Mitigation - Use of construction equipment tier 2

Water Mitigation -

Table Name	Column Name	Default Value	New Value
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	15

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	4.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	5.00
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblTripsAndVMT	HaulingTripNumber	0.00	44.00
tblVehicleTrips	ST_TR	8.57	36.00
tblVehicleTrips	ST_TR	1.96	0.00
tblVehicleTrips	SU_TR	1.42	36.00
tblVehicleTrips	SU_TR	2.19	0.00
tblVehicleTrips	WD_TR	34.80	36.00
tblVehicleTrips	WD_TR	0.78	0.00

2.0 Emissions Summary

2600 California Avenue Medical Building Project - South Coast AQMD Air District, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

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					
2023	0.0554	0.3653	0.4121	7.5000e-004	0.0154	0.0175	0.0329	5.2300e-003	0.0161	0.0214	0.0000	66.5838	66.5838	0.0178	1.0000e-003	67.3283
Maximum	**0.0554**	**0.3653**	**0.4121**	**7.5000e-004**	**0.0154**	**0.0175**	**0.0329**	**5.2300e-003**	**0.0161**	**0.0214**	**0.0000**	**66.5838**	**66.5838**	**0.0178**	**1.0000e-003**	**67.3283**

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					
2023	0.0459	0.5925	0.4586	7.5000e-004	0.0123	0.0208	0.0331	3.8100e-003	0.0208	0.0246	0.0000	66.5838	66.5838	0.0178	1.0000e-003	67.3283
Maximum	**0.0459**	**0.5925**	**0.4586**	**7.5000e-004**	**0.0123**	**0.0208**	**0.0331**	**3.8100e-003**	**0.0208**	**0.0246**	**0.0000**	**66.5838**	**66.5838**	**0.0178**	**1.0000e-003**	**67.3283**

	ROG	NOx	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	**17.10**	**-62.22**	**-11.29**	**0.00**	**19.93**	**-18.97**	**-0.76**	**27.15**	**-29.01**	**-15.26**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
1	1-2-2023	4-1-2023	0.2399	0.3698
2	4-2-2023	7-1-2023	0.1756	0.2627
		Highest	0.2399	0.3698

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	0.0143	1.0000e-005	8.2000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.5900e-003	1.5900e-003	0.0000	0.0000	1.7000e-003
Energy	1.7000e-004	1.5200e-003	1.2700e-003	1.0000e-005		1.2000e-004	1.2000e-004		1.2000e-004	1.2000e-004	0.0000	9.8155	9.8155	7.2000e-004	1.1000e-004	9.8675
Mobile	0.0498	0.0575	0.4814	1.0200e-003	0.1055	7.6000e-004	0.1062	0.0281	7.1000e-004	0.0289	0.0000	94.4429	94.4429	6.5700e-003	4.4400e-003	95.9301
Waste						0.0000	0.0000		0.0000	0.0000	6.5789	0.0000	6.5789	0.3888	0.0000	16.2990
Water						0.0000	0.0000		0.0000	0.0000	0.1194	1.2453	1.3648	0.0124	3.0000e-004	1.7641
Total	**0.0642**	**0.0590**	**0.4834**	**1.0300e-003**	**0.1055**	**8.8000e-004**	**0.1063**	**0.0281**	**8.3000e-004**	**0.0290**	**6.6984**	**105.5053**	**112.2037**	**0.4085**	**4.8500e-003**	**123.8625**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

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	0.0143	1.0000e-005	8.2000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.5900e-003	1.5900e-003	0.0000	0.0000	1.7000e-003
Energy	1.7000e-004	1.5200e-003	1.2700e-003	1.0000e-005		1.2000e-004	1.2000e-004		1.2000e-004	1.2000e-004	0.0000	9.8155	9.8155	7.2000e-004	1.1000e-004	9.8675
Mobile	0.0498	0.0575	0.4814	1.0200e-003	0.1055	7.6000e-004	0.1062	0.0281	7.1000e-004	0.0289	0.0000	94.4429	94.4429	6.5700e-003	4.4400e-003	95.9301
Waste						0.0000	0.0000		0.0000	0.0000	6.5789	0.0000	6.5789	0.3888	0.0000	16.2990
Water						0.0000	0.0000		0.0000	0.0000	0.1194	1.2224	1.3418	0.0124	3.0000e-004	1.7411
Total	**0.0642**	**0.0590**	**0.4834**	**1.0300e-003**	**0.1055**	**8.8000e-004**	**0.1063**	**0.0281**	**8.3000e-004**	**0.0290**	**6.6984**	**105.4824**	**112.1808**	**0.4085**	**4.8500e-003**	**123.8394**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.02**	**0.02**	**0.00**	**0.00**	**0.02**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	1/2/2023	1/2/2023	5	1	
2	Grading	Grading	1/3/2023	1/4/2023	5	2	
3	Building Construction	Building Construction	1/5/2023	5/24/2023	5	100	

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4	Paving	Paving	5/25/2023	5/31/2023	5	5	
5	Architectural Coating	Architectural Coating	6/1/2023	6/7/2023	5	5	

Acres of Grading (Site Preparation Phase): 0.5

Acres of Grading (Grading Phase): 1.5

Acres of Paving: 0.55

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 4,500; Non-Residential Outdoor: 1,500; Striped Parking Area: 1,464 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Architectural Coating	Air Compressors	1	6.00	78	0.48
Paving	Cement and Mortar Mixers	4	6.00	9	0.56
Building Construction	Cranes	1	4.00	231	0.29
Building Construction	Forklifts	2	6.00	89	0.20
Grading	Graders	1	6.00	187	0.41
Site Preparation	Graders	1	8.00	187	0.41
Paving	Pavers	1	7.00	130	0.42
Paving	Rollers	1	7.00	80	0.38
Grading	Rubber Tired Dozers	1	6.00	247	0.40
Building Construction	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Grading	Tractors/Loaders/Backhoes	1	7.00	97	0.37
Paving	Tractors/Loaders/Backhoes	1	7.00	97	0.37
Site Preparation	Tractors/Loaders/Backhoes	1	8.00	97	0.37

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	2	5.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Grading	3	8.00	0.00	44.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	5	13.00	5.00	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	3.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Use Cleaner Engines for Construction Equipment

Water Exposed Area

Reduce Vehicle Speed on Unpaved Roads

3.2 Site Preparation - 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					
Fugitive Dust					2.7000e-004	0.0000	2.7000e-004	3.0000e-005	0.0000	3.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	2.7000e-004	3.0900e-003	1.9600e-003	0.0000		1.1000e-004	1.1000e-004		1.0000e-004	1.0000e-004	0.0000	0.4275	0.4275	1.4000e-004	0.0000	0.4309
Total	**2.7000e-004**	**3.0900e-003**	**1.9600e-003**	**0.0000**	**2.7000e-004**	**1.1000e-004**	**3.8000e-004**	**3.0000e-005**	**1.0000e-004**	**1.3000e-004**	**0.0000**	**0.4275**	**0.4275**	**1.4000e-004**	**0.0000**	**0.4309**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.2 Site Preparation - 2023

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.0000e-005	1.0000e-005	8.0000e-005	0.0000	3.0000e-005	0.0000	3.0000e-005	1.0000e-005	0.0000	1.0000e-005	0.0000	0.0215	0.0215	0.0000	0.0000	0.0216
Total	**1.0000e-005**	**1.0000e-005**	**8.0000e-005**	**0.0000**	**3.0000e-005**	**0.0000**	**3.0000e-005**	**1.0000e-005**	**0.0000**	**1.0000e-005**	**0.0000**	**0.0215**	**0.0215**	**0.0000**	**0.0000**	**0.0216**

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					1.2000e-004	0.0000	1.2000e-004	1.0000e-005	0.0000	1.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.5000e-004	4.3100e-003	2.9300e-003	0.0000		1.2000e-004	1.2000e-004		1.2000e-004	1.2000e-004	0.0000	0.4275	0.4275	1.4000e-004	0.0000	0.4309
Total	**1.5000e-004**	**4.3100e-003**	**2.9300e-003**	**0.0000**	**1.2000e-004**	**1.2000e-004**	**2.4000e-004**	**1.0000e-005**	**1.2000e-004**	**1.3000e-004**	**0.0000**	**0.4275**	**0.4275**	**1.4000e-004**	**0.0000**	**0.4309**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.2 Site Preparation - 2023

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.0000e-005	1.0000e-005	8.0000e-005	0.0000	3.0000e-005	0.0000	3.0000e-005	1.0000e-005	0.0000	1.0000e-005	0.0000	0.0215	0.0215	0.0000	0.0000	0.0216
Total	**1.0000e-005**	**1.0000e-005**	**8.0000e-005**	**0.0000**	**3.0000e-005**	**0.0000**	**3.0000e-005**	**1.0000e-005**	**0.0000**	**1.0000e-005**	**0.0000**	**0.0215**	**0.0215**	**0.0000**	**0.0000**	**0.0216**

3.3 Grading - 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					
Fugitive Dust					5.3100e-003	0.0000	5.3100e-003	2.5700e-003	0.0000	2.5700e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	9.3000e-004	0.0102	5.5500e-003	1.0000e-005		4.2000e-004	4.2000e-004		3.9000e-004	3.9000e-004	0.0000	1.2381	1.2381	4.0000e-004	0.0000	1.2481
Total	**9.3000e-004**	**0.0102**	**5.5500e-003**	**1.0000e-005**	**5.3100e-003**	**4.2000e-004**	**5.7300e-003**	**2.5700e-003**	**3.9000e-004**	**2.9600e-003**	**0.0000**	**1.2381**	**1.2381**	**4.0000e-004**	**0.0000**	**1.2481**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.3 Grading - 2023

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	5.0000e-005	2.7900e-003	7.5000e-004	1.0000e-005	3.8000e-004	2.0000e-005	4.0000e-004	1.0000e-004	2.0000e-005	1.2000e-004	0.0000	1.2549	1.2549	7.0000e-005	2.0000e-004	1.3160
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	2.0000e-005	2.0000e-005	2.6000e-004	0.0000	9.0000e-005	0.0000	9.0000e-005	2.0000e-005	0.0000	2.0000e-005	0.0000	0.0687	0.0687	0.0000	0.0000	0.0693
Total	**7.0000e-005**	**2.8100e-003**	**1.0100e-003**	**1.0000e-005**	**4.7000e-004**	**2.0000e-005**	**4.9000e-004**	**1.2000e-004**	**2.0000e-005**	**1.4000e-004**	**0.0000**	**1.3236**	**1.3236**	**7.0000e-005**	**2.0000e-004**	**1.3853**

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					2.3900e-003	0.0000	2.3900e-003	1.1600e-003	0.0000	1.1600e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	4.1000e-004	0.0123	8.0800e-003	1.0000e-005		3.1000e-004	3.1000e-004		3.1000e-004	3.1000e-004	0.0000	1.2381	1.2381	4.0000e-004	0.0000	1.2481
Total	**4.1000e-004**	**0.0123**	**8.0800e-003**	**1.0000e-005**	**2.3900e-003**	**3.1000e-004**	**2.7000e-003**	**1.1600e-003**	**3.1000e-004**	**1.4700e-003**	**0.0000**	**1.2381**	**1.2381**	**4.0000e-004**	**0.0000**	**1.2481**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.3 Grading - 2023

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	5.0000e-005	2.7900e-003	7.5000e-004	1.0000e-005	3.8000e-004	2.0000e-005	4.0000e-004	1.0000e-004	2.0000e-005	1.2000e-004	0.0000	1.2549	1.2549	7.0000e-005	2.0000e-004	1.3160
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	2.0000e-005	2.0000e-005	2.6000e-004	0.0000	9.0000e-005	0.0000	9.0000e-005	2.0000e-005	0.0000	2.0000e-005	0.0000	0.0687	0.0687	0.0000	0.0000	0.0693
Total	**7.0000e-005**	**2.8100e-003**	**1.0100e-003**	**1.0000e-005**	**4.7000e-004**	**2.0000e-005**	**4.9000e-004**	**1.2000e-004**	**2.0000e-005**	**1.4000e-004**	**0.0000**	**1.3236**	**1.3236**	**7.0000e-005**	**2.0000e-004**	**1.3853**

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	0.0316	0.3209	0.3549	5.7000e-004		0.0160	0.0160		0.0147	0.0147	0.0000	50.1042	50.1042	0.0162	0.0000	50.5093
Total	**0.0316**	**0.3209**	**0.3549**	**5.7000e-004**		**0.0160**	**0.0160**		**0.0147**	**0.0147**	**0.0000**	**50.1042**	**50.1042**	**0.0162**	**0.0000**	**50.5093**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.4 Building Construction - 2023

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	2.7000e-004	9.5200e-003	3.6300e-003	5.0000e-005	1.5800e-003	5.0000e-005	1.6300e-003	4.5000e-004	5.0000e-005	5.1000e-004	0.0000	4.4493	4.4493	1.5000e-004	6.4000e-004	4.6451
Worker	2.0300e-003	1.5600e-003	0.0212	6.0000e-005	7.1300e-003	4.0000e-005	7.1700e-003	1.8900e-003	4.0000e-005	1.9300e-003	0.0000	5.5808	5.5808	1.4000e-004	1.4000e-004	5.6272
Total	**2.3000e-003**	**0.0111**	**0.0248**	**1.1000e-004**	**8.7100e-003**	**9.0000e-005**	**8.8000e-003**	**2.3400e-003**	**9.0000e-005**	**2.4400e-003**	**0.0000**	**10.0301**	**10.0301**	**2.9000e-004**	**7.8000e-004**	**10.2723**

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	0.0235	0.5351	0.3981	5.7000e-004		0.0193	0.0193		0.0193	0.0193	0.0000	50.1042	50.1042	0.0162	0.0000	50.5093
Total	**0.0235**	**0.5351**	**0.3981**	**5.7000e-004**		**0.0193**	**0.0193**		**0.0193**	**0.0193**	**0.0000**	**50.1042**	**50.1042**	**0.0162**	**0.0000**	**50.5093**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.4 Building Construction - 2023

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	2.7000e-004	9.5200e-003	3.6300e-003	5.0000e-005	1.5800e-003	5.0000e-005	1.6300e-003	4.5000e-004	5.0000e-005	5.1000e-004	0.0000	4.4493	4.4493	1.5000e-004	6.4000e-004	4.6451
Worker	2.0300e-003	1.5600e-003	0.0212	6.0000e-005	7.1300e-003	4.0000e-005	7.1700e-003	1.8900e-003	4.0000e-005	1.9300e-003	0.0000	5.5808	5.5808	1.4000e-004	1.4000e-004	5.6272
Total	**2.3000e-003**	**0.0111**	**0.0248**	**1.1000e-004**	**8.7100e-003**	**9.0000e-005**	**8.8000e-003**	**2.3400e-003**	**9.0000e-005**	**2.4400e-003**	**0.0000**	**10.0301**	**10.0301**	**2.9000e-004**	**7.8000e-004**	**10.2723**

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	1.5300e-003	0.0138	0.0176	3.0000e-005		6.6000e-004	6.6000e-004		6.2000e-004	6.2000e-004	0.0000	2.3498	2.3498	6.8000e-004	0.0000	2.3669
Paving	7.2000e-004					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**2.2500e-003**	**0.0138**	**0.0176**	**3.0000e-005**		**6.6000e-004**	**6.6000e-004**		**6.2000e-004**	**6.2000e-004**	**0.0000**	**2.3498**	**2.3498**	**6.8000e-004**	**0.0000**	**2.3669**

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.5 Paving - 2023

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.4000e-004	1.1000e-004	1.4700e-003	0.0000	4.9000e-004	0.0000	5.0000e-004	1.3000e-004	0.0000	1.3000e-004	0.0000	0.3864	0.3864	1.0000e-005	1.0000e-005	0.3896
Total	**1.4000e-004**	**1.1000e-004**	**1.4700e-003**	**0.0000**	**4.9000e-004**	**0.0000**	**5.0000e-004**	**1.3000e-004**	**0.0000**	**1.3000e-004**	**0.0000**	**0.3864**	**0.3864**	**1.0000e-005**	**1.0000e-005**	**0.3896**

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	9.9000e-004	0.0209	0.0173	3.0000e-005		7.6000e-004	7.6000e-004		7.6000e-004	7.6000e-004	0.0000	2.3498	2.3498	6.8000e-004	0.0000	2.3669
Paving	7.2000e-004					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**1.7100e-003**	**0.0209**	**0.0173**	**3.0000e-005**		**7.6000e-004**	**7.6000e-004**		**7.6000e-004**	**7.6000e-004**	**0.0000**	**2.3498**	**2.3498**	**6.8000e-004**	**0.0000**	**2.3669**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.5 Paving - 2023

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.4000e-004	1.1000e-004	1.4700e-003	0.0000	4.9000e-004	0.0000	5.0000e-004	1.3000e-004	0.0000	1.3000e-004	0.0000	0.3864	0.3864	1.0000e-005	1.0000e-005	0.3896
Total	**1.4000e-004**	**1.1000e-004**	**1.4700e-003**	**0.0000**	**4.9000e-004**	**0.0000**	**5.0000e-004**	**1.3000e-004**	**0.0000**	**1.3000e-004**	**0.0000**	**0.3864**	**0.3864**	**1.0000e-005**	**1.0000e-005**	**0.3896**

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	0.0173					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	4.8000e-004	3.2600e-003	4.5300e-003	1.0000e-005		1.8000e-004	1.8000e-004		1.8000e-004	1.8000e-004	0.0000	0.6383	0.6383	4.0000e-005	0.0000	0.6393
Total	**0.0178**	**3.2600e-003**	**4.5300e-003**	**1.0000e-005**		**1.8000e-004**	**1.8000e-004**		**1.8000e-004**	**1.8000e-004**	**0.0000**	**0.6383**	**0.6383**	**4.0000e-005**	**0.0000**	**0.6393**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.6 Architectural Coating - 2023

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.0000e-005	2.0000e-005	2.4000e-004	0.0000	8.0000e-005	0.0000	8.0000e-005	2.0000e-005	0.0000	2.0000e-005	0.0000	0.0644	0.0644	0.0000	0.0000	0.0649
Total	**2.0000e-005**	**2.0000e-005**	**2.4000e-004**	**0.0000**	**8.0000e-005**	**0.0000**	**8.0000e-005**	**2.0000e-005**	**0.0000**	**2.0000e-005**	**0.0000**	**0.0644**	**0.0644**	**0.0000**	**0.0000**	**0.0649**

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	0.0173					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	2.8000e-004	5.8800e-003	4.5800e-003	1.0000e-005		2.4000e-004	2.4000e-004		2.4000e-004	2.4000e-004	0.0000	0.6383	0.6383	4.0000e-005	0.0000	0.6393
Total	**0.0176**	**5.8800e-003**	**4.5800e-003**	**1.0000e-005**		**2.4000e-004**	**2.4000e-004**		**2.4000e-004**	**2.4000e-004**	**0.0000**	**0.6383**	**0.6383**	**4.0000e-005**	**0.0000**	**0.6393**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.6 Architectural Coating - 2023

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.0000e-005	2.0000e-005	2.4000e-004	0.0000	8.0000e-005	0.0000	8.0000e-005	2.0000e-005	0.0000	2.0000e-005	0.0000	0.0644	0.0644	0.0000	0.0000	0.0649
Total	**2.0000e-005**	**2.0000e-005**	**2.4000e-004**	**0.0000**	**8.0000e-005**	**0.0000**	**8.0000e-005**	**2.0000e-005**	**0.0000**	**2.0000e-005**	**0.0000**	**0.0644**	**0.0644**	**0.0000**	**0.0000**	**0.0649**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

2600 California Avenue Medical Building Project - South Coast AQMD Air District, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

	ROG	NOx	CO	SO2	Fugitive 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	0.0498	0.0575	0.4814	1.0200e-003	0.1055	7.6000e-004	0.1062	0.0281	7.1000e-004	0.0289	0.0000	94.4429	94.4429	6.5700e-003	4.4400e-003	95.9301
Unmitigated	0.0498	0.0575	0.4814	1.0200e-003	0.1055	7.6000e-004	0.1062	0.0281	7.1000e-004	0.0289	0.0000	94.4429	94.4429	6.5700e-003	4.4400e-003	95.9301

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Medical Office Building	108.00	108.00	108.00	280,137	280,137
Parking Lot	0.00	0.00	0.00		
City Park	0.00	0.00	0.00		
Total	108.00	108.00	108.00	280,137	280,137

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
Medical Office Building	16.60	8.40	6.90	29.60	51.40	19.00	60	30	10
Parking Lot	16.60	8.40	6.90	0.00	0.00	0.00	0	0	0
City Park	16.60	8.40	6.90	33.00	48.00	19.00	66	28	6

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Medical Office Building	0.543139	0.060749	0.184760	0.130258	0.023830	0.006353	0.011718	0.009137	0.000812	0.000509	0.024193	0.000750	0.003791
Parking Lot	0.543139	0.060749	0.184760	0.130258	0.023830	0.006353	0.011718	0.009137	0.000812	0.000509	0.024193	0.000750	0.003791

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

City Park	0.543139	0.060749	0.184760	0.130258	0.023830	0.006353	0.011718	0.009137	0.000812	0.000509	0.024193	0.000750	0.003791

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	8.1650	8.1650	6.9000e-004	8.0000e-005	8.2071
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	8.1650	8.1650	6.9000e-004	8.0000e-005	8.2071
NaturalGas Mitigated	1.7000e-004	1.5200e-003	1.2700e-003	1.0000e-005		1.2000e-004	1.2000e-004		1.2000e-004	1.2000e-004	0.0000	1.6505	1.6505	3.0000e-005	3.0000e-005	1.6604
NaturalGas Unmitigated	1.7000e-004	1.5200e-003	1.2700e-003	1.0000e-005		1.2000e-004	1.2000e-004		1.2000e-004	1.2000e-004	0.0000	1.6505	1.6505	3.0000e-005	3.0000e-005	1.6604

2600 California Avenue Medical Building Project - South Coast AQMD Air District, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

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					
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Medical Office Building	30930	1.7000e-004	1.5200e-003	1.2700e-003	1.0000e-005		1.2000e-004	1.2000e-004		1.2000e-004	1.2000e-004	0.0000	1.6505	1.6505	3.0000e-005	3.0000e-005	1.6604
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**1.7000e-004**	**1.5200e-003**	**1.2700e-003**	**1.0000e-005**		**1.2000e-004**	**1.2000e-004**		**1.2000e-004**	**1.2000e-004**	**0.0000**	**1.6505**	**1.6505**	**3.0000e-005**	**3.0000e-005**	**1.6604**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

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					
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Medical Office Building	30930	1.7000e-004	1.5200e-003	1.2700e-003	1.0000e-005		1.2000e-004	1.2000e-004		1.2000e-004	1.2000e-004	0.0000	1.6505	1.6505	3.0000e-005	3.0000e-005	1.6604
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**1.7000e-004**	**1.5200e-003**	**1.2700e-003**	**1.0000e-005**		**1.2000e-004**	**1.2000e-004**		**1.2000e-004**	**1.2000e-004**	**0.0000**	**1.6505**	**1.6505**	**3.0000e-005**	**3.0000e-005**	**1.6604**

2600 California Avenue Medical Building Project - South Coast AQMD Air District, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
City Park	0	0.0000	0.0000	0.0000	0.0000
Medical Office Building	37500	6.6505	5.6000e-004	7.0000e-005	6.6848
Parking Lot	8540	1.5145	1.3000e-004	2.0000e-005	1.5223
Total		**8.1650**	**6.9000e-004**	**9.0000e-005**	**8.2071**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

5.3 Energy by Land Use - Electricity

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
City Park	0	0.0000	0.0000	0.0000	0.0000
Medical Office Building	37500	6.6505	5.6000e-004	7.0000e-005	6.6848
Parking Lot	8540	1.5145	1.3000e-004	2.0000e-005	1.5223
Total		**8.1650**	**6.9000e-004**	**9.0000e-005**	**8.2071**

6.0 Area Detail

6.1 Mitigation Measures Area

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

	ROG	NOx	CO	SO2	Fugitive 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	0.0143	1.0000e-005	8.2000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.5900e-003	1.5900e-003	0.0000	0.0000	1.7000e-003
Unmitigated	0.0143	1.0000e-005	8.2000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.5900e-003	1.5900e-003	0.0000	0.0000	1.7000e-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	1.7300e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.0125					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	8.0000e-005	1.0000e-005	8.2000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.5900e-003	1.5900e-003	0.0000	0.0000	1.7000e-003
Total	**0.0143**	**1.0000e-005**	**8.2000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**1.5900e-003**	**1.5900e-003**	**0.0000**	**0.0000**	**1.7000e-003**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

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	1.7300e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.0125					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	8.0000e-005	1.0000e-005	8.2000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.5900e-003	1.5900e-003	0.0000	0.0000	1.7000e-003
Total	**0.0143**	**1.0000e-005**	**8.2000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**1.5900e-003**	**1.5900e-003**	**0.0000**	**0.0000**	**1.7000e-003**

7.0 Water Detail

7.1 Mitigation Measures Water

Use Water Efficient Irrigation System

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	1.3418	0.0124	3.0000e-004	1.7411
Unmitigated	1.3648	0.0124	3.0000e-004	1.7641

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
City Park	0 / 0.119148	0.2348	2.0000e-005	0.0000	0.2360
Medical Office Building	0.376442 / 0.0717032	1.1300	0.0124	3.0000e-004	1.5282
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**1.3648**	**0.0124**	**3.0000e-004**	**1.7641**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
City Park	0 / 0.11188	0.2204	2.0000e-005	0.0000	0.2216
Medical Office Building	0.376442 / 0.0673293	1.1214	0.0124	3.0000e-004	1.5195
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**1.3418**	**0.0124**	**3.0000e-004**	**1.7411**

8.0 Waste Detail

8.1 Mitigation Measures Waste

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	6.5789	0.3888	0.0000	16.2990
Unmitigated	6.5789	0.3888	0.0000	16.2990

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
City Park	0.01	2.0300e-003	1.2000e-004	0.0000	5.0300e-003
Medical Office Building	32.4	6.5769	0.3887	0.0000	16.2940
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Total		**6.5789**	**0.3888**	**0.0000**	**16.2990**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

8.2 Waste by Land Use

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
City Park	0.01	2.0300e-003	1.2000e-004	0.0000	5.0300e-003
Medical Office Building	32.4	6.5769	0.3887	0.0000	16.2940
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Total		**6.5789**	**0.3888**	**0.0000**	**16.2990**

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

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

11.0 Vegetation

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

2600 California Avenue Medical Building Project

South Coast AQMD Air District, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
City Park	0.10	Acre	0.10	4,356.00	0
Medical Office Building	3.00	1000sqft	0.07	3,000.00	0
Parking Lot	61.00	Space	0.55	24,400.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	31
Climate Zone	9			**Operational Year**	2023
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	390.98	**CH4 Intensity (lb/MWhr)**	0.033	**N2O Intensity (lb/MWhr)**	0.004

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Total Project Site of 0.72-acres

Construction Phase - Contruction anticipated to begin in 2023 and last 6 months. Overlapping phases for building construction and architectural coating.

Grading - Based on preliminary grading plans, project would require export of 350 cubic yards

Vehicle Trips - Based on a trip generation of 108 trips

Construction Off-road Equipment Mitigation - Use of construction equipment tier 2

Water Mitigation -

Table Name	Column Name	Default Value	New Value
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	15

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	4.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	5.00
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblTripsAndVMT	HaulingTripNumber	0.00	44.00
tblVehicleTrips	ST_TR	8.57	36.00
tblVehicleTrips	ST_TR	1.96	0.00
tblVehicleTrips	SU_TR	1.42	36.00
tblVehicleTrips	SU_TR	2.19	0.00
tblVehicleTrips	WD_TR	34.80	36.00
tblVehicleTrips	WD_TR	0.78	0.00

2.0 Emissions Summary

2600 California Avenue Medical Building Project - South Coast AQMD Air District, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

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					
2023	7.1204	12.8461	7.6524	0.0274	5.7862	0.4407	6.2268	2.6977	0.4062	3.1039	0.0000	2,826.5518	2,826.5518	0.5202	0.2215	2,905.5528
Maximum	**7.1204**	**12.8461**	**7.6524**	**0.0274**	**5.7862**	**0.4407**	**6.2268**	**2.6977**	**0.4062**	**3.1039**	**0.0000**	**2,826.5518**	**2,826.5518**	**0.5202**	**0.2215**	**2,905.5528**

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					
2023	7.0426	14.9305	9.1100	0.0274	2.8646	0.3873	3.1958	1.2850	0.3872	1.6153	0.0000	2,826.5518	2,826.5518	0.5202	0.2215	2,905.5528
Maximum	**7.0426**	**14.9305**	**9.1100**	**0.0274**	**2.8646**	**0.3873**	**3.1958**	**1.2850**	**0.3872**	**1.6153**	**0.0000**	**2,826.5518**	**2,826.5518**	**0.5202**	**0.2215**	**2,905.5528**

	ROG	NOx	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	**1.09**	**-16.23**	**-19.05**	**0.00**	**50.49**	**12.10**	**48.68**	**52.37**	**4.66**	**47.96**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2600 California Avenue Medical Building Project - South Coast AQMD Air District, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.0784	6.0000e-005	6.5400e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		0.0140	0.0140	4.0000e-005		0.0150
Energy	9.1000e-004	8.3100e-003	6.9800e-003	5.0000e-005		6.3000e-004	6.3000e-004		6.3000e-004	6.3000e-004		9.9694	9.9694	1.9000e-004	1.8000e-004	10.0286
Mobile	0.2900	0.2905	2.6929	5.8200e-003	0.5902	4.1900e-003	0.5944	0.1573	3.9000e-003	0.1612		593.2975	593.2975	0.0386	0.0257	601.9238
Total	**0.3692**	**0.2989**	**2.7064**	**5.8700e-003**	**0.5902**	**4.8400e-003**	**0.5951**	**0.1573**	**4.5500e-003**	**0.1618**		**603.2809**	**603.2809**	**0.0389**	**0.0259**	**611.9674**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.0784	6.0000e-005	6.5400e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		0.0140	0.0140	4.0000e-005		0.0150
Energy	9.1000e-004	8.3100e-003	6.9800e-003	5.0000e-005		6.3000e-004	6.3000e-004		6.3000e-004	6.3000e-004		9.9694	9.9694	1.9000e-004	1.8000e-004	10.0286
Mobile	0.2900	0.2905	2.6929	5.8200e-003	0.5902	4.1900e-003	0.5944	0.1573	3.9000e-003	0.1612		593.2975	593.2975	0.0386	0.0257	601.9238
Total	**0.3692**	**0.2989**	**2.7064**	**5.8700e-003**	**0.5902**	**4.8400e-003**	**0.5951**	**0.1573**	**4.5500e-003**	**0.1618**		**603.2809**	**603.2809**	**0.0389**	**0.0259**	**611.9674**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

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

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	1/2/2023	1/2/2023	5	1	
2	Grading	Grading	1/3/2023	1/4/2023	5	2	
3	Building Construction	Building Construction	1/5/2023	5/24/2023	5	100	
4	Paving	Paving	5/25/2023	5/31/2023	5	5	
5	Architectural Coating	Architectural Coating	6/1/2023	6/7/2023	5	5	

Acres of Grading (Site Preparation Phase): 0.5

Acres of Grading (Grading Phase): 1.5

Acres of Paving: 0.55

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 4,500; Non-Residential Outdoor: 1,500; Striped Parking Area: 1,464 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Architectural Coating	Air Compressors	1	6.00	78	0.48
Paving	Cement and Mortar Mixers	4	6.00	9	0.56
Building Construction	Cranes	1	4.00	231	0.29
Building Construction	Forklifts	2	6.00	89	0.20
Grading	Graders	1	6.00	187	0.41
Site Preparation	Graders	1	8.00	187	0.41

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Paving	Pavers	1	7.00	130	0.42
Paving	Rollers	1	7.00	80	0.38
Grading	Rubber Tired Dozers	1	6.00	247	0.40
Building Construction	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Grading	Tractors/Loaders/Backhoes	1	7.00	97	0.37
Paving	Tractors/Loaders/Backhoes	1	7.00	97	0.37
Site Preparation	Tractors/Loaders/Backhoes	1	8.00	97	0.37

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	2	5.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Grading	3	8.00	0.00	44.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	5	13.00	5.00	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	3.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Use Cleaner Engines for Construction Equipment

Water Exposed Area

Reduce Vehicle Speed on Unpaved Roads

2600 California Avenue Medical Building Project - South Coast AQMD Air District, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.2 Site Preparation - 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					
Fugitive Dust					0.5303	0.0000	0.5303	0.0573	0.0000	0.0573			0.0000			0.0000
Off-Road	0.5348	6.1887	3.9239	9.7300e-003		0.2266	0.2266		0.2084	0.2084		942.4317	942.4317	0.3048		950.0517
Total	**0.5348**	**6.1887**	**3.9239**	**9.7300e-003**	**0.5303**	**0.2266**	**0.7568**	**0.0573**	**0.2084**	**0.2657**		**942.4317**	**942.4317**	**0.3048**		**950.0517**

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	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
Worker	0.0160	0.0107	0.1754	4.9000e-004	0.0559	3.1000e-004	0.0562	0.0148	2.9000e-004	0.0151		49.4796	49.4796	1.2000e-003	1.1300e-003	49.8464
Total	**0.0160**	**0.0107**	**0.1754**	**4.9000e-004**	**0.0559**	**3.1000e-004**	**0.0562**	**0.0148**	**2.9000e-004**	**0.0151**		**49.4796**	**49.4796**	**1.2000e-003**	**1.1300e-003**	**49.8464**

2600 California Avenue Medical Building Project - South Coast AQMD Air District, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.2 Site Preparation - 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					
Fugitive Dust					0.2386	0.0000	0.2386	0.0258	0.0000	0.0258			0.0000			0.0000
Off-Road	0.3079	8.6185	5.8579	9.7300e-003		0.2405	0.2405		0.2405	0.2405	0.0000	942.4317	942.4317	0.3048		950.0517
Total	**0.3079**	**8.6185**	**5.8579**	**9.7300e-003**	**0.2386**	**0.2405**	**0.4791**	**0.0258**	**0.2405**	**0.2663**	**0.0000**	**942.4317**	**942.4317**	**0.3048**		**950.0517**

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	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
Worker	0.0160	0.0107	0.1754	4.9000e-004	0.0559	3.1000e-004	0.0562	0.0148	2.9000e-004	0.0151		49.4796	49.4796	1.2000e-003	1.1300e-003	49.8464
Total	**0.0160**	**0.0107**	**0.1754**	**4.9000e-004**	**0.0559**	**3.1000e-004**	**0.0562**	**0.0148**	**2.9000e-004**	**0.0151**		**49.4796**	**49.4796**	**1.2000e-003**	**1.1300e-003**	**49.8464**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.3 Grading - 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					
Fugitive Dust					5.3119	0.0000	5.3119	2.5686	0.0000	2.5686			0.0000			0.0000
Off-Road	0.9335	10.1789	5.5516	0.0141		0.4201	0.4201		0.3865	0.3865		1,364.7713	1,364.7713	0.4414		1,375.8062
Total	**0.9335**	**10.1789**	**5.5516**	**0.0141**	**5.3119**	**0.4201**	**5.7320**	**2.5686**	**0.3865**	**2.9550**		**1,364.7713**	**1,364.7713**	**0.4414**		**1,375.8062**

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	0.0474	2.6501	0.7453	0.0126	0.3848	0.0201	0.4049	0.1055	0.0192	0.1247		1,382.6130	1,382.6130	0.0769	0.2197	1,449.9924
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
Worker	0.0255	0.0171	0.2806	7.8000e-004	0.0894	5.0000e-004	0.0899	0.0237	4.6000e-004	0.0242		79.1674	79.1674	1.9200e-003	1.8100e-003	79.7542
Total	**0.0729**	**2.6672**	**1.0259**	**0.0134**	**0.4742**	**0.0206**	**0.4948**	**0.1292**	**0.0197**	**0.1489**		**1,461.7804**	**1,461.7804**	**0.0788**	**0.2215**	**1,529.7466**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.3 Grading - 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					
Fugitive Dust					2.3904	0.0000	2.3904	1.1559	0.0000	1.1559			0.0000			0.0000
Off-Road	0.4059	12.2633	8.0841	0.0141		0.3106	0.3106		0.3106	0.3106	0.0000	1,364.7713	1,364.7713	0.4414		1,375.8062
Total	**0.4059**	**12.2633**	**8.0841**	**0.0141**	**2.3904**	**0.3106**	**2.7010**	**1.1559**	**0.3106**	**1.4665**	**0.0000**	**1,364.7713**	**1,364.7713**	**0.4414**		**1,375.8062**

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	0.0474	2.6501	0.7453	0.0126	0.3848	0.0201	0.4049	0.1055	0.0192	0.1247		1,382.6130	1,382.6130	0.0769	0.2197	1,449.9924
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
Worker	0.0255	0.0171	0.2806	7.8000e-004	0.0894	5.0000e-004	0.0899	0.0237	4.6000e-004	0.0242		79.1674	79.1674	1.9200e-003	1.8100e-003	79.7542
Total	**0.0729**	**2.6672**	**1.0259**	**0.0134**	**0.4742**	**0.0206**	**0.4948**	**0.1292**	**0.0197**	**0.1489**		**1,461.7804**	**1,461.7804**	**0.0788**	**0.2215**	**1,529.7466**

2600 California Avenue Medical Building Project - South Coast AQMD Air District, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

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	0.0000
Vendor	5.5300e-003	0.1815	0.0715	9.1000e-004	0.0320	1.0600e-003	0.0331	9.2200e-003	1.0100e-003	0.0102		98.0155	98.0155	3.2900e-003	0.0142	102.3263
Worker	0.0415	0.0279	0.4560	1.2700e-003	0.1453	8.2000e-004	0.1461	0.0385	7.5000e-004	0.0393		128.6470	128.6470	3.1200e-003	2.9400e-003	129.6006
Total	**0.0470**	**0.2094**	**0.5275**	**2.1800e-003**	**0.1773**	**1.8800e-003**	**0.1792**	**0.0478**	**1.7600e-003**	**0.0495**		**226.6625**	**226.6625**	**6.4100e-003**	**0.0171**	**231.9269**

2600 California Avenue Medical Building Project - South Coast AQMD Air District, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

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	0.4704	10.7018	7.9624	0.0114		0.3855	0.3855		0.3855	0.3855	0.0000	1,104.6089	1,104.6089	0.3573		1,113.5402
Total	**0.4704**	**10.7018**	**7.9624**	**0.0114**		**0.3855**	**0.3855**		**0.3855**	**0.3855**	**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	0.0000
Vendor	5.5300e-003	0.1815	0.0715	9.1000e-004	0.0320	1.0600e-003	0.0331	9.2200e-003	1.0100e-003	0.0102		98.0155	98.0155	3.2900e-003	0.0142	102.3263
Worker	0.0415	0.0279	0.4560	1.2700e-003	0.1453	8.2000e-004	0.1461	0.0385	7.5000e-004	0.0393		128.6470	128.6470	3.1200e-003	2.9400e-003	129.6006
Total	**0.0470**	**0.2094**	**0.5275**	**2.1800e-003**	**0.1773**	**1.8800e-003**	**0.1792**	**0.0478**	**1.7600e-003**	**0.0495**		**226.6625**	**226.6625**	**6.4100e-003**	**0.0171**	**231.9269**

2600 California Avenue Medical Building Project - South Coast AQMD Air District, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

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	0.2882					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**0.8994**	**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	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
Worker	0.0575	0.0386	0.6314	1.7600e-003	0.2012	1.1300e-003	0.2023	0.0534	1.0400e-003	0.0544		178.1267	178.1267	4.3200e-003	4.0700e-003	179.4470
Total	**0.0575**	**0.0386**	**0.6314**	**1.7600e-003**	**0.2012**	**1.1300e-003**	**0.2023**	**0.0534**	**1.0400e-003**	**0.0544**		**178.1267**	**178.1267**	**4.3200e-003**	**4.0700e-003**	**179.4470**

2600 California Avenue Medical Building Project - South Coast AQMD Air District, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

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	0.3954	8.3730	6.9028	0.0113		0.3043	0.3043		0.3043	0.3043	0.0000	1,036.0878	1,036.0878	0.3018		1,043.6331
Paving	0.2882					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**0.6836**	**8.3730**	**6.9028**	**0.0113**		**0.3043**	**0.3043**		**0.3043**	**0.3043**	**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	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
Worker	0.0575	0.0386	0.6314	1.7600e-003	0.2012	1.1300e-003	0.2023	0.0534	1.0400e-003	0.0544		178.1267	178.1267	4.3200e-003	4.0700e-003	179.4470
Total	**0.0575**	**0.0386**	**0.6314**	**1.7600e-003**	**0.2012**	**1.1300e-003**	**0.2023**	**0.0534**	**1.0400e-003**	**0.0544**		**178.1267**	**178.1267**	**4.3200e-003**	**4.0700e-003**	**179.4470**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

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	6.9191					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	**7.1108**	**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	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
Worker	9.5800e-003	6.4300e-003	0.1052	2.9000e-004	0.0335	1.9000e-004	0.0337	8.8900e-003	1.7000e-004	9.0700e-003		29.6878	29.6878	7.2000e-004	6.8000e-004	29.9078
Total	**9.5800e-003**	**6.4300e-003**	**0.1052**	**2.9000e-004**	**0.0335**	**1.9000e-004**	**0.0337**	**8.8900e-003**	**1.7000e-004**	**9.0700e-003**		**29.6878**	**29.6878**	**7.2000e-004**	**6.8000e-004**	**29.9078**

2600 California Avenue Medical Building Project - South Coast AQMD Air District, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

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	6.9191					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1139	2.3524	1.8324	2.9700e-003		0.0951	0.0951		0.0951	0.0951	0.0000	281.4481	281.4481	0.0168		281.8690
Total	**7.0330**	**2.3524**	**1.8324**	**2.9700e-003**		**0.0951**	**0.0951**		**0.0951**	**0.0951**	**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	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
Worker	9.5800e-003	6.4300e-003	0.1052	2.9000e-004	0.0335	1.9000e-004	0.0337	8.8900e-003	1.7000e-004	9.0700e-003		29.6878	29.6878	7.2000e-004	6.8000e-004	29.9078
Total	**9.5800e-003**	**6.4300e-003**	**0.1052**	**2.9000e-004**	**0.0335**	**1.9000e-004**	**0.0337**	**8.8900e-003**	**1.7000e-004**	**9.0700e-003**		**29.6878**	**29.6878**	**7.2000e-004**	**6.8000e-004**	**29.9078**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.2900	0.2905	2.6929	5.8200e-003	0.5902	4.1900e-003	0.5944	0.1573	3.9000e-003	0.1612		593.2975	593.2975	0.0386	0.0257	601.9238
Unmitigated	0.2900	0.2905	2.6929	5.8200e-003	0.5902	4.1900e-003	0.5944	0.1573	3.9000e-003	0.1612		593.2975	593.2975	0.0386	0.0257	601.9238

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Medical Office Building	108.00	108.00	108.00	280,137	280,137
Parking Lot	0.00	0.00	0.00		
City Park	0.00	0.00	0.00		
Total	108.00	108.00	108.00	280,137	280,137

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
Medical Office Building	16.60	8.40	6.90	29.60	51.40	19.00	60	30	10
Parking Lot	16.60	8.40	6.90	0.00	0.00	0.00	0	0	0
City Park	16.60	8.40	6.90	33.00	48.00	19.00	66	28	6

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Medical Office Building	0.543139	0.060749	0.184760	0.130258	0.023830	0.006353	0.011718	0.009137	0.000812	0.000509	0.024193	0.000750	0.003791
Parking Lot	0.543139	0.060749	0.184760	0.130258	0.023830	0.006353	0.011718	0.009137	0.000812	0.000509	0.024193	0.000750	0.003791
City Park	0.543139	0.060749	0.184760	0.130258	0.023830	0.006353	0.011718	0.009137	0.000812	0.000509	0.024193	0.000750	0.003791

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	9.1000e-004	8.3100e-003	6.9800e-003	5.0000e-005		6.3000e-004	6.3000e-004		6.3000e-004	6.3000e-004		9.9694	9.9694	1.9000e-004	1.8000e-004	10.0286
NaturalGas Unmitigated	9.1000e-004	8.3100e-003	6.9800e-003	5.0000e-005		6.3000e-004	6.3000e-004		6.3000e-004	6.3000e-004		9.9694	9.9694	1.9000e-004	1.8000e-004	10.0286

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

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					
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Medical Office Building	84.7397	9.1000e-004	8.3100e-003	6.9800e-003	5.0000e-005		6.3000e-004	6.3000e-004		6.3000e-004	6.3000e-004		9.9694	9.9694	1.9000e-004	1.8000e-004	10.0286
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		**9.1000e-004**	**8.3100e-003**	**6.9800e-003**	**5.0000e-005**		**6.3000e-004**	**6.3000e-004**		**6.3000e-004**	**6.3000e-004**		**9.9694**	**9.9694**	**1.9000e-004**	**1.8000e-004**	**10.0286**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

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					
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Medical Office Building	0.0847397	9.1000e-004	8.3100e-003	6.9800e-003	5.0000e-005		6.3000e-004	6.3000e-004		6.3000e-004	6.3000e-004		9.9694	9.9694	1.9000e-004	1.8000e-004	10.0286
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		**9.1000e-004**	**8.3100e-003**	**6.9800e-003**	**5.0000e-005**		**6.3000e-004**	**6.3000e-004**		**6.3000e-004**	**6.3000e-004**		**9.9694**	**9.9694**	**1.9000e-004**	**1.8000e-004**	**10.0286**

6.0 Area Detail

6.1 Mitigation Measures Area

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.0784	6.0000e-005	6.5400e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		0.0140	0.0140	4.0000e-005		0.0150
Unmitigated	0.0784	6.0000e-005	6.5400e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		0.0140	0.0140	4.0000e-005		0.0150

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	9.4800e-003					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.0683					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	6.1000e-004	6.0000e-005	6.5400e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		0.0140	0.0140	4.0000e-005		0.0150
Total	**0.0784**	**6.0000e-005**	**6.5400e-003**	**0.0000**		**2.0000e-005**	**2.0000e-005**		**2.0000e-005**	**2.0000e-005**		**0.0140**	**0.0140**	**4.0000e-005**		**0.0150**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

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	9.4800e-003					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.0683					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	6.1000e-004	6.0000e-005	6.5400e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		0.0140	0.0140	4.0000e-005		0.0150
Total	**0.0784**	**6.0000e-005**	**6.5400e-003**	**0.0000**		**2.0000e-005**	**2.0000e-005**		**2.0000e-005**	**2.0000e-005**		**0.0140**	**0.0140**	**4.0000e-005**		**0.0150**

7.0 Water Detail

7.1 Mitigation Measures Water

Use Water Efficient Irrigation System

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

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

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

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

Boilers

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

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

2600 California Avenue Medical Building Project - South Coast AQMD Air District, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

2600 California Avenue Medical Building Project

South Coast AQMD Air District, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
City Park	0.10	Acre	0.10	4,356.00	0
Medical Office Building	3.00	1000sqft	0.07	3,000.00	0
Parking Lot	61.00	Space	0.55	24,400.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	31
Climate Zone	9			**Operational Year**	2023
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	390.98	**CH4 Intensity (lb/MWhr)**	0.033	**N2O Intensity (lb/MWhr)**	0.004

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Total Project Site of 0.72-acres

Construction Phase - Contruction anticipated to begin in 2023 and last 6 months. Overlapping phases for building construction and architectural coating.

Grading - Based on preliminary grading plans, project would require export of 350 cubic yards

Vehicle Trips - Based on a trip generation of 108 trips

Construction Off-road Equipment Mitigation - Use of construction equipment tier 2

Water Mitigation -

Table Name	Column Name	Default Value	New Value
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	15

2600 California Avenue Medical Building Project - South Coast AQMD Air District, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	4.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	5.00
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblTripsAndVMT	HaulingTripNumber	0.00	44.00
tblVehicleTrips	ST_TR	8.57	36.00
tblVehicleTrips	ST_TR	1.96	0.00
tblVehicleTrips	SU_TR	1.42	36.00
tblVehicleTrips	SU_TR	2.19	0.00
tblVehicleTrips	WD_TR	34.80	36.00
tblVehicleTrips	WD_TR	0.78	0.00

2.0 Emissions Summary

2600 California Avenue Medical Building Project - South Coast AQMD Air District, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

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					
2023	7.1209	12.9740	7.5924	0.0274	5.7862	0.4407	6.2269	2.6977	0.4062	3.1040	0.0000	2,823.5150	2,823.5150	0.5200	0.2218	2,902.6199
Maximum	**7.1209**	**12.9740**	**7.5924**	**0.0274**	**5.7862**	**0.4407**	**6.2269**	**2.6977**	**0.4062**	**3.1040**	**0.0000**	**2,823.5150**	**2,823.5150**	**0.5200**	**0.2218**	**2,902.6199**

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					
2023	7.0432	15.0584	9.0942	0.0274	2.8646	0.3874	3.1958	1.2850	0.3872	1.6154	0.0000	2,823.5150	2,823.5150	0.5200	0.2218	2,902.6199
Maximum	**7.0432**	**15.0584**	**9.0942**	**0.0274**	**2.8646**	**0.3874**	**3.1958**	**1.2850**	**0.3872**	**1.6154**	**0.0000**	**2,823.5150**	**2,823.5150**	**0.5200**	**0.2218**	**2,902.6199**

	ROG	NOx	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	**1.09**	**-16.07**	**-19.78**	**0.00**	**50.49**	**12.11**	**48.68**	**52.37**	**4.67**	**47.96**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.0784	6.0000e-005	6.5400e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		0.0140	0.0140	4.0000e-005		0.0150
Energy	9.1000e-004	8.3100e-003	6.9800e-003	5.0000e-005		6.3000e-004	6.3000e-004		6.3000e-004	6.3000e-004		9.9694	9.9694	1.9000e-004	1.8000e-004	10.0286
Mobile	0.2781	0.3123	2.6186	5.5500e-003	0.5902	4.2000e-003	0.5944	0.1573	3.9000e-003	0.1612		565.9262	565.9262	0.0400	0.0268	574.9008
Total	**0.3573**	**0.3207**	**2.6321**	**5.6000e-003**	**0.5902**	**4.8500e-003**	**0.5951**	**0.1573**	**4.5500e-003**	**0.1618**		**575.9096**	**575.9096**	**0.0403**	**0.0269**	**584.9444**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.0784	6.0000e-005	6.5400e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		0.0140	0.0140	4.0000e-005		0.0150
Energy	9.1000e-004	8.3100e-003	6.9800e-003	5.0000e-005		6.3000e-004	6.3000e-004		6.3000e-004	6.3000e-004		9.9694	9.9694	1.9000e-004	1.8000e-004	10.0286
Mobile	0.2781	0.3123	2.6186	5.5500e-003	0.5902	4.2000e-003	0.5944	0.1573	3.9000e-003	0.1612		565.9262	565.9262	0.0400	0.0268	574.9008
Total	**0.3573**	**0.3207**	**2.6321**	**5.6000e-003**	**0.5902**	**4.8500e-003**	**0.5951**	**0.1573**	**4.5500e-003**	**0.1618**		**575.9096**	**575.9096**	**0.0403**	**0.0269**	**584.9444**

2600 California Avenue Medical Building Project - South Coast AQMD Air District, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

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

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	1/2/2023	1/2/2023	5	1	
2	Grading	Grading	1/3/2023	1/4/2023	5	2	
3	Building Construction	Building Construction	1/5/2023	5/24/2023	5	100	
4	Paving	Paving	5/25/2023	5/31/2023	5	5	
5	Architectural Coating	Architectural Coating	6/1/2023	6/7/2023	5	5	

Acres of Grading (Site Preparation Phase): 0.5

Acres of Grading (Grading Phase): 1.5

Acres of Paving: 0.55

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 4,500; Non-Residential Outdoor: 1,500; Striped Parking Area: 1,464 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Architectural Coating	Air Compressors	1	6.00	78	0.48
Paving	Cement and Mortar Mixers	4	6.00	9	0.56
Building Construction	Cranes	1	4.00	231	0.29
Building Construction	Forklifts	2	6.00	89	0.20
Grading	Graders	1	6.00	187	0.41
Site Preparation	Graders	1	8.00	187	0.41

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Paving	Pavers	1	7.00	130	0.42
Paving	Rollers	1	7.00	80	0.38
Grading	Rubber Tired Dozers	1	6.00	247	0.40
Building Construction	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Grading	Tractors/Loaders/Backhoes	1	7.00	97	0.37
Paving	Tractors/Loaders/Backhoes	1	7.00	97	0.37
Site Preparation	Tractors/Loaders/Backhoes	1	8.00	97	0.37

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	2	5.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Grading	3	8.00	0.00	44.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	5	13.00	5.00	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	3.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Use Cleaner Engines for Construction Equipment

Water Exposed Area

Reduce Vehicle Speed on Unpaved Roads

2600 California Avenue Medical Building Project - South Coast AQMD Air District, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.2 Site Preparation - 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					
Fugitive Dust					0.5303	0.0000	0.5303	0.0573	0.0000	0.0573			0.0000			0.0000
Off-Road	0.5348	6.1887	3.9239	9.7300e-003		0.2266	0.2266		0.2084	0.2084		942.4317	942.4317	0.3048		950.0517
Total	**0.5348**	**6.1887**	**3.9239**	**9.7300e-003**	**0.5303**	**0.2266**	**0.7568**	**0.0573**	**0.2084**	**0.2657**		**942.4317**	**942.4317**	**0.3048**		**950.0517**

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	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
Worker	0.0169	0.0117	0.1587	4.6000e-004	0.0559	3.1000e-004	0.0562	0.0148	2.9000e-004	0.0151		46.6083	46.6083	1.2200e-003	1.2000e-003	46.9959
Total	**0.0169**	**0.0117**	**0.1587**	**4.6000e-004**	**0.0559**	**3.1000e-004**	**0.0562**	**0.0148**	**2.9000e-004**	**0.0151**		**46.6083**	**46.6083**	**1.2200e-003**	**1.2000e-003**	**46.9959**

2600 California Avenue Medical Building Project - South Coast AQMD Air District, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.2 Site Preparation - 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					
Fugitive Dust					0.2386	0.0000	0.2386	0.0258	0.0000	0.0258			0.0000			0.0000
Off-Road	0.3079	8.6185	5.8579	9.7300e-003		0.2405	0.2405		0.2405	0.2405	0.0000	942.4317	942.4317	0.3048		950.0517
Total	**0.3079**	**8.6185**	**5.8579**	**9.7300e-003**	**0.2386**	**0.2405**	**0.4791**	**0.0258**	**0.2405**	**0.2663**	**0.0000**	**942.4317**	**942.4317**	**0.3048**		**950.0517**

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	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
Worker	0.0169	0.0117	0.1587	4.6000e-004	0.0559	3.1000e-004	0.0562	0.0148	2.9000e-004	0.0151		46.6083	46.6083	1.2200e-003	1.2000e-003	46.9959
Total	**0.0169**	**0.0117**	**0.1587**	**4.6000e-004**	**0.0559**	**3.1000e-004**	**0.0562**	**0.0148**	**2.9000e-004**	**0.0151**		**46.6083**	**46.6083**	**1.2200e-003**	**1.2000e-003**	**46.9959**

2600 California Avenue Medical Building Project - South Coast AQMD Air District, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.3 Grading - 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					
Fugitive Dust					5.3119	0.0000	5.3119	2.5686	0.0000	2.5686			0.0000			0.0000
Off-Road	0.9335	10.1789	5.5516	0.0141		0.4201	0.4201		0.3865	0.3865		1,364.7713	1,364.7713	0.4414		1,375.8062
Total	**0.9335**	**10.1789**	**5.5516**	**0.0141**	**5.3119**	**0.4201**	**5.7320**	**2.5686**	**0.3865**	**2.9550**		**1,364.7713**	**1,364.7713**	**0.4414**		**1,375.8062**

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	0.0442	2.7764	0.7562	0.0126	0.3848	0.0201	0.4049	0.1055	0.0193	0.1247		1,384.1704	1,384.1704	0.0767	0.2199	1,451.6203
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
Worker	0.0270	0.0187	0.2540	7.4000e-004	0.0894	5.0000e-004	0.0899	0.0237	4.6000e-004	0.0242		74.5733	74.5733	1.9500e-003	1.9200e-003	75.1935
Total	**0.0712**	**2.7951**	**1.0101**	**0.0133**	**0.4742**	**0.0206**	**0.4949**	**0.1292**	**0.0197**	**0.1489**		**1,458.7437**	**1,458.7437**	**0.0786**	**0.2218**	**1,526.8137**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.3 Grading - 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					
Fugitive Dust					2.3904	0.0000	2.3904	1.1559	0.0000	1.1559			0.0000			0.0000
Off-Road	0.4059	12.2633	8.0841	0.0141		0.3106	0.3106		0.3106	0.3106	0.0000	1,364.7713	1,364.7713	0.4414		1,375.8062
Total	**0.4059**	**12.2633**	**8.0841**	**0.0141**	**2.3904**	**0.3106**	**2.7010**	**1.1559**	**0.3106**	**1.4665**	**0.0000**	**1,364.7713**	**1,364.7713**	**0.4414**		**1,375.8062**

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	0.0442	2.7764	0.7562	0.0126	0.3848	0.0201	0.4049	0.1055	0.0193	0.1247		1,384.1704	1,384.1704	0.0767	0.2199	1,451.6203
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
Worker	0.0270	0.0187	0.2540	7.4000e-004	0.0894	5.0000e-004	0.0899	0.0237	4.6000e-004	0.0242		74.5733	74.5733	1.9500e-003	1.9200e-003	75.1935
Total	**0.0712**	**2.7951**	**1.0101**	**0.0133**	**0.4742**	**0.0206**	**0.4949**	**0.1292**	**0.0197**	**0.1489**		**1,458.7437**	**1,458.7437**	**0.0786**	**0.2218**	**1,526.8137**

2600 California Avenue Medical Building Project - South Coast AQMD Air District, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

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	0.0000
Vendor	5.2900e-003	0.1905	0.0738	9.1000e-004	0.0320	1.0600e-003	0.0331	9.2200e-003	1.0200e-003	0.0102		98.1927	98.1927	3.2800e-003	0.0142	102.5145
Worker	0.0438	0.0305	0.4127	1.2000e-003	0.1453	8.2000e-004	0.1461	0.0385	7.5000e-004	0.0393		121.1816	121.1816	3.1600e-003	3.1200e-003	122.1894
Total	**0.0491**	**0.2210**	**0.4865**	**2.1100e-003**	**0.1773**	**1.8800e-003**	**0.1792**	**0.0478**	**1.7700e-003**	**0.0495**		**219.3742**	**219.3742**	**6.4400e-003**	**0.0174**	**224.7039**

2600 California Avenue Medical Building Project - South Coast AQMD Air District, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

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	0.4704	10.7018	7.9624	0.0114		0.3855	0.3855		0.3855	0.3855	0.0000	1,104.6089	1,104.6089	0.3573		1,113.5402
Total	**0.4704**	**10.7018**	**7.9624**	**0.0114**		**0.3855**	**0.3855**		**0.3855**	**0.3855**	**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	0.0000
Vendor	5.2900e-003	0.1905	0.0738	9.1000e-004	0.0320	1.0600e-003	0.0331	9.2200e-003	1.0200e-003	0.0102		98.1927	98.1927	3.2800e-003	0.0142	102.5145
Worker	0.0438	0.0305	0.4127	1.2000e-003	0.1453	8.2000e-004	0.1461	0.0385	7.5000e-004	0.0393		121.1816	121.1816	3.1600e-003	3.1200e-003	122.1894
Total	**0.0491**	**0.2210**	**0.4865**	**2.1100e-003**	**0.1773**	**1.8800e-003**	**0.1792**	**0.0478**	**1.7700e-003**	**0.0495**		**219.3742**	**219.3742**	**6.4400e-003**	**0.0174**	**224.7039**

2600 California Avenue Medical Building Project - South Coast AQMD Air District, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

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	0.2882					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**0.8994**	**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	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
Worker	0.0607	0.0422	0.5714	1.6600e-003	0.2012	1.1300e-003	0.2023	0.0534	1.0400e-003	0.0544		167.7899	167.7899	4.3800e-003	4.3200e-003	169.1853
Total	**0.0607**	**0.0422**	**0.5714**	**1.6600e-003**	**0.2012**	**1.1300e-003**	**0.2023**	**0.0534**	**1.0400e-003**	**0.0544**		**167.7899**	**167.7899**	**4.3800e-003**	**4.3200e-003**	**169.1853**

2600 California Avenue Medical Building Project - South Coast AQMD Air District, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

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	0.3954	8.3730	6.9028	0.0113		0.3043	0.3043		0.3043	0.3043	0.0000	1,036.0878	1,036.0878	0.3018		1,043.6331
Paving	0.2882					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**0.6836**	**8.3730**	**6.9028**	**0.0113**		**0.3043**	**0.3043**		**0.3043**	**0.3043**	**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	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
Worker	0.0607	0.0422	0.5714	1.6600e-003	0.2012	1.1300e-003	0.2023	0.0534	1.0400e-003	0.0544		167.7899	167.7899	4.3800e-003	4.3200e-003	169.1853
Total	**0.0607**	**0.0422**	**0.5714**	**1.6600e-003**	**0.2012**	**1.1300e-003**	**0.2023**	**0.0534**	**1.0400e-003**	**0.0544**		**167.7899**	**167.7899**	**4.3800e-003**	**4.3200e-003**	**169.1853**

2600 California Avenue Medical Building Project - South Coast AQMD Air District, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

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	6.9191					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	**7.1108**	**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	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
Worker	0.0101	7.0300e-003	0.0952	2.8000e-004	0.0335	1.9000e-004	0.0337	8.8900e-003	1.7000e-004	9.0700e-003		27.9650	27.9650	7.3000e-004	7.2000e-004	28.1976
Total	**0.0101**	**7.0300e-003**	**0.0952**	**2.8000e-004**	**0.0335**	**1.9000e-004**	**0.0337**	**8.8900e-003**	**1.7000e-004**	**9.0700e-003**		**27.9650**	**27.9650**	**7.3000e-004**	**7.2000e-004**	**28.1976**

2600 California Avenue Medical Building Project - South Coast AQMD Air District, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

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	6.9191					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1139	2.3524	1.8324	2.9700e-003		0.0951	0.0951		0.0951	0.0951	0.0000	281.4481	281.4481	0.0168		281.8690
Total	**7.0330**	**2.3524**	**1.8324**	**2.9700e-003**		**0.0951**	**0.0951**		**0.0951**	**0.0951**	**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	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
Worker	0.0101	7.0300e-003	0.0952	2.8000e-004	0.0335	1.9000e-004	0.0337	8.8900e-003	1.7000e-004	9.0700e-003		27.9650	27.9650	7.3000e-004	7.2000e-004	28.1976
Total	**0.0101**	**7.0300e-003**	**0.0952**	**2.8000e-004**	**0.0335**	**1.9000e-004**	**0.0337**	**8.8900e-003**	**1.7000e-004**	**9.0700e-003**		**27.9650**	**27.9650**	**7.3000e-004**	**7.2000e-004**	**28.1976**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.2781	0.3123	2.6186	5.5500e-003	0.5902	4.2000e-003	0.5944	0.1573	3.9000e-003	0.1612		565.9262	565.9262	0.0400	0.0268	574.9008
Unmitigated	0.2781	0.3123	2.6186	5.5500e-003	0.5902	4.2000e-003	0.5944	0.1573	3.9000e-003	0.1612		565.9262	565.9262	0.0400	0.0268	574.9008

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Medical Office Building	108.00	108.00	108.00	280,137	280,137
Parking Lot	0.00	0.00	0.00		
City Park	0.00	0.00	0.00		
Total	108.00	108.00	108.00	280,137	280,137

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
Medical Office Building	16.60	8.40	6.90	29.60	51.40	19.00	60	30	10
Parking Lot	16.60	8.40	6.90	0.00	0.00	0.00	0	0	0
City Park	16.60	8.40	6.90	33.00	48.00	19.00	66	28	6

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Medical Office Building	0.543139	0.060749	0.184760	0.130258	0.023830	0.006353	0.011718	0.009137	0.000812	0.000509	0.024193	0.000750	0.003791
Parking Lot	0.543139	0.060749	0.184760	0.130258	0.023830	0.006353	0.011718	0.009137	0.000812	0.000509	0.024193	0.000750	0.003791
City Park	0.543139	0.060749	0.184760	0.130258	0.023830	0.006353	0.011718	0.009137	0.000812	0.000509	0.024193	0.000750	0.003791

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	9.1000e-004	8.3100e-003	6.9800e-003	5.0000e-005		6.3000e-004	6.3000e-004		6.3000e-004	6.3000e-004		9.9694	9.9694	1.9000e-004	1.8000e-004	10.0286
NaturalGas Unmitigated	9.1000e-004	8.3100e-003	6.9800e-003	5.0000e-005		6.3000e-004	6.3000e-004		6.3000e-004	6.3000e-004		9.9694	9.9694	1.9000e-004	1.8000e-004	10.0286

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

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					
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Medical Office Building	84.7397	9.1000e-004	8.3100e-003	6.9800e-003	5.0000e-005		6.3000e-004	6.3000e-004		6.3000e-004	6.3000e-004		9.9694	9.9694	1.9000e-004	1.8000e-004	10.0286
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		**9.1000e-004**	**8.3100e-003**	**6.9800e-003**	**5.0000e-005**		**6.3000e-004**	**6.3000e-004**		**6.3000e-004**	**6.3000e-004**		**9.9694**	**9.9694**	**1.9000e-004**	**1.8000e-004**	**10.0286**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

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					
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Medical Office Building	0.0847397	9.1000e-004	8.3100e-003	6.9800e-003	5.0000e-005		6.3000e-004	6.3000e-004		6.3000e-004	6.3000e-004		9.9694	9.9694	1.9000e-004	1.8000e-004	10.0286
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		**9.1000e-004**	**8.3100e-003**	**6.9800e-003**	**5.0000e-005**		**6.3000e-004**	**6.3000e-004**		**6.3000e-004**	**6.3000e-004**		**9.9694**	**9.9694**	**1.9000e-004**	**1.8000e-004**	**10.0286**

6.0 Area Detail

6.1 Mitigation Measures Area

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.0784	6.0000e-005	6.5400e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		0.0140	0.0140	4.0000e-005		0.0150
Unmitigated	0.0784	6.0000e-005	6.5400e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		0.0140	0.0140	4.0000e-005		0.0150

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	9.4800e-003					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.0683					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	6.1000e-004	6.0000e-005	6.5400e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		0.0140	0.0140	4.0000e-005		0.0150
Total	**0.0784**	**6.0000e-005**	**6.5400e-003**	**0.0000**		**2.0000e-005**	**2.0000e-005**		**2.0000e-005**	**2.0000e-005**		**0.0140**	**0.0140**	**4.0000e-005**		**0.0150**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

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	9.4800e-003					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.0683					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	6.1000e-004	6.0000e-005	6.5400e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		0.0140	0.0140	4.0000e-005		0.0150
Total	**0.0784**	**6.0000e-005**	**6.5400e-003**	**0.0000**		**2.0000e-005**	**2.0000e-005**		**2.0000e-005**	**2.0000e-005**		**0.0140**	**0.0140**	**4.0000e-005**		**0.0150**

7.0 Water Detail

7.1 Mitigation Measures Water

Use Water Efficient Irrigation System

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

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

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

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

Boilers

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

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

ATTACHMENT E

LOW IMPACT DEVELOPMENT PLAN (LID) (MILANICO, MAY 2022)

Low Impact Development Plan
(LID Plan)

Project Name:

CALIFORNIA MEDICAL BUILDING

2600 CALIFORNIA AVENUE

LONG BEACH, CA 90755

Prepared for:

2H CONSTRUCTION, INC. (2H PROPERTY 3060, LLC)

2653 WALNUT AVENUE

SIGNAL HILL, CA 90755

(562) 424-5567

Prepared by:

MILANICO

25872 WHITE ALDER LANE

LAGUNA HILLS, CA 92653

(714) 655-3463

PE Stamp & Sign Here

AUGUST 2020

Project Owner's Certification

I certify under penalty of law that this document and all attachments were prepared under my jurisdiction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathered the information, to the best of my knowledge and belief, the information submitted is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Owner's Name:	MR. SEAN HITCHCOCK		
Owner's Title:	PRESIDENT		
Company:	2H CONSTRUCTION INC. (2H PROPERTY 3060, LLC)		
Address:	2653 WALNUT AVENUE, SIGNAL HILL, CA 90755		
Email:	SEAN@2HCONSTRUCTION.COM		
Telephone No:	(562) 424-5567		
Signature:		Date:	

Preparer (Engineer) Certification

Engineer's Name:	BABAK MILANI		
Engineer's Title:	PRINCIPAL		
Company:	MILANICO		
Address:	25872 WHITE ALDER LANE, LAGUNA HILLS, CA 92653		
Email:	BMILANI@MILANICO.COM		
Telephone No:	(714) 655-3463		
I hereby certify that this Low Impact Development Plan is in compliance with, and meets the requirements set forth in, Order WQ 2015-0075, of the Los Angeles Regional Water Quality Control Board.			
Engineer's Signature		Date	
Place Stamp Here			

Table of Contents

Attachments

1. PROJECT DESCRIPTION

1.1. PROJECT CATEGORY

Category	YES	NO
1. Development [a] of a new project equal to 1 acre or greater of disturbed area and adding more than 10,000 square feet of impervious area[b]	☐	☐
2. Development [a] of a new industrial park with 10,000 square feet or more of surface area [c]	☐	☐
3. Development [a] of a new commercial mall with 10,000 square feet or more surface area [c]	☐	☐
4. Development [a] of a new retail gasoline outlet with 5,000 square feet or more of surface area [c]	☐	☐
5. Development [a] of a new restaurant (SIC 5812) with 5,000 square feet or more of surface area [c]	☐	☐
6. Development [a] of a new parking lot with either 5,000 ft^2 or more of impervious area [b] or with 25 or more parking spaces	☒	☐
7. Development [a] of a new automotive service facility (SIC 5013, 5014, 5511, 5541, 7532-7534 and 7536-7539) with 5,000 square feet or more of surface area [c]	☐	☐
8. Projects located in or directly adjacent to, or discharging directly to a Significant Ecological Area (SEA),[d] where the development will: a. Discharge stormwater runoff that is likely to impact a sensitive biological species or habitat; and b. Create 2,500 square feet or more of impervious area [b]	☐	☐
9. Redevelopment [e] of 5,000 square feet or more in one of the categories listed above **If yes, list redevelopment category here:**	☐	☐
10. Redevelopment [e] of 10,000 square feet or more to a Single Family Home, without a change in land use.	☐	☐

a Development includes any construction or demolition activity, clearing, grading, grubbing, or excavation or any other activity that results in land disturbance.

b Surfaces that do not allow stormwater runoff to percolate into the ground. Typical impervious surfaces include: concrete, asphalt, roofing materials, etc.

c The surface area is the total footprint of an area. Not to include the cumulative area above or below the ground surface.

d An area in which plant or animal life or their habitats are either rare or especially valuable because of their special nature or role in an ecosystem and would be disturbed or degraded by human activities and developments. Also, an area designated by the City as approved by the Regional Water Quality Control Board.

e Land-disturbing activities that result in the creation, addition, or replacement of a certain amount of impervious surface area on an already developed site. Redevelopment does not include routine maintenance activities that are conducted to maintain the original line and grade, hydraulic capacity, or original purpose of facility, nor does it include modifications to existing single family structures, or emergency construction activities required to immediately protect public health and safety.

1.2. PROJECT DESCRIPTION

Total Project Area (ft^2): 11,310 SF

Total Project Area (Ac): 0.260

EXISTING CONDITIONS

Condition	Area (ft^2)	Percentage (%)
Pervious Area:	11,310	100
Impervious Area:	0	0

PROPOSED CONDITIONS

Condition	Area (ft^2)	Percentage (%)
Pervious Area:	9,210	81
Impervious Area:	2,100	19

SITE CHARACTERISTICS

DRAINAGE PATTERNS/CONNECTIONS	Existing: In the existing conditions, the surface runoff from this dirt lot drains to California Avenue, traveling northerly where it enters the BI 0580-U3 Line A (LACFCD Drainage System) at 28th Street, then traveling westerly underground and eventually confluencing with the Los Angeles River. The LA River outlets into San Pedro Bay which is hydraulically connected to the Pacific Ocean.
	Proposed: Flows from the entire parking lot will be first directed to a Bioretention BMP with Underdrain (landscape planter) with overflow draining via curb drains to California Avenue and continuing downstream northerly as in the existing conditions.
NARRATIVE PROJECT DESCRIPTION:	The project is a an approximately 11,310 square foot medical building, parking lot and associated landscaping and site work. The SIC Code is 7521006. The parking lot drainage has been divided into 3 DMA's. The building and surrounding landscape area will one DMA and a ridge line that splits the parking lot area into 2 more DMA's along the easterly and westerly edges of the property. Flows for all DMA's will surface drain into the proposed Bioretention BMP's prior to discharge via curb drain to California Avenue.

OFFSITE RUNON	There is no runon from off-site areas neither in the existing or proposed conditions.
UTILITY AND INFRASTRUCTURE INFORMATION	The site is currently vacant with no utility services. The proposed project will require a sewer service, a domestic and an irrigation services and meters that will not be affected by or conflict with the proposed Bioretention BMP.
SIGNIFICANT ECOLOGICAL AREAS (SEAS)	This project is not adjacent to or does it drain directly to a known ESA's

1.3. HYDROMODIFICATION ANALYSIS

DOES THE PROPOSED PROJECT FALL INTO ONE OF THE FOLLOWING CATEGORIES? CHECK YES/NO.	YES	NO
1. *Project is a redevelopment that decreases the effective impervious area compared to the pre-project conditions.*	☐	☒
Describe:		
2. *Project is a redevelopment that increases the infiltration capacity of pervious areas compared to the pre-project conditions.*	☐	☒
Describe:		
3. *Project discharges directly or via a storm drain to a sump, lake, area under tidal influence, into a waterway that has a 100-year peak flow (Q_{100}) of 25,000 cfs or more.*	☐	☒
Describe:		
4. *Project discharges directly or via a storm drain into concrete or otherwise engineered (not natural) channels (e.g., channelized or armored with rip rap, shotcrete, etc.), which, in turn, discharge into receiving water that is not susceptible to hydromodification impacts.*	☒	☐
Describe: This site is not within an area of potential erosion, habitat and physical structure susceptibility. All runoff from the site is carried to the ocean entirely via hardened and approved drainage systems not susceptible to erosion, sedimentation and degradation of a downstream channel or stream (i.e. paved street curb and gutter/under and above ground concrete storm drain system).		

HYDROMODIFICATION ANALYSIS

The project is exempt from Hydromodification Control Measures.

1.4. PROPERTY OWNERSHIP/MANAGEMENT

	The entire site is and will be owned and operated by 2H Properties. No portion of the project will be transferred to a public agency.

2. BEST MANAGEMENT PRACTICES (BMPS)

2.1. SITE DESIGN

85TH PERCENTILE, 24-HOUR STORM DEPTH	Per LA County DPW Hydrology Map GIS system, the site is between 0.6 and 0.7 inch
SITE DESIGN	The entire site will drains to Bioretention BMP's with Underdrain (landscape planter strip) situated along the edges of the improvements. Any overflow will flow via curb drain onto California Avenue.

BMP LIST

DMA DESIGNATION	SQUARE FOOTAGE (SF)	ACREAGE (AC)	STORM WATER QUALITY DESIGN VOLUME (SWQDV, CF)	BMP TYPE	MINIMUM BMP SIZE	BMP SIZE PROVIDED	GPS COORDINATES
1	4,328	0.10	183 CF	Bioretention with Underdrain	458 CF of media (Assume 40% void ratio)	225 CF (337 SF x 24" deep Bioretention BMP)	
2	3,183	0.07	151 CF	Bioretention with Underdrain	378 CF media (Assume 40% void ratio)	163 CF (245 SF x 24" deep Bioretention BMP)	
3	3,799	0.09	193 CF	Bioretention with Underdrain	483 CF media (Assume 40% void ratio)	210 CF (210 SF x 30" deep Bioretention BMP)	

2.2. BMP SELECTION

2.2.1. INFILTRATION BMPS

NAME	INCLUDED [Check all that apply.]
Bioretention without underdrains	☐
Infiltration Trench	☐
Infiltration Basin	☐
Drywell	☐
Proprietary Subsurface Infiltration Gallery	☐
Permeable Pavement (concrete, asphalt, pavers)	☐
Other:	☐
Other:	☐

DESCRIPTION	**The Geotechnical Engineer performed 2 borings with the results of 0 in/hr and 1.29 in/hr respectively (Please see Geotechnical Report in Attachments). Groundwater is well below minimum requirements. For design purposes, we are assuming that the underlying soils within the site are capable of infiltrating an average of 0.65 in/hr. With a factor of safety of 3 applied, the design rate is 0.22 in/hr. Infiltration is therefore not recommended and based on the required hierarchy of controls, Biofiltration/Biotreatment in site landscape planters is the most viable and preferred BMP. **Infiltration test was performed in 2018 for the adjacent parking lot project. It is assumed that the same conditions exist at this site. Additional soils test will be performed once the project moves forward.
CALCULATIONS [	See Attachment A

2.2.2. RAINWATER HARVEST AND USE BMPS

NAME	INCLUDED [Check all that apply.]
Above-ground cisterns and basins	☐
Underground detention	☐
Other:	☐
Other:	☐
Other:	☐

DESCRIPTION	N/A - LID requirements being met with Biofiltration
CALCULATIONS	N/A

2.2.3. ALTERNATIVE COMPLIANCE BMPS

BIOFILTRATION BMPS

(If Infiltration BMPs and Rainwater Harvest and Use BMPs are Infeasible)

NAME	INCLUDED [Check all that apply.]
Bioretention with underdrains (i.e. planter box, rain garden, etc.)	☒
Constructed Wetland	☐
Vegetated Swale	☐
Vegetated Filter Strip	☐
Tree-Well Filter	☐
Other:	☐
Other:	☐

DESCRIPTION	LID requirements being met with Biofiltration The parking lot drainage has been divided into 3 DMA's. The building and surrounding landscape area will one DMA and a ridge line that splits the parking lot area into 2 more DMA's along the easterly and westerly edges of the property. Flows for all DMA's will surface drain into the proposed Bioretention BMP's prior to discharge via curb drain to California Avenue. The Bioretention BMP has a slotted underdrain that collects treated runoff and discharges at the northerly edge of the property via a curb drain.
CALCULATIONS	DMA1: 337 SF (24" wide) and 24" deep Bioretention BMP. Volume provided 225 CF. Volume required 183 CF DMA2: 245 SF (24" wide) and 24" deep Bioretention BMP. Volume provided 163 CF. Volume required 151 CF DMA3: 210 SF (24" wide) and 30" deep Bioretention BMP. Volume provided 210 CF. Volume required 193 CF

OFFSITE BMPS

(If Infiltration BMPs, Rainwater Harvest and Use BMPs, and Biofiltration BMPs are Infeasible)

NAME	INCLUDED [Check all that apply.]
Offsite Infiltration	☐
Ground Water Replenishment Projects	☐
Offsite Project - Retrofit Existing Development	☐
Regional Storm Water Mitigation Program	☐
Other:	☐
Other:	☐

DESCRIPTION	N/A - LID requirements being met with Biofiltration
CALCULATIONS	N/A

2.2.4. TREATMENT CONTROL BMPS

Treatment control BMPs can only be used as pre-treatment to LID BMPs.

NAME	INCLUDED [Check all that apply.]
Media Filter	☐
Filter Insert	☐
CDS Unit	☐
Other:	☐
Other:	☐

DESCRIPTION	N/A - LID requirements being met with Biofiltration

2.2.5. HYDROMODIFICATION CONTROL BMPS

NAME	INCLUDED [Check all that apply.]
Infiltration System	☐
Above-ground Cistern	☐
Above-ground Basin	☐
Underground Detention	☐
Other:	☐
Other:	☐

DESCRIPTION	N/A – Not required per Section 1.3 of the report.
CALCULATIONS	N/A

2.2.6. NON-STRUCTURAL SOURCE CONTROL BMPS

NAME	CHECK ONE	
	Included	**Not Applicable**
Education for Property Owners, Tenants and Occupants	☒	☐
Activity Restrictions	☒	☐
Common Area Landscape Management	☒	☐
Common Area Litter Control	☐	☒
Housekeeping of Loading Docks	☐	☒
Common Area Catch Basin Inspection	☐	☒
Street Sweeping Private Streets and Parking Lots	☒	☐

2.2.7. STRUCTURAL SOURCE CONTROL BMPS

NAME	CHECK ONE	
	Included	**Not Applicable**
Provide storm drain system stenciling and signage	☐	☒
Design and construct outdoor material storage areas to reduce pollution introduction	☐	☒
Design and construct trash and waste storage areas to reduce pollution introduction	☐	☒
Use efficient irrigation systems & landscape design, water conservation, smart controllers, and source control	☒	☐
Protect slopes and channels and provide energy dissipation	☐	☒
Loading docks	☐	☒
Maintenance bays	☐	☒
Vehicle wash areas	☐	☒
Outdoor processing areas	☐	☒
Equipment wash areas/racks	☐	☒
Fueling areas	☐	☒
Hillside landscaping	☐	☒

Attachment A

Calculations

Peak Flow Hydrologic Analysis

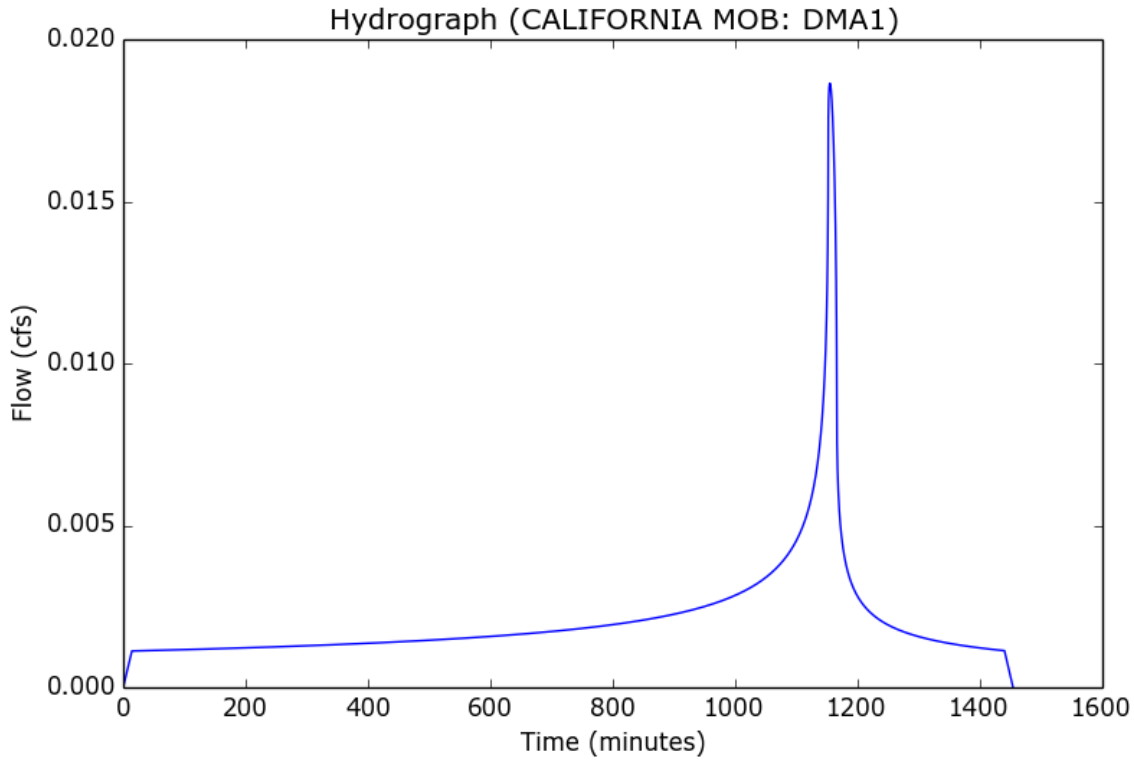
File location: C:/Documents and Settings/Administrator/My Documents/MILANICO PROJECTS/2H CALIFORNIA MOB/LID PLAN/2H California Medical -
Version: HydroCalc 1.0.3

Input Parameters

Project Name	CALIFORNIA MOB
Subarea ID	DMA1
Area (ac)	0.1
Flow Path Length (ft)	100.0
Flow Path Slope (vft/hft)	0.0058
0.75-inch Rainfall Depth (in)	0.75
Percent Impervious	0.72
Soil Type	14
Design Storm Frequency	0.75 inch storm
Fire Factor	0
LID	True

Output Results

Modeled (0.75 inch storm) Rainfall Depth (in)	0.75
Peak Intensity (in/hr)	0.2758
Undeveloped Runoff Coefficient (Cu)	0.1
Developed Runoff Coefficient (Cd)	0.676
Time of Concentration (min)	14.0
Clear Peak Flow Rate (cfs)	0.0186
Burned Peak Flow Rate (cfs)	0.0186
24-Hr Clear Runoff Volume (ac-ft)	0.0042
24-Hr Clear Runoff Volume (cu-ft)	182.5205



Peak Flow Hydrologic Analysis

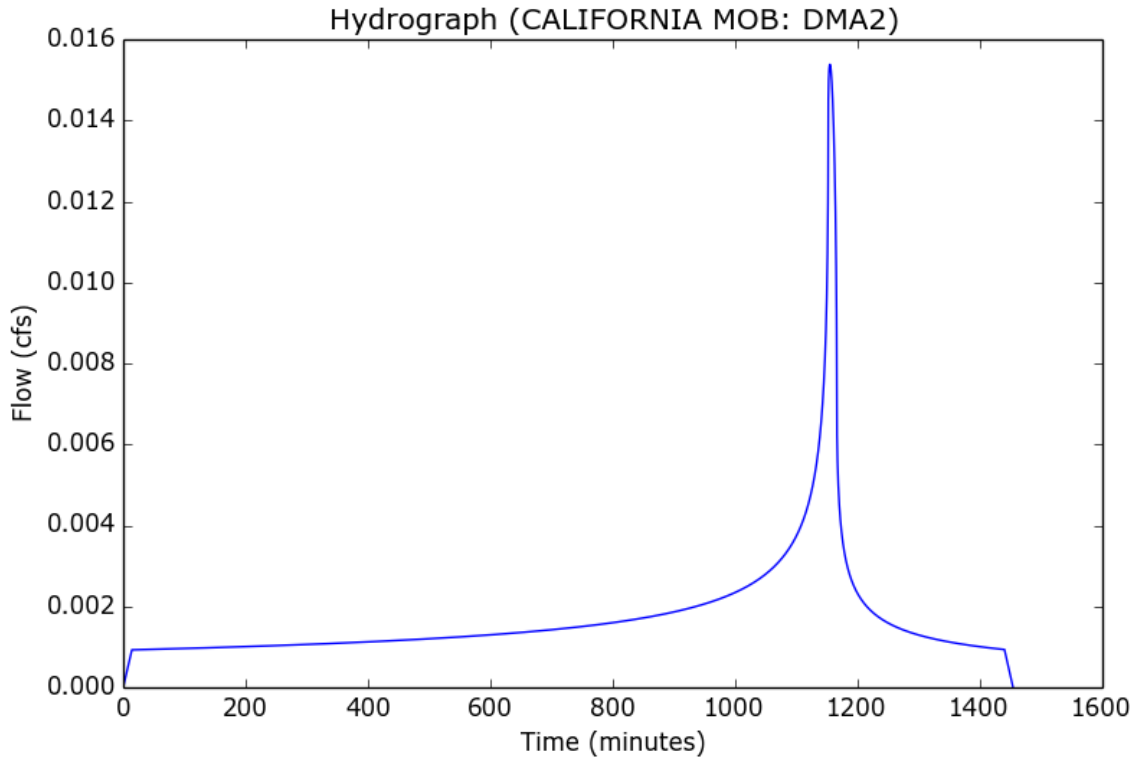
File location: C:/Documents and Settings/Administrator/My Documents/MILANICO PROJECTS/2H CALIFORNIA MOB/LID PLAN/2H California Medical -
Version: HydroCalc 1.0.3

Input Parameters

Project Name	CALIFORNIA MOB
Subarea ID	DMA2
Area (ac)	0.073
Flow Path Length (ft)	140.0
Flow Path Slope (vft/hft)	0.009
0.75-inch Rainfall Depth (in)	0.75
Percent Impervious	0.83
Soil Type	14
Design Storm Frequency	0.75 inch storm
Fire Factor	0
LID	True

Output Results

Modeled (0.75 inch storm) Rainfall Depth (in)	0.75
Peak Intensity (in/hr)	0.2758
Undeveloped Runoff Coefficient (Cu)	0.1
Developed Runoff Coefficient (Cd)	0.764
Time of Concentration (min)	14.0
Clear Peak Flow Rate (cfs)	0.0154
Burned Peak Flow Rate (cfs)	0.0154
24-Hr Clear Runoff Volume (ac-ft)	0.0035
24-Hr Clear Runoff Volume (cu-ft)	150.5848



Peak Flow Hydrologic Analysis

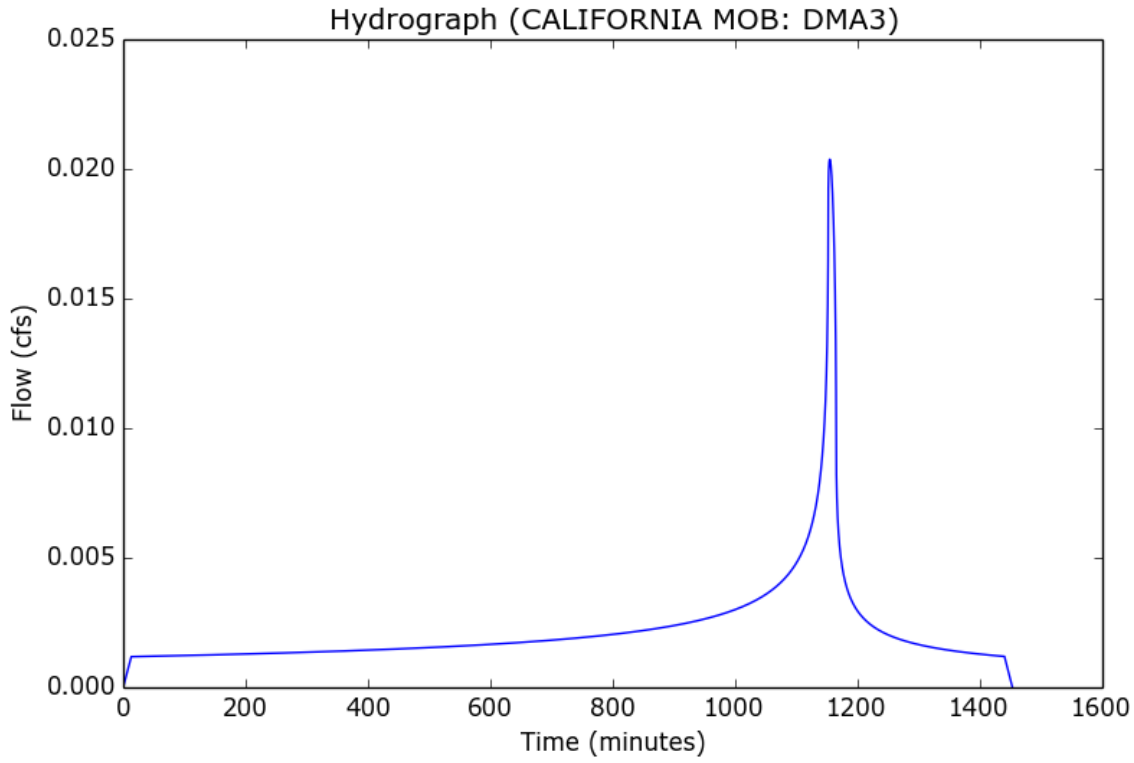
File location: C:/Documents and Settings/Administrator/My Documents/MILANICO PROJECTS/2H CALIFORNIA MOB/LID PLAN/2H California Medical -
Version: HydroCalc 1.0.3

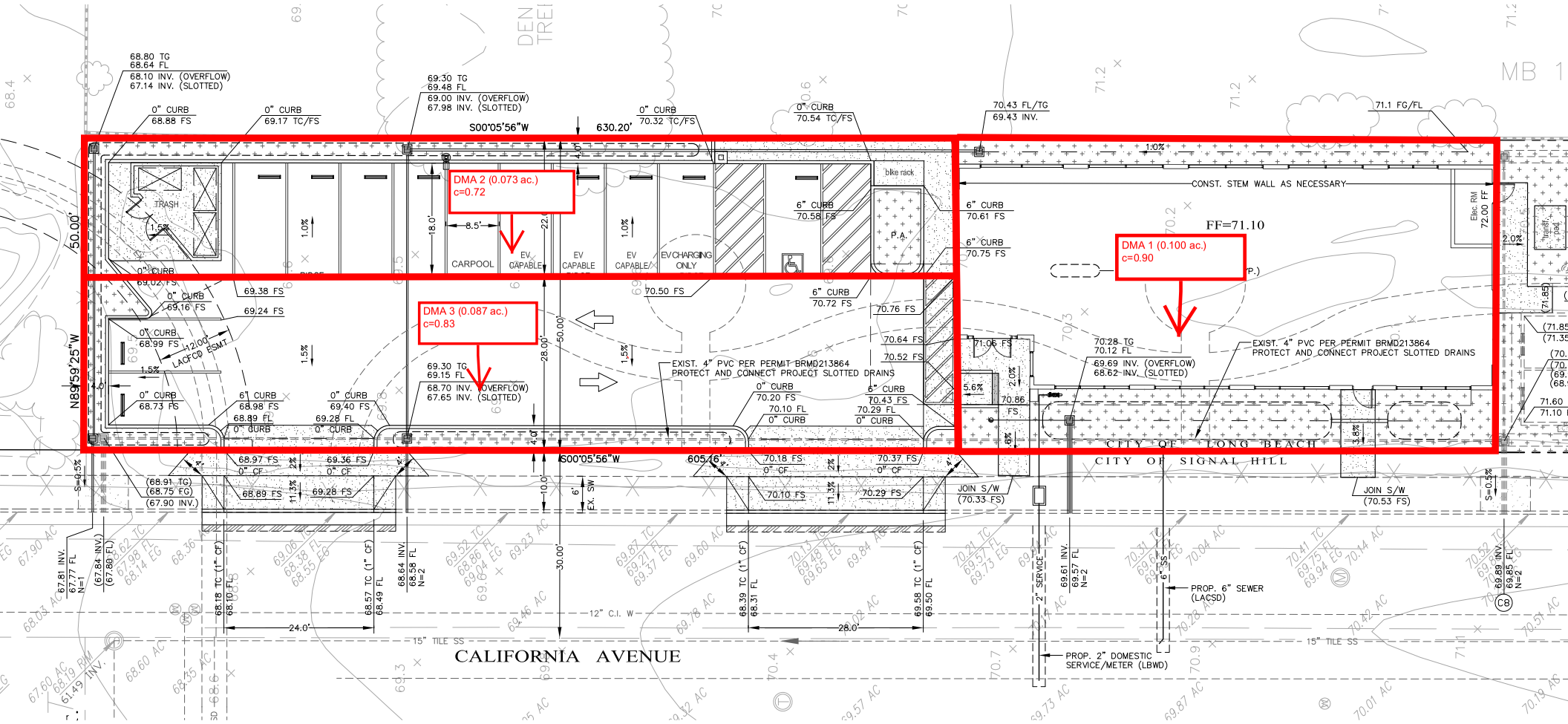
Input Parameters

Project Name	CALIFORNIA MOB
Subarea ID	DMA3
Area (ac)	0.087
Flow Path Length (ft)	140.0
Flow Path Slope (vft/hft)	0.014
0.75-inch Rainfall Depth (in)	0.75
Percent Impervious	0.9
Soil Type	14
Design Storm Frequency	0.75 inch storm
Fire Factor	0
LID	True

Output Results

Modeled (0.75 inch storm) Rainfall Depth (in)	0.75
Peak Intensity (in/hr)	0.2856
Undeveloped Runoff Coefficient (Cu)	0.1
Developed Runoff Coefficient (Cd)	0.82
Time of Concentration (min)	13.0
Clear Peak Flow Rate (cfs)	0.0204
Burned Peak Flow Rate (cfs)	0.0204
24-Hr Clear Runoff Volume (ac-ft)	0.0044
24-Hr Clear Runoff Volume (cu-ft)	192.6184




DMA 2 (0.073 ac.)
c=0.72
DMA 3 (0.087 ac.)
c=0.83
DMA 1 (0.100 ac.)
c=0.90
FF=71.10
CONST. STEM WALL AS NECESSARY
EXIST. 4" PVC PER PERMIT BRMD213864
PROTECT AND CONNECT PROJECT SLOTTED DRAINS
CITY OF LONG BEACH
CITY OF SIGNAL HILL
CALIFORNIA AVENUE
PROP. 6" SEWER (LACSD)
PROP. 2" DOMESTIC SERVICE/METER (LBWD)
JOIN S/W (70.33 FS)
JOIN S/W (70.53 FS)
TRASH
CARPOOL
EV CAPABLE
EV CHARGING ONLY
bike rack
P.A.
Elec RM 72.00 FF
N89°59'25"W
S00°05'56"W 630.20'
S00°05'56"W 605.16'
50.00'
24.0'
28.0'
30.00'
12" C.I. W
15" TILE SS
6" EX. SW

Attachment B

Geotechnical Investigation

ASSOCIATED SOILS ENGINEERING, INC.
Consulting Geotechnical Engineers

REPORT OF PRELIMINARY GEOTECHNICAL INVESTIGATION

Proposed Parking Lot Development

2600 California Avenue

City of Long Beach, California

Prepared For:

2H Construction, Inc.

2651 Walnut Avenue

Signal Hill, California 90755

Project No. 6731.17 **June 16, 2017**

2860 Walnut Avenue, Signal Hill CA 90755 * Tel: (562) 426-7990 * Fax: (562) 426-1842

6.0 FIELD PERCOLATION TEST DATA

Initial seepage rate obtained during the "Sand Soil Criteria Test" in Boring B-3 after overnight pre-soaking did not qualify on-site soils to be "Sandy Soils". A percolation test was therefore performed using the "Normal" method (i.e. 4 hour test with 10-minute reading intervals), according to the County of Los Angeles Public Works Publication GS200.1 procedures modified to test the cross sectional zone of typical soils within the level of anticipated storm water infiltration (e.g. approximately 1 foot to 5 feet below existing grade).

Field percolation testing was conducted on May 2, 2017. Stabilized field percolation test data indicates a pre-adjusted percolation test rates of 0 (no percolation of water measured) at the location of Boring P-1, and approximately 20.0 minutes per inch (mpi) for clean water at the location of Boring P-2. Field percolation test data is presented on the attached Plates H-1 and H-2 in Appendix A, whereas tabulated below is the measured field percolation rate and the corresponding infiltration rate calculated from the County of Los Angeles Public Works Publication GS200.1 procedures.

Test Location	Measured Field Percolation Rate (Minute/Inch)	Converted Infiltration Rate (Inches/Hour) *
P-1	0	0
P-2	3.0	1.29

* Infiltration Rate for vertical flow derived from L.A. County Public Works Publication GS200.1 procedures for Boring Percolation Testing.

The rate presented above is anticipated to be the fastest rate that can be absorbed by the site soils at the boring location. However, with time and depending on the degree of saturation of soils and other factors, the percolation rate may reduce which is typical for sewage disposal or stormwater dispersal fields.

In reference to the Orange County Technical Guidance Document Appendices (Appendix VII), soils are considered potentially feasible for infiltration if the measured infiltration rate is greater than 0.3 inch per hour. Therefore, soils in the vicinity of Boring P-1 are not considered suitable for infiltration, and soils in the vicinity Boring P-2 are considered suitable for infiltration.

Please be informed that during installation of on-site storm water dispersal system, the following factors should be noted:

- The degree of compactive effort in the upper 1 to 1.5 feet of soils above any filter material should be between 90 and 92 percent relative compaction. As any greater compactive efforts in the soil strata of water retention system construction may cause the percolation rates to reduce substantially, it is not advisable to impose significant structural loading in these areas, from a geotechnical viewpoint.
- The rate of water transmission from the filter material to the soil will be limited the porosity characteristics of the fabric wrap around the filter material.

LEGEND

- Approx. site limit
- B-1/P-1 — Designated soils boring/percolation test number
- Approx. location of soils boring/percolation test
- 21'/6' — Terminal depth of soils boring/percolation testing

ASSOCIATED SOILS ENGINEERING, INC.
Consulting Geotechnical Engineers

Associated Soils Engineering, Inc.

2860 Walnut Avenue
Signal Hill, CA 90755

Tel (562) 426-7990 Fax (562) 426-1842

Project:	**Prop. Parking Lot Development** 2600 California Avenue, Signal Hill, CA		
Plate A	**Boring Location Plan**		
Prop. No.:	**6731.17**	**Date:**	**June, 2017**

Attachment C

City Forms

Attachment D

Master Covenant Agreement (MCA)

Attachment E

Operations and Maintenance (O&M) Plan

REQUIRED PERMITS

This section must list any permits required for the implementation, operation, and maintenance of the BMPs.Possible examples are:

- Permits for connection to sanitary sewer
- Permits from California Department of Fish and Game
- Encroachment permits

If no permits are required, a statement to that effect should be made.

RECORDKEEPING

All records must be made available for review upon request.

RESPONSIBLE PARTY

The owner is aware of the maintenance responsibilities of the proposed BMPs. A funding mechanism is in place to maintain the BMPs at the frequency stated in the LID Plan. The contact information for the entity responsible is below:

Name:	Mr. Sean Hitchcock
Company:	2H Properties
Title:	President
Address 1:	2653 Walnut Avenue
Address 2:	Signal Hill, CA 90755
Phone Number:	(562) 424-5567
Email:	sean@2hconstruction.com

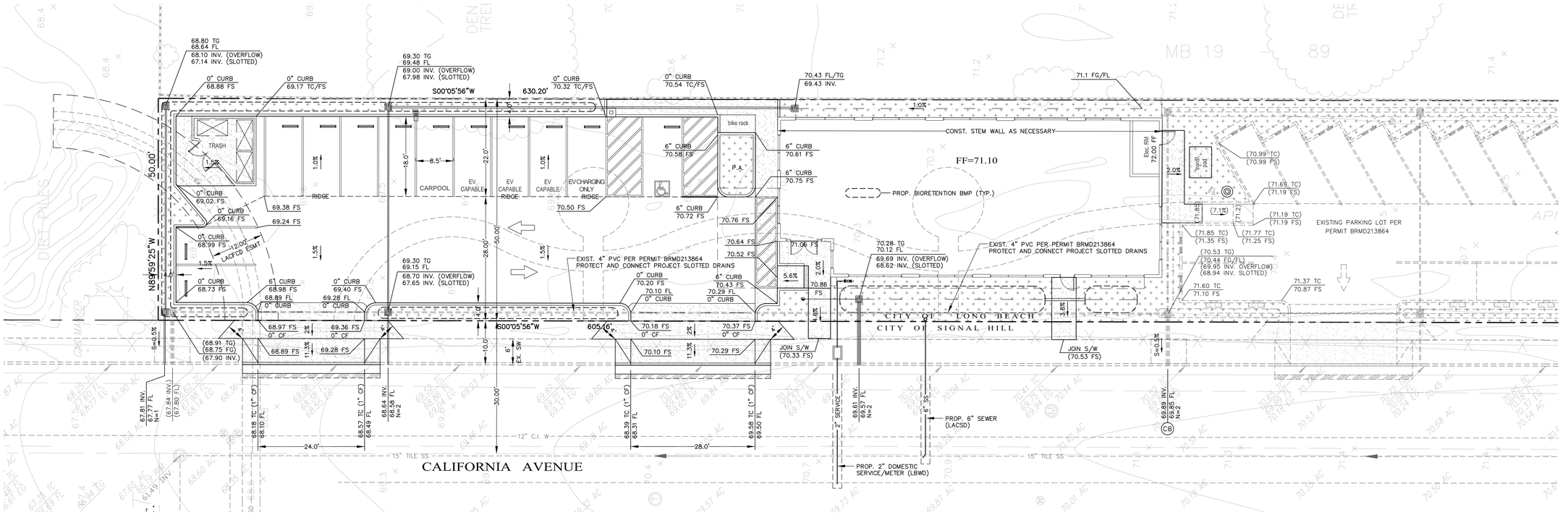
BMP Name	BMP Implementation, Maintenance, and Inspection Procedures	Implementation, Maintenance, and Inspection Frequency and Schedule	Person or Entity with Operation & Maintenance Responsibility
Non-Structural Source Control BMPs			
Education for Property Owners, Tenants and Occupants	**Brochures and other practical informational material in the LID Plan will be provided to the first tenants by the developer and new tenants thereafter by the property manager on general housekeeping practices that contribute to the protection of stormwater quality.**	**The brochures provided in this report or other pertinent water quality literature will be provided to all new tenants and employees within 6 months of hire and annually thereafter. Also new employees and tenants will be notified of all activity restriction as set within this report.**	**2H Properties**
Activity Restriction	**Use restrictions shall be developed by the property manager through lease terms that restrict washing cars, changing of oil or other auto maintenance on the premises, on-site cleaning of trash dumpsters with water.**	**The owner and/or property manager shall continually monitor and assure that no restricted activities are taking place on the premises that effect water quality. The said activity restrictions shall be prescribed within the lease agreement or other equally effective measure.**	**2H Properties**
Common Area Landscape Management	**The property manager shall identify on-going landscape maintenance requirements that are consistent with those in the local Water Conservation Ordinances that include fertilizer and/or pesticide usage.**	**Each month as a minimum, or as needed, the landscape maintenance contractor shall assure that landscaping is consistent all applicable landscape maintenance guidelines regarding use of fertilizers, trimming, replanting and replacement of mulch.**	**2H Properties**
Street Sweeping Private Streets and Parking Lots	**The parking lot will be swept prior to the storm season, in late summer or early fall, prior to the start of the rainy season or equivalent as needed.**	**In conjunction with routine maintenance activities, and quarterly at a minimum and just before October 1, the landscape or other maintenance contractor shall clean and sweep the parking lot and premises.**	**2H Properties**
Structural Source Control BMPs			

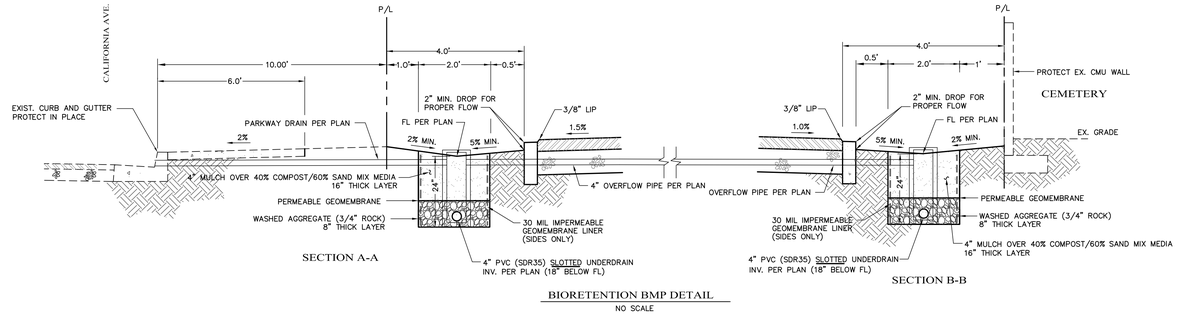
BMP Name	BMP Implementation, Maintenance, and Inspection Procedures	Implementation, Maintenance, and Inspection Frequency and Schedule	Person or Entity with Operation & Maintenance Responsibility
Design and Construct Trash and Waste Storage Areas to Reduce Pollutant Introduction	**The proposed trash area at the back of the parking lot will be enclosed with a 6' high masonry screen wall and will be covered with a roof to avoid mixing of trash and debris with rainwater. Runoff water from adjoining roofs and pavement areas are diverted around the enclosure to minimize transport of trash and litter. Any drainage from the enclosure will be directed to the Bioretention BMP prior to discharge.**	**Trash enclosure shall be swept weekly and just before October 1, and shall be maintained clean of trash, debris and sediments.**	**2H Properties**

BMP Name	BMP Implementation, Maintenance, and Inspection Procedures	Implementation, Maintenance, and Inspection Frequency and Schedule	Person or Entity with Operation & Maintenance Responsibility
Use Efficient Irrigation Systems & Landscape Design	**The project will incorporate efficient irrigation systems for all project landscaping. Efficient irrigation systems shall be designed to reduce or eliminate excessive irrigation runoff and conserve water resources by regulating the timing and application of irrigation water. Efficient irrigation features will employ, as feasible, one or more of the following technologies, or equally effective measures, to reduce runoff: computerized and/or radio telemetry to control the amount of irrigation based on soil moisture or other indicators; rain shutoff devices to prevent irrigation after precipitation; flow reducers or shutoff valves triggered by a pressure drop to control water loss in the event of broken sprinkler heads or lines; programmable irrigation times to allow irrigation cycles to be tailored based on a landscape area's specific water requirements and/or weather conditions; soil moisture sensors; and inspections to insure that spray irrigation is not irrigating paved areas.**	**In conjunction with routine maintenance activities, and quarterly at a minimum, the landscape contractor shall verify that the landscape design continues to function properly as it relates to any water quality function, by adjusting spray heads to avoid overspray, verify that timing and cycle lengths are adjusted in accordance to water demands, given time of year, weather and day/night temperatures.**	**2H Properties**
LID BMPs			
Bioretention BMP with Underdrain	**Inspect Bioretention BMP (i.e. Landscape Planter) and check for erosion, sediment, debris and trash accumulation and dispense properly. Re-apply layer of mulch as needed for coverage. Check for standing water.**	**1) one inspection at the end of the wet season** **2) before October 1 and** **3) After periods of heavy runoff (0.25" or greater).**	**2H Properties**

Attachment F

Plans





BIORETENTION BMP DETAIL
NO SCALE

DIGALERT
DIAL TOLL FREE
1-800-227-2600
AT LEAST TWO DAYS
BEFORE YOU DIG
UNDERGROUND SERVICE ALERT OF SOUTHERN CALIFORNIA

GRAPHIC SCALE
10 0 5 10 20 40
(IN FEET)
1 inch = 10 ft.

DRA ARCHITECTS
32 Executive, Suite 100
Irvine, CA 92614
T 949.833.3800 • F 949.833.3806

CONSULTANT:
MILANI•CO
CONSULTING ENGINEERS
25872 WHITE ALDER LANE
LAGUNA HILLS, CA. 92653
714•655•3463 PH.

PROFESSIONAL SEAL:
REGISTERED PROFESSIONAL ENGINEER
DARAK S. MILANI
No. 65349
CIVIL
STATE OF CALIFORNIA

PROJECT TITLE

CALIFORNIA MEDICAL BLDG

2600 California Ave.
Long Beach, California

CLIENT NAME

2H PROPERTY 3060, LLC

2653 Walnut Avenue
Signal Hill, CA 90755
Phone: (562) 424-5567

SHEET NAME

PRELIMINARY GRADING PLAN

NO:	DATE:	DESCRIPTION:
	08-10-20	1st Site Plan Review Submittal

JOB NO:	20047
DATE ISSUED:	07-14-20
DRAWN BY:	CMH
CHECK BY:	CMH

SHEET NO:
1 OF 1

ATTACHMENT F

HYDROLOGY REPORT (MILANICO, MAY 2022)

Hydrology Report

2H California Medical Office Building

2600 California Avenue, Long Beach, CA

Prepared for:

2H Property 3060, LLC

2653 Walnut Avenue

Signal Hill, CA 90755

Prepared by:

MilaniCo

24982 Del Monte Street

Laguna Hills, CA

(714) 655-3463

MILANI • CO
CONSULTING ENGINEERS

May 2022

Table of Contents

Attachments

I. Introduction

This drainage study is prepared to quantify the change in storm water runoff from a 100-year storm event in the existing and proposed conditions for a proposed one story medical office building located at 2600 California Avenue in Long Beach, California. The site is bounded by California Avenue to the west, a park to the north, a cemetery to the east, and an asphalt parking lot to the south. The property area is approximately 0.26 acres and currently serves as a passive park with an adjacent surface parking lot.

II. Existing and Proposed Drainage Areas and Characteristics

As previously mentioned, the site is 0.26 acres in size and is a passive park with 10% impervious cover of concrete walkways. In the proposed condition, the entire site will be graded to accommodate an approximately 3000 sq. ft. medical office building and associated surface parking and site improvements. Based on the topographic survey map of the site, there is an approximate 2.2-foot elevation change over a span of 231 feet diagonally across the site. This results in a gradient of approximately 1% from southeast to northwest. Based on existing elevations, runoff discharges by sheet flow to California Ave. and into an adjacent LA County Flood Control District (LACFCD) facility just downstream. This condition is generally maintained in both the existing and proposed conditions. See attached Hydrology Exhibit.

III. Methodology

LA County's HydroCalc Calculator was used to determine the existing and proposed peak runoff rates for the 100-year storm events for the drainage areas. HydroCalc is a software based on the Modified Rational Method (MODRAT), as outlined by the Los Angeles County Public Works Department Hydrology Manual, dated January 2006. The runoff equation for the Rational Method is as follows:

Q = C I A where: Q = Peak runoff rate (cfs)

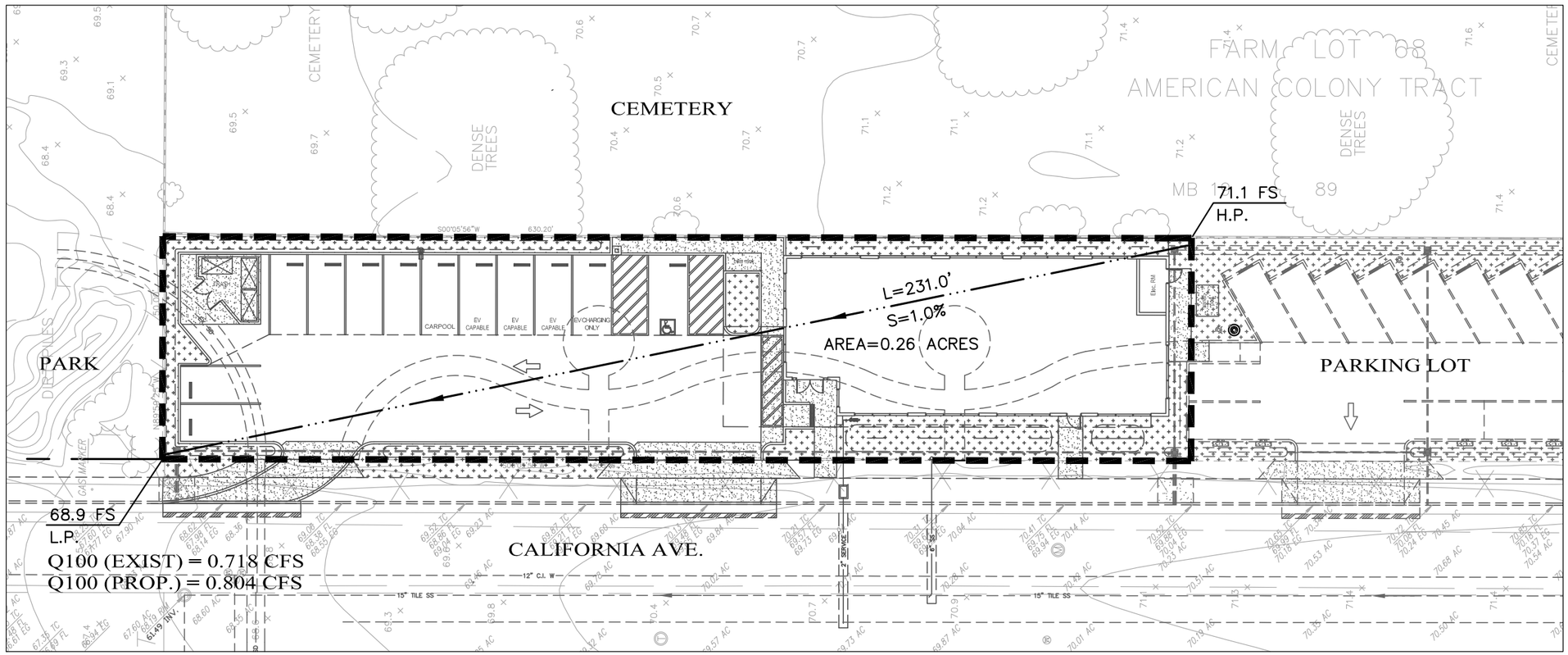
C = Runoff coefficient
I = Average rainfall intensity (in/hr)
A = Drainage area (acres)

The 50-year, 24-hour rainfall depth for the project is 5.2-inches which was used for the analysis. The peak flow rate for the drainage area was calculated using estimated impervious and pervious runoff coefficient. Input parameters are provided on the existing and proposed hydrology. The soil type is 014 for the entire site.

IV. Summary

A comparison of existing and proposed percent of imperviousness shows that the overall percent of imperviousness increases from 10% to 90%. Per the modified rational method, the corresponding runoff 100-year runoff in the existing and proposed conditions are 0.718 cfs and 0.804 cfs respectively with a net increase of 0.086 cfs. Runoff would continue to follow the same discharge paths and drain to the same existing storm water systems. In conclusion, the net increase of runoff from existing conditions is negligible. Additionally, this project will incorporate permanent infiltration BMPs that will reduce the discharge offsite, which will decrease the already negligible increase in flows from existing to proposed conditions.

ATTACHMENT 1



HYDROLOGY EXHIBIT

DIGALERT
DIAL TOLL FREE
1-800-227-2600
AT LEAST TWO DAYS
BEFORE YOU DIG
UNDERGROUND SERVICE ALERT OF SOUTHERN CALIFORNIA

DRA ARCHITECTS
32 Executive, Suite 100
Irvine, CA 92614
T 949.833.3800 - F 949.833.3806

CONSULTANT:
MILANI CO
CONSULTING ENGINEERS
25872 WHITE ALDER LANE
LAGUNA HILLS, CA. 92653
714-655-3463 PH.

PROFESSIONAL SEAL:
REGISTERED PROFESSIONAL ENGINEER
OMAR S. MILANI
No. 65349
CIVIL
STATE OF CALIFORNIA

PROJECT TITLE
CALIFORNIA MEDICAL BLDG
2600 California Ave.
Long Beach, California

CLIENT NAME
2H PROPERTY 3060, LLC
2653 Walnut Avenue
Signal Hill, CA 90755
Phone: (562) 424-5567

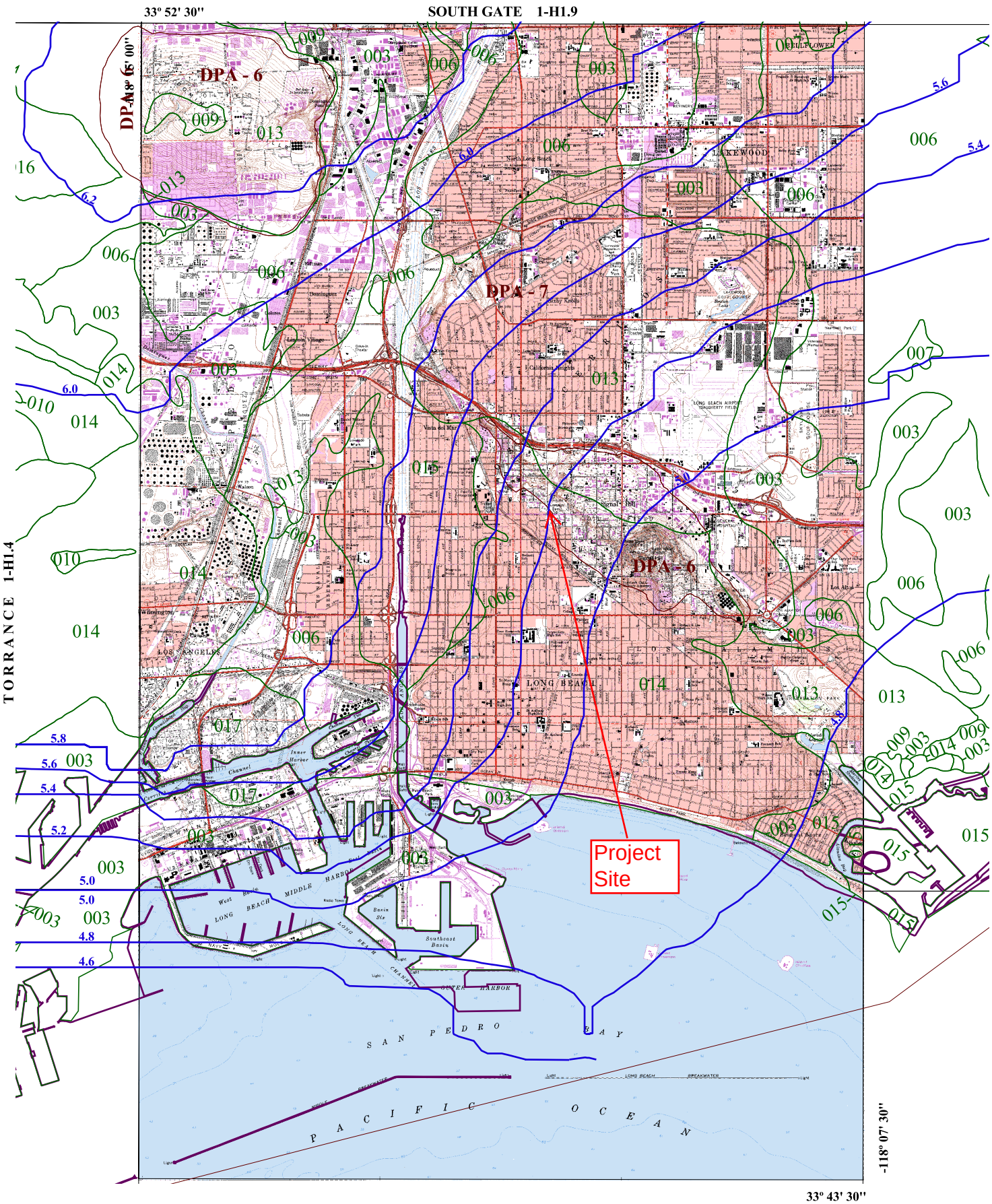
SHEET NAME
HYDROLOGY EXHIBIT

NO:	DATE:	DESCRIPTION:
	08-10-20	1st Site Plan Review Submittal

JOB NO:	20047
DATE ISSUED:	07-14-20
DRAWN BY:	CMH
CHECK BY:	CMH

SHEET NO:
1 OF 1

ATTACHMENT 2



016 SOIL CLASSIFICATION AREA

7.2 INCHES OF RAINFALL

DPA - 6 DEBRIS POTENTIAL AREA

1 0 1 2 Miles

25-YEAR 24-HOUR ISOHYET REDUCTION FACTOR: 0.878
10-YEAR 24-HOUR ISOHYET REDUCTION FACTOR: 0.714

LONG BEACH
50-YEAR 24-HOUR ISOHYET

1-H1.5

LOS ANGELES COUNTY PUBLIC WORKS Public Service That Works

ATTACHMENT 3

Peak Flow Hydrologic Analysis

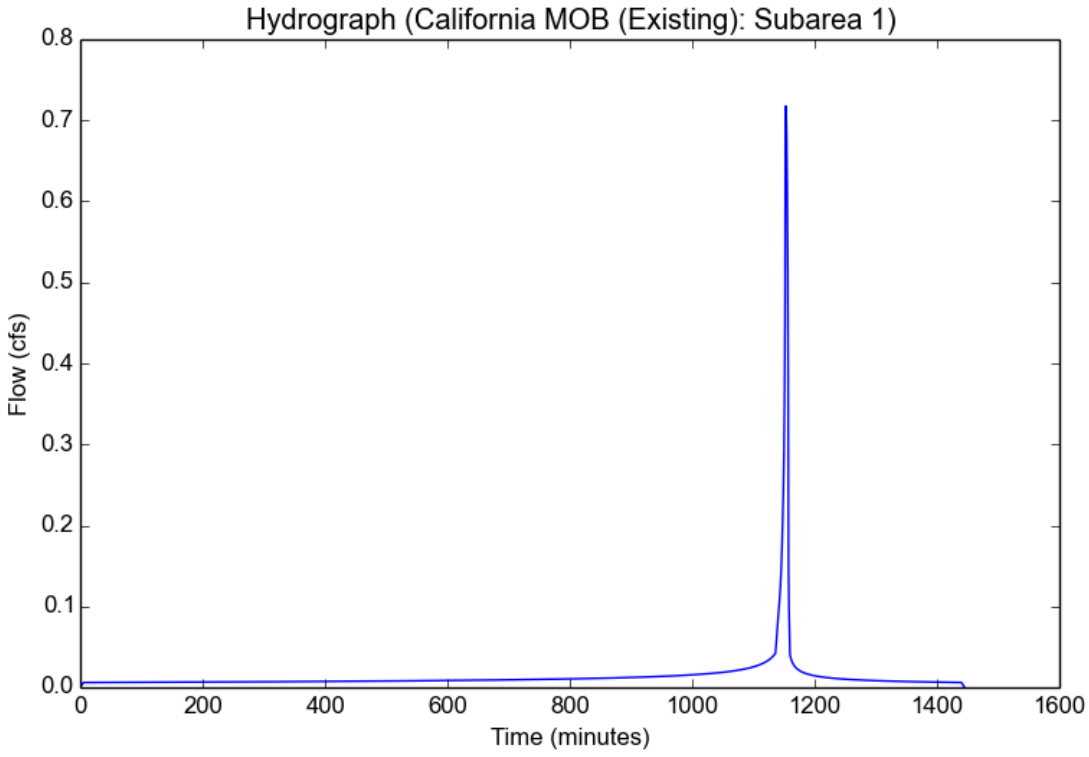
File location: C:/Users/milanib/Desktop/California MOB (Existing) - Subarea 1.pdf
Version: HydroCalc 1.0.3

Input Parameters

Project Name	California MOB (Existing)
Subarea ID	Subarea 1
Area (ac)	0.26
Flow Path Length (ft)	231.0
Flow Path Slope (vft/hft)	0.01
50-yr Rainfall Depth (in)	5.2
Percent Impervious	0.1
Soil Type	14
Design Storm Frequency	100-yr
Fire Factor	0
LID	False

Output Results

Modeled (100-yr) Rainfall Depth (in)	5.8344
Peak Intensity (in/hr)	3.481
Undeveloped Runoff Coefficient (Cu)	0.7811
Developed Runoff Coefficient (Cd)	0.793
Time of Concentration (min)	5.0
Clear Peak Flow Rate (cfs)	0.7177
Burned Peak Flow Rate (cfs)	0.7177
24-Hr Clear Runoff Volume (ac-ft)	0.0282
24-Hr Clear Runoff Volume (cu-ft)	1227.7661



ATTACHMENT 4

Peak Flow Hydrologic Analysis

File location: C:/Users/milanib/Desktop/California MOB (Proposed) - Subarea 1.pdf
Version: HydroCalc 1.0.3

Input Parameters

Project Name	California MOB (Proposed)
Subarea ID	Subarea 1
Area (ac)	0.26
Flow Path Length (ft)	231.0
Flow Path Slope (vft/hft)	0.01
50-yr Rainfall Depth (in)	5.2
Percent Impervious	0.9
Soil Type	14
Design Storm Frequency	100-yr
Fire Factor	0
LID	False

Output Results

Modeled (100-yr) Rainfall Depth (in)	5.8344
Peak Intensity (in/hr)	3.481
Undeveloped Runoff Coefficient (Cu)	0.7811
Developed Runoff Coefficient (Cd)	0.8881
Time of Concentration (min)	5.0
Clear Peak Flow Rate (cfs)	0.8038
Burned Peak Flow Rate (cfs)	0.8038
24-Hr Clear Runoff Volume (ac-ft)	0.1034
24-Hr Clear Runoff Volume (cu-ft)	4505.2185