ATTACHMENT I
CLASS 32 EXEMPTION REPORT

253 SOUTH LOS ROBLES AVENUE MULTI-FAMILY PROJECT

CEQA Class 32 Categorical Exemption Report

Prepared for
City of Pasadena
175 N Garfield Avenue
Pasadena, CA 91101

August 2018

ESA

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CATEGORICAL EXEMPTION REPORT

This report serves as the summary of the environmental analysis performed by ESA for the proposed Los Robles Condominiums (Project) located at 253 South Los Robles in the City of Pasadena (City). The intent of the analysis is to document whether the Project is eligible for a Class 32 Categorical Exemption (CE) pursuant to the State *California Environmental Quality Act (CEQA) Guidelines* §15332. The report provides an introduction, project description, and evaluation of the Project's consistency with the requirements for a Class 32 exemption. This includes an analysis of the project's potential impacts in the areas of habitat for endangered, rare or threatened species, traffic, noise, air quality, water, and historic resources. This report concludes that the Project is eligible for a Class 32 CE pursuant to the *State CEQA Guidelines* §15332.

1.0
Introduction

The State *California Environmental Quality Act (CEQA) Guidelines* §15332 states that a Class 32 Categorical Exemption (CE) is allowed when an in-fill development project meets the following conditions:

a. The project is consistent with the applicable general plan designation and all applicable general plan policies as well as with applicable zoning designation and regulations.

b. The proposed development occurs within city limits on a project site of no more than five acres substantially surrounded by urban uses.

c. The project site has no value as habitat for endangered, rare or threatened species.

d. Approval of the project would not result in any significant effects relating to traffic, noise, air quality, or water quality.

e. The site can be adequately served by all required utilities and public services.

Additionally, State *CEQA Guidelines* Section 15300.2 lists six exceptions to a categorical exemption. These exemptions include the following conditions:

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.

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

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

d. Scenic Highways. A categorical exemption shall not be used for a project which may result in damage to scenic resources, including but not limited to, trees, historic buildings, rock outcroppings, or similar resources, within a highway officially designated as a state

scenic highway. This does not apply to improvements which are required as mitigation by an adopted negative declaration or certified EIR.

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

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

ESA evaluated the proposed Los Robles Condominiums (Project) located at 253 South Los Robles in the City of Pasadena (City) with respect to consistency with the above requirements, including its potential impacts in the areas of habitat for endangered, rare or threatened species, traffic, noise, air quality, water quality and historic resources, as well as the six exceptions to a categorical exemption, to confirm the Project's eligibility for the Class 32 CE pursuant to the State *CEQA Guidelines* §15332.

2.0
Project Description

Zhuang & Zhong Los Robles, LLC (the Applicant) proposes to develop the proposed Project located at 253 South Los Robles in the City of Pasadena. The Project would consist of a 94,165 square feet (SF), six-story, 92-unit, residential building, which includes a 1,699 SF gym, 22,320 SF of open space including a 6th Floor Terrace and Sundeck. Parking would be provided in a three-level subterranean parking garage with 131 spaces and totaling 69,668 SF. Project construction would include the demolition of current structures, grading to prepare the Site for new development, excavation to accommodate the subterranean parking and basement levels, and the construction, architectural coating, and paving of the commercial building.

The Project Site is located in the CD-2 (Central District Specific Plan) zoning district in the City of Pasadena and is currently developed with one vacant office building. An Affordable Housing Concession Permit and design review approval is required for the Project. The Project Site is shown in **Figure 1**, *Vicinity Location Map.* The proposed Project site plans are provided in **Attachment A** of this report.

Construction of the Project is anticipated to begin in the third quarter of 2018, pending Project consideration and approval, and would be completed in late 2020. Construction of the Project is estimated to require approximately 23 months. Construction activities would include demolition, excavation, foundations and concrete pouring, building construction, and architectural coatings. Heavy-duty equipment, vendor supply trucks and concrete trucks would be used during construction of foundations, parking structures, and buildings. Landscaping and architectural coating would occur during the finishing activities. Demolition activities would include the removal of the existing office building and existing parking structure. Approximately 17 tons of debris would be exported from the Project Site. The Project would require the excavation of approximately 30,240 cubic yards of earth for the proposed three-level subterranean parking garage.

D170931.00 - 253 South Los Robles Avenue Multi-Family Project\05 Graphics-GIS-Modeling\Illustrator

SOURCE: Google Earth Pro, basemap, 2018; ESA, 2018

253 S Los Robles Avenue Project

Figure 1
Vicinity Location Map

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3.0
Existing Site Conditions

The Project Site is an approximately 0.815 acre (35,501 SF) rectangular-shaped site (Project Site) located on the west side of Los Robles Avenue, south of Cordova Street. The Project Site is also located near public transportation options including bus stops approximately 50 feet east of the Project Site at the intersection of South Los Robles Ave/Cordova Street, 220 feet northeast of the Project Site along Cordova Street, and 310 feet north of the Project Site along South Los Robles Ave, and the Metro Gold Line Del Mar Station is located approximately 0.35 miles west of the Project Site.

The Project Site is currently developed with an office building totaling 43,544 SF that is currently vacant and a 9,160 SF parking lot. **Figure 2**, *Aerial Photograph of Project Site and Vicinity*, shows the Project Site and surrounding land uses. The Project Site is bordered by an eight-story commercial building to the north, a three-story commercial building to the east across S. Los Robles Avenue, multifamily residences to the west and a surface-level parking lot to the south with multifamily residences further south across E. Del Mar Boulevard.

D170931.00 - 253 South Los Robles Avenue Multi-Family Project\05 Graphics-GIS-Modeling\Illustrator

SOURCE: Google Earth Pro, basemap, 2018; ESA, 2018

253 S Los Robles Avenue Project

Figure 2
Aerial Photograph of Project Site and Vicinity

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4.0
Consistency Analysis

Criterion (a): The project is consistent with the applicable general plan designation and all applicable general plan policies as well as with applicable zoning designation and regulations.

According to the City of Pasadena General Plan Land Use Diagram, the Project Site is designated for Medium Mixed Use development, which specifically allows for exclusively commercial or exclusively residential, or with buildings vertically integrating housing with non-residential uses.[1] The proposed Project is exclusively residential and would be consistent with the General Plan designation. The Project Site is located within the Central District Specific Plan area, which operates as the city's urban core and encourages urban villages, work-live spaces, in-town housing, and cultural and entertainment opportunities. The Central District Specific Plan area encompasses 960 acres corresponding to the areas recognized by Pasadena residents as "Downtown." The Central District Specific Plan includes a vision statement and objectives that are intended to support the Guiding Principles of the General Plan. To implement this vision, the Central District Specific Plan provides District-Wide Land Use, Mobility, and Urban Design Concepts, which together offer a comprehensive vision for the physical design and development of Downtown Pasadena. Included within the District-Wide Land Use, Mobility, and Urban Design Concepts are specific development standards for permitted land use types, maximum housing density, maximum FAR, minimum and maximum building heights, required setbacks, open space, signage, and parking. The development standards of the Central District Specific Plan are codified in Chapter 17.30 of the Zoning Code, discussed below.

Thus, a project that is consistent with the Zoning Code is in turn consistent with the development standards of the Central District Specific Plan. The Project Site is located within the CD-2 (Central District, Civic Center/Mid-town sub-district) subdistrict. The subdistrict is intended to strengthen its role as the symbolic and governmental center of the City, encouraging the presence of civic, cultural and public service institutions, while augmenting the character of the area with a supportive mixture of uses. The City's Zoning Code (Title 17 of the Pasadena Municipal Code [PMC]) implements the General Plan's Land Use Element and its policies. The intent of the Zoning Code is to protect public health, safety, and the general welfare of residents and visitors in the City. The Zoning Code identifies particular uses permitted on each parcel of land in the City and sets forth regulations and standards for development to ensure that the policies, goals, and objectives of the General Plan are implemented. The current zoning designation on the Project Site is CD-2 (Central District, Civic Center/Mid-town sub-district) and multi-family housing is a

[1] City of Pasadena, General Plan, Land Use Element, Adopted August 18, 2015, Amended January 25, 2016, p. 5, http://ww5.cityofpasadena.net/planning/wp-content/uploads/sites/56/2017/07/Land-Use-Element-2016-01-25.pdf. Accessed July 2018.

permitted use pursuant to Section 17.30.030 of the City's Zoning Code (see Table 3-1 and Figure 3-4 [Area 1]). The purpose of the CD district is to implement the goals and development standards of the Central District Specific Plan. According to Section 17.30.040 – CD, the maximum FAR of 2.25 is permitted on the subject site. The developer is requesting an Affordable Housing Concession Permit that would allow for a 2.65 FAR in order to provide the affordable housing on-site. In addition, the maximum permitted height on the subject site is 60'-0", or 75'-0' when utilizing height averaging. The developer is requesting a height of 80'-0", exceeding the provisions of height averaging.

The General Plan and Central District Specific Plan have several land-use policies that are relevant to the proposed Project, including the following specifically applicable policies related to community character and quality and economic sustainability. **Table 1**, *Consistency with Applicable General Plan Land Use Element Goals and Policies for the Central District*, presents an evaluation of the Project's consistency with applicable City General Plan and Central District Specific policies.

TABLE 1
CONSISTENCY WITH APPLICABLE GENERAL PLAN LAND USE ELEMENT GOALS AND POLICIES FOR THE CENTRAL DISTRICT

Goals and Policies	Consistency Analysis
Goal 31. Central District. Central District. The primary civic, business, financial, retail, entertainment, and cultural center of Pasadena with supporting housing enabling residents to live close and walk to these uses and access regional transit.	**Consistent.** The Project would provide residential uses that enables residents to walk to nearby public transit and to the civic, business, financial, retail, entertainment, and cultural amenities of Pasadena's Central District.
Policy 31.1 Focus Growth. Focus growth in the Central District into key sub-areas including the Pasadena Playhouse, Civic Center/Midtown, Lake, Northwest Gateway, and Walnut Districts, and in proximity to the three Metro Gold Line stations, to support economic vitality while preserving and complementing the historic core.	**Consistent.** The Project is consistent with increasing residential growth in a location targeted by the General Plan and the Central District Specific Plan.
Policy 31.2 Sub-District Identity. Enhance the distinctive, yet complementary nature of the Central District's sub-areas by recognizing and building on their unique attributes and features through signage, streetscape designs, design guidelines and encouraging new uses and infill development that fits with the vision of each sub-area.	**Consistent.** The goal of the Central District, Civic Center/Mid-town sub-district is intended to strengthen its role as the symbolic and governmental center of the City, encouraging the presence of civic, cultural and public service institutions, while augmenting the character of the area with a supportive mixture of uses. The Project is consistent with this by increasing the mixture of uses in the sub-district by providing a residential development that is supportive of the primary role of the sub-district.
Policy 31.3 Del Mar, Memorial Park and Lake Transit Villages. Concentrate higher intensity development with a mix of retail, office, and multi-family housing uses that are compatible with one another expanding the customer base for local retail uses and supporting Metro Gold Line ridership.	**Consistent.** The Project would intensify development by increasing multi-family housing in an area directly served by the Metro Del Mar Station that is served by the Gold Line as the Project Site is located within a half-mile of the Metro Del Mar Station.
Policy 31.4 Contextual Development in Historic Districts. Require new development within and adjacent to the historic districts to be compatible with the scale, density, and urban design features of existing historic buildings and districts	**Not Applicable.** The Project would not conflict with this policy as it is not within or adjacent to a historic district.
Policy 31.5 Transit Options. Increase the network of transit, walking, and bicycling opportunities between sub-areas within the Central District through expanded services, additional rights of way/pathways with corresponding signage.	**Not Applicable.** The policy refers to transit service and rights-of-way. The Project would not conflict with this policy as it would make no changes to, nor interfere with, transit facilities or rights-of-way.

Goals and Policies	Consistency Analysis
Policy 31.6 Connections to Other Community Places. Establish and maintain pedestrian walkways that provide access to the other Community Places and encourage people to move freely between each subarea within the Central District through a unifying/connected network of public areas.	**Consistent.** The Project would maintain the sidewalk system along the perimeter of the site and would incorporate pedestrian pathways that would connect to the existing sidewalk network which in turn connect with the other places in the Central District area. The Project would improve pedestrian circulation and pedestrian safety in the Project vicinity by including a pedestrian walkway that would provide direct access to South Los Robles Ave.
Policy 31.7 Expanded Economic Opportunities. Strengthen the Central District's economic vitality by supporting existing businesses and providing opportunities for new commercial development in underutilized areas with higher development capacity.	**Consistent.** The Project would locate residential uses into the Central District and introduce a new residential population that would utilize the surrounding businesses of the Central District.
Policy 31.8 Street Vitality During Evenings and On Weekends. Sustain a vibrant pedestrian atmosphere in traditionally civic and office dominant sub-areas on evenings and weekends by encouraging additional residential and mixed-use development.	**Consistent.** The Project would locate residential uses into the Central District and introduce a new residential population that would utilize the dining, retail and cultural amenities of the Central District.
Policy 31.9 Housing Choice. Provide a wide variety of housing options in the Central District in terms of the type, location, size and price.	**Consistent.** The Project would locate new residential uses into the Central District and introduce a new housing options, including 8 affordable housing units.
Policy 31.10 Building Orientation. Require businesses to be oriented primarily to pedestrian streets and urban spaces and secondarily to parking lots and to provide visibility and accessibility to customers arriving on foot, by bicycle, and by automobile.	**Consistent.** The Project would be oriented to the public streets and parking would be provided in subterranean levels.

SOURCE: ESA, 2018.

As discussed in **Table 1**, the proposed project would be consistent with applicable General Plan and Central District Specific Plan policies. Furthermore, as discussed above, the proposed Project would be consistent with the City's General Plan designation, which allows for exclusively residential projects, and the City's zoning code designation, which allows for multi-family housing as a permitted use. Therefore, the proposed Project would meet this criterion.

Criterion (b): The proposed development occurs within city limits on a project site of no more than five acres substantially surrounded by urban uses.

The Project Site is located on a 0.815-acre parcel within a developed urban neighborhood. It is directly surrounded by urban uses in all directions, as shown in **Figure 1**, above. Therefore, the proposed Project would meet this criterion.

Criterion (c): The project site has no value as habitat for endangered, rare, or threatened species.

Since it located within a highly developed area, the Project Site lacks habitat that would be suitable for sensitive animal or plant species. In addition, the Project Site is currently developed with an office building and associated parking lot surrounded by minimal vegetation. This vegetation does not provide habitat for sensitive species due to its small size, lack of native vegetation, and highly urban context. Therefore, the proposed Project would meet this criterion.

Criterion (d): Approval of the project would not result in any significant effects relating to traffic, noise, air quality, or water quality.

I. Traffic

The following review of potential traffic impacts is based on the Transportation Impact Analysis prepared by City of Pasadena Department of Transportation (included as **Attachment B** of this report) for the proposed Project. The goal of the Transportation Impact Analysis was to analyze the impact the development would have on the City transportation system by estimating incremental changes in vehicle miles traveled (VMT) per capita, vehicle trips per capita (VT), the Project's impact on service population proximity access to transit and bike facilities, and walk accessibility score.

A summary of findings of the Transportation Impact Analysis is provided below:

- The Project's incremental VMT per capita change is 12.6. The incremental change does not exceed the adopted significance threshold of 22.6 VMT per capita. Therefore, the Project does not cause a significant impact to VMT per capita.

- The Project's incremental VT per capita change is 2.1. This incremental change does not exceed the adopted significance threshold of 2.8 VT per capita. Thus, the project does not cause a significant impact to VT per capita.

- Any decrease in the existing City-wide service population percentage of 31.7% within a quarter mile of bicycle facilities would indicate a significant impact. The Transportation Impact Analysis determined that the service population percentage with the Project would be 31.7%. Therefore, the Project does not cause a significant impact on the existing bicycle network.

- Any decrease in the existing City-wide service population percentage of 66.6% within a quarter mile of transit facilities would indicate a significant impact. The Transportation Impact Analysis determined that the service population percentage with the project would be 66.7%. The Project does not cause a significant impact on the existing transit network.

- Any decrease in the calculated Pedestrian Accessibility score of 3.88 would indicate a significant impact with the addition of the Project. The Transportation Impact Analysis revealed that the pedestrian accessibility score would be 3.88. Therefore, the Project does not cause a significant impact.

Conclusion: The Project would not significantly impact the City transportation system based on the results of the Project's incremental changes in vehicle miles traveled (VMT) per capita, vehicle trips per capita (VT), the Project's impact on service population proximity access to transit and bike facilities, and walk accessibility score. Approval of the project would not result in any significant effects relating to traffic. For additional details, refer to the full Transportation Impact Analysis provided in **Attachment B** of this report.

II. Noise

The following review of potential noise impacts is based on the Noise Technical Report prepared by ESA (included as **Attachment C** of this report) for the proposed Project. In accordance with Appendix G of the State *CEQA Guidelines*, the proposed Project would result in potentially significant impacts related to noise if it would result in:

- Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies;
- Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels;
- A substantial permanent increase in ambient noise levels in the vicinity of the project above levels existing without the project; or
- A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project.

A summary of findings of the Noise Technical Report is provided below:

ESA conducted an acoustical study (included as **Attachment C** of this report) to evaluate the potential noise and vibration impacts associated with construction activities, surface transportation, and other aspects of Project construction and operations that have the potential to impact noise sensitive land uses. The findings of the analyses are as follows:

- Construction of the Project would not exceed the City's construction noise standards. Thus, the Project would not result in a substantial temporary or periodic increase in noise and impacts would be less than significant.
- Operation of the Project would not exceed the City's traffic or operational stationary source noise standards. Thus, the Project would not result in a substantial permanent increase in ambient noise levels in the vicinity of the Project above levels existing without the Project and impacts would be less than significant.
- The Project would not result in the generation of excessive groundborne vibration or groundborne noise levels from construction or operational activities. Thus, the Project would result in a less than significant impact from groundborne vibration and groundborne noise.

Conclusion: Construction of the Project has the potential to generate an increase in temporary or periodic noise through the use of heavy-duty construction equipment and through vehicle trips generated from construction workers traveling to and from the Project Site. However, use of construction equipment equipped with industry standard noise minimization strategies and compliance with the City's Noise Ordinance would minimize the potential for noise generation. Noise from construction of the Project would not exceed the City's standards. Therefore, impacts related to construction noise would be less than significant. Construction activities would generate vibration from the use of heavy equipment and haul trucks. However, vibration levels at sensitive receptors would be below the thresholds. As a result, construction vibration impacts would be less than significant.

Project operations would generate an increase in ambient noise from roadway traffic and stationary noise. The Project would not result in a substantial increase in roadway traffic noise and would not exceed the significance thresholds. Stationary noise sources would be designed in accordance with City standards and would not exceed the allowable noise levels. As a result, operational noise impacts would be less than significant. The Project's operations would include typical residential-grade stationary mechanical and electrical equipment for multi-family residential buildings, such as air handling units, condenser units, and exhaust fans, which would produce vibration. In addition, the primary sources of transient vibration would include passenger vehicle circulation within the proposed parking area. The potential vibration levels from Project operational sources at the closest existing and future sensitive receptor locations would be less than the significance threshold. As a result, operational vibration impacts would be less than significant.

For additional details, refer to the full Noise Technical Report provided in **Attachment C** of this report.

III. Air Quality

The following review of potential air quality impacts is based on the Air Quality Technical Report prepared by ESA (included as **Attachment D** of this report) for the proposed Project. In accordance with Appendix G of the State *CEQA Guidelines*, the proposed Project would result in potentially significant impacts related to air quality if it would:

- Conflict with or obstruct the implementation of the applicable air quality plan;
- Violate any air quality standard or contribute substantially to an existing or projected air quality violation;
- Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is nonattainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors);
- Expose sensitive receptors to substantial pollutant concentrations; or
- Create objectionable odors affecting a substantial number of people.

The CEQA Guidelines Section 15064.7 provides the significance criteria established by the applicable air quality management district or air pollution control district, when available, may be relied upon to make determinations of significance. The potential air quality impacts of the Project are, therefore, evaluated according to thresholds developed by the South Coast Air Quality Management District (SCAQMD) in their *CEQA Air Quality Handbook*, *Air Quality Analysis Guidance Handbook*, and subsequent guidance.

A summary of findings of the Air Quality Technical Report is provided below.

ESA conducted an air quality assessment (included as **Attachment D** of this report) to evaluate the potential air quality impacts associated with construction activities, mobile sources, building

energy demand, and other aspects of Project construction and operations that have the potential to generate criteria air pollutant emissions. The findings of the analyses are as follows:

- The incremental increase in emissions from construction and operation of the Project would be below the regional daily emission thresholds set forth by the South Coast Air Quality Management District (SCAQMD). Thus, the Project would not result in a regional violation of applicable air quality standards or jeopardize the timely attainment of such standards in the South Coast Air Basin (the Air Basin).

- The incremental increase in on-site emissions from construction and operation of the Project would be below the localized significance thresholds set forth by the SCAQMD. Thus, the Project would not result in a localized violation of applicable air quality standards or expose off-site receptors to substantial levels of regulated air contaminants.

- Emissions from the increase in traffic due to operation of the Project would not have a significant impact upon 1-hour or 8-hour local carbon monoxide (CO) concentrations due to mobile source emissions.

- Project construction and operations would not result in significant levels of odors.

- The Project would be consistent with air quality policies set forth by the City of Pasadena, the SCAQMD, and the Southern California Association of Governments (SCAG).

- The Project would not result in a significant cumulative air quality impact.

Conclusion: Construction of the Project has the potential to create air quality impacts through the use of heavy-duty construction equipment and through vehicle trips generated from construction workers traveling to and from the Project Site. In addition, fugitive dust emissions would result from grading and construction activities. However, use of typical construction equipment (in terms of size and age/emission standards) and compliance with Rule 403 requirements (regarding dust control measures such as watering twice daily and track out prevention measures), minimizes air emissions to the extent warranted. Regional construction emissions would not exceed the SCAQMD daily significance thresholds. Therefore, impacts related to regional construction emissions would be less than significant. Localized construction emissions would not exceed the SCAQMD localized significance thresholds. Therefore, impacts related to localized construction emissions would be less than significant. As a result, Project-related construction impacts would be less than significant.

Air pollutant emissions associated with Project operations would be generated by the consumption of natural gas and by the operation of on-road vehicles. Regional and localized operational emissions associated with the Project would not exceed the SCAQMD daily significance thresholds. In addition, the Project would result in less-than-significant CO hotspot and odor impacts. Furthermore, the Project would be consistent with applicable air quality plans and policies and would not generate odors affecting a substantial number of people. Therefore, impacts related to Project operational emissions and consistency with applicable air quality management plans, policies, or regulations would be less than significant.

For additional details, refer to the full Air Quality Technical Report provided in **Attachment D** of this report.

IV. Water Quality

Urban runoff can have a variety of detrimental effects. For instance, heavy metals such as cadmium, chromium, copper and lead can be washed off of paved roads and parking lots and are the most common metals found in urban stormwater runoff. These metals may be toxic to aquatic organisms, and have the potential to contaminate drinking water supplies. Nitrogen and phosphorous from fertilizers can serve as nutrients for algae and vegetation, resulting in accelerated growth and potential oxygen depletion and hypoxic conditions in receiving waters and additional impaired uses of water.

Currently, the Project Site is almost entirely covered with impervious surfaces, although a few trees and street plantings are located along S. Los Robles Avenue. Stormwater runoff currently enters storm drains on along S. Los Robles Avenue and E. Del Mar Boulevard to existing City drainage facilities. Neither the permeability nor the hydrology of the site would substantially change with project implementation, as the amount of impervious surfaces with the proposed project would be comparable to existing conditions.

Pasadena lies within the greater Los Angeles River watershed, and thus, within the jurisdiction of the Los Angeles Regional Water Quality Control Board (LARWQBC). The LARWQCB adopted water quality objectives in its Stormwater Quality Management Plan (SQMP), which is designed to ensure stormwater achieves compliance with receiving water limitations. Thus, stormwater generated by a development that complies with the SQMP does not exceed the limitations of receiving waters, and therefore does not exceed water quality standards. Compliance with the SQMP is enforced by application of Section 402 of the Clean Water Act, the National Pollutant Discharge Elimination System (NPDES). Under this section, municipalities are required to obtain permits for the water pollution generated by stormwater in their jurisdiction. These permits are known as Municipal Separate Storm Sewer Systems (MS4) permits. The City of Pasadena is a co-permittee in the Los Angeles County MS4 permit (Order No 01-182; NPDES No. CAS0041 as amended by Orders R4-2006-0074 and R4-2007-0042). Under this MS4, each permitted municipality is required to implement the SQMP. In accordance with the countywide MS4 permit, all new developments must comply with the SQMP. In addition, as required by the MS4 permit, the City of Pasadena has adopted a Standard Urban Stormwater Mitigation Plan (SUSMP) ordinance, which includes low impact development (LID) design standards, to ensure new developments comply with SQMP. This ordinance requires most new developments to submit a plan to the City that demonstrates how the project would comply with the City's SUSMP.

The Project proposes a multi-family residential development with 92 units and includes a 1,699 SF gym, 22,320 SF of open space including a 6th Floor Terrace and Sundeck with associated parking. None of the proposed uses would be point source generators of water pollutants. Therefore, no quantifiable water quality standards apply to the Project. As an urban development, the proposed Project would add typical, urban, nonpoint-source pollutants to storm water runoff. These pollutants are permitted by the countywide MS4 permit, and would not exceed any receiving water limitations. The City requires, pursuant to PMC Chapter 8.70, that

redevelopment projects that involve more than 5,000 SF comply with the SUSMP. Thus, the applicant is required to submit and implement a SUSMP compliance plan. Compliance with the MS4 permit and SUSMP would ensure that the proposed Project would not violate any water quality standards or waste discharge requirements, and would have no related significant impacts.

As construction of the Project would involve grading, including the export of 30,240 cubic yards of soil, on an approximately 0.815-acre site, the applicant would not be required to submit a Storm Water Pollution Prevention Plan (SWPPP) to the City of Pasadena Public Works Department as the Project would disturb less than one acre of soil and is not part of a larger common plan of development which in total disturbs one acre or more. However, the Project would be required to manage storm water drainage during construction through one or more of the flowing methods: (1) Retention basins of sufficient size shall be utilized to retain storm water on the site. (2) Where storm water is conveyed to a public drainage system, collection point, gutter or similar disposal method, water shall be filtered by use of a barrier system, wattle or other method approved by the enforcing agency, (3) compliance with a lawfully enacted storm water management ordinance in order to avoid discharging pollutants into waterways. Therefore, development of the proposed project would not result in any significant effects relating to water quality.

Related projects in the vicinity of the Project Site, which include the 245 South Los Robles Avenue project (a 131-unit mixed-use building to the north of the proposed Project Site) and the 399 East Del Mar Boulevard project (a 55-unit multi-family residential building to the south of the proposed Project Site). Construction of these related projects would be required to comply with SWPPP requirements if disturbing 1 acre or more of soil. Like the proposed Project, these related projects would add typical, urban, nonpoint-source pollutants to storm water runoff. These pollutants are permitted by the countywide MS4 permit, and would not exceed any receiving water limitations. These related projects would also be required, pursuant to PMC Chapter 8.70, comply with the applicable SUSMP and MS4 permit requirements, which would ensure that these related projects would not violate any water quality standards or waste discharge requirements, and would have no related significant impacts.

Conclusion: The proposed Project would not adversely affect underground aquifers, drainage patterns, or surface water quality. Impacts related to water quality would be less than significant.

V. Summary for Criterion (d)

As the Project would result in less than significant impacts with respect to traffic, noise, air quality, and water quality, the proposed Project would meet this criterion.

Criterion (e): The site can be adequately served by all required utilities and public services.

The Project would be located in an existing highly urban area served by existing public utilities and services. A considerable increase in demand for services or utilities would not be anticipated with the implementation of the proposed Project since it is located on an existing urban infill location previously developed with an office building. The City of Pasadena Department of Water

and Power provides electricity and water, and the City of Pasadena Department of Public Works provides solid waste collection and sewer services. SoCal gas provides natural gas services to the City of Pasadena and would be expected to serve the Project. Thus, the Project meets this criterion.

Exceptions to Categorical Exemption

State *CEQA Guidelines* Section 15300.2 lists six exceptions to a categorical exemption. As discussed below, none of the exceptions apply to the proposed Project.

Location (State CEQA Guidelines §15300.2(a))

This exception applies to Classes 3, 4, 5, 6, and 11. This exception does not apply to a Class 32 exemption. Therefore, this exception does not apply to the Project. Furthermore, the Project Site is not located in a particularly sensitive environment and is located in a previously developed urban infill location and is surrounded by existing urban uses.

Cumulative Impact (State CEQA Guidelines §15300.2(b))

Under this exception, 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. There is no evidence of a potential significant cumulative impact because successive projects of the same type in the same place have not been approved and are not currently proposed. The related projects in the vicinity of the proposed Project, which include the 245 South Los Robles Avenue project (a 131-unit mixed-use building to the north of the proposed Project Site) and the 399 East Del Mar Boulevard project (a 55-unit multi-family residential building to the south of the proposed Project Site) would not result in project-level or cumulatively significant impacts. As discussed above, the proposed Project Transportation Impact Analysis did not identify significant cumulative traffic impacts with regards to the Project and buildout of the related projects. The proposed Project would not contribute to significant cumulative noise impacts with regards to the Project and buildout of the related projects. In addition, the proposed Project would not result in significant cumulative air quality or water quality impacts with regards to the Project and buildout of the related projects. As a result, there is no evidence of significant cumulative impacts from successive projects of the same type in the same place, over time. Therefore, this exception does not apply to the Project.

Significant Effect (State CEQA Guidelines §15300.2(c))

This exception applies when there is a reasonable possibility that the activity will have a significant effect on the environment due to unusual circumstances. As described above, the proposed Project would consist of a 94,165 square feet (SF), six-story, 92-unit, residential building, which includes a 1,699 SF gym, 22,320 SF of open space including a 6th Floor Terrace and Sundeck. Parking would be provided in a three-level subterranean parking garage with 131 spaces. The Project is consistent with the General Plan land use designation and zoning code designation and is similar in size and scale to other developments in the area and is not unusual for the location. The Project is located in a developed urban neighborhood and is directly surrounded by urban uses in all directions, including existing multi-family housing. There are no

features that distinguish this project from others in the exempt class and, therefore, there are no unusual circumstances. Therefore, this exception does not apply to the Project.

Scenic Highways (State CEQA Guidelines §15300.2(d))

This exception applies to 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. Based on a review of the California Scenic Highway Mapping System,[2] the proposed Project Site is not located on or near an officially designated scenic highway. The Project would have no impacts on an officially designated scenic highway. Therefore, this exception does not apply to the Project.

Hazardous Waste Sites (State CEQA Guidelines §15300.2(e))

This exception applies to a project located on a site which is included on any list compiled pursuant to Section 65962.5 of the Government Code. Government Code Section 65962.5 refers specifically to a list of hazardous waste facilities compiled by the Department of Toxic Substances Control (DTSC). The Project Site is not included on the DTSC's hazardous waste facilities list.[3] Thus, the Project Site has not been included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5. Therefore, this exception does not apply to the Project.

Historic Resources (State CEQA Guidelines §15300.2(f))

State *CEQA Guidelines* §15300.2 states that a categorical exemption "shall not be used for a project which may cause a substantial adverse change in the significance of a historical resource." The existing building on the Project Site is not known to be associated with events that have made a significant contribution to California's history and cultural heritage nor with the lives of persons who have historic importance and is not listed on the California Historical Resources Inventory Database for the City of Pasadena. Based on a review of the existing building permits, the existing building does not embody the distinctive work of an important creative individual or possess high artistic values. Moreover, the building is not likely to yield information important in prehistory or history. Therefore, it is ineligible for listing on the National Register of Historic Places or the California Register of Historical Resources, or for designation as a City landmark. The proposed Project would not result in a substantial adverse change in the significance of a historic resource. As a result, this exception does not apply to the Project.

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2 California Department of Transportation, California Scenic Highway Mapping System, Updated: September 7, 2011, http://www.dot.ca.gov/hq/LandArch/16_livability/scenic_highways/. Accessed July 2018.

3 Department of Toxic Substances Control, Hazardous Waste and Substance Site List (CORTESE), http://www.envirostor.dtsc.ca.gov/public/mandated_reports.asp. Accessed July 23, 2018.

5.0
Summary

A project qualifies for a Class 32 CE if it is developed on an infill site and meets the conditions described in this report. The five (5) conditions which the project must meet in order to qualify for the Class 32 CE are as follows: (a) The project is consistent with the applicable general plan designation and all applicable general plan policies as well as with the applicable zoning designation and regulations; (b) The proposed development occurs within city limits on a project site of no more than five acres substantially surrounded by urban uses; (c) The project site has no value as habitat for endangered, rare or threatened species; (d) Approval of the project would not result in any significant effects relating to traffic, noise, air quality, or water quality; and (e) The site can be adequately served by all required utilities and public services.

Based on the results of the Transportation Impact Analysis prepared by City of Pasadena Department of Transportation, and the Air Quality, and Noise Technical Reports prepared by ESA, as well as the consistency analysis with respect to the criteria specified in the State *CEQA Guidelines* §15332, the proposed 253 S. Los Robles Avenue Multi-Family Project meets the criteria for a Class 32 CE. The Project Site will be adequately served by required utilities. Furthermore, none of the exceptions to a CE listed in the State *CEQA Guidelines* §15300.2 apply to the Project. Therefore, it can be found that the project meets the qualifications of the Class 32 CE.

Attachment A
Proposed Project Site Plan

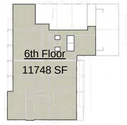
AREA SUMMARY

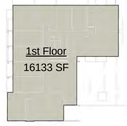
Gross Floor Area

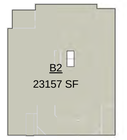
	Gross Area	Net Residential Area
1st Floor	16133 SF	11135 SF
2nd Floor	16573 SF	13457 SF
3rd Floor	16571 SF	13457 SF
4th Floor	16571 SF	13457 SF
5th Floor	16571 SF	13457 SF
6th Floor	11748 SF	9095 SF
	94165 SF	74060 SF

BASEMENT AREA CALCULATIONS

	Gross Area
B1	23157 SF
B2	23157 SF
B3	23353 SF
	69668 SF







PROGRAM SUMMARY

TOTAL UNIT COUNT

1-Bedroom	64
2-Bedroom	28
	92

UNITS LESS THAN 650 SF

1-Bedroom	11
	11

SIXTH FLOOR

1-Bedroom	6
2-Bedroom	4
	10

FIFTH FLOOR

1-Bedroom	12
2-Bedroom	5
	17

FOURTH FLOOR

1-Bedroom	12
2-Bedroom	5
	17

THIRD FLOOR

1-Bedroom	12
2-Bedroom	5
	17

SECOND FLOOR

1-Bedroom	12
2-Bedroom	5
	17

FIRST FLOOR

1-Bedroom	(South)	8
2-Bedroom		4
1-Bedroom	(North)	2
		14

UNIT SUMMARY

UNIT SCHEDULE

Name	Occupancy	Net Area
6th Floor		
Unit 601	1-Bedroom	695 SF
Unit 602	2-Bedroom	1044 SF
Unit 603	1-Bedroom	782 SF
Unit 604	1-Bedroom	781 SF
Unit 605	1-Bedroom	781 SF
Unit 606	2-Bedroom	1397 SF
Unit 607	1-Bedroom	775 SF
Unit 608	2-Bedroom	1345 SF
Unit 609	1-Bedroom	611 SF
Unit 610	2-Bedroom	884 SF
		9095 SF
5th Floor		
Unit 501	2-Bedroom	970 SF
Unit 502	2-Bedroom	979 SF
Unit 503	1-Bedroom	644 SF
Unit 504	1-Bedroom	704 SF
Unit 505	1-Bedroom	655 SF
Unit 506	1-Bedroom	784 SF
Unit 507	2-Bedroom	1056 SF
Unit 508	1-Bedroom	782 SF
Unit 509	1-Bedroom	781 SF
Unit 510	1-Bedroom	746 SF
Unit 511	1-Bedroom	781 SF
Unit 512	1-Bedroom	778 SF
Unit 513	1-Bedroom	775 SF
Unit 514	1-Bedroom	663 SF
Unit 515	2-Bedroom	865 SF
Unit 516	1-Bedroom	610 SF
Unit 517	2-Bedroom	884 SF
		13457 SF
4th Floor		
Unit 401	2-Bedroom	970 SF
Unit 402	2-Bedroom	979 SF
Unit 403	1-Bedroom	644 SF
Unit 404	1-Bedroom	704 SF
Unit 405	1-Bedroom	655 SF
Unit 406	1-Bedroom	784 SF
Unit 407	2-Bedroom	1056 SF
Unit 408	1-Bedroom	782 SF
Unit 409	1-Bedroom	781 SF
Unit 410	1-Bedroom	746 SF
Unit 411	1-Bedroom	781 SF
Unit 412	1-Bedroom	778 SF
Unit 413	1-Bedroom	775 SF
Unit 414	1-Bedroom	663 SF
Unit 415	2-Bedroom	865 SF
Unit 416	1-Bedroom	610 SF
Unit 417	2-Bedroom	884 SF
		13457 SF
3rd Floor		
Unit 301	2-Bedroom	970 SF
Unit 302	2-Bedroom	979 SF
Unit 303	1-Bedroom	644 SF
Unit 304	1-Bedroom	704 SF
Unit 305	1-Bedroom	655 SF
Unit 306	1-Bedroom	784 SF
Unit 307	2-Bedroom	1056 SF
Unit 308	1-Bedroom	782 SF
Unit 309	1-Bedroom	781 SF
Unit 310	1-Bedroom	746 SF
Unit 311	1-Bedroom	781 SF
Unit 312	1-Bedroom	778 SF
Unit 313	1-Bedroom	775 SF
Unit 314	1-Bedroom	663 SF
Unit 315	2-Bedroom	865 SF
Unit 316	1-Bedroom	610 SF
Unit 317	2-Bedroom	884 SF
		13457 SF
2nd Floor		
Unit 201	2-Bedroom	970 SF
Unit 202	2-Bedroom	979 SF
Unit 203	1-Bedroom	644 SF
Unit 204	1-Bedroom	704 SF
Unit 205	1-Bedroom	655 SF
Unit 206	1-Bedroom	784 SF
Unit 207	2-Bedroom	1056 SF
Unit 208	1-Bedroom	782 SF
Unit 209	1-Bedroom	781 SF
Unit 210	1-Bedroom	746 SF
Unit 211	1-Bedroom	781 SF
Unit 212	1-Bedroom	778 SF
Unit 213	1-Bedroom	775 SF
Unit 214	1-Bedroom	663 SF
Unit 215	2-Bedroom	865 SF
Unit 216	1-Bedroom	610 SF
Unit 217	2-Bedroom	884 SF
		13457 SF
1st Floor South		
Unit 101	2-Bedroom	970 SF
Unit 102	2-Bedroom	978 SF
Unit 103	1-Bedroom	643 SF
Unit 104	1-Bedroom	704 SF
Unit 105	1-Bedroom	654 SF
Unit 106	1-Bedroom	784 SF
Unit 107	2-Bedroom	1056 SF
Unit 108	1-Bedroom	782 SF
Unit 109	1-Bedroom	781 SF
Unit 110	1-Bedroom	781 SF
Unit 111	1-Bedroom	782 SF
Unit 112	1-Bedroom	726 SF
Unit 113	1-Bedroom	611 SF
Unit 114	2-Bedroom	884 SF
		11135 SF
Grand total: 92		74060 SF

ZONING SUMMARY

Assessor's Parcel Number: ***5722-030-162***

General Plan
Land Use Designation: ***Medium Mixed Use***

Zoning District: CD-2/ Mid Town Civic Auditorium

Existing Buildings to be Removed: 43,544 sf 2-Story Office Building

Proposed Building(s): One New Building:
6 Above-grade Habitable Levels
2 Below-grade Parking Levels

Lot Area: 35,502 sf

Base Density Allowed: 87 Dwelling Units/ Acre = 71

29.6% Density Bonus Proposed Market Rate = 84
Very Low Income = 8
Total = 92

Designated Very Low Income Units 2 BR: 215, 415
1 BR: 204, 305, 316
404, 505, 516

Building Area, Height, Open Space Summary

Base F.A.R. Allowed: 2.25 x 35,502 sf = 79,879 sf
Concession Proposed: to 2.65 x 35,502 sf = 94,165 sf

Height Limit: 60 (75) Height Averaging Allowed
Concession Proposed: to 80'-0" (no averaging)**

**Heights not including appertenances, See Sheet A-2.3 for more information

Open Space Coverage:
Required (30% of Net Area) = .3 x 74,060 sf
= 22,218 sf

Proposed
Common Courtyard 2,432 sf
Add'l Front 963 sf (Courtyard & Drive Excluded)
North Yard 3,051 sf
Patio Easmt 2,251 sf
South Yard 2,556 sf
6th Floor 2,037 sf East Terrace
6th Floor 2,092 sf Sundeck
Subtotal Common Open Space 15,382 sf

Private Balconies (Max 35%) (Minimum Dimension = 6'-0" Typ.)
1st Floor 2,180 sf (Patios)
2nd Floor 899 sf (Balconies)
3rd Floor 899 sf (Balconies)
4th Floor 899 sf (Balconies)
5th Floor 899 sf (Balconies)
6th Floor 1,163 sf (Balconies)
Subtotal Balcony Open Space 6,938 sf (= 31.1% < 35% - OK)

Total Open Space Proposed 22,320 sf > 22,218 sf (OK)

Parking:
1-Bedroom Units 64 Spaces
64 Units x (1 space per Unit)
2-Bedroom Units 56 Spaces
28 Units x (2 spaces per Unit)
Visitor 9 Spaces
[Min: 92 Units x (0.10 spaces per Unit)]
Total Spaces Required = 129

Proposed
Basement 1 41
Basement 2 43
Basement 3 47
Total ***131***

Tandem Stalls 12
Max. Allowed 30%
Proposed 9%

Loading: Required None
Proposed None

VIEW FROM THE SOUTHEAST

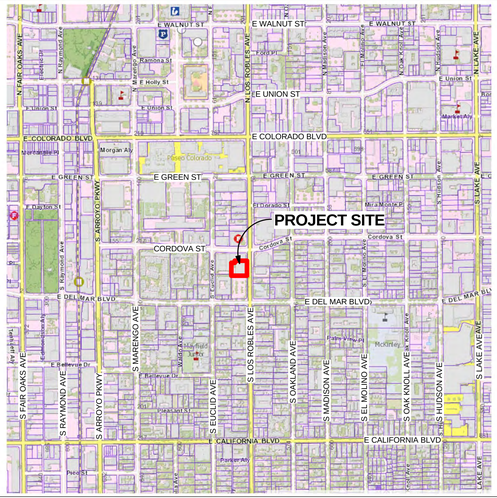
PROJECT TEAM

Owner:
Zhuang & Zhong Los Robles, LLC
c/o Robert Artura, agent
180 N. Glendora Avenue
Glendora, CA 91741

Architect:
Tyler Gonzalez Architects
139 South Hudson Street, Suite 300
Pasadena, CA 91101
Contact: Rob Tyler
Phone: 626.396.9599
Email: Rob@TGArchitects.net

Landscape Architect:
Tyler Gonzalez Architects
139 South Hudson Street, Suite 300
Pasadena, CA 91101
Contact: Robert Martin
Phone: 626.396.9599
Email: RMartin@TGArchitects.net

VICINITY MAP (not to scale)



BUILDING CODE SUMMARY

Applicable Building Codes: Building regulations specified in Title 14 of the Pasadena Municipal Code
2016 California Building Code
2016 California Mechanical Code
2016 California Plumbing Code
2016 California Electrical Code
2016 California Fire Code
2016 California Residential Code
2016 California Energy Code
2016 Green Building Standards
Energy Conservation regulations specified in Title 24 of the California Code of Regulations
California Disabled Access

Type of Construction: Levels B1/ B2 Type IA
Floor 1 Type IA
Floors 2-6 Type IIIA
Sprinklered Throughout
Vertically & Horizontally Separated

Occupancy/ Building Types: S-2: (Type IA) Sub Garages
R-2: (Type IA) Ground Floor
R-2: (Type IIIA) Floors 2-6

GENERAL NOTES

1. All work shall conform to the governing codes, documents and agencies having jurisdiction over the project. The governing code is the 2016 California Building Codes; CBC, CMC, CPC, CEC, as amended by the City Ordinance and the 2016 Title 24 Energy Standards.
2. Contractor shall obtain and pay for all necessary permits from all agencies having jurisdiction over the work, except only general building permit.
3. Verify all conditions and dimensions at the job site. Deviations from the Contract Documents shall be reported to the Architect before proceeding with the work. Commencement of work shall be construed as acceptance of all conditions, dimensions, and substrates.
4. All dimensions are face of stud or sheathing and centerline of columns unless noted otherwise.
5. Drawings are not to be scaled; use written dimensions only. Report dimensional discrepancies to the Architect before proceeding with the work.
6. Maintain a complete set of drawings and specifications on the job site at all times, including copies of all the Architect's supplemental instructions, construction change authorizations, reviewed shop drawings and project submittals.
7. Provide construction barriers to conform with the requirements of Local and County agencies.
8. Separate permit required for perimeter retaining walls.

FIRE DEPARMENT NOTES

1. Buildings shall be fully sprinklered per City of Pasadena Fire Department Multi-Family Dwelling Sprinkler Standards.
2. The Fire Lane shall be marked with red curbing and signage. Signage beyond the fire lane shall be provided shwowing the weight capacity of the driveway.
3. Minimum 2A: 10BC fire extinguishers shall be provided showing on the exterior. Max. travel distance from any unit to an extinguisher shall be 75 feet.

SHEET INDEX

TYLER GONZALEZ ARCHITECTS, INC
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Pasadena, CA 91101
626.396.9599

www.TGArchitects.net

Architect of Record

LICENSED ARCHITECT
Robert G. Tyler:
No. C18812
Exp. 8-31-17
STATE OF CALIFORNIA

Issue Dates

No.	Description	Date

Los Robles Condominiums

253 South Los Robles Avenue, Pasadena CA 91101

Use of Architect's Drawings

Sheet No.	Project No.
G-0.0	16-16
	Date: 12/14/17
Drawn By: EZ	Reviewed:
Description: TITLE SHEET	
Scale: 1" = 80'-0"	

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STATE OF CALIFORNIA

Issue Dates

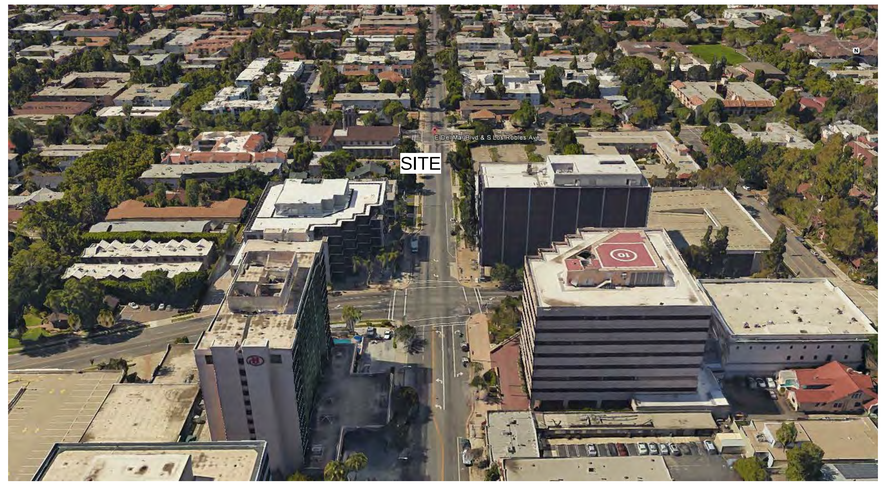
No.	Description	Date

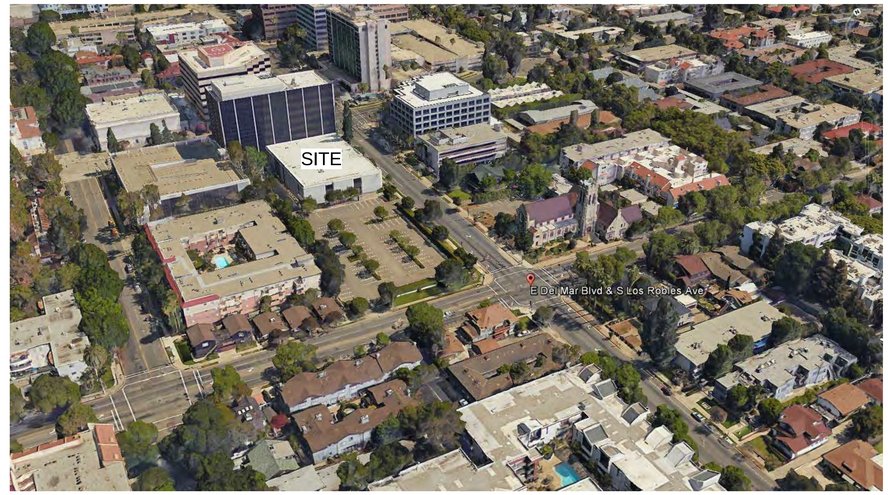
Los Robles Condominiums

253 South Los Robles Avenue, Pasadena CA 91101

Use of Architect's Drawings

Sheet No.	Project No.
G-0.1	16-16
	Date: 12/14/17
Drawn By: Author	Reviewed: Checker
Description: PERSPECTIVES	
Scale	





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Issue Dates

No.	Description	Date

Los Robles Condominiums

253 South Los Robles Avenue, Pasadena CA 91101

Use of Architect's Drawings

Sheet No.	Project No.
G-0.2	16-16
	Date: 12/14/17
Drawn By: Author	Reviewed: Checker

Description: SITE CONTEXT

Scale

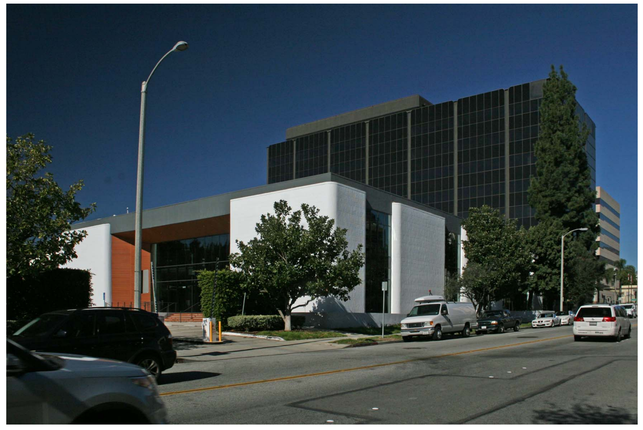
245 W. CORDOVA STREET &
253 S. LOS ROBLES AVENUE

245 W. CORDOVA STREET

245 W. CORDOVA STREET &
253 S. LOS ROBLES AVENUE

253 S. LOS ROBLES AVENUE

245 W. CORDOVA STREET



253 S. LOS ROBLES AVENUE

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Issue Dates

No.	Description	Date

Los Robles Condominiums

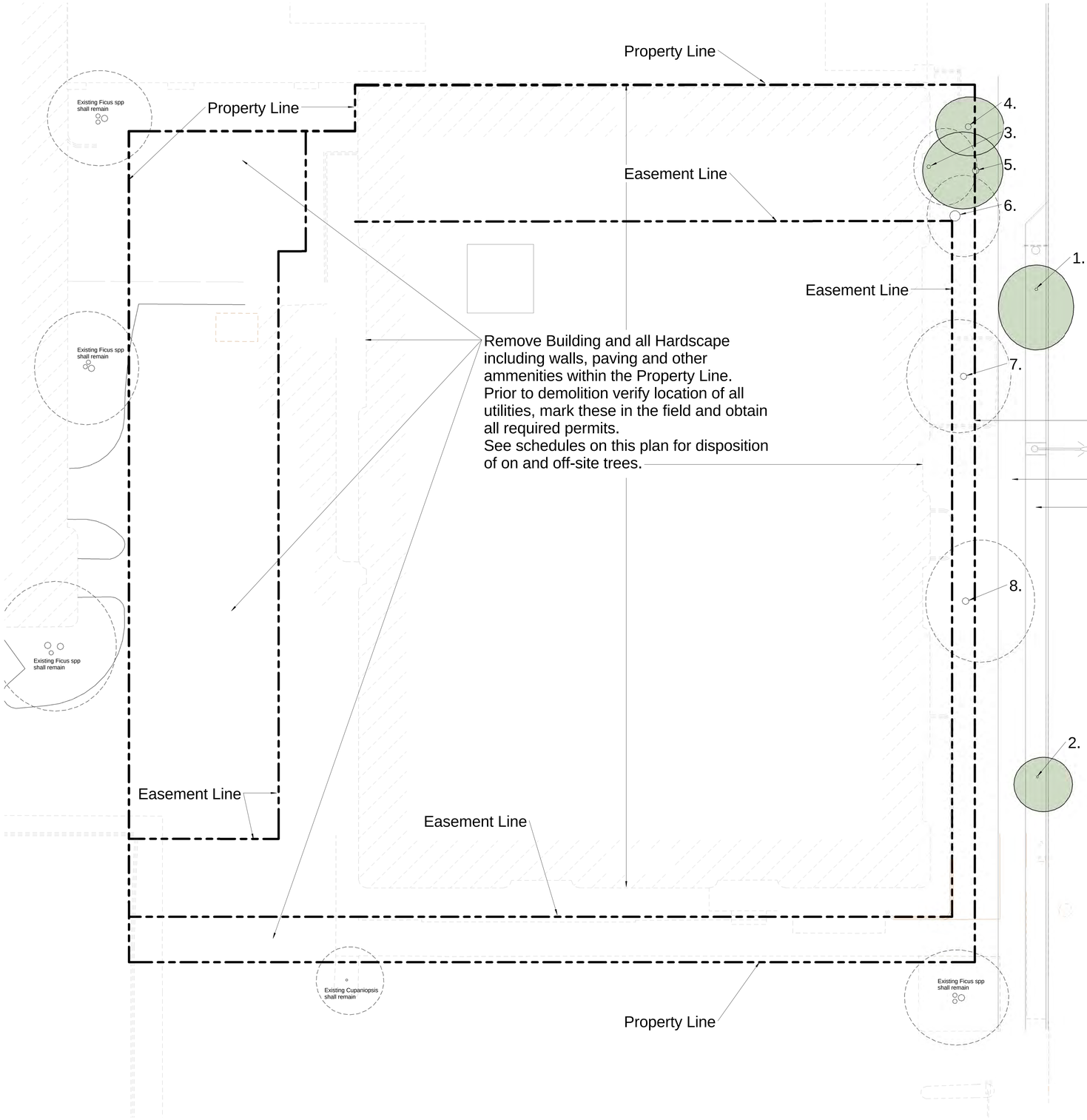
253 South Los Robles Avenue, Pasadena CA 91101

Use of Architect's Drawings

Sheet No.	Project No.
G-0.3	16-16
	Date: 12/14/17
Drawn By: Author	Reviewed: Checker

Description: SITE CONTEXT

Scale



PASADENA PERMIT CENTER
www.cityofpasadena.net/permitcenter

SUPPLEMENT TO MASTER APPLICATION FORM
ENVIRONMENTAL ASSESSMENT (Continued)

TREE INVENTORY FOR PROPERTY LOCATED AT _____

(For hillside project include all trees with a diameter of 4 inches or more. For all other projects, include all trees with a diameter of 8 inches or more.)

Application may not be process if Tree Inventory is not complete or if left blank. If no trees exist on site, indicate "NONE"

Tree #[1]	Scientific Name / Common Name	DHB[2]	Height[3]	Spread	Proposed Status X = Remcve R = Remain L = Relocate	Street tree or public tree? Y = Yes, N = No, U = Unknown
1	Quercus englemannii / Pasadena Oak, Mesa Oak	7.75"	28'	17'	R	Y
2	Quercus engelmannii / Pasadena Oak, Mesa Oak	6"	24'	13'	R	Y
3	Cinnamomum camphora / Camphor Tree	10.5"	45'	18'	X	N
4	Pinus canariensis / Canary Island Pine	16.5"	85'	14'	R	N
5	Pinus canariensis / Canary Island Pine	18"	80'	17'	R	N
6	Pinus canariensis / Canary Island Pine	26"	100'	18'	X	N
7	Podocarpus gracilior / Fern Pine	17.25"	32'	24'	X	N
8	Magnolia grandiflora / Southern Magnolia, Bull Bay	18"	35'	24'	X	N
9		"	'	'		
10		"	'	'		
11		"	'	'		
12		"	'	'		

1 Tree number should match number on the site plan. Show tree location on site plan. Include all street trees and trees in public rights-of-way.
2 Diameter at breast height (DBH) measured at 4 ½ feet above the point where the trunk meets the ground.
3 Estimate the tree height and spread of canopy and provide measurement in feet.

PLANNING AND DEVELOPMENT DEPARTMENT
PLANNING DIVISION
175 NORTH GARFIELD AVENUE
PASADENA, CA 91101
T 626-744-8092
F 626-744-8795

Tree Inventory

Number	Botanical Name / Common Name	DBH in Inches	Height (Feet)	Protected Size	Protected	Spread (N-E-S-W)	Health	Structure	Disposition
1	Quercus engelmannii (Street Tree) / Pasadena Oak, Mesa Oak	7.75"	28'	None	Yes	5'-8'-12'-8'	Good	Average	Save Protect
2	Quercus engelmannii (Street Tree) / Pasadena Oak, Mesa Oak	6"	24'	None	Yes	4'-6'-8'-7'	Average	Average	Save Protect
3	Cinnamomum camphora / Camphor Tree	10.5"	40'	18"	No	7'-11'-12'-3'	Good	Constricted	Remove
4	Pinus canariensis / Canary Island Pine	16.5"	85'	25"	No	6'-8'-7'-7'	Good	Columnar	Save
5	Pinus canariensis / Canary Island Pine	18"	80'	25"	No	9'-11'-8'-5'	Good	Columnar	Save
6	Pinus canariensis / Canary Island Pine	26"	100'	25"	Yes	7'-10'-12'-6'	Good	Columbar	Remove
7	Podocarpus gracilior / Fern Pine	17.25"	32'	20"	No	9'-15'-16'-8'	Good	Good	Remove
8	Magnolia grandiflora / Southern Magnolia, Bull Bay	18"	35'	20"	No	13'-18'-14'6'	Good	Good	Remove

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Robert G. Tyler:
No. C18812
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STATE OF CALIFORNIA

Issue Dates

No.	Description	Date

Los Robles Condominiums

253 South Los Robles Avenue, Pasadena CA 91101

Use of Architect's Drawings

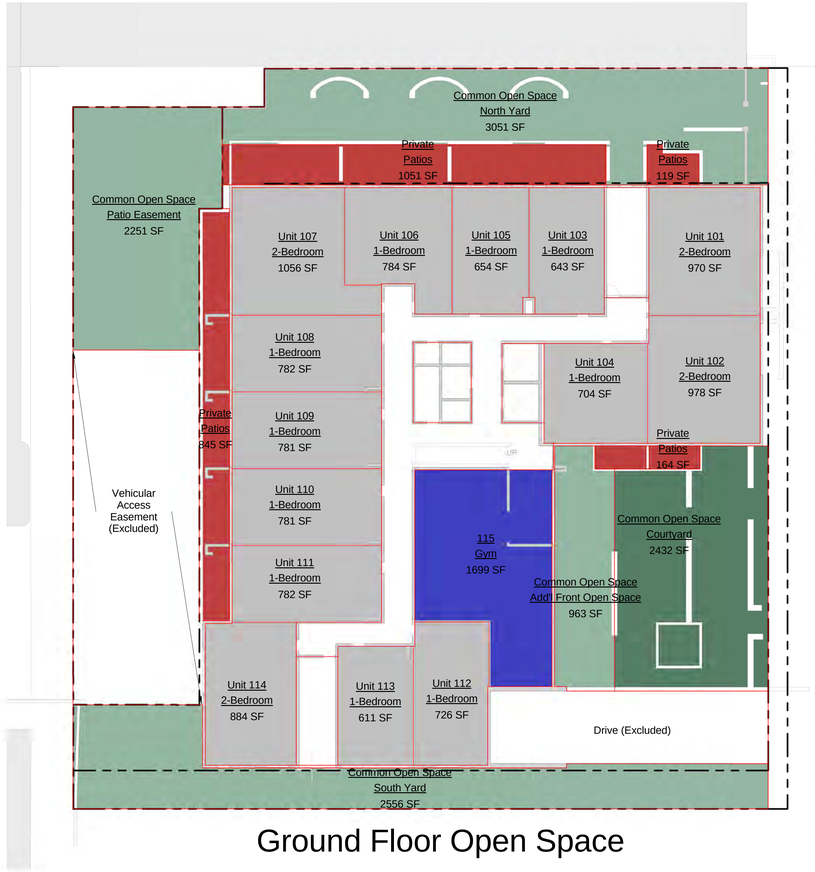
Sheet No.	Project No.
G-0.4	16-16
	Date: 12/14/17
Drawn By: Author	Reviewed: Checker
Description: SURVEY & TREE INVENTORY	
Scale: As indicated	

Area Schedule (Private Open Space)

Name	Number	Area	Area Type	Comments	Level
1st Floor South					
Patios	Private	845 SF	Exterior Area		1st Floor South
Patios	Private	1051 SF	Building Common Area		1st Floor South
Patios	Private	119 SF	Building Common Area		1st Floor South
Patios	Private	164 SF	Building Common Area		1st Floor South
1st Floor South: 4		2180 SF			
2nd Floor					
Balcony	Private	86 SF	Building Common Area	Private	2nd Floor
Balcony	Private	116 SF	Building Common Area	Private	2nd Floor
Balcony	Private	116 SF	Building Common Area	Private	2nd Floor
Balcony	Private	116 SF	Building Common Area	Private	2nd Floor
Balcony	Private	116 SF	Building Common Area	Private	2nd Floor
Balcony	Private	116 SF	Building Common Area	Private	2nd Floor
Balcony	Private	116 SF	Building Common Area	Private	2nd Floor
Balcony	Private	116 SF	Building Common Area	Private	2nd Floor
2nd Floor: 8		899 SF			
3rd Floor					
Balcony	Private	86 SF	Building Common Area	Private	3rd Floor
Balcony	Private	116 SF	Building Common Area	Private	3rd Floor
Balcony	Private	116 SF	Building Common Area	Private	3rd Floor
Balcony	Private	116 SF	Building Common Area	Private	3rd Floor
Balcony	Private	116 SF	Building Common Area	Private	3rd Floor
Balcony	Private	116 SF	Building Common Area	Private	3rd Floor
Balcony	Private	116 SF	Building Common Area	Private	3rd Floor
Balcony	Private	116 SF	Building Common Area	Private	3rd Floor
3rd Floor: 8		899 SF			
4th Floor					
Balcony	Private	86 SF	Building Common Area	Private	4th Floor
Balcony	Private	116 SF	Building Common Area	Private	4th Floor
Balcony	Private	116 SF	Building Common Area	Private	4th Floor
Balcony	Private	116 SF	Building Common Area	Private	4th Floor
Balcony	Private	116 SF	Building Common Area	Private	4th Floor
Balcony	Private	116 SF	Building Common Area	Private	4th Floor
Balcony	Private	116 SF	Building Common Area	Private	4th Floor
4th Floor: 8		899 SF			
5th Floor					
Balcony	Private	86 SF	Building Common Area	Private	5th Floor
Balcony	Private	116 SF	Building Common Area	Private	5th Floor
Balcony	Private	116 SF	Building Common Area	Private	5th Floor
Balcony	Private	116 SF	Building Common Area	Private	5th Floor
Balcony	Private	116 SF	Building Common Area	Private	5th Floor
Balcony	Private	116 SF	Building Common Area	Private	5th Floor
Balcony	Private	116 SF	Building Common Area	Private	5th Floor
Balcony	Private	116 SF	Building Common Area	Private	5th Floor
5th Floor: 8		899 SF			
6th Floor					
Balcony	Private	85 SF	Building Common Area	Private	6th Floor
Balcony	Private	116 SF	Building Common Area	Private	6th Floor
Balcony	Private	116 SF	Building Common Area	Private	6th Floor
Balcony	Private	116 SF	Building Common Area	Private	6th Floor
Balcony	Private	322 SF	Building Common Area	Private	6th Floor
Balcony	Private	116 SF	Building Common Area	Private	6th Floor
Balcony	Private	292 SF	Building Common Area	Private	6th Floor
6th Floor: 7		1163 SF			
Grand total: 43		6938 SF			

Area Schedule (Common Open Space)

Name	Number	Area	Area Type	Comments	Level
Sundeck	Common Open Space	2092 SF	Building Common Area	Open Space	6th Floor
Courtyard	Common Open Space	2432 SF	Building Common Area	Open Space	1st Floor South
E Terrace	Common Open Space	2037 SF	Building Common Area	Open Space	6th Floor
South Yard	Common Open Space	2556 SF	Building Common Area		1st Floor South
North Yard	Common Open Space	3051 SF	Building Common Area		1st Floor South
Add'l Front Open Space	Common Open Space	963 SF	Building Common Area		1st Floor South
Patio Easement	Common Open Space	2251 SF	Building Common Area		1st Floor South
Grand total: 7		15382 SF			



Ground Floor Open Space

2nd-5th Floor
Open Space

6th Floor
Open Space

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Architect of Record

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Robert G. Tyler:
No. C18812
Exp. 8-31-17
STATE OF CALIFORNIA

Issue Dates

No.	Description	Date

Los Robles Condominiums

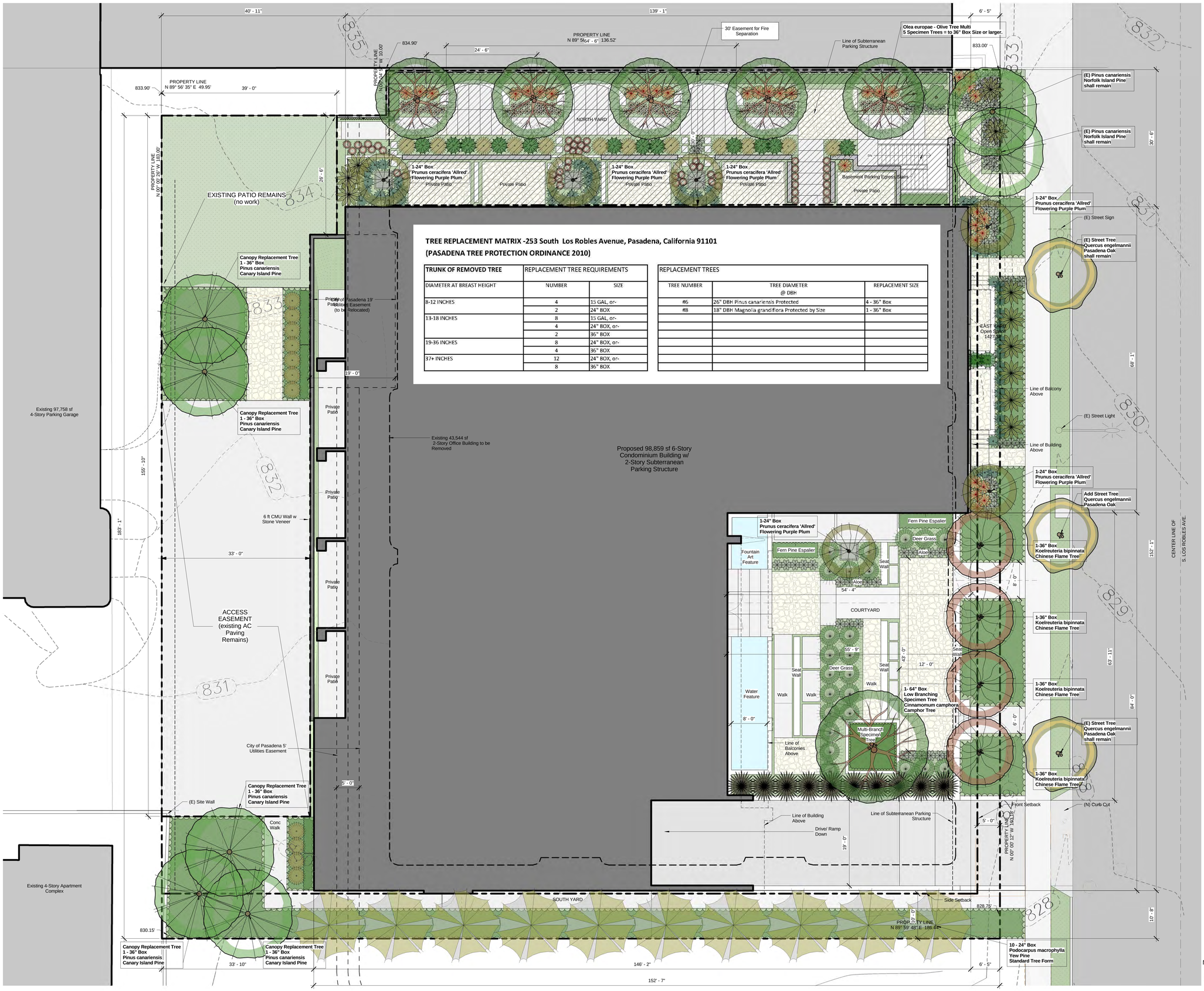
253 South Los Robles Avenue, Pasadena CA 91101

Use of Architect's Drawings

Sheet No.	Project No.
G-0.5	16-16
	Date: 12/14/17
Drawn By: Author	Reviewed: Checker

Description: OPEN SPACE DIAGRAMS

Scale: 1/16" = 1'-0"



TREE REPLACEMENT MATRIX -253 South Los Robles Avenue, Pasadena, California 91101
(PASADENA TREE PROTECTION ORDINANCE 2010)

TRUNK OF REMOVED TREE	REPLACEMENT TREE REQUIREMENTS	
DIAMETER AT BREAST HEIGHT	NUMBER	SIZE
8-12 INCHES	4	15 GAL, or-
	2	24" BOX
13-18 INCHES	8	15 GAL, or-
	4	24" BOX, or-
	2	36" BOX
19-36 INCHES	8	24" BOX, or-
	4	36" BOX
37+ INCHES	12	24" BOX, or-
	8	36" BOX

REPLACEMENT TREES		
TREE NUMBER	TREE DIAMETER @ DBH	REPLACEMENT SIZE
#6	26" DBH Pinus canariensis Protected	4 - 36" Box
#8	18" DBH Magnolia grandiflora Protected by Size	1 - 36" Box

TGA
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253 South Los Robles Avenue, Pasadena CA 91101

Use of Architect's Drawings

Sheet No.	Project No.
A-1.0	16-16
	Date: 12/14/17
Drawn By: Author	Reviewed: Checker

Description

SITE & LANDSCAPE PLAN

Scale: 1/8" = 1'-0"

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Issue Dates

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Use of Architect's Drawings

Sheet No.	Project No.
A-2.0	16-16
	Date: 12/14/17
Drawn By: Author	Reviewed: Checker

Description: GROUND FLOOR PLAN

Scale: 1/8" = 1'-0"

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Issue Dates

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Sheet No.	Project No.
A-2.1	16-16
	Date: 12/14/17
Drawn By: Author	Reviewed: Checker
Description: FLOOR PLANS 2-5	
Scale: 1/8" = 1'-0"	

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Issue Dates

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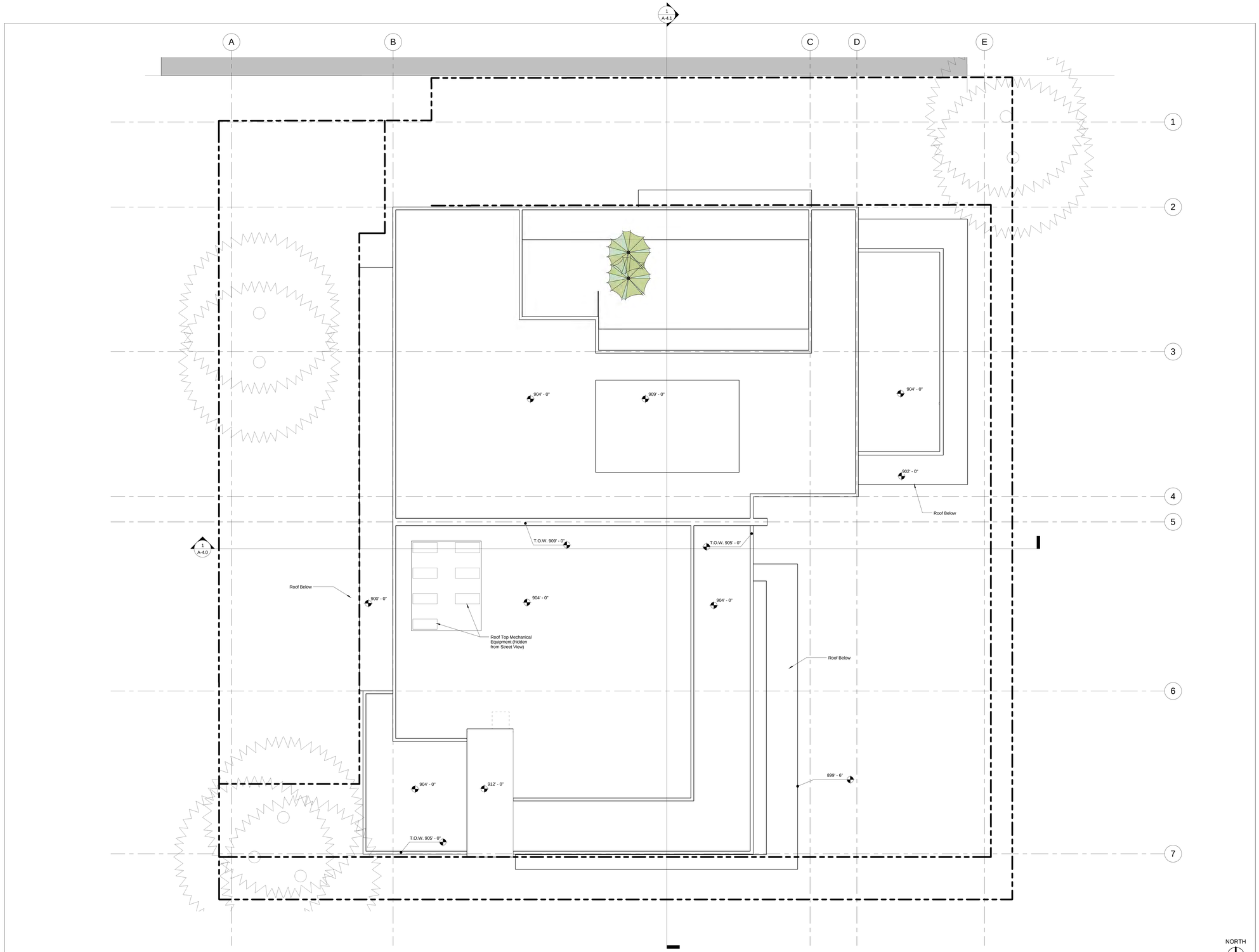
Use of Architect's Drawings

Sheet No.	Project No.
A-2.2	16-16
	Date: 12/14/17
Drawn By: Author	Reviewed: Checker
Description: 6th FLOOR PLAN	
Scale: 1/8" = 1'-0"	



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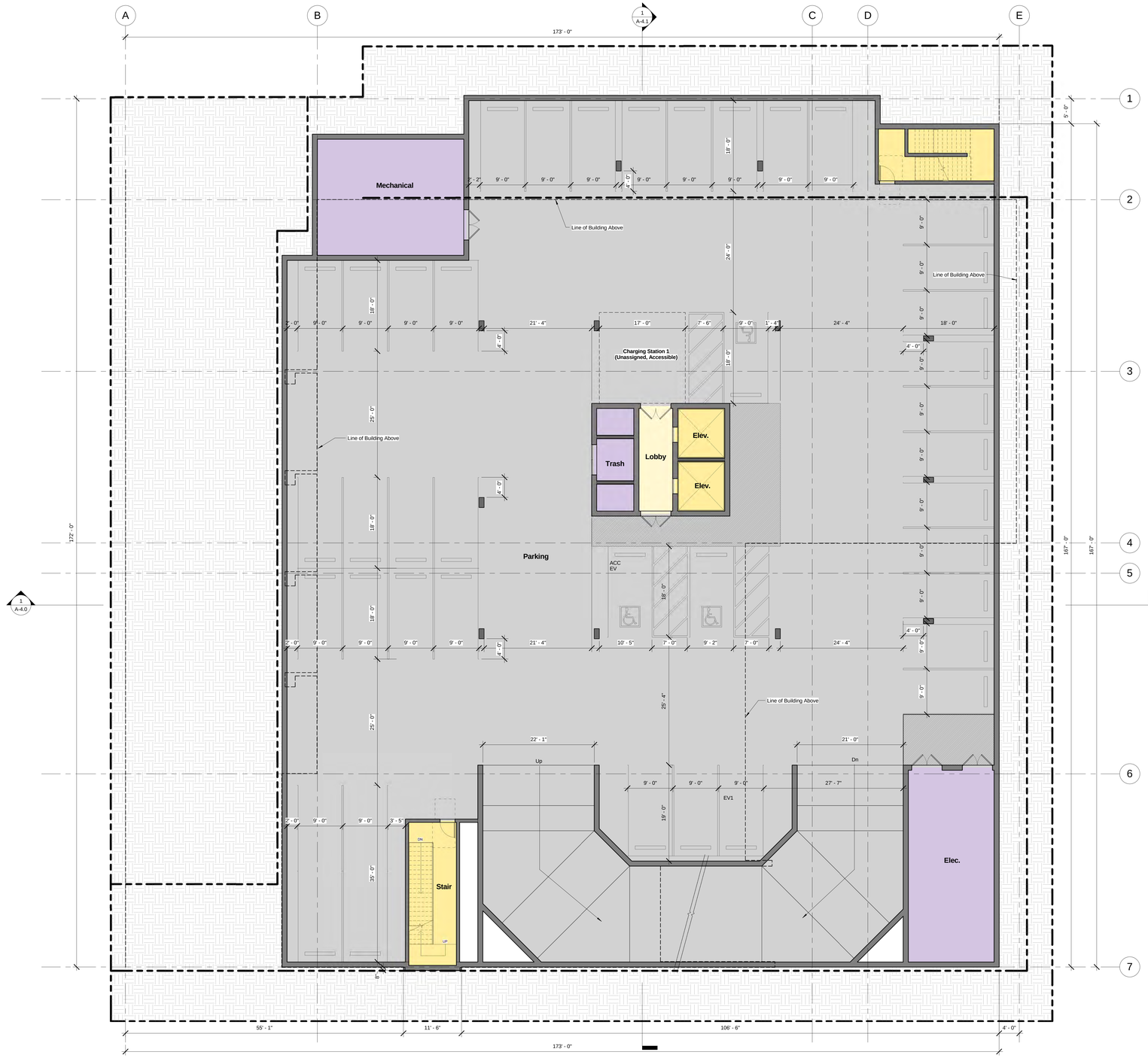
Drawings, specifications, and other documents, including those in electronic form, prepared by the Architect and the Architect's consultants are and shall remain the property of the Architect with respect to this Project. The Architect and the Architect's consultants shall be deemed the authors and owners of their respective instruments of Service and shall retain all common law, statutory and other reserved rights, including copyrights. Visual contact with these documents constitute prima facia acceptance of these conditions.

Sheet No.	Project No.
A-2.3	16-16
	Date: 12/14/17
Drawn By: Author	Reviewed: Checker

Description: ROOF PLAN

Scale: 1/8" = 1'-0"



NORTH

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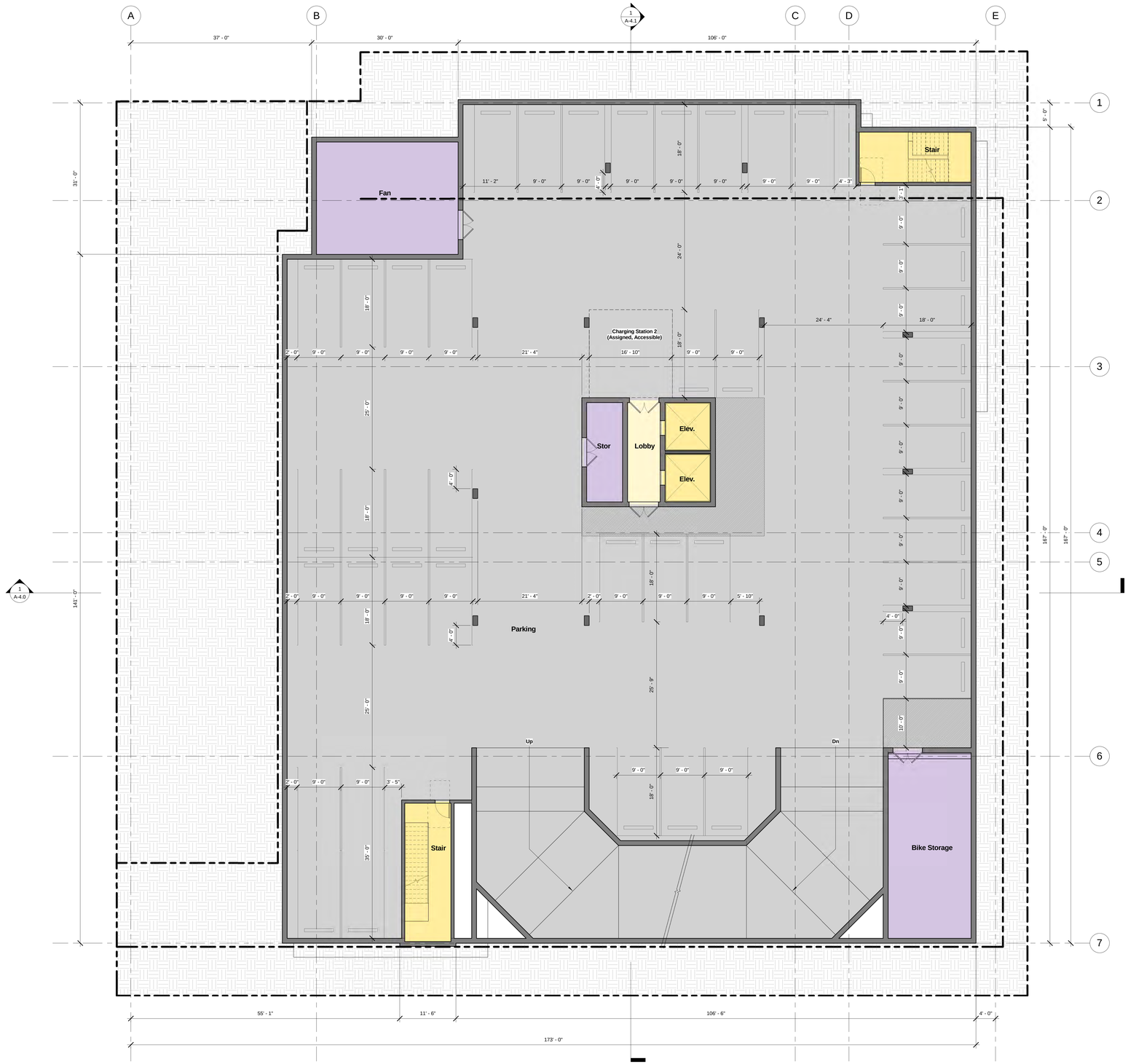
Issue Dates

No.	Description	Date

Los Robles Condominiums

253 South Los Robles Avenue, Pasadena CA 91101

Sheet No.	Project No.
A-2.4	16-16
	Date: 12/14/17
Drawn By: Author	Reviewed: Checker
Description: B1 BASEMENT PLAN	
Scale: 1/8" = 1'-0"	



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Issue Dates

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Los Robles Condominiums

253 South Los Robles Avenue, Pasadena CA 91101

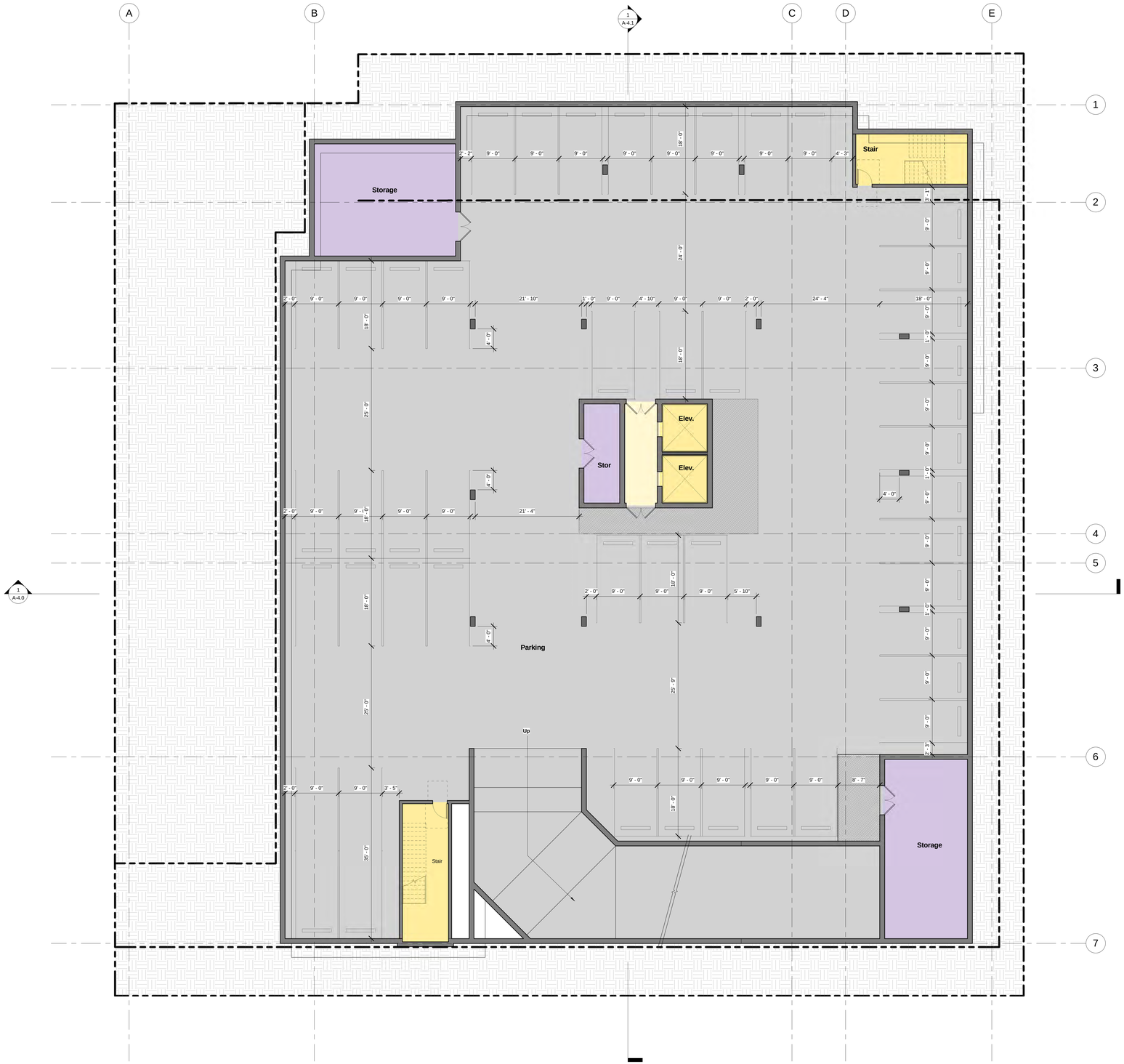
Use of Architect's Drawings

Sheet No.	Project No.
A-2.5	16-16
	Date
	12/14/17
Drawn By	Reviewed
Author	Checker

Description

B2 BASEMENT PLAN

Scale 1/8" = 1'-0"



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Issue Dates

No.	Description	Date

Los Robles Condominiums

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Use of Architect's Drawings

Sheet No.	Project No.
A-2.6	16-16
	Date
	12/14/17
Drawn By	Reviewed
Author	Checker
Description	
B3 BASEMENT PLAN	
Scale	1/8" = 1'-0"

ELEVATION KEYNOTES

1. **La Habra Exterior Plaster**
   Finish: 20/30 Float (Sand)
   Color: X-23 Aspen (Integrated)
2. **Cembrit Rainscreen System**
   Size: 30" Vertical
   Color: True, Antarctic 304
3. **Cembrit Rainscreen System**
   Size: 6" Horizontal
   Color: True, Olympus 309
4. **Cembrit Rainscreen System**
   Size: 6" Horizontal
   Color: True, Kilimanjaro 307
5. **Concrete Wall**
   Finish: Textured
6. **Aluminum Windows & Doors**
   Color: Clear Anodized
7. **Eave w/ Alucobond Fascia**
   Color: Clear Anodized
   Feat: Wood texture underside
8. **Balcony w/ Alucobond Fascia**
   Color: Clear Anodized
   Feat: Wood texture underside
9. **Glass Railing**
10. **Steel Tension Cables**
11. **Steel Eyebrow over Window**
12. **Alucobond Horizontal Sun Shade**
    Color: Clear Anodized
13. **Steel Vertical Privacy Screen**
14. **Rooftop Mechanical** (hidden from Street View)

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No.	Description	Date

Los Robles Condominiums

253 South Los Robles Avenue, Pasadena CA 91101

Sheet No.	Project No.
A-3.0	16-16
	Date: 12/14/17
Drawn By: Author	Reviewed: Checker
Description: EAST ELEVATION	
Scale: As indicated	

399 East Del Mar Townhomes (unbuilt) | Proposed Project | Existing Office Building

Los Robles Street Elevation

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253 South Los Robles Avenue, Pasadena CA 91101

Use of Architect's Drawings

Sheet No.	Project No.
A-3.01	16-16
	Date: 12/14/17
Drawn By: Author	Reviewed: Checker

Description: EAST ELEVATION - CONTEXT

Scale: 1/16" = 1'-0"

ELEVATION KEYNOTES

1. **La Habra Exterior Plaster**
   Finish: 20/30 Float (Sand)
   Color: X-23 Aspen (Integrated)
2. **Cembrit Rainscreen System**
   Size: 30" Vertical
   Color: True, Antarctic 304
3. **Cembrit Rainscreen System**
   Size: 6" Horizontal
   Color: True, Olympus 309
4. **Cembrit Rainscreen System**
   Size: 6" Horizontal
   Color: True, Kilimanjaro 307
5. **Concrete Wall**
   Finish: Textured
6. **Aluminum Windows & Doors**
   Color: Clear Anodized
7. **Eave w/ Alucobond Fascia**
   Color: Clear Anodized
   Feat: Wood texture underside
8. **Balcony w/ Alucobond Fascia**
   Color: Clear Anodized
   Feat: Wood texture underside
9. **Glass Railing**
10. **Steel Tension Cables**
11. **Steel Eyebrow over Window**
12. **Alucobond Horizontal Sun Shade**
    Color: Clear Anodized
13. **Steel Vertical Privacy Screen**
14. **Rooftop Mechanical** (hidden from Street View)

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Issue Dates

No.	Description	Date

Los Robles Condominiums
253 South Los Robles Avenue, Pasadena *CA* 91101

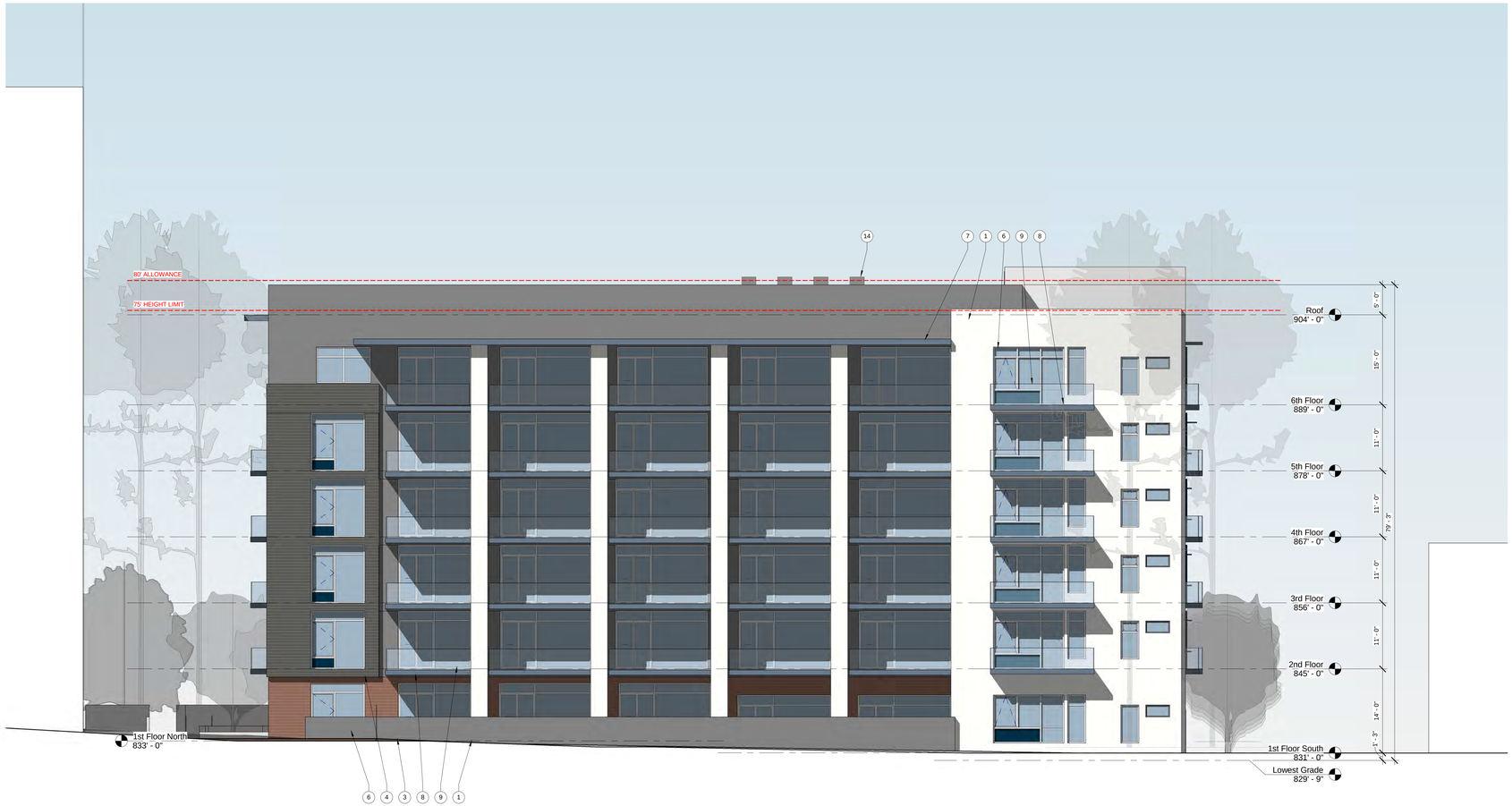
Use of Architect's Drawings

Sheet No.	Project No.
A-3.1	16-16
	Date
	12/14/17
Drawn By	**Reviewed**
Author	Checker

Description

NORTH ELEVATION

Scale: As indicated



ELEVATION KEYNOTES

1. **La Habra Exterior Plaster**
   Finish: 20/30 Float (Sand)
   Color: X-23 Aspen (Integrated)
2. **Cembrit Rainscreen System**
   Size: 30" Vertical
   Color: True, Antarctic 304
3. **Cembrit Rainscreen System**
   Size: 6" Horizontal
   Color: True, Olympus 309
4. **Cembrit Rainscreen System**
   Size: 6" Horizontal
   Color: True, Kilimanjaro 307
5. **Concrete Wall**
   Finish: Textured
6. **Aluminum Windows & Doors**
   Color: Clear Anodized
7. **Eave w/ Alucobond Fascia**
   Color: Clear Anodized
   Feat: Wood texture underside
8. **Balcony w/ Alucobond Fascia**
   Color: Clear Anodized
   Feat: Wood texture underside
9. **Glass Railing**
10. **Steel Tension Cables**
11. **Steel Eyebrow over Window**
12. **Alucobond Horizontal Sun Shade**
    Color: Clear Anodized
13. **Steel Vertical Privacy Screen**
14. **Rooftop Mechanical** (hidden from Street View)

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Issue Dates

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Los Robles Condominiums

253 South Los Robles Avenue, Pasadena CA 91101

Use of Architect's Drawings

Sheet No.	Project No.
A-3.2	16-16
	Date 12/14/17
Drawn By Author	**Reviewed** Checker

Description

WEST ELEVATION

Scale: As indicated

ELEVATION KEYNOTES

1. **La Habra Exterior Plaster**
   Finish: 20/30 Float (Sand)
   Color: X-23 Aspen (Integrated)
2. **Cembrit Rainscreen System**
   Size: 30" Vertical
   Color: True, Antarctic 304
3. **Cembrit Rainscreen System**
   Size: 6" Horizontal
   Color: True, Olympus 309
4. **Cembrit Rainscreen System**
   Size: 6" Horizontal
   Color: True, Kilimanjaro 307
5. **Concrete Wall**
   Finish: Textured
6. **Aluminum Windows & Doors**
   Color: Clear Anodized
7. **Eave w/ Alucobond Fascia**
   Color: Clear Anodized
   Feat: Wood texture underside
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   Color: Clear Anodized
   Feat: Wood texture underside
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Use of Architect's Drawings

Sheet No.	Project No.
A-3.3	16-16
	Date: 12/14/17
Drawn By: Author	Reviewed: Checker
Description: SOUTH ELEVATION	
Scale: As indicated	

1 EAST-WEST SECTION LOOKING NORTH
1/8" = 1'-0"

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Issue Dates

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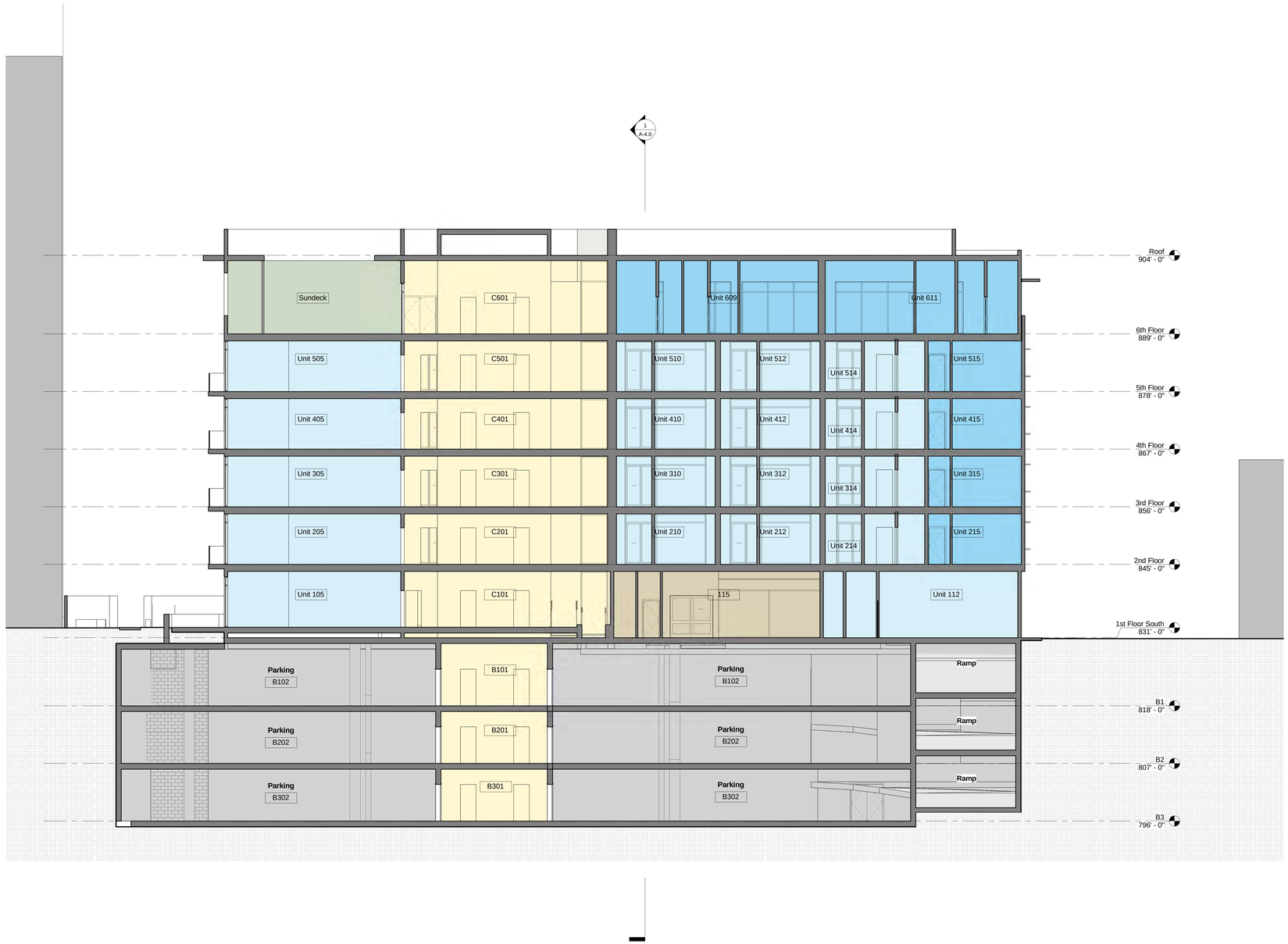
Use of Architect's Drawings

Sheet No.	Project No.
A-4.0	16-16
	Date: 12/14/17
Drawn By: Author	Reviewed: Checker
Description: BUILDING SECTION N-S	
Scale: 1/8" = 1'-0"	



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No.	Description	Date

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Use of Architect's Drawings

Sheet No.	Project No.
A-4.1	16-16
	Date: 12/14/17
Drawn By: Author	Reviewed: Checker

Description

BUILDING SECTION E-W

Scale: 1/8" = 1'-0"

Attachment B

City of Pasadena, Department of Transportation, Transportation Impact Analysis, CEQA Evaluation

MEMORANDUM

PASADENA
DEPARTMENT OF TRANSPORTATION

DATE: February 7, 2018

TO: Kelvin Parker, Zoning Administrator
Planning and Development Department

FROM: Mike Bagheri MB
Transportation Planning and Development Manager

RE: Transportation Impact Analysis – Acceptance Letter (CEQA)
CASE: 253 South Los Robles Avenue

The City of Pasadena Department of Transportation conducted a transportation analysis to review potential transportation impacts related to the demolition of a vacant 43,500 square-foot commercial office building, and the construction of a new six-story building with 92 residential condominiums and two levels of underground parking.

This report analyzed the impact the development will have on the City transportation system using the City's calibrated travel demand forecasting model (TDF) by estimating incremental changes in vehicle miles traveled (VMT) per capita, vehicle trips per capita (VT), along with the project impact on service population proximity access to transit and bike facilities, and walk accessibility score.

The project does not exceed any thresholds outlined in DOT's current Transportation Impact Analysis Guidelines.

If you have any questions, please feel free to contact me at extension 7208.

CC: Frederick C. Dock, Director of Transportation
Yannie Wu, Principal Engineer, Public Works
Bob Sulistio, Associate Engineer, Public Works
Talyn Mirzakhanian, Senior Planner, Planning Department

MXB:clv

PASADENA
DEPARTMENT OF TRANSPORTATION

Transportation Impact Analysis

CEQA Evaluation

Category 2

Project Address: 253 South Los Robles Avenue

Project Summary: Demolition of a vacant 43,544 square-foot commercial office building, and the construction of a new six-story building with 92 residential condominiums and two levels of underground parking.

Applicant:
Burke Farrar
Odyssey Development Services
711 East Walnut Street, Suite 108
Pasadena, CA 91101

Attention:
Kelvin Parker, Zoning Administrator
City Planning Department

February 5, 2018

Table of Contents

List of Figures

List of Tables

I. Study Objective

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

II. Project Description

The City of Pasadena Department of Transportation conducted an analysis to review potential transportation impacts related to the construction of a new six-story building with 92 residential condominiums and two levels of underground parking.

Figure 1 depicts the project site plan. Vehicular site access is along Los Robles Avenue.

III. Existing Transportation Network

Street System Classifications

Colorado Boulevard is an east-west principal arterial with two travel lanes in each direction. The City of Pasadena's adopted street classification for this roadway is **City Connector**. The posted speed limit is 25 miles per hour in the business district.

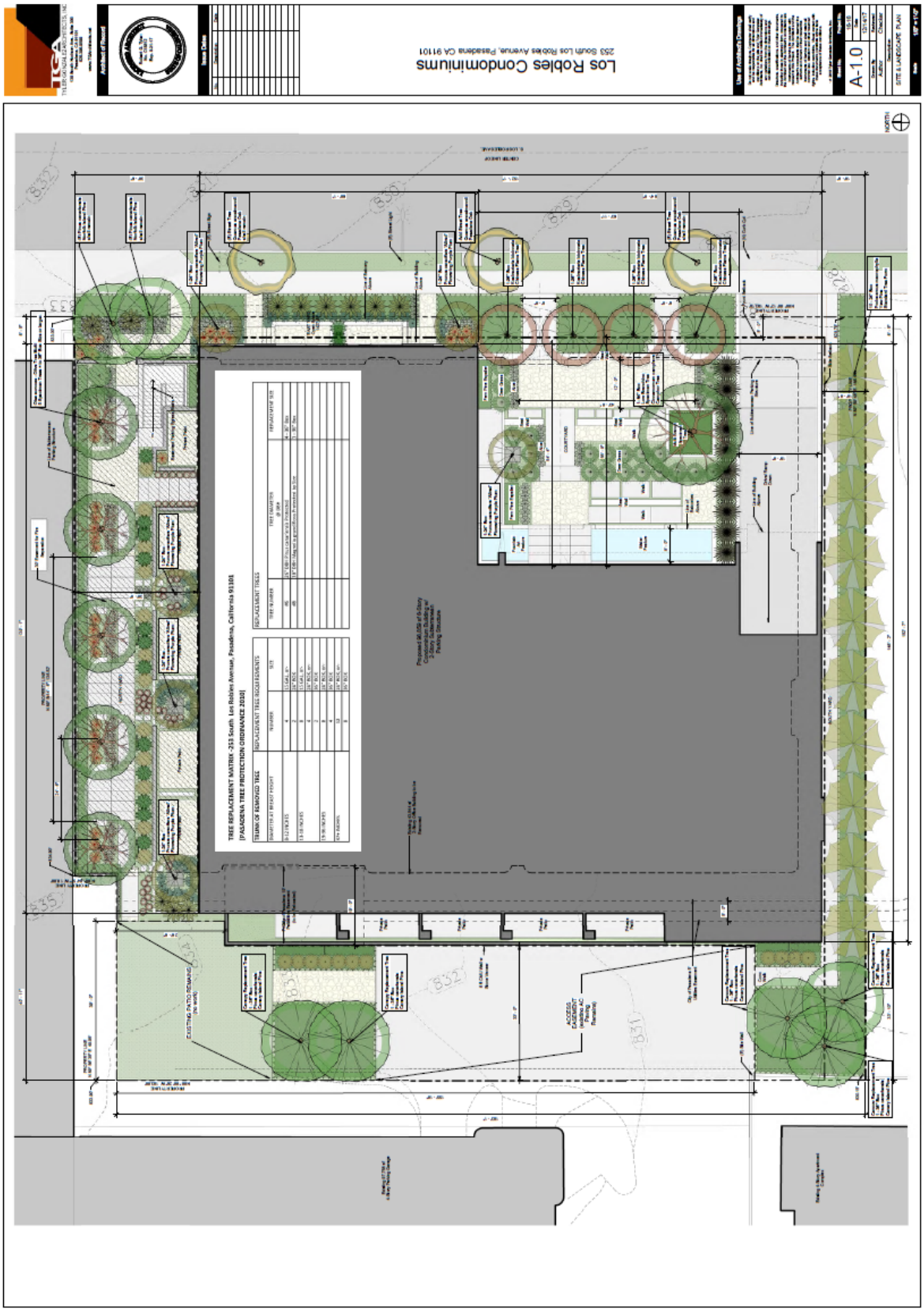
Green Street is a one-way collector roadway that runs in the eastbound direction and is classified as a multimodal corridor between Fair Oaks Avenue and Hill Avenue. The City of Pasadena's adopted street classification for this roadway is a **City Connector**. The speed limit is 30 mph.

Cordova Street is an east-west collector with two travel lanes in each direction. The City of Pasadena adopted street classification for this roadway is **Neighborhood Connector**. The posted speed limit is 35 mph.

Del Mar Boulevard is an east-west minor arterial which provides two travel lanes in each direction. The City of Pasadena's adopted street classification for this roadway is a **City Connector**. The posted speed limit is 35 miles per hour. Del Mar Boulevard east of Wilson Ave has a Class III enhanced bike route.

Marengo Avenue is a north-south roadway classified as a minor arterial. The City of Pasadena's adopted street classification for this roadway is a **City Connector**. This roadway is designated as a Class II bike lane south of Del Mar Boulevard and as a Class III bike route between Del Mar Boulevard and Orange Grove Boulevard. Marengo Avenue is 25 mph south of Walnut Street to Del Mar Boulevard.

Figure 1. Project Site Plan



Los Robles Avenue is classified as a primary arterial roadway that provides local and regional circulation in the vicinity of the project. It is classified as a multimodal corridor in the 2004 Mobility Element north of Del Mar Boulevard. The City of Pasadena's adopted street classification for this roadway is a **City Connector**. This roadway traverses in a north-south direction, and offers two lanes in each direction south of Villa Street. Near the project vicinity, a speed limit of 30 miles per hour is posted on this roadway. This roadway is designated as a Class III enhanced bike route facility with "Share the Road" signs.

Union Street is a one-way westbound roadway. The posted speed limit is 30 miles per hour east of Garfield Avenue. The City of Pasadena's adopted street classification for this roadway is a **City Connector**.

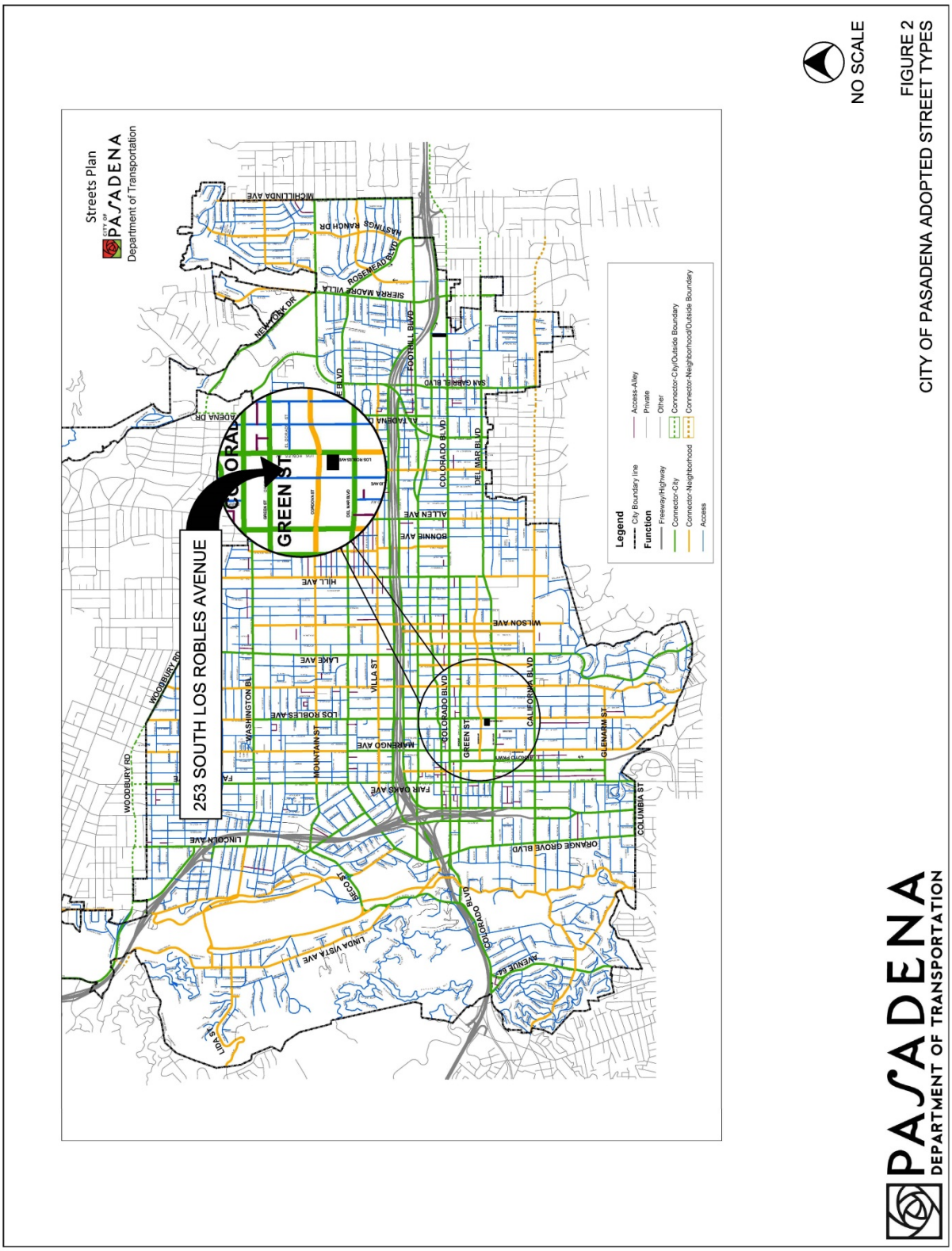
Figure 2 depicts the project within the context of the City of Pasadena's Adopted Street Types map.

Existing Transit Service

Public transit service within the project study area is currently provided by LA Metro (Metro) and LA Department of Transportation (LADOT). The project occupants will have adequate access to the City's transit network within a quarter mile radius from the project address. The locations of public transit stops near the project are summarized in the following table:

Location	**Route**
Los Robles Ave northbound Cordova St far -side	Metro 267/264; LADOT 549
Los Robles Ave southbound Cordova St far-side	Metro 267/264
Cordova Street eastbound Los Robles Avenue far-side	LADOT 549
Los Robles Avenue northbound Del Mar Boulevard far-side	Metro 267/264
Los Robles Avenue northbound Green Street far-side	Metro 267/264
Del Mar Boulevard eastbound Los Robles Avenue far-side	Metro 267/264
Los Robles Avenue southbound Green Street far-side	Metro 267/264

Figure 2. City of Pasadena Adopted Street Types Map



IV. Transportation Impact Analysis Methodology

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

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

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

Analysis Purpose

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

Analysis Threshold Criteria - Transportation Performance Measures

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

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

- Pedestrian Accessibility

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

Definitions

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

Table 1. City of Pasadena CEQA Transportation Thresholds of Significance

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

<u>VMT Per Capita</u>

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

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

VT Per Capita

Vehicle Trips (VT) per Capita is a measure of motor vehicle trips associated with the City. The measure sums the trips with origins and destination within the City of Pasadena, as generated by the 2013 Trip-based citywide Travel Demand Model. The regional VT is calculated by adding the VT associated with trips generated and attracted within City of Pasadena boundaries, and 50% of the VT associated with trips that either begin or end in the City, but have one trip end outside of the City. The City's VT is then divided by the City's total service population, defined as the population plus the number of jobs.

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

Proximity and Quality of Bicycle Network

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

Table 2. Bicycle Facilities Hierarchy

LEVEL	DESCRIPTION	FACILITIES INCLUDED
1	Advanced Facilities	Bike Paths (P1) Multipurpose Paths (PP) Cycle Tracks/Protected Bike Lanes
2	Dedicated Facilities	Buffered Bike Lanes Bike Lanes (2, P2) Bike Boulevards (BB)
3	Basic Facilities	Bike Routes (3, P3) Enhanced Bike Routes (E3, PE3) Emphasized Bikeways (PEB)

For each bike facility level, a quarter-mile network distance buffer is calculated and the total service population (population + jobs) within the buffer are added.
The City can improve measures of Bike Facility Access by improving and expanding existing bike facilities and by encouraging residential and commercial development in areas with high-quality bike facilities. Figure 3A depicts the project location in relation to the bike facility level in the area.

Figure 3 A. Bike Facility Map

Proximity and Quality of Transit Network

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

Table 3. Description of Transit Facilities

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

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

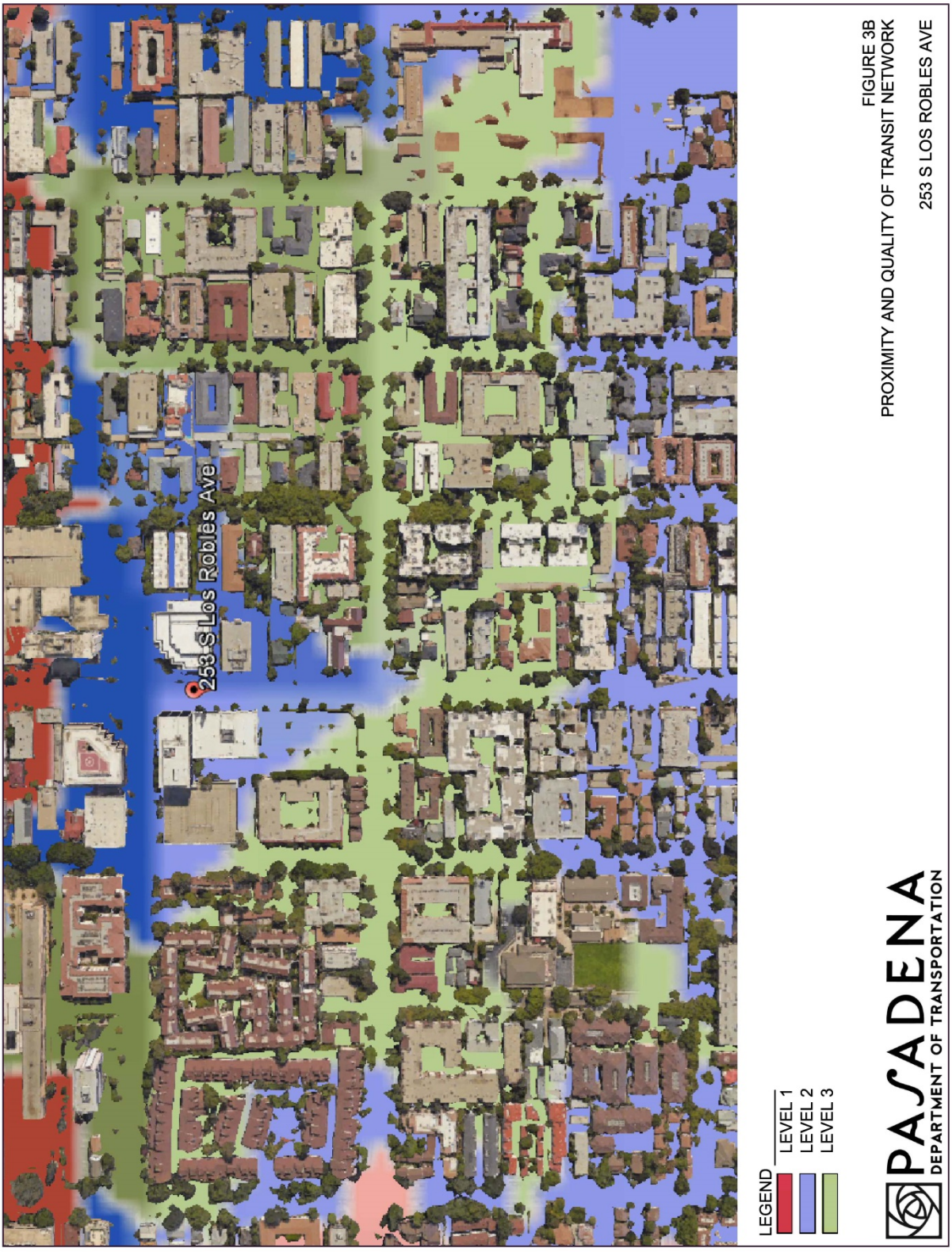
The City can improve the measures of Transit Proximity and Quality by reducing headways on existing transit routes, by expanding transit routes to cover new areas, and by encouraging residential and commercial development to occur in areas with an already high-quality transit service. Figure 3B depicts the project location in relation to the transit facility level in the area.

Pedestrian Accessibility

Proximity and Quality of Pedestrian Environment score provides a measure of the average walkability in the Traffic Analysis Zones (TAZs) surrounding Pasadena residents, based on a Pedestrian Accessibility metric. The Pedestrian accessibility metric is a simple count of the number of land use types accessible to a Pasadena resident or employee in a given TAZ within a 5-minute walk. The ten categories of land uses are:

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

Figure 3 B. Transit Facility Map



V. Project Transportation Impact Analysis

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

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

The results are based on the project's vehicular and non-vehicular trip making characteristics, trip length, and its interaction with other surrounding/citywide land uses, and the City's transportation network.

VMT per Capita Analysis

The TDF model calculation results indicated that the project's incremental VMT per capita change is 12.6. The incremental change does not exceed the adopted caps of significance under the Vehicle Miles Traveled (VMT) per capita of 22.6. Therefore, the project does not cause a significant impact to VMT per capita.

VT per Capita Analysis

The TDF model calculation results indicated that the incremental VT per capita change is 2.1. This incremental change does not exceed the adopted caps of significance under the Vehicle Trips (VT) per capital of 2.8. Thus, the project does not cause a significant impact to VT per capita.

Proximity and Quality of Bicycle Network Analysis

Any decrease in the existing City-wide service population percentage of 31.7% within a quarter mile of bicycle facilities will indicate a significant impact. The TDF model calculation determined that the service population percentage with the project will be 31.7%. The project does not cause a significant impact on the existing bicycle network.

Proximity and Quality of Transit Network Analysis

Calculation of this metric provides a measure of the percent of the City's population and jobs within a quarter mile of transit facility types. Any decrease in the existing City-wide service population percentage of 66.6% within a quarter mile of transit facilities will indicate a significant impact. The TDF model calculation determined that the service population percentage with the project will be 66.7%. The project does not cause a significant impact on the existing transit network.

Pedestrian Accessibility Analysis

The proximity and quality of pedestrian environment provides a measure of the average walkability in the TAZ surrounding Pasadena residents, based on a Pedestrian Accessibility score. The score is a simple count of the number of land use types accessible to the resident in a given Transportation Analysis Zone (TAZ) within a 5-minute walk. Any decrease in the calculated Pedestrian Accessibility score of 3.88 will indicate a significant impact with the addition of the project. The TDF model results revealed that the pedestrian accessibility score will be 3.88. Therefore, the project does not cause a significant impact.

Table 4 summarizes the analyses of the proposed project's impacts on the transportation system using the calibrated TDF model.

Table 4. Transportation Performance Metrics Summary

Transportation Performance Metrics	Significant Impact Cap (existing)	Incremental change (existing + project)	Significant Impact?
VMT Per Capita	>22.6	12.6	No
VT Per Capita	>2.8	2.1	No
Proximity and Quality of Bicycle Network	<31.7%	31.7	No
Proximity and Quality of Transit Network	<66.6%	66.7	No
Pedestrian Accessibility	<3.88	3.88	No

VI. Conclusion

The City of Pasadena Department of Transportation conducted an analysis to review potential transportation impacts related to the construction of 92 residential condominiums and two levels of underground parking.

The City's Transportation Demand Model determined that the proposed project does not cause a significant impact.

VII. Appendices

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

Appendix:
Memorandum of Understanding

Assessor's Parcel Number: ***5722-030-162***

General Plan
Land Use Designation: ***Medium Mixed Use***

Zoning District: CD-2/ Mid Town Civic Auditorium

Existing Buildings to be Removed: 43,544 sf 2-Story Office Building

Proposed Building(s): One New Building:
6 Above-grade Habitable Levels
2 Below-grade Parking Levels

Lot Area: 35,502 sf

Base Density Allowed: 87 Dwelling Units/ Acre = 71

29.6% Density Bonus Proposed

Market Rate	= 84
Very Low Income	= 8
Total	= 92

Designated Very Low Income Units

2 BR:	215, 415
1 BR:	204, 305, 316
	404, 505, 516

Building Area, Height, Open Space Summary

Base F.A.R. Allowed: 2.25 x 35,502 sf = 79,879 sf
Concession Proposed: to 2.65 x 35,502 sf = 94,165 sf

Height Limit: 60 (75) Height Averaging Allowed
Concession Proposed: to 80'-0" (no averaging)**

**Heights not including appertenances, See Sheet A-2.3 for more information

Open Space Coverage:
Required (30% of Net Area) = .3 x 74,060 sf
= 22,218 sf

Proposed

Common	Courtyard	2,432 sf	
	Add'l Front	963 sf	(Courtyard & Drive Excluded)
	North Yard	3,051 sf	
	Patio Easmt	2,251 sf	
	South Yard	2,556 sf	
	6th Floor	2,037 sf	East Terrace
	6th Floor	2,092 sf	Sundeck
Subtotal Common Open Space		15,382 sf	

Private Balconies (Max 35%) (Minimum Dimension = 6'-0" Typ.)

1st Floor	2,180 sf	(Patios)
2nd Floor	899 sf	(Balconies)
3rd Floor	899 sf	(Balconies)
4th Floor	899 sf	(Balconies)
5th Floor	899 sf	(Balconies)
6th Floor	1,163 sf	(Balconies)
Subtotal Balcony Open Space	6,938 sf (= 31.1% < 35% - OK)	

Total Open Space Proposed 22,320 sf > 22,218 sf (OK)

Parking:

1-Bedroom Units	64 Spaces
64 Units x (1 space per Unit)	
2-Bedroom Units	56 Spaces
28 Units x (2 spaces per Unit)	
Visitor	9 Spaces
[Min: 92 Units x (0.10 spaces per Unit)]	
Total Spaces Required =	**129**

Proposed

Basement 1	41
Basement 2	43
Basement 3	47
Total	***131***

Tandem Stalls	12
Max. Allowed	30%
Proposed	9%

Loading:

Required	None
Proposed	None

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

Daily Trips	Internal	External
Internal	351,074	335,942
External	335,942	491,156

Pop	136,126
Emp	111,348
Ext. Factor	50%

FINAL REDUCED DAILY VMT BY SPEED BIN					EMFAC
Speed	**Internal**	**External**	**Regional**	**Total**	**INPUT**
5	109	0	1,740	1,849	0%
10	672	135	14,351	15,158	0%
15	4,138	1,272	45,856	51,266	1%
20	16,828	4,554	75,159	96,541	2%
25	96,297	12,622	150,148	259,067	5%
30	489,214	61,377	275,019	825,610	15%
35	824,735	139,370	320,125	1,284,230	23%
40	200,956	55,887	225,405	482,248	9%
45	136,006	104,900	169,342	410,248	7%
50	113,994	2,075	211,672	327,741	6%
55	94,166	7,974	229,235	331,376	6%
60	120,005	15,080	238,048	373,132	7%
65	323,520	20,894	181,003	525,416	9%
70	3,633	0	528,892	532,524	11%
75	0	0	77,281	77,281	
80	0	0	0	0	
85	0	0	0	0	
SUM	**2,424,274**	**426,139**	**2,743,277**	**5,593,690**	**100%**

TOTAL RAW DAILY SUMMARY					
Metric	**Internal**	**External**	**Regional**	**Total**	**Capita**
VMT	2,424,274	852,278	5,486,553	8,763,105	35.4
VT	351,074	671,884	-	1,022,957	4.1
Length	6.9	1.3	-	8.6	-

REDUCED DAILY SUMMARY					
Metric	**Internal**	**External**	**Regional**	**Total**	**Capita**
VMT	2,424,274	426,139	2,743,277	5,593,690	22.6
VT	351,074	335,942	-	687,015	2.8
Length	6.9	1.3	-	8.1	-

FINAL DAILY SCENARIO SUMMARY					
Pop	**Emp**	**VMT**	**VT**	**VMT/Cap**	**VT/Cap**
136,126	111,348	5,593,690	687,015	22.6	2.8

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

INCREMENTAL SCENARIO RESULTS					
Pop	**Emp**	**VMT**	**VT**	**VMT/Cap**	**VT/Cap**
188	0	2,361	396	12.6	2.1
				PASS	PASS

Proximity and Quality of Bicycle Network

Existing

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

Existing + Project

Facility Type	Service Population	Serice Population Adjustment	Final Service Population	Percent of Service Population
Level 2	78,415		78,415	31.7%
Level 3	123,670	187.68	123,858	50.1%
No Facility	45,202		45,202	18.3%
Exist City Total	247,286	187.68	247,474	100.1%

Proximity and Quality of Transit Network

Existing

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

Existing + Project

Facility Type	Service Population	Serice Population Adjustment	Final Service Population	Percent of Service Population
Level 1	90,600		90,600	36.6%
Level 2	74,298	187.68	74,485	30.1%
Level 3	50,495		50,495	20.4%
No Facility	31,893		31,893	12.9%
Exist City Total	247,286	187.68	247,474	100.1%

				Weighted Average:	3.883521706	Average:	2.702
PasadenaDTATAZ	Land Use Types	Population_In_TAZ	Employment_In_TAZ	Service_Population	Land Use Types	Min:	0.000
69	5	231	1020	1251	5		

Attachment C
ESA, Noise Technical Report

253 SOUTH LOS ROBLES AVENUE MULTI-FAMILY PROJECT

Noise Technical Report

Prepared for
City of Pasadena
175 N Garfield Avenue
Pasadena, CA 91101

July 2018

253 SOUTH LOS ROBLES AVENUE MULTI-FAMILY PROJECT

Noise Technical Report

Prepared for
City of Pasadena
175 N Garfield Avenue
Pasadena, CA 91101

July 2018

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EXECUTIVE SUMMARY

Zhuang & Zhong Los Robles, LLC (the Applicant) proposes to develop the Los Robles Condominiums (Project) a residential development containing 92 condominium units, located at 253 South Los Robles Avenue in the City of Pasadena (City). The Project Site is an approximately 0.815 acre (35,501 square-foot [SF]) rectangular site (Project Site) located on the west side of Los Robles Avenue, south of Cordova Street. In accordance with the requirements under the California Environmental Quality Act (CEQA), this Technical Report describes the existing noise environment in the Project area, estimates future noise and vibration levels at surrounding land uses resulting from construction and operation of the Project, and identifies the potential for significant impacts.

The Project would consist of a 94,165 SF, six-story, residential building. Overall, the Project would consist of 92 condominium units, a 1,699 SF gym, 22,320 SF of open space, including a 6th Floor Terrace and Sundeck, and a 68,668 SF three-level subterranean parking garage. The Project includes demolition of all existing on-site buildings and features, excavation to accommodate the subterranean parking levels, and the construction of the new residential building.

The report summarizes the potential for the Project to conflict with applicable noise and vibration regulations, standards, and thresholds. The findings of the analyses are as follows:

- Construction of the Project would not exceed the City's construction noise standards. Thus, the Project would not result in a substantial temporary or periodic increase in noise and impacts would be less than significant.

- Operation of the Project would not exceed the City's traffic or operational stationary source noise standards. Thus, the Project would not result in a substantial permanent increase in ambient noise levels in the vicinity of the Project above levels existing without the Project and impacts would be less than significant.

- The Project would not result in the generation of excessive groundborne vibration or groundborne noise levels from construction or operational activities. Thus, the Project would result in a less than significant impact from groundborne vibration and groundborne noise.

1.0
Introduction

ESA has conducted an acoustical study to evaluate the potential noise and vibration impacts associated with construction activities, surface transportation, and other aspects of Project construction and operations that have the potential to impact noise sensitive land uses. The objectives of this noise study are to:

- Quantify the existing ambient noise environment at the Project Site;
- Evaluate the construction and operational noise and vibration impacts to noise sensitive receptors (i.e., residential uses) based on applicable standards and thresholds;
- Provide, if needed, noise mitigation measures as required to meet applicable noise regulations and standards as specified by the City of Pasadena.

1.1 Existing Conditions

Zhuang & Zhong Los Robles, LLC (the Applicant) proposes to develop the Los Robles Condominiums (Project) located at 253 South Los Robles in the City of Pasadena (City). The Project Site is an approximately 0.815 acre (35,501 SF) rectangular-shaped site (Project Site) located on the west side of Los Robles Avenue, south of Cordova Street. The Project Site is also located near public transportation options including bus stops approximately 50 feet east of the Project Site at the intersection of South Los Robles Ave/Cordova Street, 220 feet northeast of the Project site along Cordova Street, and 310 feet north of the Project Site along South Los Robles Ave, and the Metro Gold Line Del Mar Station is located approximately 0.35 miles west of the Project Site. The Project Site is shown in **Figure 1**, *Vicinity Location Map.* The Project Site is in close proximity to a mix of residential uses, commercial and a school.

The Project Site is currently developed with a 43,544 SF office building that is currently vacant and a 9,160 SF parking lot. **Figure 2**, *Aerial Photograph of Project Site and Vicinity*, shows the Project Site and surrounding land uses.

SOURCE: Google Earth Pro, basemap, 2018; ESA, 2018

253 S Los Robles Avenue Project

Figure 1
Vicinity Location Map

ESA

D170931.00 - 253 South Los Robles Avenue Multi-Family Project\05 Graphics-GIS-Modeling\Illustrator

D170931.00 - 253 South Los Robles Avenue Multi-Family Project\05 Graphics-GIS-Modeling\Illustrator

SOURCE: Google Earth Pro, basemap, 2018; ESA, 2018

253 S Los Robles Avenue Project

Figure 2
Aerial Photograph of Project Site and Vicinity

ESA

1.2 Project Description

The Project would consist of a 94,165 SF, six-story, residential building containing 92 condominium units, which includes a 1,699 SF gym, and 22,320 SF of open space including a 6th Floor Terrace and Sundeck. Parking would be provided in a three-level subterranean parking garage with 131 spaces and totaling 69,668 SF. Project construction would include the demolition of current on-site structures, grading to prepare the Site for new development, excavation to accommodate the subterranean parking and basement levels, and the construction, architectural coating, and paving of the commercial building.

The Project site is located in the CD-2 (Central District Specific Plan) zoning district in the City of Pasadena and is currently developed with one vacant office building. An Affordable Housing Concession Permit and design review approval is required for the Project.

1.3 Noise and Vibration Descriptors

1.3.1 Noise

Noise is most often defined as unwanted sound. Although sound can be easily measured, the perceptibility of sound is subjective and the physical response to sound complicates the analysis of its impact on people. People judge the relative magnitude of sound sensation in subjective terms such as "noisiness" or "loudness." Sound pressure magnitude is measured and quantified using a logarithmic ratio of pressures, the scale of which gives the level of sound in decibels (dB). The human hearing system is not equally sensitive to sound at all frequencies. Therefore, to approximate the human, frequency-dependent response, the A-weighted filter system is used to adjust measured sound levels. The A-weighted sound level (dBA), typically applied to community noise measurements,[1] de-emphasizes low frequencies to which human hearing is less sensitive and focuses on mid- to high-range frequencies. The range of human hearing is approximately 3 to 140 dBA, with 110 dBA considered intolerable or painful to the human ear. In a non-controlled environment, a change in sound level of 3 dB is considered "just perceptible," a change in sound level of 5 dB is considered "clearly noticeable," and a change in 10 dB is perceived as a doubling of sound volume.[2]

Although the A-weighted scale accounts for a range of people's responses, and is therefore commonly used to quantify individual event or general community sound levels, the degree of annoyance or other response effects also depends on several other factors. These factors include:

- Ambient (background) sound level;
- Magnitude of sound event with respect to the background noise level;
- Duration of the sound event;

1 M David Egan, *Architectural Acoustics*, Chapter 1, March, 1988.
2 Engineering Noise Control, Bies & Hansen, 1988.

- Number of event occurrences and their repetitiveness; and
- Time of day that the event occurs.

In an outdoor environment, sound levels attenuate with distance. Such attenuation is called "distance loss" or "geometric spreading" and is influenced by the noise source configuration (i.e., point source or line source). For a point source, such as stationary equipment, the rate of sound attenuation is usually 6 dB per doubling of distance from the noise source at urban, acoustically "hard" sites, or highly acoustically reflective settings that preserve sound energy (water, asphalt, and concrete). Within such environments, a sound level of 50 dBA at a distance of 25 feet from the noise source would attenuate to 44 dBA at a distance of 50 feet. For a line source within an acoustically hard environment, such as a roadway with a constant flow of traffic, the rate of sound attenuation is 3 dB per doubling of distance.[3] In addition, structures (e.g., buildings and solid walls) and natural topography (e.g., hills) that obstruct the line-of-sight between a noise source and a receptor further reduce the noise level if the receptor is located within the "shadow" of the obstruction, such as behind a sound wall. This type of sound attenuation is known as "barrier insertion loss." If a receptor is located behind the wall but still has a view of the source (i.e., line-of-sight not fully blocked), some barrier insertion loss would still occur, but to a lesser extent. A receptor located on the same side of the wall as a noise source may actually experience an increase in the perceived noise level as the wall reflects noise back to the receptor, thereby compounding the noise. Noise barriers can provide noise level reductions ranging from approximately 5 dBA (where the barrier just breaks the line-of-sight between the source and receiver) up to 20 dBA with a more substantial barrier.[4]

Community noise levels usually change continuously during the day. The equivalent sound level (L_{eq}) is normally used to describe community noise. The L_{eq} is the equivalent steady-state A-weighted sound level that would contain the same acoustical energy as the time-varying A-weighted sound level during the same time interval. For intermittent noise sources, the maximum noise level (L_{max}) is normally used to represent the maximum noise level measured during the measurement. Maximum and minimum noise levels, as compared to the L_{eq}, are a function of the characteristics of the noise source. As an example, sources such as generators have maximum and minimum noise levels that are similar to L_{eq} since noise levels for steady-state noise sources do not substantially fluctuate. However, as another example, vehicular noise levels along local roadways result in substantially different minimum and maximum noise levels when compared to the L_{eq} since noise levels fluctuate during pass-by events.

To assess noise levels over a given 24-hour time period, the Community Noise Equivalent Level (CNEL) descriptor is used in land use planning. CNEL is the time average of all A-weighted sound levels for a 24-hour period with a 10 dBA adjustment (upward) added to the sound levels which occur in the night (10:00 P.M. to 7:00 A.M.) and a 5 dBA adjustment (upward) added to the sound levels which occur in the evening 7:00 P.M. to 10:00 P.M.). These penalties attempt to account for increased human sensitivity to noise during the quieter nighttime periods, particularly where sleep is the most probable activity. CNEL has been adopted by the State of California to

3 Caltrans, Technical Noise Supplement (TeNS), 2013.
4 Ibid.

define the community noise environment for development of a community noise element of a General Plan and is also used by the City of Pasadena for land use planning in the City's General Plan Noise Element (Noise Element).[5]

1.3.2 Vibration

Vibration is an oscillatory motion through a solid medium in which the motion's amplitude can be described in terms of displacement, velocity, or acceleration. The response of humans, buildings, and equipment to vibration is more accurately described using velocity or acceleration.[6] Vibration amplitudes are usually described in terms of peak levels, as in peak particle velocity (PPV). The peak level represents the maximum instantaneous peak of the vibration signal. In addition, vibrations can be measured in the vertical, horizontal longitudinal, or horizontal transverse directions. Ground vibrations are most often greatest, and can damage buildings, when they propagate in the vertical direction.[7] Therefore, the analysis of ground-borne vibration associated with the Project was evaluated in the vertical direction. Typically, ground-borne vibration generated by man-made activities attenuates rapidly with distance from the source of the vibration. Man-made vibration issues are therefore usually confined to short distances from the source (i.e., 50 feet or less). The vibration attenuation equation is presented below.

$PPV_{equip} = PPV_{ref}(25/D)^n$ where , PPV_{ref} = reference source vibration, D = Distance, and n = factor for soil attenuation (typically n = 1.5).

1.4 Existing Noise Conditions

1.4.1 Noise-Sensitive Receptor Locations

Some land uses are considered more sensitive to noise than others due to the amount of noise exposure and the types of activities typically involved at the receptor location. Residences, schools, motels and hotels, libraries, religious institutions, hospitals, nursing homes, and parks are generally more sensitive to noise than commercial and industrial land uses. Existing noise-sensitive uses in the vicinity of the Project Site are summarized below:

- **R1 –** Residential: Euclid Place multi-family residences located approximately 350 feet southwest of the Project Site across Euclid Avenue.
- **R2 –** Residential: Multi-family residences located approximately 350 feet south of the Project Site across Del Mar Boulevard.
- **R3 –** Church/School: Throop Unitarian Universalist Church and Pasadena Montessori School located approximately 225 feet southeast of the Project Site across Los Robles Avenue.

5 State of California, General Plan Guidelines, 2002.

6 Federal Transit Administration, Transit Noise and Vibration Impact Assessment, page 7-3, May 2006.

7 California Department of Transportation (Caltrans), Transportation Related Earthborne Vibrations, page 4, February 2002.

- **R4 –** Residential: Monterra Del Sol multi-family residential building located adjacent (about 50 feet) to the west of the Project Site.

- **R5 –** Hotel: Hilton Pasadena hotel located approximately 250 feet northeast of the Project Site.

The nearest sensitive land uses to the Project Site are shown in **Figure 3**, *Sensitive Receptor Locations Nearest to the Project Site*.

1.4.2 Local Noise Sources

The Project Site is located in the CD-2 (Central District Specific Plan) zoning district in the City of Pasadena and is currently developed with one commercial building and a parking lot, which would be demolished and removed from the Project Site. The current building, which consists of office space, is unoccupied and does not generate typical noise associated with commercial building operations, such as vehicle trips and stationary equipment.

To establish conservative ambient noise levels, ambient noise measurements were conducted at five locations, representing the nearby sensitive receptor land uses, described above, in the vicinity of the Project Site. The measurement locations, along with existing development, are shown in **Figure 3**.

The ambient noise measurements were conducted using the Larson-Davis LxT1 Sound Level Meter (SLM). The Larson-Davis LxT1 SLM is a Type 1 standard instrument as defined in the American National Standard Institute S1.4. All instruments were calibrated and operated according to the applicable manufacturer specification. The microphone was placed at a height of 5 feet above the local grade, at the following locations as shown in **Table 1**, *Summary of Ambient Noise Measurements*, and described in detail under Section 1.4.2, *Noise-Sensitive Receptor Locations*, below.

Short-term (15-minute) noise measurements were conducted at all locations. Short-term ambient noise measurements were conducted between 8:30 a.m. to 10:00 a.m. on Wednesday, February 7, to characterize the existing noise environment in the Project vicinity. A summary of noise measurement data is provided in **Table 1**. Noise levels ranged from 51.7 dBA to 69.4 dBA L_{eq} at off-site sensitive receptor locations.

D170931.00 - 253 South Los Robles Avenue Multi-Family Project\05 Graphics-GIS-Modeling\Illustrator

SOURCE: Google Earth Pro, basemap, 2018; ESA, 2018

253 S Los Robles Avenue Project

Figure 3
Sensitive Receptor Locations Nearest to Project Site

ESA

TABLE 1

SUMMARY OF AMBIENT NOISE MEASUREMENTS

Location, Duration, Existing Land Uses and, Date of Measurements	Measured Ambient Noise Levels [a] (dBA)
R1 2/7/18 (8:30 a.m. to 8:45 a.m.) Wednesday	58.8
R2 2/7/18 (9:39 a.m. to 9:54 a.m.) Wednesday	69.4
R3 2/7/18 (9:23 a.m. to 9:38 a.m.) Wednesday	67.0
R4 2/7/18 (8:47 a.m. to 9:02 a.m.) Wednesday	51.7
R5 2/7/18 (9:05 a.m. to 9:20 a.m.) Wednesday	68.8

[a] Detailed measured noise data, including hourly L_{eq} levels, are included in Appendix A.

SOURCE: ESA 2018.

1.4.2 Existing Roadway Noise Levels Off-site

Existing roadway noise levels were calculated for five roadway segments located in the vicinity of the Project Site. The roadway segments selected for analysis are considered to be those that are expected to be most directly impacted by Project-related traffic; which, for the purpose of this analysis, includes the roadways that are located near and immediately adjacent to the Project Site. These roadways, when compared to roadways located further away from the Project Site, would experience the greatest percentage increase in traffic generated by the Project.

Calculation of the existing roadway noise levels was accomplished using the California Department of Transportation (Caltrans) Technical Noise Supplement (TeNS) and traffic volumes at the study intersections analyzed in the Project's traffic study prepared by Pasadena Department of Transportation.[8] The model calculates the average noise level in CNEL at specific locations based on traffic volumes, average speeds, and site environmental conditions. The calculated CNEL (at a distance of 25 feet from the roadway right-of-way) from existing traffic volumes on the analyzed roadway segments is shown in **Table 2**, *Existing Roadway Noise Levels*.

8 Pasadena Department of Transportation, *Traffic Impact Analysis*, February 2018.

TABLE 2

EXISTING ROADWAY NOISE LEVELS

Roadway Segment	Calculated Traffic Noise Levels along the Roadway dBA CNEL
Cordova St between Marengo Ave & Euclid Ave	67.2
Cordova St between Euclid Ave & Los Robles Ave	67.6
Cordova St between Los Robles Ave & Oakland Ave	68.1
Marengo Ave between Del Mar Blvd & California Blvd	68.9
Los Robles Ave between Del Mar Blvd & California Blvd	67.9

SOURCE: ESA 2018.

1.4.3 Vibration-Sensitive Receptor Locations

Typically, ground-borne vibration generated by man-made activities (i.e., rail and roadway traffic, mechanical equipment and typical construction equipment) diminishes rapidly as the distance from the source of the vibration become greater. The Federal Transportation Association (FTA) uses a screening distance of 100 feet for high vibration sensitive buildings (e.g., hospital with vibration sensitive equipment) and 50 feet for residential uses. When vibration sensitive uses are located within those distances from a project site, vibration impact analysis may be warranted. With respect to structures, vibration-sensitive receptors generally include historic buildings with construction susceptible to damage, buildings in poor structural condition, and uses that require precision instruments (e.g., hospital operating rooms or scientific research laboratories). There are no historic buildings with construction susceptible to damage, buildings in poor structural condition, or uses that require precision instruments in the vicinity of the Project Site that would be affected by Project vibration sources. The vibration-sensitive receptors nearest to the Project Site are located adjacent to the west of the Project Site at the Monterra Del Sol Apartments.

2.0
Regulatory Setting

2.1 Regulatory Setting

Many government agencies have established noise regulations and policies to protect citizens from potential hearing damage and various other adverse physiological and social effects associated with noise and ground-borne vibration. The City of Pasadena has adopted a number of policies, which are based in part on federal and State regulations and are intended to control, minimize or mitigate environmental noise effects. There are no City-adopted policies or standards that relate to ground-borne vibration, but the FTA and Caltrans does have such standards and/or policies that can provide guidance for this analysis but are not regulatory requirements for the Project. The regulations and policies that are relevant to Project construction and operational noise levels are discussed below.

2.1.1 City of Pasadena Noise Element of the General Plan

The Noise Element of the General Plan is primarily used by the Planning and Community Development Department as a guideline for siting noise sensitive land use land uses in the vicinity of preemptive noise sources unless adequate noise abatement is incorporated into the encroaching development. The City of Pasadena Noise Element contains a noise compatibility matrix that shows acceptable and unacceptable ranges of noise for various land uses. The noise compatibility matrix is shown in **Table 3,** *City of Pasadena Guidelines for Noise Compatible Land Use***,** (appears as Figure 1 in the City's Noise Element).[9]

These guidelines are set forth in the *City of Pasadena Revised Noise Element of the General Plan (2002)* in terms of the CNEL metric. CNEL guidelines for specific land uses are classified into four categories: (1) "clearly acceptable," (2) "normally acceptable," (3) "conditionally acceptable," and (4) "normally unacceptable." As shown in Table 1, CNEL values of 75 dBA and 80 dBA are the upper limits of what is considered a "conditionally acceptable" noise environment for residential and school uses, respectively, although the upper limits of what is considered "normally acceptable" for residential and school uses are set at 70 dBA CNEL.[10]

9 City of Pasadena Revised Noise Element, December 2002.

10 Ibíd.

TABLE 3

CITY OF PASADENA GUIDELINES FOR NOISE COMPATIBLE LAND USE

Land Use Category	*Community Noise Exposure L_{dn} or CNEL, dBA*						
	55	*60*	*65*	*70*	*75*	*80*	*85*
Residential – Low Density Single Family, Duplex, Mobile Homes							
Residential – Multi- Family and Mixed Commercial/Residential Use							
Transient Lodging – Motels, Hotels							
Schools, Libraries, Churches, Hospitals, Nursing Homes							
Auditoriums, Concert Halls, Amphitheatres							
Sports Arena, Outdoor Spectator Sports							
Playgrounds, Neighborhood Parks							
Golf Courses, Riding Stables, Water Recreation, Cemeteries							
Office Buildings, Business Commercial and Professional							
Industrial, Manufacturing, Utilities, Agriculture							

	CLEARLY 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.
	NORMALLY ACCEPTABLE: New construction or development should be undertaken after an analysis of the noise reduction requirements is made and needed noise insulation features included in the design. Conventional construction, but with closed windows and fresh air supply systems or air conditioning will normally suffice.
	CONDITIONALLY ACCEPTABLE: If new construction or development proceeds, an analysis of the noise reduction requirement should be made and needed noise insulation features included in the design.
	NORMALLY UNACCEPTABLE: New construction or development should generally not be undertaken, unless it can be demonstrated than an interior level of 45 dBA can be achieved.

SOURCE: California, General Plan Guidelines 1998, as modified by the City of Pasadena 2002

2.1.2 City of Pasadena Noise Restrictions Ordinance

The Pasadena Noise Ordinance is contained in Title 9, Article IV, Chapter 9, Section 36 and is titled, "Noise Restrictions Ordinance." The following sections of the current City of Pasadena Municipal Code (PMC) are particularly applicable to this study:

Section 9.36.020 – Declaration of Policy

It is declared to be the policy of the city to prohibit unnecessary, excessive and annoying noises from all sources subject to its police power. Noise at certain levels is detrimental to the health and welfare of the general public. Consequently, it shall be systematically proscribed in the public interest.

Section 9.36.050 - General Noise Sources.

A. It is unlawful for any person to create, cause, make or continue to make or permit to be made or continued any noise or sound which exceeds the ambient noise level at the property line of any property by more than 5 decibels.

B. Notwithstanding any other provision of this chapter and in addition thereto it shall be unlawful for any person to willfully make or continue, or cause to be made or continued, any loud, unnecessary or unusual noise which disturbs the peace or quiet of any neighborhood or which causes discomfort or annoyance to any reasonable person of normal sensitiveness residing in the area. The standards which shall be considered in determining whether a violation of the provisions of this section exists shall include, but not be limited to, the following:

1. The level of the noise;
2. The intensity of the noise;
3. Whether the nature of the noise is usual or unusual;
4. Whether the origin of the noise is natural or unnatural;
5. The level and intensity of the background noise, if any;
6. The proximity of the noise to residential sleeping facilities;
7. The nature and zoning of the area within which the noise emanates;
8. The density of the inhabitation of the area within which the noise emanates;
9. The time of the day or night the noise occurs;
10. The duration of the noise;

11. Whether the noise is recurrent, intermittent or constant; and

12. Whether the noise is produced by a commercial or noncommercial activity.

Section 9.36.040 – Ambient Noise Level

A. When "ambient noise level" is referred to in this chapter, it means the actual measured ambient noise level.

B. Any sound level measurement made pursuant to the provisions of this chapter shall be measured with a sound level meter using the A weighting.

1. Where the sound alleged to be offending is of a type or character set forth below, the following values shall be added to the sound level measurement of the offending noise:

a. Except for noise emanating from any electrical transformer or gas metering and pressure control equipment existing and installed prior to the effective date of the ordinance codified herein, any steady audible tone: + 5;

b. Repeated impulsive noise: + 5;

c. Noise occurring more than 5 but less than 15 minutes per hour: - 5;

d. Noise occurring more than 1 but less than 5 minutes per hour: - 10;

e. Noise occurring less than 1 minute per hour: -20.

2. Values of subsections (B)(1)(c), (B)(1)(d) and (B)(1)(e) of this section shall be added to the sound level measurements during daytime (6 a.m. to 11 p.m.) periods only.

Section 9.36.070 – Construction Projects

A. No person shall operate any pile driver, power shovel, pneumatic hammer, derrick power hoist, forklift, cement mixer or any other similar construction equipment within a residential district or within a radius of 500 feet therefrom at any time other than as listed below:

1. From 7:00 a.m. to 7:00 p.m. Monday through Friday;

2. From 8:00 a.m. to 5:00 p.m. on Saturday;

3. Operation of any of the listed construction equipment is prohibited on Sundays and holidays.

B. No person shall perform any construction or repair work on buildings, structures or projects within a residential district or within a radius of 500 feet therefrom in such a manner that a reasonable person of normal sensitiveness residing in the area is caused discomfort or annoyance at any time other than as listed below:

    1. From 7:00 a.m. to 7:00 p.m. Monday through Friday;

    2. From 8:00 a.m. to 5:00 p.m. on Saturday;

    3. Performance of construction or repair work is prohibited on Sundays and holidays.

C. The prohibition against construction on Sundays and Holidays as set forth in subsection B of this section shall not apply under either of the following conditions:

    1. The construction is actually performed by an individual who is the owner or lessor of the premises and who is assisted by not more than two individuals;

    2. The person performing the construction shall have provided the building official with a petition which indicates the consent of 65 percent of the households residing within 500 feet of the construction site and the unanimous consent of the households adjacent to the construction site. Said petition shall be on a form promulgated by said building official and shall be accompanied by a fee, the amount of which shall be established by resolution by the city council.

D. The prohibitions of this section shall not apply to the performance of emergency work as defined in Section 9.36.030.

E. For purposes of this section, holidays are New Year's Day, Martin Luther King Jr. Day, Lincoln's Birthday, Washington's Birthday, Memorial Day, Independence Day, Labor Day, Veteran's Day, Thanksgiving Day, Day after Thanksgiving, and Christmas.

Section 9.36.080 – Construction Equipment

It is unlawful for any person to operate any powered construction equipment if the operation of such equipment emits noise at a level in excess of 85 dBA when measured within a radius of 100 feet from such equipment.

Section 9.36.090 – Machinery, Equipment, Fans and Air Conditioning

Except for emergency work, as defined in this chapter it is unlawful for any person to operate any machinery, equipment, pump, fan, air conditioning apparatus or similar mechanical device 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 5 decibels.

2.2 Ground-Borne Vibration Guidelines

The City has not adopted policies or guidelines relative to ground-borne vibration. As such, the following is a summary of Caltrans ground-borne vibration policies and guidelines. With respect to ground-borne vibration from construction activities, Caltrans has adopted guidelines/recommendations to limit ground-borne vibration based on the age and/or condition of the structures that are located in close proximity to construction activity. Caltrans' technical publication titled "Transportation and Construction Vibration Guidance Manual" September 2013,[11] provides a vibration damage potential threshold criteria of 0.5 inch-per-second PPV for Class III buildings typically with wooden ceilings and walls in masonry, 0.7 inch-per-second PPV for Class II buildings typically built with foundation, floors, and walls in concrete or masonry, and 1.2 inch-per-second PPV for Class I buildings typically built from reinforced steel or reinforced concrete. Caltrans has provided guidance[12] for evaluating human annoyance from groundborne vibration resulting from construction equipment and is identified as barely perceptible, distinctly perceptible, strongly perceptible, or severe. Caltrans defines barely perceptible vibration annoyance as 0.04 inch-per-second PPV, distinctly perceptible as 0.25 inch-per-second PPV, strongly perceptible as 0.9 inch-per-second PPV, and severe as 2.0 inch-per-second for transient sources. These Caltrans guidance criteria are used to evaluate the potential for human annoyance vibration impacts.

11 California Department of Transportation, Transportation and Construction Vibration Guidance Manual, Table 10. (2013), http://www.dot.ca.gov/hq/env/noise/pub/TCVGM_Sep13_FINAL.pdf. Accessed July 2018.

12 California Department of Transportation, Transportation and Construction Vibration Guidance Manual, Table 20. (2013), http://www.dot.ca.gov/hq/env/noise/pub/TCVGM_Sep13_FINAL.pdf. Accessed July 2018.

3.0
Significance Thresholds

In accordance with Appendix G of the State *CEQA Guidelines*, the proposed Project would result in potentially significant impacts if it would result in:

NOISE-1: Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies;

NOISE-2: Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels;

NOISE-3: A substantial permanent increase in ambient noise levels in the vicinity of the project above levels existing without the project; or

NOISE-4: A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project.

The paragraphs below provide guidance for evaluating the Project against these thresholds.

3.1 Construction (NOISE-1, NOISE-4)

Based on the City of Pasadena Noise Element of the General Plan and Noise Restrictions Ordinance, Project construction would normally be considered to exceed thresholds NOISE-1 and/or NOISE-4 if:

- Construction equipment emits noise at a level in excess of 85 dBA when measured within a radius of 100 feet of such equipment; or
- Construction activities would occur outside the hours of 7:00 A.M. to 7:00 P.M. Monday through Friday day, from 8:00 A.M. to 5:00 P.M. on Saturday, or anytime on Sunday or holidays (City-observed) within a residential district or within a radius of 500 feet therefrom and such construction would generate noise that would substantially affect sensitive receptors.

3.2 Operation (NOISE-1, NOISE-3, NOISE-4)

Project operational noise would normally be considered to exceed thresholds NOISE-1, NOISE-3 and/or NOISE-4 if:

- Project-related operational activities cause ambient noise levels to increase by 5 dBA or more at the property line. In accordance with Pasadena Municipal Code Section 9.36.040, where the sound alleged to be offending is of a type or character set forth below, the following values shall be added to the sound level measurement of the offending noise:

    a. Except for noise emanating from any electrical transformer or gas metering and pressure control equipment existing and installed prior to the effective date of the ordinance codified herein, any steady audible tone: + 5;

    b. Repeated impulsive noise: + 5;

    c. Noise occurring more than 5 but less than 15 minutes per hour during daytime (6 a.m. to 11 p.m.) periods only: - 5;

    d. Noise occurring more than 1 but less than 5 minutes per hour during daytime (6 a.m. to 11 p.m.) periods only: - 10;

    e. Noise occurring less than 1 minute per hour during daytime (6 a.m. to 11 p.m.) periods only: -20; or

- Project-related off-site noise sources (i.e., roadway traffic noise) cause the ambient noise levels measured at the property line of affected noise-sensitive uses to increase by 3 dBA in CNEL to or within the "normally unacceptable" category.

3.3 Ground-Borne Vibration (NOISE-2).

Project vibrations would normally be considered to exceed threshold NOISE-2 if Project-induced vibrations would cause structural damage and/or disrupt the operations of vibration sensitive land uses.

The CEQA Guidelines do not define the levels at which groundborne vibration or groundborne noises are considered "excessive." The City of Pasadena currently does not have a significance threshold to assess vibration impacts during construction. Additionally, there are no federal, state, or local vibration regulations or guidelines directly applicable to the Project. However, publications of the FTA and Caltrans are two of the seminal works for the analysis of vibration relating to transportation and construction-induced vibration. The Project is not subject to FTA or Caltrans regulations; nonetheless, these guidelines serve as useful tools to evaluate vibration impacts. For the purpose of this analysis, the vibration criteria for structural damage and human annoyance established in Tables 10 and 20 of the most recent Caltrans' *Transportation and Construction Vibration Guidance Manual*[13] and Table 12-3 of the FTA's *Transit Noise and Vibration Impact Assessment*[14] are used to evaluate the potential vibration impacts of the Project on nearby sensitive receptors. The vibration-sensitive receptors nearest to the Project Site are

[13] California Department of Transportation, Transportation and Construction Vibration Guidance Manual, (2013), http://www.dot.ca.gov/hq/env/noise/pub/TCVGM_Sep13_FINAL.pdf. Accessed July 2018.

[14] Federal Transit Administration, Transit Noise and Vibration Impact Assessment, May 2006, https://www.transit.dot.gov/sites/fta.dot.gov/files/docs/FTA_Noise_and_Vibration_Manual.pdf. Accessed April 2017.

located adjacent to the west of the Project Site at the Monterra Del Sol Apartments, which is a Class III building. Thus, Project construction and operational ground-borne vibration would normally be considered to exceed threshold NOISE-2 if:

- Project construction activities cause ground-borne vibration levels to exceed 0.5 in/sec PPV for structural damage or exceed 0.9 in/sec PPV for human annoyance.

4.0
Methodology

4.1 Methodology

4.1.1 On-Site Construction Noise

On-site construction noise impacts were evaluated by determining the noise levels generated by the different types of construction activity anticipated (i.e., demolition, grading, building construction, architectural coating, and paving), calculating the construction-related noise level at nearby sensitive receptor locations as identified in Section 1.4 of this Technical Report, and comparing these construction-related noise levels to existing ambient noise levels (i.e., noise levels without construction noise) at those receptors. More, specifically, the following steps were undertaken to assess construction-period noise impacts.

1. Typical noise levels for each type of construction equipment were obtained from the Federal Highway Administration (FHWA) Roadway Construction Noise Model;

2. Distances between construction site locations (noise sources) and surrounding sensitive receptors were measured using Project architectural drawings and site plans;

3. Using the FWHA Roadway Construction Noise Model, construction noise levels were then calculated, in terms of hourly L_{eq}, for sensitive receptor locations based on the standard point source noise-distance attenuation factor of 6.0 dBA for each doubling of distance; and

4. Construction noise levels were then compared to the construction noise significance thresholds identified previously in Section 3.0 of this Technical Report.

During demolition, construction equipment would be expected to operate primarily at a distance of 25 feet or more from the Project boundary to the nearest sensitive receptors, as there is an existing school adjacent to the Project Site. Asphalt removal may require a tractor/loader/backhoe; therefore, it was assumed a tractor/loader/backhoe could be used in close proximity to sensitive receptors, within 50 feet of R4. During grading, a rubber-tired dozer and tractor/loader/backhoe may temporarily operate as close as 50 feet of R4 when grading is occurring at the western end of the Project Site. Similarly, during building construction, paving, and architectural coating, construction equipment, including a crane, paving equipment, and air compressor, may temporarily operate as close as 50 feet of R4. However, it is not physically possible for all construction associated with a particular construction activity to be in use simultaneously at the same location. Construction equipment cannot operate in close quarters at a single location in given physical construction site constraints and on-site safety and accident

prevention best practices. Therefore, for the purposes of this analysis, it is reasonably expected that equipment associated with a particular construction activity would operate at various distances from sensitive receptors, with some equipment temporarily in use as close as 50 feet from sensitive receptors while other equipment is in use elsewhere on the Project Site (e.g., 100 feet or greater from sensitive receptors).

4.1.2 Off-Site Roadway Noise

Roadway noise impacts have been evaluated based on the FHWA TNM method described in FHWA Traffic Noise Model Technical Manual[15] and based on data from the Project's Traffic Impact Analysis.[16] This method allows for the definition of roadway configurations, barrier information (if any), and receiver locations. Roadway noise attributable to Project development was calculated and compared to baseline noise levels that would occur under the "Without Project" condition, which accounts for the current uses on the Project Site.

4.1.3 Stationary Point-Source Noise (Operations)

Stationary point-source noise impacts were evaluated by identifying the noise levels generated by outdoor stationary noise sources for the Project, which includes rooftop mechanical equipment, parking structure, and at-grade parking area. Evaluating noise from these point sources included calculating the hourly L_{eq} noise level from each noise source at sensitive receptor property lines and comparing such noise levels to existing ambient noise levels. More specifically, the following steps were undertaken to calculate outdoor stationary point-source noise impacts:

1. Distances between stationary noise sources and surrounding sensitive receptor locations were measured using Project architectural drawings and site plans;

2. Stationary-source noise levels were then calculated for each sensitive receptor location based on the standard point source noise-distance attenuation factor of 6.0 dBA for each doubling of distance;

3. Noise level increases were compared to the stationary source noise significance thresholds identified above; and

4. For outdoor mechanical equipment, the maximum allowable noise emissions from any and all outdoor mechanical equipment were specified such that noise levels would not exceed the significance threshold identified previously.

For the purpose of providing a quantitative estimate of the noise levels that would be generated from the Project's parking structure, the methodology recommended by the FTA for the general assessment of parking structure noise is used. Based on this methodology, the project's peak

15 Federal Highway Administration, Traffic Noise Model, https://www.fhwa.dot.gov/environment/noise/traffic_noise_model/. Accessed March 2017.

16 Pasadena Department of Transportation, *Traffic Impact Analysis*, February 2018.

hourly noise level that would be generated by the on-site parking structure was estimated using the following FTA equation for a parking lot:[17]

$L_{eq}(h) = SELref + 10 \log(NA/1000) – 35.6$

Where: $L_{eq}(h)$ = hourly L_{eq} noise level at 50 feet

SELref = reference noise level for stationary noise source represented in sound exposure level (SEL) at 50 feet

NA = number of automobiles per hour

4.1.4 Ground-Borne Vibration

Ground-borne vibration impacts were evaluated by identifying potential vibration sources, measuring the distance between vibration sources and surrounding structure locations, and making a significance determination based on the significance thresholds identified previously. Vibration levels are estimated using the vibration attenuation equation provided above in Section 1.3.2.

4.2 Project Characteristics and Project Design Features

4.2.1 Project Characteristics

Several Project characteristics and common best practices that are included as Project design features (PDFs) (see Section 4.2.2 below) have the potential to reduce noise and vibration generation and were taken into account in the analysis of potential impacts. In accordance with the City's Noise Ordinance requirements, construction hours for exterior construction and hauling activities would be expected to occur between the hours of 7:00 A.M. and 7:00 P.M, Monday through Friday, and 8:00 A.M. to 5:00 P.M on Saturday. The Project contractor(s) would equip all construction equipment, fixed or mobile, with properly operating and maintained noise mufflers, consistent with manufacturers' standards and general industry standard best practices. In addition, contractor(s) would comply with existing State of California regulations that limit engine idling to five minutes or less at any location from construction equipment such as haul trucks.

With respect to Project operation, building outdoor mounted mechanical and electrical equipment would be designed in accordance with general industry standard best practices to meet the requirements of the City's Noise Ordinance to prevent any adjoining unit to exceed the ambient noise level by more than five (5) decibels.

17 Federal Transit Administration, Transit Noise and Vibration Impact Assessment, Table 5-6, May 2006.

4.2.2 Project Design Features

The Project will incorporate—and the analysis assumes implementation of—the following general industry standard best practices to minimize noise and vibration impacts:

PDF-NOISE-1, Construction Equipment Noise Control: The Project contractor(s) will employ industry standard noise minimization strategies, as feasible, when using mechanized construction equipment. The contractor(s) will not use jack hammers, blasting, or pile drivers. The contractor(s) will strive to use other electric equipment if commercially available. The contractor(s) will limit unnecessary idling of equipment on or near the site in accordance with idling limits specified in Title 13 California Code of Regulations (CCR), Section 2485. The contractor(s) will strive to place noisy construction equipment as far from the Project Site edges as practicable. The Project contractor(s) will equip all construction equipment, fixed or mobile, with properly operating and maintained noise mufflers, consistent with manufacturers' standards. For example, absorptive mufflers are generally considered commercially available, industry standard noise reduction for heavy duty equipment.[18]

PDF-NOISE-2, Stationary Equipment Noise Control: Air conditioners, fans, generators, and related equipment will be designed to not to exceed the ambient noise levels by more than five (5) dBA at off-site residential uses.

[18] United muffler Corp: https://www.unitedmuffler.com/ P) 866-229-3402; Auto-jet Muffler Corp: http://mandrelbending-tubefabrication.com/index.php, P) 800-247-5391; AP Exhaust Technologies: http://www.apexhaust.com/, P) 800-277-2787.

5.0
Environmental Impacts

5.1 Construction Noise (NOISE-1, NOISE-4)

5.1.1 On-Site Construction Noise

Noise impacts from construction activities are generally a function of the noise generated by construction equipment, equipment locations, the sensitivity of nearby land uses, and the timing and duration of the noise-generating activities. Construction would include the following activities: demolition, site preparation, grading, drainage/utilities/trenching, concrete pouring, building construction, paving, and architectural coatings. Each activity would involve the use of different types of construction equipment and, therefore, has its own distinct noise characteristics. Demolition would typically involve the use of tractor/loader/backhoe, rubber-tired dozer, concrete/industrial saws, and haul trucks for the removal and transport of demolished material. Grading would typically involve the use of a rubber-tired dozer, tractor/loader/backhoe, water truck, and haul trucks for the removal and transport of excavated soil. Building construction would typically involve the use of forklifts, tractor/loader/backhoe, and cranes. Paving would typically involve the use of cement and mortar mixers, pavers, rollers, and tractor/loader/backhoe. Architectural coatings would typically involve the use of an air compressor. The Project would be constructed using typical construction techniques; no blasting, impact pile driving, or jackhammers would be used.

Project construction would require the use of mobile heavy equipment with high noise-level characteristics. With implementation of PDF-NOISE-1, individual pieces of construction equipment anticipated during Project construction equipped with properly operating and maintained noise mufflers could produce maximum noise levels of 74 dBA to 90 dBA at a reference distance of 50 feet from the noise source, as shown in **Table 4**, *Construction Equipment Noise Levels*. These maximum noise levels would occur when equipment is operating under full power conditions. The estimated usage factors for the equipment are also shown in Table 4. The usage factors are based on FHWA's *Roadway Construction Noise Model User's Guide*.[19] To more accurately characterize construction-period noise levels, the average (Hourly L_{eq}) noise level associated with each construction stage is calculated based on the quantity, type, and usage factors for each type of equipment used during each construction stage and are typically attributable to multiple pieces of equipment operating simultaneously.

19 Federal Highway Administration, Roadway Construction Noise Model User's Guide, 2006.

Construction noise levels were estimated based on an industry standard sound attenuation rate of 6 dBA per doubling of distance (from the 50-foot reference distance) for point sources (e.g., construction equipment). For the purposes of providing a conservative analysis, the noisiest construction equipment was assumed to operate simultaneously with an estimated usage factor at the construction area nearest to potentially affected sensitive receptors (at the fence line). These assumptions represent a worst-case noise scenario as the noisiest construction equipment used in a given phase would not typically operate concurrently and at full power, and the location of activities are routinely spread across the construction site, rather than concentrated close to the nearest noise-sensitive receptors. In practice, equipment is used on construction sites intermittently over the course of a construction day and generally do not operate in close quarters at a single location in order to provide for on-site safety and accident prevention. In addition, noise from different construction stages that could occur simultaneously were added together to provide a conservative composite construction noise level.

TABLE 4

CONSTRUCTION EQUIPMENT NOISE LEVELS

Equipment	Estimated Usage Factor, %	Maximum Noise Level at 50 feet from Equipment, dBA (Lmax)
Air Compressor	50	78
Auger Drill Rig	20	85
Cement and Mortar Mixers	40	79
Compactor	20	83
Concrete Saw	20	90
Crane	40	81
Dump/Haul Truck	20	76
Excavator	40	81
Forklift	10	75
Generator Sets	50	81
Paver	50	77
Pumps	50	81
Rubber Tired Loader	50	79
Tractor/Loader/Backhoe	25	80
Trencher	50	80
Welder	40	74

SOURCE: FHWA Roadway Construction Noise Model User's Guide, 2006.

A summary of construction noise impacts at the existing nearby sensitive receptors is provided in **Table 5,** *Estimated Construction Noise Levels (L_{eq}) at Off-Site Sensitive Receptors*. Detailed noise calculations for construction activities are provided in Appendix A. As shown in **Table 5**,

construction noise levels are estimated to reach a maximum noise level of up to approximately 71 dBA L_{eq} at the off-site receptor locations R1, R2, and R5, up to approximately 74 dBA L_{eq} at the off-site receptor location R3, and up to approximately 81 dBA L_{eq} at the off-site receptor R4 with equipment operating at the specified distances. Accounting for distance attenuation, maximum construction activity noise levels would be up to approximately 75 dBA at a reference distance of 100 feet. Overlapping building demolition and site preparation activities would result in approximately 75 dBA at a reference distance of 100 feet. As a result, since the maximum construction-related noise level would be 75 dBA measured at a distance of 100 feet, construction activity would not generate noise levels in excess of the City's Noise Ordinance of 85 dBA at 100 feet. Furthermore, construction related activity would be expected to only occur during the hours of 7:00 a.m. to 7:00 p.m. in compliance with the City's Noise Ordinance. As such, the Project would not exceed the significance thresholds and construction noise impacts would be less than significant.

TABLE 5

ESTIMATED CONSTRUCTION NOISE LEVELS (L_{EQ}) AT OFF-SITE SENSITIVE RECEPTORS

Noise-Sensitive Receptor	Distance between Nearest Receptor and Construction Equipment (feet)	Construction Noise Levels at the Noise-Sensitive Receptor by Construction Phase,[a] Hourly L_{eq} (dBA)	Significance Threshold	Exceed Significance Threshold
R1 Multi-family residences to the southwest	350 to 550 feet	71	–	–
R2 Multi-family residences to the south	350 to 530 feet	71	–	–
R3 Church and school to the southeast	225 to 475 feet	74	–	–
R4 Multi-family residences adjacent to the west	50 to 250 feet	81	–	–
R5 Hotel to the northeast	250 to 500 feet	71	–	–
Maximum Projected Noise Level at Threshold Distance of 100 feet	**100 feet**	**75**	**85**	**No**

NOTES:
[a] Estimated construction noise levels represent the worst-case condition when the noisiest construction equipment would be located closest to the sensitive receptors and are expected to last the entire duration of each construction phase.

SOURCE: ESA 2018.

5.1.2 Off-Site Haul Truck Noise

Delivery and soil hauling truck trips would occur throughout the construction period. An estimated maximum of approximately 5,400 total haul truck trips would occur during the grading and excavation phase of construction. This would result in approximately 60 truck trips per day (over an estimated 90-day grading and excavation period). Haul truck traffic would take the most

direct route to the appropriate freeway ramp. Construction-related truck traffic is assumed to use northbound Los Robles Avenue to eastbound Corson Street to access the 210 freeway. As shown in **Table 4**, haul trucks are estimated to generate a peak instantaneous noise level of up to 76 dBA at 50 feet as a truck passes by a noise receiver. This peak instantaneous noise level represents the maximum noise as a truck passes by a stationary receiver (i.e., such as a stationary sound level meter) and would only be experienced by that stationary receiver for a few seconds per truck movement. As the haul truck moves away from that stationary receiver, the noise level drops substantially with increasing distance between the truck and the stationary receiver.

Based on roadway truck traffic noise modeling using the FHWA TNM method, the noise level from Project haul trucks traveling along the haul route at 50 feet would be approximately 55.9 dBA Leq based on 8 truck trips in a peak hour and 60 truck trips per day. Since construction of the Project would generate approximately 60 truck trips spread out over an entire work day, the dBA Leq noise metric is a better representation of the overall sound environment from construction haul trucks and is the appropriate noise metric for comparison with the City's significance threshold. As shown previously in **Table 1**, existing noise levels in the Project area range from approximately 58.8 dBA Leq to 69.4 dBA Leq. Since Project-related construction trucks would generate a noise level less than the existing levels, Project-related construction truck noise would not increase existing noise levels by more than 3 dBA, which is less than the perceptible level. While it is expected that instantaneous sound levels from passing haul trucks may generate noise over the ambient noise levels, such increases are expected to be sporadic and temporary with durations typically substantially less than one minute as a truck passes by a noise receiver and would not substantially contribute to an increase in existing roadway noise levels. Therefore, haul truck noise impacts would result in a less than significant impact.

5.1.3 Off-Site Construction Worker Trip Noise

In addition to soil haul trucks, construction of the Project would result in construction worker trips to and from the Project Site. The largest number of worker and vendor trips would occur during the building construction phase and would result in an estimated 36 worker trips per day and 25 vendor trips per day. An increase of 61 trips per day would not result in a doubling of traffic volumes on local roadways and would not temporarily result in a 3 dBA or more increase in roadway noise levels. This temporary noise level increase would not result in a substantial increase in roadway noise levels and impacts would be less than significant impact.

5.2 Operational Noise (NOISE-1, NOISE-3, NOISE-4)

5.2.1 Fixed Mechanical Equipment

The operation of mechanical equipment typically installed for developments like the Project, such as air conditioners, fans, generators, and related equipment, may generate audible noise levels. The mechanical equipment would generate noise distributed across all frequencies (i.e., white noise) and would not generate noise at a specific frequency. As such, the noise would not be characterized as a steady audible tone or as repeated impulsive noise. Therefore, no noise adjustment or noise penalty is required per PMC Section 9.36.040(B).

Project mechanical equipment including air conditioning condensers would be installed on the building rooftop, with other equipment contained within the building. Project mechanical equipment would be designed with appropriate noise control devices, such as sound attenuators, acoustic louvers, or sound screens/parapet walls to comply with noise limitation requirements provided in the City's Noise Ordinance, which prevents the noise from such equipment from causing an increase in the ambient noise level of more than five decibels. To ensure the ability to meet this standard, the Project would implement PDF-NOISE-2 to ensure that Project-related stationary sources of noise are consistent with City standards. Therefore, operation of rooftop mechanical equipment on the Project building would not exceed the City's thresholds of significance and impacts would be less than significant.

5.2.2 Parking Structure

Automobile movements within parking structures could generate noise levels with the potential to adversely impact adjacent land uses during Project operations. However, the below-grade parking level at the Project Site would be fully enclosed and, as such, would not contribute to off-site noise impacts. As such, impacts from the on-site parking structure would be less than significant.

5.2.3 Refuse Collection Area

The Project would be designed with a refuse area located in the central area of the first basement level of the proposed building. The refuse area would be shielded from noise sensitive receptors by the Project building itself. Therefore, there is no potential for off-site noise impacts from refuse collection activities.

5.2.4 Project-Related Traffic Noise

Future roadway noise levels were calculated along various arterial segments adjacent to the Project. Roadway noise attributable to Project development was calculated using the traffic noise model previously described and was compared to baseline noise levels that would occur under the "No Project" condition.

Project impacts are shown in **Table 6**, *Estimated Operational Traffic Noise Levels.* As indicated, operation of the Project would not result in a substantial increase in Project-related traffic noise levels over existing traffic noise levels. The increase in noise level would be substantially less than threshold of a 3 dBA increase in CNEL to or within the "normally unacceptable" category (see **Table 2**). The maximum increase in traffic noise from the project is 0.1 dBA Leq, which would not be perceptible. As a result, Project-related traffic noise would be less than significant.

TABLE 6

ESTIMATED OPERATIONAL TRAFFIC NOISE LEVELS

Roadway Segment		Calculated Traffic Noise Levels at 25 feet from Roadway (dBA Leq)			
		Existing [a] (A)	Existing with Project [a] (B)	Project Increment (B - A)	Exceed Threshold?
Cordova St	Between Marengo Ave & Euclid Ave	67.2	67.3	0.1	**No**
Cordova St	Between Euclid Ave & Los Robles Ave	67.6	67.6	0.0	**No**
Cordova St	Between Los Robles Ave & Oakland Ave	68.1	68.2	0.1	**No**
Marengo Ave	Between Del Mar Blvd & California Blvd	68.9	68.9	0.0	**No**
Los Robles Ave	Between Del Mar Blvd & California Blvd	67.9	68.0	0.1	**No**

NOTES:
[a] Existing data is taken from **Table 1**.
[b] The noise levels are modeled at 50 feet from the centerline of these roadway segments since these segments are relatively wide and 25 feet would still be located within the roadway right-of-way.

SOURCE: ESA 2018.

5.3 Ground-Borne Vibration (NOISE-2)

5.3.1 Construction Vibration

Structural Impacts

Construction activities can generate varying degrees of ground vibration, depending on the construction procedures and the construction equipment used. The operation of construction equipment generates vibrations that spread through the ground and diminish in amplitude with distance from the source. The effect on buildings located in the vicinity of the construction site varies depending on soil type, ground strata, and construction characteristics of the receptor buildings. The results from vibration can range from no perceptible effects at the lowest vibration levels, to low rumbling sounds and perceptible vibration at moderate levels, to slight damage at the highest levels. Ground-borne vibration from construction activities rarely reaches levels that damage structures. The Caltrans guidance manual incorporates FTA standard vibration velocities for construction equipment operations (Table 18 of the Caltrans guidance manual).[20] The PPV for construction equipment pieces anticipated to be used during Project construction are listed in **Table 7**, *Typical Vibration Velocities for Potential Project Construction Equipment*.

[20] California Department of Transportation, Transportation and Construction Vibration Guidance Manual, (2013), http://www.dot.ca.gov/hq/env/noise/pub/TCVGM_Sep13_FINAL.pdf. Accessed July 2018.

TABLE 7

TYPICAL VIBRATION VELOCITIES FOR PROJECT CONSTRUCTION EQUIPMENT

Equipment	Reference Vibration Velocity Levels at 25 feet, PPV (inch/second) [a, b]
Large bulldozer	0.089
Loaded trucks	0.076
Small Bulldozer	0.003

NOTES:
[a] PPV = Peak particle velocity.
[b] FTA, Transit Noise and Vibration Impact Assessment, Table 12-2.

SOURCE: USDOT Federal Transit Administration, 2006.

Construction of the Project would generate ground-borne construction vibration during site clearing and grading activities. Based on the vibration data provided in Table 7, vibration velocities from operation of commonly used construction equipment would range from approximately 0.003 to 0.089 inches per second PPV at 25 feet from the source of activity.

The nearest sensitive receptors to the Project Site are located adjacent to the west of the Project Site at Monterra Del Sol Apartments (R4). The Project is not expected to require the use of large bulldozers within 50 feet of any sensitive receptor. Based on the vibration attenuation equation provided in Section 1.3.2 above, Project-related construction activities would generate vibration velocities of up to approximately 0.032 inches per second at the nearest sensitive receptor boundary. The Monterra del Sol Apartments are most closely representative of buildings described as Class III in Caltrans' *Transportation and Construction Vibration Guidance Manual*[21] and, thus, the 0.5 inch per second PPV threshold applies. The maximum vibration level would not exceed the 0.5 inch per second PPV significance threshold for potential building damage for Class III buildings. As a result, Project-related construction would result in less-than-significant vibration impacts related to potential structural damage.

Human Annoyance

Residences, schools, motels and hotels, libraries, religious institutions, hospitals, nursing homes, and parks are considered particularly sensitive uses for vibration annoyance. The nearest vibration-sensitive uses with the potential for human annoyance impacts in the Project vicinity is the adjacent Monterra Del Sol Apartments (R4) to the west of the Project Site. As discussed above, these structures could be exposed to vibration velocities from construction activities that would be up to approximately 0.032 inches per second PPV when bulldozers would be in use within 50 feet of any sensitive receptor, which would not exceed the 0.9-inch-per-second PPV

[21] California Department of Transportation, Transportation and Construction Vibration Guidance Manual, (2013), http://www.dot.ca.gov/hq/env/noise/pub/TCVGM_Sep13_FINAL.pdf. Accessed July 2018.

significance threshold for potential human annoyance. As a result, Project-related construction would result in less-than-significant vibration impacts related to potential human annoyance.

5.3.2 Operational Vibration

The Project's operations would include typical residential-grade stationary mechanical and electrical equipment for multi-family residential buildings, such as air handling units, condenser units, and exhaust fans, which would produce vibration. In addition, the primary sources of transient vibration would include passenger vehicle circulation within the proposed parking area. Ground-borne vibration generated by each of the above-mentioned activities would generate approximately up to 0.005 inches per second (PPV) adjacent to the Project Site.[22] The potential vibration levels from Project operational sources at the closest existing and future sensitive receptor locations would be less than the threshold of perceptibility of 0.9 inches per second (PPV). As such, vibration impacts associated with operation of the Project would be below the significance threshold and impacts would be less than significant.

22 This vibration estimate is based on data presented in the USDOT Federal Transit Administration, 2006.

6.0
Cumulative Impacts

6.1 Construction

Cumulative construction impacts could occur when multiple construction projects are occurring simultaneously with the proposed Project. There are two planned projects that are adjacent to the Project Site to the north and south. The 245 South Los Robles Avenue project would be a 131 unit mixed-use building to the north of the proposed Project and the 399 East Del Mar Boulevard project would be a 55 unit multi-family residential building to the south of the proposed Project. Concurrent noise impacts could occur if the projects were being constructed on overlapping schedules. The City's noise threshold for construction is 85 dBA at 100 feet for each piece of equipment. As a conservative approach for this cumulative construction noise analysis, this threshold of 85 dBA at 100 feet was applied to the aggregate noise from concurrent construction activities for the proposed Project and the two adjacent projects (i.e., multiple pieces of construction equipment operating simultaneously on separate but adjacent sites).

The 399 East Del Mar Boulevard project would be approximately equidistant from the closest sensitive receptor to the proposed Project and consists of multi-family residential uses, similar to the proposed Project. Therefore, the 399 East Del Mar Boulevard project would produce similar noise levels at 100 feet (75 dBA) as the Project. The 245 South Los Robles Avenue project would be located further away from the proposed Project's most affected sensitive receptor and would also consist of multi-family residential uses. Thus, the 245 South Los Robles Avenue project would contribute less noise than the other two projects given increase in noise attenuation from the increased distance. Furthermore, environmental documents prepared for both related projects concluded that noise impacts would be less than significant. Conservatively assuming all three related projects each contribute 75 dBA during concurrent construction phases, the combined noise level would be approximately 80 dBA at 100 feet, which would be less than the 85 dBA at 100 feet threshold.

The combined haul truck noise from the Project and two related projects was calculated by conservatively assuming that all three projects would generate concurrent construction haul truck trips. The 399 East Del Mar Boulevard project and the 245 South Los Robles project are approximately twice the size of the proposed Project (i.e., 131 + 55 = 186 total units compared to the proposed Project's 92 units). The proposed Project is expected to include 60 haul truck trips per day and a peak hour volume of 8 trucks. Assuming that the two related projects would contribute twice the number of haul trucks as the proposed Project, the total number of concurrent truck trips would be approximately 180 trips per day and 24 peak hour trips. Based on roadway truck traffic noise modeling using the FHWA TNM method, the combined noise levels would be

60.7 dBA Leq. As shown previously in **Table 1**, existing noise levels in the Project area range from approximately 58.8 dBA Leq to 69.4 dBA Leq. Since cumulative construction trucks would generate a noise level less than the existing levels, cumulative construction truck noise would not increase existing noise levels by more than 3 dBA, which would be less than the perceptible level and less than significant.

With respect to worker and vendor trips, based on this same analysis method, the number of worker and vendor trips would result in an increase from 36 worker trips per day (5 peak hour trips) and 25 vendor trips per day (3 peak hour trips) from the proposed Project to 108 worker trips per day (15 peak hour trips) and 75 vendor trips per day (9 peak hour trips) from the proposed Project and the two related projects. Based on roadway truck traffic noise modeling using the FHWA TNM method, the combined noise levels would be 54.1 dBA Leq. As shown previously in **Table 1**, existing noise levels in the Project area range from approximately 58.8 dBA Leq to 69.4 dBA Leq. Since cumulative construction worker and vendor trucks would generate a noise level less than the existing levels, cumulative worker and vendor truck noise would not increase existing noise levels by more than 3 dBA, which would be less than the perceptible level and less than significant.

The cumulative noise levels would be intermittent, temporary and would cease at the end of the respective project construction periods. It is not likely that maximum construction noise impacts from related projects would occur simultaneously as the proposed Project, as construction noise levels vary from day to day depending on the construction activity performed that day and its location on the development site. Although there would be an increase in temporary ambient sound levels, each construction project would be expected to comply with the City's Noise Ordinance with construction equipment operating between the hours of 7:00 A.M. to 7:00 P.M. Monday through Friday, and 8:00 A.M. to 5:00 P.M on Saturday. As a result, the Project's contribution to cumulative construction impacts would not be cumulatively considerable and impacts would be less than significant.

6.2 Operations

Cumulative noise impacts would occur primarily as a result of increased traffic on local roadways due to operation of the Project and cumulative projects, as traffic is the greatest source of operational noise in the Project area. The trip generation from the Project is not anticipated to result in a measurable or an audible noise increase. As shown in **Table 6**, the Project would generate an increase in roadway noise levels much less than 1 dBA. Therefore, the Project would also be expected to contribute less than a 1 dBA increase in cumulative roadway noise levels, which would not exceed the significant threshold. The two related projects, the 245 South Los Robles Avenue project and the 399 East Del Mar Boulevard project would consist of multi-family residential uses, similar to the proposed Project. The 245 South Los Robles Avenue and 399 East Del Mar Boulevard include a total of 186 units (131 + 55 = 186 total units), which is approximately twice the size of the proposed Project's 92 units. Thus, considered together, the traffic noise increase from the two related projects is estimated to be less than 1 dBA in total (i.e., double the proposed Project's 0.1 dBA increase as shown in **Table 6**). With the proposed

Project, the cumulative traffic noise level increase would be much less than 3 dBA and, therefore, cumulative traffic noise impacts would be less than significant.

Stationary-source noise is generally localized to the immediate area. The Project's stationary noise sources (i.e., fixed mechanical equipment, parking structure, and loading dock) would not contribute to an audible increase in ambient noise levels at adjacent properties and would not exceed City standards. Although each related project could potentially impact an adjacent sensitive use, that potential impact would be localized to that specific area and would not contribute to cumulative noise conditions at or adjacent to the proposed Project Site. Furthermore, environmental documents prepared for both related projects concluded that noise impacts would be less than significant. Thus, both related projects would also be in compliance with the City's standards. Therefore, cumulative stationary source noise would be less than significant. As the Project's contribution to cumulative traffic impacts and stationary-source noise impacts would not be cumulatively considerable, cumulative operational noise impacts would be less than significant.

6.3 Ground-Borne Vibration

Ground-borne vibration generated by man-made activities attenuates rapidly with distance from the source of the vibration. Man-made vibration issues are therefore usually confined to short distances from the source (i.e., 50 feet or less). Due to the rapid attenuation characteristics of ground-borne vibration, there is no expected potential for cumulative construction- or operational-period impacts with respect to ground-borne vibration from related projects. Therefore, cumulative vibration impacts would be less than significant.

7.0
Summary of Results

Noise and vibration levels associated with the Project have been evaluated to determine the level of impact from construction activities and future operations of the Project.

7.1 Construction

Construction of the Project has the potential to generate an increase in temporary or periodic noise through the use of heavy-duty construction equipment and through vehicle trips generated from construction workers traveling to and from the Project Site. However, use of construction equipment equipped with industry standard noise minimization strategies (PDF-NOISE-1) and compliance with the City's Noise Ordinance would minimize the potential for noise generation. As shown in Table 5, noise from construction of the Project would not exceed the City's standards. Therefore, impacts related to construction noise would be less than significant.

Construction activities would generate vibration from the use of heavy equipment and haul trucks. However, vibration levels at sensitive receptors would be below the thresholds. As a result, construction vibration impacts would be less than significant.

7.2 Operation

Project operations would generate an increase in ambient noise from roadway traffic and stationary noise. As shown in Table 6, the Project would not result in a substantial increase in roadway traffic noise and would not exceed the significance thresholds. Stationary noise sources would be designed in accordance with City standards and would not exceed the allowable noise levels (PDF-NOISE-2). As a result, operational noise impacts would be less than significant.

The Project's operations would include typical residential-grade stationary mechanical and electrical equipment for multi-family residential buildings, such as air handling units, condenser units, and exhaust fans, which would produce vibration. In addition, the primary sources of transient vibration would include passenger vehicle circulation within the proposed parking area. The potential vibration levels from Project operational sources at the closest existing and future sensitive receptor locations would be less than the significance threshold. As a result, operational vibration impacts would be less than significant.

Appendix A

Noise Worksheets

Appendix A.1

Construction Noise

Project: 253 S Los Robles

Construction Noise Impact on Sensitive Receptors

Residences to the Southwest Across E Del Mar Blvd

Parameters

Construction Hours:	8	Daytime hours (7 am to 7 pm)
	0	Evening hours (7 pm to 10 pm)
	0	Nighttime hours (10 pm to 7 am)
Leq to L10 factor	3	

				R1				
Construction Phase **Equipment Type**	**No. of Equip.**	**Reference Noise Level at 50ft, Lmax**	**Acoustical Usage Factor**	**Distance (ft)**	**Lmax**	**Leq**	**L10**	**Estimated Noise Shielding, dBA**
Demolition						***61***		
Tractor/Loader/Backhoe	1	80	25%	350	63	57	60	
Dump/Haul Trucks	4	76	20%	550	61	54	57	
Rubber Tired Loader	1	79	50%	450	60	57	60	
Site Preparation						***63***		
Tractor/Loader/Backhoe	1	80	25%	450	61	55	58	
Auger Drill Rig	1	85	20%	350	68	61	64	
Dump/Haul Trucks	1	76	20%	550	55	48	51	
Rubber Tired Loader	1	79	50%	450	60	57	60	
Grading/Excavation						***64***		
Tractor/Loader/Backhoe	1	80	25%	450	61	55	58	
Compactor (ground)	1	83	20%	350	66	59	62	
Excavator	1	81	40%	450	62	58	61	
Dump/Haul Trucks	5	76	20%	550	62	55	58	
Rubber Tired Loader	1	79	50%	550	58	55	58	
Drainage/Utilities/Trenching						***61***		
Tractor/Loader/Backhoe	1	80	25%	350	63	57	60	
Dump/Haul Trucks	1	76	20%	550	55	48	51	
Trenching Machine	1	80	50%	450	61	58	61	
Foundation/Concrete Pour						***65***		
Air Compressor	1	78	50%	450	59	56	59	
Tractor/Loader/Backhoe	1	80	25%	350	63	57	60	
Cement and Mortar Mixers	1	79	40%	450	60	56	59	
Cranes	1	81	40%	350	64	60	63	
Pumps	1	81	50%	550	60	57	60	
Building Construction						***71***		
Air Compressor	2	78	50%	450	62	59	62	
Concrete Saw	2	90	20%	350	76	69	72	
Cranes	1	81	40%	550	60	56	59	
Forklift	1	75	10%	350	58	48	51	
Generator Sets	1	81	50%	450	62	59	62	
Tractor/Loader/Backhoe	3	80	25%	550	64	58	61	
Welders	2	74	40%	350	60	56	59	
Paving						***57***		
Paver	1	77	50%	350	60	57	60	
Architectural Coating						***58***		
Air Compressor	1	78	50%	350	61	58	61	
Forklift	1	75	10%	450	56	46	49	
Overlapping Phases						***65***		
Maximum Noise Level						**71**		
Maximum Noise Level at 100 feet						**65**		

Project: 253 S Los Robles

Construction Noise Impact on Sensitive Receptors

Residences to the South Across E Del Mar Blvd

Parameters

Construction Hours:	8	Daytime hours (7 am to 7 pm)
	0	Evening hours (7 pm to 10 pm)
	0	Nighttime hours (10 pm to 7 am)
Leq to L10 factor	3	

				R1				
Construction Phase **Equipment Type**	**No. of Equip.**	**Reference Noise Level at 50ft, Lmax**	**Acoustical Usage Factor**	**Distance (ft)**	**Lmax**	**Leq**	**L10**	**Estimated Noise Shielding, dBA**
Demolition						***61***		
Tractor/Loader/Backhoe	1	80	25%	350	63	57	60	
Dump/Haul Trucks	4	76	20%	530	62	55	58	
Rubber Tired Loader	1	79	50%	450	60	57	60	
Site Preparation						***63***		
Tractor/Loader/Backhoe	1	80	25%	450	61	55	58	
Auger Drill Rig	1	85	20%	350	68	61	64	
Dump/Haul Trucks	1	76	20%	530	55	49	52	
Rubber Tired Loader	1	79	50%	450	60	57	60	
Grading/Excavation						***64***		
Tractor/Loader/Backhoe	1	80	25%	450	61	55	58	
Compactor (ground)	1	83	20%	350	66	59	62	
Excavator	1	81	40%	450	62	58	61	
Dump/Haul Trucks	5	76	20%	530	62	55	58	
Rubber Tired Loader	1	79	50%	530	58	55	58	
Drainage/Utilities/Trenching						***61***		
Tractor/Loader/Backhoe	1	80	25%	350	63	57	60	
Dump/Haul Trucks	1	76	20%	530	55	49	52	
Trenching Machine	1	80	50%	450	61	58	61	
Foundation/Concrete Pour						***65***		
Air Compressor	1	78	50%	450	59	56	59	
Tractor/Loader/Backhoe	1	80	25%	350	63	57	60	
Cement and Mortar Mixers	1	79	40%	450	60	56	59	
Cranes	1	81	40%	350	64	60	63	
Pumps	1	81	50%	530	60	57	60	
Building Construction						***71***		
Air Compressor	2	78	50%	450	62	59	62	
Concrete Saw	2	90	20%	350	76	69	72	
Cranes	1	81	40%	530	60	57	60	
Forklift	1	75	10%	350	58	48	51	
Generator Sets	1	81	50%	450	62	59	62	
Tractor/Loader/Backhoe	3	80	25%	530	64	58	61	
Welders	2	74	40%	350	60	56	59	
Paving						***57***		
Paver	1	77	50%	350	60	57	60	
Architectural Coating						***58***		
Air Compressor	1	78	50%	350	61	58	61	
Forklift	1	75	10%	450	56	46	49	
Overlapping Phases						***65***		
Maximum Noise Level at 100 feet						**59**		

Project: 253 S Los Robles

Construction Noise Impact on Sensitive Receptors

Church to the Southeast Across S Los Robles Ave

Parameters

Construction Hours:	8	Daytime hours (7 am to 7 pm)
	0	Evening hours (7 pm to 10 pm)
	0	Nighttime hours (10 pm to 7 am)
Leq to L10 factor	3	

				R2				
Construction Phase **Equipment Type**	**No. of Equip.**	**Reference Noise Level at 50ft, Lmax**	**Acoustical Usage Factor**	**Distance (ft)**	**Lmax**	**Leq**	**L10**	**Estimated Noise Shielding, dBA**
Demolition						***64***		
Tractor/Loader/Backhoe	1	80	25%	225	67	61	64	
Dump/Haul Trucks	4	76	20%	475	62	55	58	
Rubber Tired Loader	1	79	50%	350	62	59	62	
Site Preparation						***67***		
Tractor/Loader/Backhoe	1	80	25%	350	63	57	60	
Auger Drill Rig	1	85	20%	225	72	65	68	
Dump/Haul Trucks	1	76	20%	475	56	49	52	
Rubber Tired Loader	1	79	50%	350	62	59	62	
Grading/Excavation						***66***		
Tractor/Loader/Backhoe	1	80	25%	350	63	57	60	
Compactor (ground)	1	83	20%	225	70	63	66	
Excavator	1	81	40%	350	64	60	63	
Dump/Haul Trucks	5	76	20%	475	63	56	59	
Rubber Tired Loader	1	79	50%	475	59	56	59	
Drainage/Utilities/Trenching						***64***		
Tractor/Loader/Backhoe	1	80	25%	225	67	61	64	
Dump/Haul Trucks	1	76	20%	475	56	49	52	
Trenching Machine	1	80	50%	350	63	60	63	
Foundation/Concrete Pour						***68***		
Air Compressor	1	78	50%	350	61	58	61	
Tractor/Loader/Backhoe	1	80	25%	225	67	61	64	
Cement and Mortar Mixers	1	79	40%	350	62	58	61	
Cranes	1	81	40%	225	68	64	67	
Pumps	1	81	50%	475	61	58	61	
Building Construction						***74***		
Air Compressor	2	78	50%	350	64	61	64	
Concrete Saw	2	90	20%	225	80	73	76	
Cranes	1	81	40%	475	61	57	60	
Forklift	1	75	10%	225	62	52	55	
Generator Sets	1	81	50%	350	64	61	64	
Tractor/Loader/Backhoe	3	80	25%	475	65	59	62	
Welders	2	74	40%	225	64	60	63	
Paving						***61***		
Paver	1	77	50%	225	64	61	64	
Architectural Coating						***62***		
Air Compressor	1	78	50%	225	65	62	65	
Forklift	1	75	10%	350	58	48	51	
Maximum (overlapping phases)						***68***		
Maximum Noise Level at 100 feet						**62**		

Project: 253 S Los Robles

Construction Noise Impact on Sensitive Receptors

Residences Adjacent to the Project Site to the West

Parameters

Construction Hours:	8	Daytime hours (7 am to 7 pm)
	0	Evening hours (7 pm to 10 pm)
	0	Nighttime hours (10 pm to 7 am)
Leq to L10 factor	3	

				R3				
Construction Phase **Equipment Type**	**No. of Equip.**	**Reference Noise Level at 50ft, Lmax**	**Acoustical Usage Factor**	**Distance (ft)**	**Lmax**	**Leq**	**L10**	**Estimated Noise Shielding, dBA**
Demolition						***77***		
Tractor/Loader/Backhoe	1	80	25%	130	72	66	69	
Dump/Haul Trucks	4	76	20%	250	68	61	64	
Rubber Tired Loader	1	79	50%	50	79	76	79	
Site Preparation						***79***		
Tractor/Loader/Backhoe	1	80	25%	130	72	66	69	
Auger Drill Rig	1	85	20%	50	85	78	81	
Dump/Haul Trucks	1	76	20%	250	62	55	58	
Rubber Tired Loader	1	79	50%	130	71	68	71	
Grading/Excavation						***77***		
Tractor/Loader/Backhoe	1	80	25%	130	72	66	69	
Compactor (ground)	1	83	20%	50	83	76	79	
Excavator	1	81	40%	130	73	69	72	
Dump/Haul Trucks	5	76	20%	250	69	62	65	
Rubber Tired Loader	1	79	50%	250	65	62	65	
Drainage/Utilities/Trenching						***75***		
Tractor/Loader/Backhoe	1	80	25%	50	80	74	77	
Dump/Haul Trucks	1	76	20%	250	62	55	58	
Trenching Machine	1	80	50%	130	72	69	72	
Foundation/Concrete Pour						***79***		
Air Compressor	1	78	50%	130	70	67	70	
Tractor/Loader/Backhoe	1	80	25%	50	80	74	77	
Cement and Mortar Mixers	1	79	40%	130	71	67	70	
Cranes	1	81	40%	50	81	77	80	
Pumps	1	81	50%	250	67	64	67	
Building Construction						***80***		
Air Compressor	2	78	50%	130	73	70	73	
Concrete Saw	2	90	20%	130	85	78	81	
Cranes	1	81	40%	250	67	63	66	
Forklift	1	75	10%	50	75	65	68	
Generator Sets	1	81	50%	130	73	70	73	
Tractor/Loader/Backhoe	3	80	25%	250	71	65	68	
Welders	2	74	40%	50	77	73	76	
Paving						***74***		
Paver	1	77	50%	50	77	74	77	
Architectural Coating						***75***		
Air Compressor	1	78	50%	50	78	75	78	
Forklift	1	75	10%	130	67	57	60	
Maximum (overlapping phases)						***81***		
Maximum Level at 100 feet						***75***		

Project: 253 S Los Robles

Construction Noise Impact on Sensitive Receptors

Hotel to the Northeast at the Corner of S Los Robles Ave & Cordova St

Parameters

Construction Hours:	8	Daytime hours (7 am to 7 pm)
	0	Evening hours (7 pm to 10 pm)
	0	Nighttime hours (10 pm to 7 am)
Leq to L10 factor	3	

				R3				
Construction Phase **Equipment Type**	**No. of Equip.**	**Reference Noise Level at 50ft, Lmax**	**Acoustical Usage Factor**	**Distance (ft)**	**Lmax**	**Leq**	**L10**	**Estimated Noise Shielding, dBA**
Demolition						***64***		
Tractor/Loader/Backhoe	1	80	25%	380	62	56	59	
Dump/Haul Trucks	4	76	20%	500	62	55	58	
Rubber Tired Loader	1	79	50%	250	65	62	65	
Site Preparation						***66***		
Tractor/Loader/Backhoe	1	80	25%	380	62	56	59	
Auger Drill Rig	1	85	20%	250	71	64	67	
Dump/Haul Trucks	1	76	20%	500	56	49	52	
Rubber Tired Loader	1	79	50%	380	61	58	61	
Grading/Excavation						***66***		
Tractor/Loader/Backhoe	1	80	25%	380	62	56	59	
Compactor (ground)	1	83	20%	250	69	62	65	
Excavator	1	81	40%	380	63	59	62	
Dump/Haul Trucks	5	76	20%	500	63	56	59	
Rubber Tired Loader	1	79	50%	500	59	56	59	
Drainage/Utilities/Trenching						***63***		
Tractor/Loader/Backhoe	1	80	25%	250	66	60	63	
Dump/Haul Trucks	1	76	20%	500	56	49	52	
Trenching Machine	1	80	50%	380	62	59	62	
Foundation/Concrete Pour						***67***		
Air Compressor	1	78	50%	380	60	57	60	
Tractor/Loader/Backhoe	1	80	25%	250	66	60	63	
Cement and Mortar Mixers	1	79	40%	380	61	57	60	
Cranes	1	81	40%	250	67	63	66	
Pumps	1	81	50%	500	61	58	61	
Building Construction						***71***		
Air Compressor	2	78	50%	380	63	60	63	
Concrete Saw	2	90	20%	380	75	68	71	
Cranes	1	81	40%	500	61	57	60	
Forklift	1	75	10%	250	61	51	54	
Generator Sets	1	81	50%	380	63	60	63	
Tractor/Loader/Backhoe	3	80	25%	500	65	59	62	
Welders	2	74	40%	250	63	59	62	
Paving						***60***		
Paver	1	77	50%	250	63	60	63	
Architectural Coating						***61***		
Air Compressor	1	78	50%	250	64	61	64	
Forklift	1	75	10%	380	57	47	50	
Maximum (overlapping phases)						***68***		
Maximum Level at 100 feet						**62**		

Vibration Calculations

Equipment	Large Bulldozer/Caisson Drilling	Loaded Trucks	Jackhammer	Small Dozer
Reference Vibration Levels	0.089	0.076	0.035	0.003
Reference Distance	25	25	25	25
Distance to Sensitive Receptor	50	50	50	50
	0.5	0.5	0.5	0.5
	0.354	0.354	0.354	0.354
Vibration Levels at Sensitive Receptor	0.0315	0.02687	0.01237	0.00106

TRAFFIC NOISE ANALYSIS TOOL

Project Name: 253 S Los Robles Ave
Project Number:
Analysis Scenario:
Source of Traffic Volumes:

Roadway Segment	Ground Type	Distance from Roadway to Receiver (feet)	Speed (mph)			Peak Hour Volume			Peak Hour Noise Level (Leq(h) dBA)	CNEL Noise Level (dBA)
			Auto	MT	HT	Auto	MT	HT		
Haul Trucks	Hard	50	40	40	40	0	0	8	55.9	56.9
Worker and Vendor Trips	Hard	50	40	40	40	5	3	0	49.3	50.3

Model Notes:
The calculation is based on the methodology described in FHWA Traffic Noise Model Technical Manual (1998).
The peak hour noise level at 50 feet was validated with the results from FHWA Traffic Noise Model Version 2.5.
Accuracy of the calculation is within ±0.1 dB when comparing to TNM results.
Noise propagation greater than 50 feet is based on the following assumptions:
For hard ground, the propagation rate is 3 dB per doubling the distance.
For soft ground, the propagation rate is 4.5 dB per doubling the distance.
Vehicles are assumed to be on a long straight roadway with cruise speed.
Roadway grade is less than 1.5%.

TRAFFIC NOISE ANALYSIS TOOL

Project Name: Burbank Avion
Project Number: D160935.00
Analysis Scenario: Cumulative
Source of Traffic Volumes: Fehr and Peers, 2017

Roadway Segment	Ground Type	Distance from Roadway to Receiver (feet)	Speed (mph)			Peak Hour Volume			Peak Hour Noise Level (Leq(h) dBA)	CNEL Noise Level (dBA)
			Auto	MT	HT	Auto	MT	HT		
Haul Trucks	Hard	50	40	40	40	0	0	24	60.7	61.7
Worker and Vendor Trips	Hard	50	40	40	40	15	9	0	54.1	55.1

Model Notes:
The calculation is based on the methodology described in FHWA Traffic Noise Model Technical Manual (1998).
The peak hour noise level at 50 feet was validated with the results from FHWA Traffic Noise Model Version 2.5.
Accuracy of the calculation is within ±0.1 dB when comparing to TNM results.
Noise propagation greater than 50 feet is based on the following assumptions:
For hard ground, the propagation rate is 3 dB per doubling the distance.
For soft ground, the propagation rate is 4.5 dB per doubling the distance.
Vehicles are assumed to be on a long straight roadway with cruise speed.
Roadway grade is less than 1.5%.

Appendix A.2

Operational Noise

TRAFFIC NOISE ANALYSIS TOOL

Project Name: 253 Los Robles
Project Number:
Analysis Scenario: Existing
Source of Traffic Volumes:

Roadway Segment	Ground Type	Distance from Roadway to Receiver (feet)	Speed (mph)			Peak Hour Volume			Peak Hour Noise Level (Leq(h) dBA)	Noise Level dBA CNEL
			Auto	MT	HT	Auto	MT	HT		
Cordova St between Marengo Ave & Euclid Ave	Hard	25	35	35	35	777	16	8	66.9	67.2
Cordova St between Euclid Ave & Los Robles Ave	Hard	25	35	35	35	843	17	9	67.3	67.6
Cordova St between Los Robles Ave & Oakland Ave	Hard	25	35	35	35	964	20	10	67.8	68.1
Marengo Ave between Del Mar Blvd & California Blvd	Hard	25	35	35	35	1155	24	12	68.6	68.9
Los Robles Ave between Del Mar Blvd & California Blvd	Hard	25	35	35	35	914	19	9	67.6	67.9

Model Notes:
The calculation is based on the methodology described in FHWA Traffic Noise Model Technical Manual (1998).
The peak hour noise level at 50 feet was validated with the results from FHWA Traffic Noise Model Version 2.5.
Accuracy of the calculation is within ±0.1 dB when comparing to TNM results.
Noise propagation greater than 50 feet is based on the following assumptions:
For hard ground, the propagation rate is 3 dB per doubling the distance.
For soft ground, the propagation rate is 4.5 dB per doubling the distance.
Vehicles are assumed to be on a long straight roadway with cruise speed.
Roadway grade is less than 1.5%.
CNEL levels were obtained based on Figure 2-19, on page 2-58 Caltran's TeNS 2013.

TRAFFIC NOISE ANALYSIS TOOL

Project Name: 253 Los Robles
Project Number:
Analysis Scenario: Existing plus Project
Source of Traffic Volumes:

Roadway Segment	Ground Type	Distance from Roadway to Receiver (feet)	Speed (mph)			Peak Hour Volume			Peak Hour Noise Level (Leq(h) dBA)	Noise Level dBA CNEL
			Auto	MT	HT	Auto	MT	HT		
Cordova St between Marengo Ave & Euclid Ave	Hard	25	35	35	35	789	16	8	67.0	67.3
Cordova St between Euclid Ave & Los Robles Ave	Hard	25	35	35	35	855	18	9	67.3	67.6
Cordova St between Los Robles Ave & Oakland Ave	Hard	25	35	35	35	976	20	10	67.9	68.2
Marengo Ave between Del Mar Blvd & California Blvd	Hard	25	35	35	35	1161	24	12	68.6	68.9
Los Robles Ave between Del Mar Blvd & California Blvd	Hard	25	35	35	35	924	19	10	67.7	68.0

Model Notes:
The calculation is based on the methodology described in FHWA Traffic Noise Model Technical Manual (1998).
The peak hour noise level at 50 feet was validated with the results from FHWA Traffic Noise Model Version 2.5.
Accuracy of the calculation is within ±0.1 dB when comparing to TNM results.
Noise propagation greater than 50 feet is based on the following assumptions:
For hard ground, the propagation rate is 3 dB per doubling the distance.
For soft ground, the propagation rate is 4.5 dB per doubling the distance.
Vehicles are assumed to be on a long straight roadway with cruise speed.
Roadway grade is less than 1.5%.
CNEL levels were obtained based on Figure 2-19, on page 2-58 Caltran's TeNS 2013.

Appendix A.3

Noise Measurements

Summary

File Name on Meter	R1
File Name on PC	SLM_0005055_LxT_Data_076.00.ldbin
Serial Number	0005055
Model	SoundTrack LxT®
Firmware Version	2.301
User	
Location	
Job Description	
Note	

Measurement

Description	
Start	2018-02-07 08:30:38
Stop	2018-02-07 08:45:38
Duration	00:15:00.0
Run Time	00:15:00.0
Pause	00:00:00.0
Pre Calibration	2018-02-07 08:28:23
Post Calibration	None
Calibration Deviation	---

Overall Settings

RMS Weight	A Weighting			
Peak Weight	A Weighting			
Detector	Slow			
Preamp	Unknown			
Microphone Correction	Off			
Integration Method	Exponential			
Overload	147.2 dB			
	A	**C**	**Z**	
Under Range Peak	**103.5**	100.5	105.5	dB
Under Range Limit	**38.7**	36.7	44.7	dB
Noise Floor	26.0	26.5	33.9	dB

Results

LA_{Seq}	58.8	dB	
LASE	88.3	dB	
EAS	75.257	µPa²h	
EAS8	2.408	mPa²h	
EAS40	12.041	mPa²h	
$LA_{Speak\ (max)}$	2018-02-07 08:39:15	92.1	dB
LA_{Smax}	2018-02-07 08:39:17	73.1	dB
LA_{Smin}	2018-02-07 08:32:03	46.9	dB

Summary

File Name on Meter	R2
File Name on PC	SLM_0005055_LxT_Data_080.00.ldbin
Serial Number	0005055
Model	SoundTrack LxT®
Firmware Version	2.301
User	
Location	
Job Description	
Note	

Measurement

Description	
Start	2018-02-07 09:39:43
Stop	2018-02-07 09:54:43
Duration	00:15:00.0
Run Time	00:15:00.0
Pause	00:00:00.0
Pre Calibration	2018-02-07 08:28:21
Post Calibration	None
Calibration Deviation	---

Overall Settings

RMS Weight	A Weighting			
Peak Weight	A Weighting			
Detector	Slow			
Preamp	Unknown			
Microphone Correction	Off			
Integration Method	Exponential			
Overload	147.2 dB			
	A	**C**	**Z**	
Under Range Peak	**103.5**	100.5	105.5	dB
Under Range Limit	**38.7**	36.7	44.7	dB
Noise Floor	26.0	26.5	33.9	dB

Results

LA_{Seq}	69.4		dB
LASE	98.9		dB
EAS	862.664		µPa²h
EAS8	27.605		mPa²h
EAS40	138.026		mPa²h
$LA_{Speak\ (max)}$	2018-02-07 09:46:31	107.0	dB
LA_{Smax}	2018-02-07 09:46:32	91.0	dB
LA_{Smin}	2018-02-07 09:49:38	52.6	dB
SEA	-99.9		dB

Summary

File Name on Meter	R3
File Name on PC	SLM_0005055_LxT_Data_079.00.ldbin
Serial Number	0005055
Model	SoundTrack LxT®
Firmware Version	2.301
User	
Location	
Job Description	
Note	

Measurement

Description	
Start	2018-02-07 09:23:31
Stop	2018-02-07 09:38:31
Duration	00:15:00.0
Run Time	00:15:00.0
Pause	00:00:00.0
Pre Calibration	2018-02-07 08:28:21
Post Calibration	None
Calibration Deviation	---

Overall Settings

RMS Weight	A Weighting			
Peak Weight	A Weighting			
Detector	Slow			
Preamp	Unknown			
Microphone Correction	Off			
Integration Method	Exponential			
Overload	147.2 dB			
	A	**C**	**Z**	
Under Range Peak	**103.5**	100.5	105.5	dB
Under Range Limit	**38.7**	36.7	44.7	dB
Noise Floor	26.0	26.5	33.9	dB

Results

LA_{Seq}	67.0 dB		
LASE	96.5 dB		
EAS	495.992 µPa²h		
EAS8	15.872 mPa²h		
EAS40	79.359 mPa²h		
$LA_{Speak\ (max)}$	2018-02-07 09:23:45	94.7	dB
LA_{Smax}	2018-02-07 09:23:46	81.3	dB
LA_{Smin}	2018-02-07 09:27:34	53.2	dB
SEA	-99.9 dB		

Summary

File Name on Meter	R4
File Name on PC	SLM_0005055_LxT_Data_077.00.ldbin
Serial Number	0005055
Model	SoundTrack LxT®
Firmware Version	2.301
User	
Location	
Job Description	
Note	

Measurement

Description	
Start	2018-02-07 08:47:10
Stop	2018-02-07 09:02:10
Duration	00:15:00.0
Run Time	00:15:00.0
Pause	00:00:00.0
Pre Calibration	2018-02-07 08:28:21
Post Calibration	None
Calibration Deviation	---

Overall Settings

RMS Weight	A Weighting			
Peak Weight	A Weighting			
Detector	Slow			
Preamp	Unknown			
Microphone Correction	Off			
Integration Method	Exponential			
Overload	147.2 dB			
	A	**C**	**Z**	
Under Range Peak	**103.5**	100.5	105.5	dB
Under Range Limit	**38.7**	36.7	44.7	dB
Noise Floor	26.0	26.5	33.9	dB

Results

LA_{Seq}	51.7		dB
LASE	81.2		dB
EAS	14.673		µPa²h
EAS8	469.549		µPa²h
EAS40	2.348		mPa²h
$LA_{Speak\ (max)}$	2018-02-07 09:02:06	88.4	dB
LA_{Smax}	2018-02-07 08:49:36	68.4	dB
LA_{Smin}	2018-02-07 08:53:03	46.1	dB
SEA	-99.9		dB

Summary

File Name on Meter	R5
File Name on PC	SLM_0005055_LxT_Data_078.00.ldbin
Serial Number	0005055
Model	SoundTrack LxT®
Firmware Version	2.301
User	
Location	
Job Description	
Note	

Measurement

Description	
Start	2018-02-07 09:05:23
Stop	2018-02-07 09:20:23
Duration	00:15:00.0
Run Time	00:15:00.0
Pause	00:00:00.0
Pre Calibration	2018-02-07 08:28:21
Post Calibration	None
Calibration Deviation	---

Overall Settings

RMS Weight	A Weighting			
Peak Weight	A Weighting			
Detector	Slow			
Preamp	Unknown			
Microphone Correction	Off			
Integration Method	Exponential			
Overload	147.2 dB			
	A	**C**	**Z**	
Under Range Peak	**103.5**	100.5	105.5	dB
Under Range Limit	**38.7**	36.7	44.7	dB
Noise Floor	26.0	26.5	33.9	dB

Results

LA_{Seq}	68.8 dB		
LASE	98.3 dB		
EAS	753.736 µPa²h		
EAS8	24.120 mPa²h		
EAS40	120.598 mPa²h		
$LA_{Speak\ (max)}$	2018-02-07 09:07:38	99.7	dB
LA_{Smax}	2018-02-07 09:07:39	87.9	dB
LA_{Smin}	2018-02-07 09:06:00	61.8	dB
SEA	-99.9 dB		

Attachment D

ESA, Air Quality Technical Report

253 SOUTH LOS ROBLES AVENUE MULTI-FAMILY PROJECT

Air Quality Technical Report

Prepared for
City of Pasadena
175 N Garfield Avenue
Pasadena, CA 91101

August 2018

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EXECUTIVE SUMMARY

Zhuang & Zhong Los Robles, LLC (the Applicant) proposes to develop the Los Robles Condominiums (Project) a residential development containing 92 condominium units, located at 253 South Los Robles Avenue in the City of Pasadena (City). The Project Site is an approximately 0.815 acre (35,501 square-foot [SF]) rectangular site (Project Site) located on the west side of Los Robles Avenue, south of Cordova Street. In accordance with the requirements under the California Environmental Quality Act (CEQA), this Technical Report provides an estimate of air pollutant emissions for the Project and the potential impacts to air quality from associated construction and operational activities. The report includes the categories and types of emission sources resulting from the Project, the calculation procedures used in the analysis, and assumptions or limitations.

The Project would consist of a 94,165 SF, six-story, residential building. Overall, the Project would consist of 92 condominium units, a 1,699 SF gym, 22,320 SF of open space, including a 6th Floor Terrace and Sundeck, and a 68,668 SF three-level subterranean parking garage. The Project includes demolition of all existing on-site buildings and features, excavation to accommodate the subterranean parking levels, and the construction of the new residential building.

This report summarizes the potential for the Project to conflict with an applicable air quality plan, to violate an air quality standard or threshold, to result in a cumulatively considerable net increase of criteria pollutant emissions, to expose sensitive receptors to substantial pollutant concentrations, or to create objectionable odors affecting a substantial number of people. The findings of the analyses are as follows:

- The incremental increase in emissions from construction and operation of the Project would not exceed the regional daily emission thresholds set forth by the South Coast Air Quality Management District (SCAQMD). Thus, the Project would not result in a regional violation of applicable air quality standards or jeopardize the timely attainment of such standards in the South Coast Air Basin (the Air Basin).

- The incremental increase in on-site emissions from construction and operation of the Project would not exceed the localized significance thresholds set forth by the SCAQMD. Thus, the Project would not result in a localized violation of applicable air quality standards or expose off-site receptors to substantial levels of regulated air contaminants.

- Emissions from the increase in traffic due to operation of the Project would not have a significant impact upon 1-hour or 8-hour local carbon monoxide (CO) concentrations due to mobile source emissions.

- Project construction and operations would not result in significant levels of odors.
- The Project would be consistent with air quality policies set forth by the City of Pasadena, the SCAQMD, and the Southern California Association of Governments (SCAG).
- The Project would not result in a significant cumulative air quality impact.

1.0
Introduction

ESA has conducted an air quality assessment to evaluate the potential air quality impacts associated with construction activities, mobile sources, building energy demand, and other aspects of Project construction and operations that have the potential to generate criteria air pollutant emissions. The objectives of this Air Quality Technical Report are to:

- Evaluate the construction and operational criteria air pollutant emissions associated with Project development and the potential for regional and localized air quality impacts based on applicable standards and thresholds;

- Provide, if needed, air quality mitigation measures as required to meet applicable air quality standards and thresholds as specified by the SCAQMD.

1.1 Existing Conditions

Zhuang & Zhong Los Robles, LLC (the Applicant) proposes to develop the Los Robles Condominiums (Project) located at 253 South Los Robles in the City of Pasadena (City). The Project Site is an approximately 0.815 acre (35,501 SF) rectangular-shaped site (Project Site) located on the west side of Los Robles Avenue, south of Cordova Street. The Project Site is also located near public transportation options including bus stops approximately 50 feet east of the Project Site at the intersection of South Los Robles Ave/Cordova Street, 220 feet northeast of the Project site along Cordova Street, and 310 feet north of the Project Site along South Los Robles Ave, and the Metro Gold Line Del Mar Station is located approximately 0.35 miles west of the Project Site. The Project Site is shown in **Figure 1**, *Vicinity Location Map.* The Project Site abuts a mix of residential uses, commercial uses and a school.

The Project Site is currently developed with an office building totaling 43,544 SF that is currently vacant and a 9,160 SF parking lot. **Figure 2**, *Aerial Photograph of Project Site and Vicinity*, shows the Project Site and surrounding land uses.

D170931.00 - 253 South Los Robles Avenue Multi-Family Project\05 Graphics-GIS-Modeling\Illustrator

SOURCE: Google Earth Pro, basemap, 2018; ESA, 2018

253 S Los Robles Avenue Project

Figure 1
Vicinity Location Map

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SOURCE: Google Earth Pro, basemap, 2018; ESA, 2018

253 S Los Robles Avenue Project

Figure 2
Aerial Photograph of Project Site and Vicinity

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1.2 Project Description

The Project would consist of a 94,165 SF, six-story, residential building, which includes a 1,699 SF gym, 22,320 SF of open space including a 6th Floor Terrace and Sundeck. Parking would be provided in a three-level subterranean parking garage with 131 spaces and totaling 69,668 SF. Project construction would include the demolition of current structures, grading to prepare the Site for new development, excavation to accommodate the subterranean parking and basement levels, and the construction, architectural coating, and paving of the residential building.

The Project site is located in the CD-2 (Central District Specific Plan) zoning district in the City of Pasadena and is currently developed with one vacant office building. An Affordable Housing Concession Permit for floor area and building height are necessary to achieve the density bonus. In addition, a vesting Tentative Tract Map for condominium purposes and Design Review approval are required.

1.3 Existing Site Emissions

The Project Site is currently developed with an office building totaling 43,544 SF that is currently vacant and a 9,160 SF parking lot. While the site operated as an occupied office building for many years, to be conservative, this analysis considers all Project-related emissions as new emissions.

1.4 Existing Air Quality Conditions

1.4.1 Regional Air Quality

The distinctive climate of the South Coast Air Basin (the Air Basin) is determined primarily by its terrain and geographical location. Regional meteorology is dominated by a persistent high-pressure area which commonly resides over the eastern Pacific Ocean. Seasonal variations in the strength and position of this pressure cell cause changes in the weather patterns of the area. Warm summers, mild winters, infrequent rainfall, moderate daytime on-shore breezes, and moderate humidity characterize local climatic conditions. This normally mild climatic condition is occasionally interrupted by periods of hot weather, winter storms, and hot easterly Santa Ana winds.

The Air Basin is an area of high air pollution potential, particularly from June through September. This condition is generally attributed to the large amount of pollutant emissions, light winds and shallow vertical atmospheric mixing. This frequently reduces pollutant dispersion, thus causing elevated air pollution levels. Pollutant concentrations in the Air Basin vary with location, season and time of day. Ozone concentrations, for example, tend to be lower along the coast, higher in the near inland valleys and lower in the far inland areas of the Air Basin and adjacent desert.

Certain air pollutants have been recognized to cause notable health problems and consequential damage to the environment either directly or in reaction with other pollutants, due to their presence in elevated concentrations in the atmosphere. Such pollutants have been identified and

regulated as part of the overall endeavor to prevent further deterioration and facilitate improvement in air quality. The following pollutants are regulated by the United States Environmental Protection Agency (USEPA) and are subject to emissions control requirements adopted by federal, state and local regulatory agencies. These pollutants are referred to as "criteria air pollutants" as a result of the specific standards, or criteria, which have been adopted for them. A brief description of the health effects of these criteria air pollutants are provided below.

Ozone (O_3): O_3 is a secondary pollutant formed by the chemical reaction of VOCs and NO_X under favorable meteorological conditions such as high temperature and stagnation episodes. O_3 concentrations are generally highest during the summer months when direct sunlight, light wind, and warm temperature conditions are favorable. An elevated level of O_3 irritates the lungs and breathing passages, causing coughing and pain in the chest and throat, thereby increasing susceptibility to respiratory infections and reducing the ability to exercise. Effects are more severe in people with asthma and other respiratory ailments. Long-term exposure may lead to scarring of lung tissue and may lower the lung efficiency.[1]

Volatile Organic Compounds (VOCs). VOCs are typically formed from combustion of fuels and/or released through evaporation of organic liquids and internal combustion associated with motor vehicle usage and use of consumer products (e.g., architectural coatings, etc.) are the major sources of VOCs. [2] Some VOCs are also classified by the State as toxic air contaminants (TACs).[3] These are compounds comprised primarily of atoms of hydrogen and carbon.. Emissions of VOCs themselves are not "criteria" pollutants; however, they contribute with NO_X to formation of O_3 and are regulated as O_3 precursor emissions.

Nitrogen Dioxide (NO_2) and Nitrogen Oxides (NO_X): NO_X is a term that refers to a group of compounds containing nitrogen and oxygen. The primary compounds of air quality concern include NO_2 and nitric oxide (NO), which can quickly oxidize in the atmosphere to form NO_2. Ambient air quality standards have been promulgated for NO_2, which is a reddish-brown, reactive gas. The principle form of NO_X produced by combustion is NO, but NO reacts quickly in the atmosphere to form NO_2, creating the mixture of NO and NO_2 referred to as NO_X. Major sources of NO_X emissions include power plants, large industrial facilities, and motor vehicles. Emissions of NO_X are a precursor to the formation of ground-level ozone. NO_2 can potentially irritate the nose and throat, aggravate lung and heart problems, and may increase susceptibility to respiratory infections, especially in people with asthma. According to the California Air Resources Board (CARB), "NO_2 is an oxidizing gas capable of damaging cells lining the respiratory tract. Exposure to NO_2 along with other traffic-related pollutants, is associated with respiratory symptoms, episodes of respiratory illness and impaired lung functioning. Studies in animals have reported biochemical, structural, and cellular changes in the lung when exposed to NO_2 above the

1 California Air Resources Board. Ozone and Ambient Air Quality Standards, 2015. https://www.arb.ca.gov/research/aaqs/caaqs/ozone/ozone.htm. Accessed July 2018.

2 California Air Resources Board. Toxic Air Contaminants Monitoring. 2017. https://www.arb.ca.gov/aaqm/toxics.htm. Accessed July 2018.

3 California Air Resources Board. Toxic Air Contaminants Monitoring. 2017. https://www.arb.ca.gov/aaqm/toxics.htm. Accessed July 2018.

level of the current state air quality standard. Clinical studies of human subjects suggest that NO_2 exposure to levels near the current standard may worsen the effect of allergens in allergic asthmatics, especially in children."[4] NO_2 also contributes to the formation of particulate matter. The terms "NO_X" and "NO_2" are sometimes used interchangeably. However, the term "NO_X" is primarily used when discussing emissions, usually from combustion-related activities. The term "NO_2" is primarily used when discussing ambient air quality standards. More specifically, NO_2 is regulated as a criteria air pollutant under the Clean Air Act and subject to the ambient air quality standards, whereas NO_X and NO are not. In cases where the thresholds of significance or impact analyses are discussed in the context of NO_X emissions, it is based on the conservative assumption that all NO_X emissions would oxidize in the atmosphere to form NO_2.

Carbon Monoxide (CO): Carbon monoxide is primarily emitted from combustion processes and motor vehicles due to incomplete combustion of fuel. Elevated concentrations of CO weaken the heart's contractions and lower the amount of oxygen carried by the blood. It is especially dangerous for people with chronic heart disease. Inhalation of CO can cause nausea, dizziness, and headaches at moderate concentrations and can be fatal at high concentrations.

Sulfur Dioxide (SO_2): Major sources of SO_2 include power plants, large industrial facilities, diesel vehicles, and oil-burning residential heaters. Emissions of sulfur dioxide aggravate lung diseases, especially bronchitis. It also constricts the breathing passages, especially in asthmatics and people involved in moderate to heavy exercise. Sulfur dioxide potentially causes wheezing, shortness of breath, and coughing. High levels of particulates appear to worsen the effect of sulfur dioxide, and long-term exposures to both pollutants leads to higher rates of respiratory illness.

Particulate Matter (PM10 and PM2.5): The human body naturally prevents the entry of larger particles into the body. However, small particles including fugitive dust, with an aerodynamic diameter equal to or less than ten microns (PM10) and even smaller particles with an aerodynamic diameter equal to or less than 2.5 microns (PM2.5), can enter the body and are trapped in the nose, throat, and upper respiratory tract. These small particulates could potentially aggravate existing heart and lung diseases, change the body's defenses against inhaled materials, and damage lung tissue. The elderly, children, and those with chronic lung or heart disease are most sensitive to PM10 and PM2.5. Lung impairment can persist for two to three weeks after exposure to high levels of particulate matter. Some types of particulates could become toxic after inhalation due to the presence of certain chemicals and their reaction with internal body fluids. The elderly, children, and those with chronic lung or heart disease are most sensitive to PM10 and PM2.5. In children, studies have shown associations between particulate matter exposure and reduced lung function and increased respiratory symptoms and illnesses.[5] Lung impairment can persist for two to three weeks after exposure to high levels of particulate matter. Some types of particulates could become toxic after inhalation due to the presence of certain chemicals and their reaction with internal body fluids.

4 California Air Resources Board, "Nitrogen Dioxide – Overview," http://www.arb.ca.gov/research/aaqs/caaqs/no2-1/no2-1.htm. Accessed July 2018.

5 California Air Resources Board, "Particulate Matter – Overview," http://www.arb.ca.gov/research/aaqs/caaqs/pm/pm.htm. Accessed July 2018.

Lead (Pb): Lead is emitted from industrial facilities and from the sanding or removal of old lead-based paint. Smelting or processing the metal is the primary source of lead emissions, which is primarily a regional pollutant. Lead affects the brain and other parts of the body's nervous system. Exposure to lead in very young children impairs the development of the nervous system, kidneys, and blood forming processes in the body.

1.4.2 Local Air Quality

Existing Ambient Air Quality in the Surrounding Area

The SCAQMD maintains a network of air quality monitoring stations located throughout the Air Basin to measure ambient pollutant concentrations. The monitoring station most representative of the Project Site is the West San Gabriel Monitoring Station, located at 752 South Wilson Avenue, Pasadena, CA 91702. Criteria pollutants monitored at this station include O_3, NO_2, CO, and PM2.5. The monitoring station that is most representative of the Project Site for PM10 is the East San Gabriel Monitoring Station, located at 803 North Loren Avenue, Azusa, CA 91702 and for SO_2 is the Central Los Angeles Monitoring Station located at 1630 North Main Street, Los Angeles, CA 90012. The most recent data available from the SCAQMD for these monitoring stations are from years 2012 to 2016.[6] The pollutant concentration data for these years are summarized in **Table 1**, *Pollutant Standards and Ambient Air Quality Data from Representative Monitoring Stations*.

TABLE 1
POLLUTANT STANDARDS AND AMBIENT AIR QUALITY DATA FROM REPRESENTATIVE MONITORING STATIONS

Pollutant/Standard [a]	2012	2013	2014	2015	2016
O_3 (1-hour)					
Maximum Concentration (ppm)	0.111	0.099	0.124	0.111	0.126
Days > CAAQS (0.09 ppm)	8	2	6	12	12
O_3 (8-hour)					
Maximum Concentration (ppm)	0.086	0.075	0.096	0.084	0.090
4th High 8-hour Concentration (ppm)	0.080	0.070	0.086	0.082	0.082
Days > CAAQS (0.070 ppm)	20	2	13	18	19
Days > NAAQS (0.075 ppm)	9	0	7 [b]	18 [b]	18 [b]
NO_2 (1-hour)					
Maximum Concentration (ppm)	0.071	0.067	0.075	0.075	0.072
Days > CAAQS (0.180 ppm)	0	0	0	0	0
98th Percentile Concentration (ppm)	0.056	0.060	0.060	0.055	0.058
Days > NAAQS (0.100 ppm)	0	0	0	0	0
NO_2 (Annual)					
Annual Arithmetic Mean (0.030 ppm)	0.017	0.019	0.017	0.015	0.015

6 South Coast Air Quality Management District, Historical Data by Year, http://www.aqmd.gov/home/air-quality/air-quality-data-studies/historical-data-by-year. Accessed July 2018.

Pollutant/Standard [a]	2012	2013	2014	2015	2016
CO (1-hour)					
Maximum Concentration (ppm)	2.4	2.5	3.0	2.6	1.5
Days > CAAQS (20 ppm)	0	0	0	0	0
Days > NAAQS (35 ppm)	0	0	0	0	0
CO (8-hour)					
Maximum Concentration (ppm)	1.6	1.7	1.8	1.6	1.0
Days > CAAQS (9.0 ppm)	0	0	0	0	0
Days > NAAQS (9 ppm)	0	0	0	0	0
SO_2 (1-hour)					
Maximum Concentration (ppm)	0.007	0.011	0.005	0.012	0.013
Days > CAAQS (0.25 ppm)	0	0	0	0	0
99th Percentile Concentration (ppm)	0.003	0.004	0.004	0.006	0.003
Days > NAAQS (0.075 ppm)	0	0	0	0	0
PM10 (24-hour)					
Maximum Concentration (µg/m^3)	78	76	60	101	74
Samples > CAAQS (50 µg/m^3)	6	6	1	12	12
Samples > NAAQS (150 µg/m^3)	0	0	0	0	0
PM10 (Annual Average)					
Annual Arithmetic Mean (20 µg/m^3)	30.3	33.0	31.2	37.1	33.7
PM2.5 (24-hour)					
Maximum Concentration (µg/m^3)	30.5	25.7	38.8	48.5	29.2
98th Percentile Concentration (µg/m^3)	24.2	30.4	26.3	32.4	25.4
Samples > NAAQS (35 µg/m^3)	0	0	1	2	0
PM2.5 (Annual)					
Annual Arithmetic Mean (12 µg/m^3)	10.1	10.1	11.3	9.9	9.6

NOTES:

[a] ppm = parts per million; µg/m^3 = micrograms per cubic meter

[b] The year 2014, 2015, and 2016 number of days over the NAAQS is based on the 0.070 ppm federal 8-hour ozone standard, which was adopted by the U.S. Environmental Protection Agency in October 2015.

SOURCE: South Coast Air Quality Management District, Historical Data by Year, https://www.aqmd.gov/home/air-quality/air-quality-data-studies/historical-data-by-year. Accessed July 2018; California Air Resources Board, Air Quality Data Statistics, http://www.arb.ca.gov/adam/. Accessed July 2018; U.S. Environmental Protection Agency, AirData, http://www.epa.gov/airdata/ad_rep_mon.html. Accessed July 2018.

Sensitive Receptors

Certain population groups, such as children, elderly, and acutely and chronically ill persons (especially those with cardio-respiratory diseases), are considered more sensitive to the potential effects of air pollution than others. The nearest sensitive land uses to the Project Site are shown in **Figure 3**, *Sensitive Receptor Locations Nearest to the Project Site*, and include the following:

- Residential: Euclid Place multi-family residences located approximately 350 feet southwest of the Project Site across Euclid Avenue.
- Residential: Multi-family residences located approximately 350 feet south of the Project Site across Del Mar Boulevard.
- School: Pasadena Montessori School located approximately 225 feet southeast of the Project Site across Los Robles Avenue.

- Residential: Monterra Del Sol multi-family residential building located adjacent (about 50 feet) to the west of the Project Site.

Other air quality sensitive receptors in the vicinity of the Project Site include the residential uses located on the southwest corner of East Del Mar Boulevard and South Euclid Avenue southwest of the Project Site, and the California Apartment Homes approximately 425 feet north of the Project Site across Cordova Street; however, these air quality sensitive receptors are located at greater distances from the Project Site, and would be less impacted by Project emissions. Localized air quality impacts are quantified for the above sensitive receptors.

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SOURCE: Google Earth Pro, basemap, 2018; ESA, 2018

253 S Los Robles Avenue Project

Figure 3
Sensitive Receptor Locations Nearest to Project Site

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2.0
Regulatory Setting

A number of statutes, regulations, plans and policies have been adopted which address air quality concerns. The Project Site and vicinity is subject to air quality regulations developed and implemented at the federal, State, and local levels. At the federal level, the USEPA is responsible for implementation of the federal Clean Air Act. Some portions of the Clean Air Act (e.g., certain mobile source requirements and other requirements) are implemented directly by the USEPA. Other portions of the Clean Air Act (e.g., stationary source requirements) are implemented through delegation of authority to State and local agencies.

A number of plans and policies have been adopted by various agencies that address air quality concerns. Those plans and policies that are relevant to the Project are discussed below.

2.1 Federal

The federal Clean Air Act of 1963 was the first federal legislation regarding air pollution control and has been amended numerous times in subsequent years, with the most recent amendments occurring in 1990. At the federal level, the USEPA is responsible for implementation of certain portions of the Clean Air Act including mobile source requirements. Other portions of the Clean Air Act, such as stationary source requirements, are implemented by state and local agencies.

The Clean Air Act establishes federal air quality standards, known as National Ambient Air Quality Standards (NAAQS) and specifies future dates for achieving compliance. The 1990 Amendments to the Clean Air Act identify specific emission reduction goals for areas not meeting the NAAQS. These amendments require both a demonstration of reasonable further progress toward attainment and incorporation of additional sanctions for failure to attain or to meet interim milestones. Title I (Nonattainment Provisions) and Title II (Mobile Source Provisions) of the Clean Air Act are most applicable to the development and operations of the Project. Title I provisions were established with the goal of attaining the NAAQS for the following criteria pollutants: (1) O_3; (2) NO_2; (3) CO; (4) SO_2; (5) PM10; and (6) Pb. The NAAQS were updated in 1997 to include separate standards for PM2.5, which is a subset of PM10 emissions. **Table 2**, *Ambient Air Quality Standards*, shows the NAAQS currently in effect for each criteria pollutant.

TABLE 2

AMBIENT AIR QUALITY STANDARDS

Pollutant	Average Time	California Standards [a]		National Standards [b]		
		Concentration [c]	Method [d]	Primary [c,e]	Secondary [c,f]	Method [g]
O_3 [h]	1 Hour	0.09 ppm (180 µg/m^3)	Ultraviolet Photometry	—	Same as Primary Standard	Ultraviolet Photometry
	8 Hour	0.070 ppm (137 µg/m^3)		0.070 ppm (137 µg/m^3)		
NO_2 [i]	1 Hour	0.18 ppm (339 µg/m^3)	Gas Phase Chemi-luminescence	100 ppb (188 µg/m^3)	None	Gas Phase Chemi-luminescence
	Annual Arithmetic Mean	0.030 ppm (57 µg/m^3)		53 ppb (100 µg/m^3)	Same as Primary Standard	
CO	1 Hour	20 ppm (23 mg/m^3)	Non-Dispersive Infrared Photometry (NDIR)	35 ppm (40 mg/m^3)	None	Non-Dispersive Infrared Photometry (NDIR)
	8 Hour	9.0 ppm (10mg/m^3)		9 ppm (10 mg/m^3)		
	8 Hour (Lake Tahoe)	6 ppm (7 mg/m^3)		—	—	
SO_2 [j]	1 Hour	0.25 ppm (655 µg/m^3)	Ultraviolet Fluorescence	75 ppb (196 µg/m^3)	—	Ultraviolet Fluorescence; Spectrophotometry (Pararosaniline Method)[9]
	3 Hour	—		—	0.5 ppm (1300 µg/m^3)	
	24 Hour	0.04 ppm (105 µg/m^3)		0.14 ppm (for certain areas)[j]	—	
	Annual Arithmetic Mean	—		0.030 ppm (for certain areas) [j]	—	
PM10 [k]	24 Hour	50 µg/m^3	Gravimetric or Beta Attenuation	150 µg/m^3	Same as Primary Standard	Inertial Separation and Gravimetric Analysis
	Annual Arithmetic Mean	20 µg/m^3		—		
PM2.5 [k]	24 Hour	No Separate State Standard		35 µg/m^3	Same as Primary Standard	Inertial Separation and Gravimetric Analysis
	Annual Arithmetic Mean	12 µg/m^3	Gravimetric or Beta Attenuation	12.0 µg/m^3 [k]	15 µg/m^3	
Lead [l,m]	30 Day Average	1.5 µg/m^3	Atomic Absorption	—	—	High Volume Sampler and Atomic Absorption
	Calendar Quarter	—		1.5 µg/m^3 (for certain areas)[m]	Same as Primary Standard	

Pollutant	Average Time	California Standards [a]		National Standards [b]		
		Concentration [c]	Method [d]	Primary [c,e]	Secondary [c,f]	Method [g]
	Rolling 3-Month Average [m]	--		0.15 µg/m^3		
Visibility Reducing Particles [n]	8 Hour	Extinction coefficient of 0.23 per kilometer — visibility of ten miles or more (0.07 — 30 miles or more for Lake Tahoe) due to particles when relative humidity is less than 70 percent. Method: Beta Attenuation and Transmittance through Filter Tape.		**No Federal Standards**		
Sulfates (SO_4)	24 Hour	25 µg/m^3	Ion Chromatography			
Hydrogen Sulfide	1 Hour	0.03 ppm (42 µg/m^3)	Ultraviolet Fluorescence			
Vinyl Chloride [l]	24 Hour	0.01 ppm (26 µg/m^3)	Gas Chromatography			

NOTES:

[a] California standards for O_3, CO (except 8-hour Lake Tahoe), SO_2 (1 and 24 hour), NO_2nitrogen dioxide, and particulate matter (PM10, PM2.5, and visibility reducing particles), are values that are not to be exceeded. All others are not to be equaled or exceeded. California ambient air quality standards are listed in the Table of Standards in Section 70200 of Title 17 of the California Code of Regulations.

[b] National standards (other than O_3, PM10, PM2.5, and those based on annual arithmetic mean) are not to be exceeded more than once a year. The O_3 standard is attained when the fourth highest 8-hour concentration measured at each site in a year, averaged over three years, is equal to or less than the standard. For PM10, the 24 hour standard is attained when the expected number of days per calendar year with a 24-hour average concentration above 150 µg/m^3 is equal to or less than one. For PM2.5, the 24 hour standard is attained when 98 percent of the daily concentrations, averaged over three years, are equal to or less than the standard.

[c] Concentration expressed first in units in which it was promulgated. Equivalent units given in parentheses are based upon a reference temperature of 25°C and a reference pressure of 760 torr. Most measurements of air quality are to be corrected to a reference temperature of 25°C and a reference pressure of 760 torr; ppm in this table refers to ppm by volume, or micromoles of pollutant per mole of gas.

[d] Any equivalent procedure which can be shown to the satisfaction of CARB to give equivalent results at or near the level of the air quality standard may be used.

[e] National Primary Standards: The levels of air quality necessary, with an adequate margin of safety to protect the public health.

[f] National Secondary Standards: The levels of air quality necessary to protect the public welfare from any known or anticipated adverse effects of a pollutant.

[g] Reference method as described by the USEPA. An “equivalent method” of measurement may be used but must have a “consistent relationship to the reference method” and must be approved by the USEPA.

[h] On October 1, 2015, the national 8-hour O_3 primary and secondary standards were lowered from 0.075 to 0.070 ppm.

[i] To attain the 1-hour national standard, the 3-year average of the annual 98th percentile of the 1-hour daily maximum concentrations at each site must not exceed 100 ppb.

[j] On June 2, 2010, a new 1-hour SO_2 standard was established and the existing 24-hour and annual primary standards were revoked. To attain the 1-hour national standard, the 3-year average of the annual 99th percentile of the 1-hour daily maximum concentrations at each site must not exceed 75 ppb. The 1971 SO_2 national standards (24-hour and annual) remain in effect until one year after an area is designated for the 2010 standard, except that in areas designated non-attainment for the 1971 standards, the 1971 standards remain in effect until implementation plans to attain or maintain the 2010 standards are approved.

[k] On December 14, 2012, the national annual PM2.5 primary standard was lowered from 15 µg/m^3 to 12.0 µg/m^3.

[l] CARB has identified lead and vinyl chloride as 'toxic air contaminants' with no threshold level of exposure for adverse health effects determined. These actions allow for the implementation of control measures at levels below the ambient concentrations specified for these pollutants.

[m] The national standard for lead was revised on October 15, 2008 to a rolling 3-month average. The 1978 lead standard (1.5 µg/m^3 as a quarterly average) remains in effect until one year after an area is designated for the 2008 standard, except that in areas designated non-attainment for the 1978 standard, the 1978 standard remains in effect until implementation plans to attain or maintain the 2008 standard are approved.

[n] In 1989, CARB converted both the general statewide 10-mile visibility standard and the Lake Tahoe 30-mile visibility standard to instrumental equivalents, which are "extinction of 0.23 per kilometer" and "extinction of 0.07 per kilometer" for the statewide and Lake Tahoe Air Basin standards, respectively.

SOURCE: California Air Resources Board, Ambient Air Quality Standards (5/4/16), http://www.arb.ca.gov/research/aaqs/aaqs2.pdf. Accessed July 2018.

The Project is located within the South Coast Air Basin, which is an area designated as non-attainment because it does not currently meet NAAQS for certain pollutants regulated under the Clean Air Act. In the past, the Air Basin previously exceeded the NAAQS for PM10, but has recently met the NAAQS at all monitoring stations and the USEPA has since approved the request for re-designation to attainment effective July 26, 2013.[7] Currently, the Air Basin does not meet the NAAQS for O_3 and PM2.5 and is classified as being in non-attainment for these pollutants. The Los Angeles County portion of the Air Basin is designated as non-attainment for the lead NAAQS; however, this was due to localized emissions from two previously operating lead-acid battery recycling facilities located in the City of Vernon and the City of Industry.[8] These facilities are no longer operating and would not affect the Project Site and there are no other lead-acid battery recycling facilities in Los Angeles County. **Table 3**, *South Coast Air Basin Attainment Status (Los Angeles County),* lists the criteria pollutants and their relative attainment status.

The Clean Air Act also specifies future dates for achieving compliance with the NAAQS and mandates that states submit and implement a State Implementation Plan (SIP) for local areas not meeting these standards. These plans must include pollution control measures that demonstrate how the standards would be met. The 1990 amendments to the Clean Air Act identify specific emission reduction goals for basins not meeting the NAAQS. These amendments require both a demonstration of reasonable further progress toward attainment and incorporation of additional sanctions for failure to attain or to meet interim milestones.

Title II of the Clean Air Act pertains to mobile sources, such as cars, trucks, buses, and planes. Reformulated gasoline, automobile pollution control devices, and vapor recovery nozzles on gas pumps are a few of the mechanisms the USEPA uses to regulate mobile air emission sources. The provisions of Title II have resulted in tailpipe emission standards for vehicles, which have strengthened in recent years to improve air quality. For example, the standards for NO_X emissions have lowered substantially and the specification requirements for cleaner burning gasoline are more stringent.

7 Federal Register, Vol. 78, No. 123, June 26, 2013, 38223-38226.

8 South Coast Air Quality Management District, Board Meeting, Agenda No. 30, Adopt the 2012 Lead State Implementation Plan for Los Angeles County, May 4, 2012.

TABLE 3

SOUTH COAST AIR BASIN ATTAINMENT STATUS (LOS ANGELES COUNTY)

Pollutant	National Standards (NAAQS)	California Standards (CAAQS)
O_3 (1-hour standard)	N/A [a]	Non-attainment – Extreme
O_3 (8-hour standard)	Non-attainment – Extreme	Non-attainment
CO	Attainment	Attainment
NO_2	Attainment	Attainment
SO_2	Attainment	Attainment
PM10	Attainment	Non-attainment
PM2.5	Non-attainment – Serious	Non-attainment
Lead (Pb)	Non-attainment (Partial) [b]	Attainment
Visibility Reducing Particles	N/A	Unclassified
Sulfates	N/A	Attainment
Hydrogen Sulfide	N/A	Unclassified
Vinyl Chloride [c]	N/A	N/A

NOTES: N/A = not applicable

[a] The NAAQS for 1-hour ozone was revoked on June 15, 2005, for all areas except Early Action Compact areas.

[b] Partial Non-attainment designation – Los Angeles County portion of the Air Basin only for near-source monitors.

[c] In 1990, the California Air Resources Board identified vinyl chloride as a toxic air contaminant and determined that it does not have an identifiable threshold. Therefore, the California Air Resources Board does not monitor or make status designations for this pollutant.

SOURCE: United States Environmental Protection Agency, The Green Book Non-Attainment Areas for Criteria Pollutants. Available: https://www.epa.gov/green-book. Accessed July 2018; California Air Resources Board, Area Designations Maps/State and National. Available: http://www.arb.ca.gov/desig/adm/adm.htm. Accessed July 2018.

2.2 State

2.2.1 California Air Resources Board

CARB, a part of the California Environmental Protection Agency, is responsible for the coordination and administration of both federal and state air pollution control programs within California. In this capacity, CARB conducts research, sets the CAAQS, complies emission inventories, develops suggested control measures, and provides oversight of local programs. CARB establishes emission standards for motor vehicles sold in California, consumer products (such as hairspray, aerosol paints, and barbecue lighter fluid), and various types of commercial equipment. It also sets fuel specifications to further reduce vehicular emissions. CARB has primary responsibility for the development of California's State Implementation Plan (SIP), for which it works closely with the federal government and local air districts. The SIP is required for the State to take over implementation of the federal Clean Air Act from the USEPA.

2.2.2 California Clean Air Act

The California Clean Air Act, signed into law in 1988, requires all areas of the State to achieve and maintain the California Ambient Air Quality Standards (CAAQS) by the earliest practical date. The CAAQS apply to the same criteria pollutants as the federal Clean Air Act but also include State-identified criteria pollutants, which include sulfates, visibility-reducing particles, hydrogen sulfide, and vinyl chloride. CARB has primary responsibility for ensuring the implementation of the California Clean Air Act, responding to the federal Clean Air Act planning requirements applicable to the state, and regulating emissions from motor vehicles and consumer products within the state. **Table 2** shows the CAAQS currently in effect for each of the criteria pollutants as well as the other pollutants recognized by the state. As shown in **Table 2**, the CAAQS include more stringent standards than the NAAQS for most of the criteria air pollutants.

Health and Safety Code Section 39607(e) requires CARB to establish and periodically review area designation criteria. **Table 3** provides a summary of the attainment status of the Los Angeles County portion of the Air Basin with respect to the state standards. The Air Basin is designated as attainment for the California standards for sulfates, hydrogen sulfide, and vinyl chloride.

2.2.3 Air Quality and Land Use Handbook

CARB published the *Air Quality and Land Use Handbook* in April 2005 to serve as a general guide for considering impacts to sensitive receptors from facilities that emit TAC emissions. The recommendations provided therein are voluntary and do not constitute a requirement or mandate for either land use agencies or local air districts. The goal of the guidance document is to protect sensitive receptors, such as children, the elderly, acutely ill, and chronically ill persons, from exposure to TAC emissions. Some examples of CARB's siting recommendations include the following: (1) avoid siting sensitive receptors within 500 feet of a freeway, urban road with 100,000 vehicles per day, or rural roads with 50,000 vehicles per day; (2) avoid siting sensitive receptors within 1,000 feet of a distribution center (that accommodates more than 100 trucks per day, more than 40 trucks with operating transport refrigeration units per day, or where transport refrigeration unit operations exceed 300 hours per week); (3) avoid siting sensitive receptors within 300 feet of any dry cleaning operation using perchloroethylene and within 500 feet of operations with two or more machines; and (4) avoid siting sensitive receptors within 300 feet of a large gasoline dispensing facility (defined as a facility with a throughput of 3.6 million gallons per year or greater) or 50 feet of a typical gasoline dispensing facility. The Project Site is not within the screening distances of these land uses. The nearest boundary of the Project Site is located approximately 3,500 feet south of the nearest lane of Interstate 210; approximately 1,800 feet east of the nearest dry cleaner (that does not currently use perchloroethylene machines),[9] and over 1,550 feet from the nearest gasoline stations at the intersection of East Del Mar Boulevard and South Arroyo Parkway.

[9] South Coast Air Quality Management District, Facility Information Detail (FIND), Civic Center Cleaners, Facility ID 152573. Available: http://www3.aqmd.gov/webappl/fim/prog/facility_details.aspx?fac_id=152573. Accessed July 2018.

2.2.3 On-Road and Off-Road Vehicle Rules

In 2004, CARB adopted an Airborne Toxic Control Measure (ATCM) to limit heavy-duty diesel motor vehicle idling in order to reduce public exposure to diesel particulate matter and other vehicle emissions (Title 13 California Code of Regulations [CCR], Section 2485). The measure applies to diesel-fueled commercial vehicles with gross vehicle weight ratings greater than 10,000 pounds that are licensed to operate on highways, regardless of where they are registered. This measure does not allow diesel-fueled commercial vehicles to idle for more than 5 minutes at any given time.

In 2008 CARB approved the Truck and Bus regulation to reduce NO_X, PM10, and PM2.5 emissions from existing diesel vehicles operating in California (13 CCR, Section 2025). The requirements were amended in December 2010 and apply to nearly all diesel fueled trucks and busses with a gross vehicle weight rating greater than 14,000 pounds. For the largest trucks in the fleet, those with a gross vehicle weight rating greater than 26,000 pounds, there are two methods to comply with the requirements. The first way is for the fleet owner to retrofit or replace engines, starting with the oldest engine model year, to meet 2010 engine standards, or better. This is phased over 8 years, starting in 2015 and would be fully implemented by 2023, meaning that all trucks operating in the State subject to this option would meet or exceed the 2010 engine emission standards for NO_X and particulate matter by 2023. The second option, if chosen, requires fleet owners, starting in 2012, to retrofit a portion of their fleet with diesel particulate filters achieving at least 85 percent removal efficiency, so that by January 1, 2016 their entire fleet is equipped with diesel particulate filters. However, diesel particulate filters do not typically lower NO_X emissions. Thus, fleet owners choosing the second option must still comply with the 2010 engine emission standards for their trucks and busses by 2020.

In addition to limiting exhaust from idling trucks, CARB recently promulgated emission standards for off-road diesel construction equipment of greater than 25 horsepower (hp) such as bulldozers, loaders, backhoes and forklifts, as well as many other self-propelled off-road diesel vehicles. The regulation adopted by the CARB on July 26, 2007, aims to reduce emissions by installation of diesel soot filters and encouraging the retirement, replacement, or repower of older, dirtier engines with newer emission-controlled models (13 CCR, Section 2449). Implementation is staggered based on fleet size (which is the total of all off-road horsepower under common ownership or control), with the largest fleets to begin compliance by January 1, 2014. Each fleet must demonstrate compliance through one of two methods. The first option is to calculate and maintain fleet average emissions targets, which encourages the retirement or repowering of older equipment and rewards the introduction of newer cleaner units into the fleet. The second option is to meet the Best Available Control Technology (BACT) requirements by turning over or installing Verified Diesel Emission Control Strategies (VDECS) on a certain percentage of its total fleet horsepower. The compliance schedule requires that BACT turn overs or retrofits (VDECS installation) be fully implemented by 2023 in all equipment in large and medium fleets and across 100 percent of small fleets by 2028.

2.3 Regional

2.3.1 South Coast Air Quality Management District

As indicated previously, the City of Pasadena is located within the South Coast Air Basin. The SCAQMD has jurisdiction over an area of approximately 10,743 square miles. This area includes all of Orange County, Los Angeles County except for the Antelope Valley, the non-desert portion of western San Bernardino County, and the western and Coachella Valley portions of Riverside County. The Air Basin is a sub-region of the SCAQMD jurisdiction. While air quality in this area has improved, the Air Basin requires continued diligence to meet air quality standards.

Air Quality Management Plan

The SCAQMD has adopted a series of Air Quality Management Plans (AQMP) to meet the CAAQS and NAAQS. The 2012 AQMP incorporates the latest scientific and technological information and planning assumptions, including regional growth projections[10] to achieve federal standards for air quality in the Air Basin. It incorporates a comprehensive strategy aimed at controlling pollution from all sources, including stationary sources, and on-road and off-road mobile sources. The 2012 AQMP includes new and changing federal requirements, implementation of new technology measures, and the continued development of economically sound, flexible compliance approaches. Additionally, it highlights the significant amount of emissions reductions needed and the urgent need to identify additional strategies, especially in the area of mobile sources, to meet all federal criteria pollutant standards within the timeframes allowed under the federal Clean Air Act.

The key understanding of the 2012 AQMP is to bring the Air Basin into attainment with the NAAQS for the 24-hour PM2.5 standard. It also intensifies the scope and pace of continued air quality improvement efforts toward meeting the 2024 8-hour O3 standard deadline with new measures designed to reduce reliance on the federal Clean Air Act Section 182(e)(5) long-term measures for NOx and VOC reductions The SCAQMD expects exposure reductions to be achieved through implementation of new and advanced control technologies as well as improvement of existing technologies.

The SCAQMD Governing Board adopted the 2016 AQMP on March 3, 2017.[11] CARB approved the AQMP on March 23, 2017. Key elements of the 2016 AQMP include implementing fair-share emissions reductions strategies at the federal, state, and local levels; establishing partnerships, funding, and incentives to accelerate deployment of zero and near-zero-emissions technologies; and taking credit from co-benefits from greenhouse gas, energy, transportation and other planning

10 South Coast Air Quality Management District, 2012. Air Quality Management Plan, (2013). Available at: http://www.aqmd.gov/home/air-quality/clean-air-plans/air-quality-mgt-plan/final-2012-air-quality-management-plan. Accessed July 2018.

11 South Coast Air Quality Management District, Air Quality Management Plan (AQMP), Final 2016 AQMP, http://www.aqmd.gov/home/air-quality/clean-air-plans/air-quality-mgt-plan/final-2016-aqmp. Accessed July 2018.

efforts.[12] The strategies included in the 2016 AQMP are intended to demonstrate attainment of the NAAQS for the federal non-attainment pollutants O_3 and PM2.5.[13] Similar to the 2012 AQMP, the 2016 AQMP relies on "…aggressive mobile source control strategy supplemented with focused and strategic stationary source control measures." The 2016 AQMP also recognizes the reduction in traditional air pollutants which occur as a "co-benefit" with the reduction in climate change-related pollutants achieved through greenhouse gas (GHG) emission reduction programs and policies.[14] Vehicles and appliances (boilers, water heaters, space heaters, etc.) used in the construction and operation of the Project would comply with applicable regulations. While the 2016 AQMP was adopted by the SCAQMD and CARB, it has not yet received USEPA approval for inclusion in the SIP. Therefore, until such time as the 2016 AQMP is approved by the USEPA, the 2012 AQMP remains the applicable AQMP; however, this analysis considers both the 2012 and 2016 AQMP as appropriate.

Air Quality Guidance Documents

The SCAQMD published the California Environmental Quality Act (CEQA) Air Quality Handbook to provide local governments with guidance for analyzing and mitigating project-specific air quality impacts.[15] The CEQA Air Quality Handbook provides standards, methodologies, and procedures for conducting air quality analyses in EIRs and was used extensively in the preparation of this analysis. However, the SCAQMD is currently in the process of replacing the CEQA Air Quality Handbook with the Air Quality Guidance Handbook. While this process is underway, the SCAQMD recommends that lead agencies avoid using the screening tables in Chapter 6 (Determining the Air Quality Significance of a Project) of the CEQA Air Quality Handbook and instead recommends using other approved models to calculate emissions from land use projects, such as the California Emissions Estimator Model (CalEEMod) software.[16] The SCAQMD has published a guidance document called the *Final Localized Significance Threshold Methodology* that is intended to provide guidance in evaluating localized effects from mass emissions during construction and operations.[17] The SCAQMD adopted additional guidance regarding PM2.5 in a document called Final Methodology to Calculate

12 South Coast Air Quality Management District, Air Quality Management Plan (AQMP), Final 2016 AQMP, http://www.aqmd.gov/home/air-quality/clean-air-plans/air-quality-mgt-plan/final-2016-aqmp. Accessed July 2018.

13 South Coast Air Quality Management District, NAAQS/CAAQS and Attainment Status for South Coast Air Basin, (2016), http://www.aqmd.gov/docs/default-source/clean-air-plans/air-quality-management-plans/naaqs-caaqs-feb2016.pdf?sfvrsn=2. Accessed July 2018.

14 South Coast Air Quality Management District, NAAQS/CAAQS and Attainment Status for South Coast Air Basin, (2016), http://www.aqmd.gov/docs/default-source/clean-air-plans/air-quality-management-plans/naaqs-caaqs-feb2016.pdf?sfvrsn=2. Accessed July 2018.

15 South Coast Air Quality Management District, CEQA Air Quality Handbook (1993). Available: http://www.aqmd.gov/home/regulations/ceqa/air-quality-analysis-handbook/ceqa-air-quality-handbook-(1993). Accessed July 2018.

16 http://www.aqmd.gov/home/air-quality/clean-air-plans/air-quality-mgt-plan/final-2016-aqmp. Accessed July 2018.

17 South Coast Air Quality Management District, *Final Localized Significance Threshold Methodology*, (2008). Available at: http://www.aqmd.gov/home/regulations/ceqa/air-quality-analysis-handbook/localized-signficance-thresholds. Accessed July 2018.

Particulate Matter (PM)2.5 and PM2.5 Significance Thresholds.[18] This latter document has been incorporated by the SCAQMD into its CEQA significance thresholds and Localized Significance Threshold Methodology.

Regulations and Rules

Several SCAQMD rules adopted to implement portions of the AQMP may apply to construction or operation of the Project. The Project may be subject to the following SCAQMD rules and regulations:

Regulation IV – Prohibitions: This regulation sets forth the restrictions for visible emissions, odor nuisance, fugitive dust, various air emissions, fuel contaminants, start-up/shutdown exemptions and breakdown events. The following is a list of rules which may apply to the Project:

- **Rule 401 – Visible Emissions:** This rule states that a person shall not discharge into the atmosphere from any single source of emission whatsoever any air contaminant for a period or periods aggregating more than three minutes in any one hour which is as dark or darker in shade as that designated No. 1 on the Ringelmann Chart[19] or of such opacity as to obscure an observer's view.

- **Rule 402 – Nuisance:** This rule states that 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.

- **Rule 403 – Fugitive Dust:** This rule requires projects to prevent, reduce or mitigate fugitive dust emissions from a site. Rule 403 restricts visible fugitive dust to the project property line, restricts the net PM10 emissions to less than 50 micrograms per cubic meter ($\mu g/m^3$) and restricts the tracking out of bulk materials onto public roads. Additionally, projects must utilize one or more of the best available control measures (identified in the tables within the rule). Mitigation measures may include adding freeboard to haul vehicles, covering loose material on haul vehicles, watering, using chemical stabilizers and/or ceasing all activities. Finally, a contingency plan may be required if so determined by the USEPA.

Regulation XI – Source Specific Standards: Regulation XI sets emissions standards for different specific sources. The following is a list of rules which may apply to the Project:

- **Rule 1113 – Architectural Coatings:** This rule requires manufacturers, distributors, and end users of architectural and industrial maintenance coatings to reduce VOC emissions from the use of these coatings, primarily by placing limits on the VOC content of various coating categories.

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18 South Coast Air Quality Management District, Final Methodology to Calculate Particulate Matter (PM)2.5 and PM2.5 Significance Thresholds, (2006). Available at: http://www.aqmd/gov/home/regulations/ceqa/air-quality-analysis-handbook/pm-2.5-signficance-thresholds-and -calculation-methodology. Accessed July 2018.

19 United States Bureau of Mines, Ringelmann Smoke Chart, (1967). Available at: http://stacks.cdc.gov/vies/cdc/8906/cdc_8906_DS1.pdf

- **Rule 1121 – Control of Nitrogen Oxides from Residential Type, Natural Gas-Fired Water Heaters:** This rule specifies NO_X emission limits for natural gas-fired water heaters, with heat input rates less than 75,000 British thermal units (BTUs) per hour.

- **Rule 1146.2 – Emissions of Oxides of Nitrogen from Large Water Heaters and Small Boilers and Process Heaters:** This rule requires manufacturers, distributors, retailers, refurbishers, installers, and operators of new and existing units to reduce NO_X emissions from natural gas-fired water heaters, boilers, and process heaters as defined in this rule.

- **Rule 1186 – PM10 Emissions from Paved and Unpaved Roads, and Livestock Operations:** This rule applies to owners and operators of paved and unpaved roads and livestock operations. The rule is intended to reduce PM10 emissions by requiring the cleanup of material deposited onto paved roads, use of certified street sweeping equipment, and treatment of high-use unpaved roads (see also **Rule 403).**

- **Rule 1403 – Asbestos Emissions from Demolition/Renovation Activities:** This rule requires owners and operators of any demolition or renovation activity and the associated disturbance of asbestos-containing materials, any asbestos storage facility, or any active waste disposal site to implement work practice requirements to limit asbestos emissions from building demolition and renovation activities, including the removal and associated disturbance of asbestos-containing materials.

2.3.2 Southern California Association of Governments

SCAG is the regional planning agency for Los Angeles, Orange, Ventura, Riverside, San Bernardino and Imperial Counties and addresses regional issues relating to transportation, the economy, community development and the environment. SCAG is the federally designated metropolitan planning organization (MPO) for the majority of the southern California region and is the largest MPO in the nation. With regard to air quality planning, SCAG adopted the 2016 Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS) in April 2016, which addresses regional development and growth forecasts and forms the basis for the land use and transportation control portions of the AQMP. The growth forecasts are utilized in the preparation of the air quality forecasts and consistency analysis included in the AQMP. The RTP/SCS and AQMP are based on projections originating within local jurisdictions.

In 2008, SCAG released the Regional Comprehensive Plan (RCP) which addresses regional issues such as housing, traffic/transportation, water, and air quality. The RCP serves as an advisory document to local agencies in the Southern California region for their information and voluntary use for preparing local plans and handling local issues of regional significance. The RCP presents a vision of how Southern California can balance air quality with growth and development by including goals such as: reducing emission of criteria pollutants to attain federal air quality standards by prescribed dates and stated ambient air quality standards as soon as practicable; reverse current trends in GHG emissions to support sustainability goals for energy, water supply, agriculture, and other resource areas; and to minimize land uses that increase the risk of adverse air pollution-related health impacts from exposure to TACS, particulates and CO.

2.4 Local

Local jurisdictions, such as the City of Pasadena, have the authority and responsibility to reduce air pollution through its land use decision-making authority. Specifically, the City is responsible for the assessment and mitigation of air emissions resulting from its land use decisions. The City's General Plan includes Citywide goals, objectives, and policies related to air quality resources. Several goals, objectives, and policies are relevant to the project and are related to stationary source, mobile source, transportation and land use control, and energy conservation measures.

The City of Pasadena is also responsible for the implementation of transportation control measures as outlined in the AQMP. Through capital improvement programs, local governments can fund infrastructure that contributes to improved air quality by requiring such improvements as bus turnouts as appropriate, installation of energy-efficient streetlights, and synchronization of traffic signals. In accordance with CEQA requirements and the CEQA review process, the City assesses the air quality impacts of new development projects, requires mitigation of potentially significant air quality impacts by conditioning discretionary permits, and monitors and enforces implementation of such mitigation measures.

The City of Pasadena has incorporated the California Green Building (CALGreen) Standards Code, with amendments in Chapter 14.04.500 et seq. in its Municipal Code. The City's ordinance requires applicable projects to comply with specified provisions to reduce energy consumption. The ordinance added Section 307.1 to the CALGreen Standards Code, which states that buildings required to comply with Tier 1 requirements include mixed use and multi-family residential buildings four stories in height or more (Section 14.04.504). This would apply to the Project as it is a multi-family residential building four stories in height or more.

3.0
Significance Thresholds

Pursuant to Appendix G of the State *CEQA Guidelines*, the Project would result in a significant impact related to air quality if it would:

a. Conflict with or obstruct the implementation of the applicable air quality plan;

b. Violate any air quality standard or contribute substantially to an existing or projected air quality violation;

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

d. Expose sensitive receptors to substantial pollutant concentrations; or

e. Create objectionable odors affecting a substantial number of people.

The CEQA Guidelines Section 15064.7 indicates that significance criteria established by the applicable air quality management district or air pollution control district, when available, may be relied upon to make determinations of significance. The potential air quality impacts of the Project are, therefore, evaluated according to the SCAQMD's *CEQA Air Quality Handbook*, *Air Quality Analysis Guidance Handbook*, and subsequent guidance. The SCAQMD's guidance includes the following quantitative evaluation criteria, as shown in **Table 4**, *SCAQMD Air Quality Significance Thresholds*, which are used to determine if the Project's impacts exceed the thresholds listed above:[20]

[20] While the SCAQMD CEQA Air Quality Handbook contains evaluation criteria for lead, Project construction and operation would not include sources of lead emissions and, therefore, the Project does not have the potential to cause significant air quality impacts related to lead. Unleaded fuel and unleaded paints have virtually eliminated lead emissions from residential land use projects such as the Project. As a result, lead emissions are not further evaluated herein.

TABLE 4

SCAQMD AIR QUALITY SIGNIFICANCE THRESHOLDS

Mass Daily Thresholds		
Pollutant	**Construction [a]**	**Operations [b]**
NO_X	100 lbs/day	55 lbs/day
VOC	75 lbs/day	55 lbs/day
PM10	150 lbs/day	150 lbs/day
PM2.5	55 lbs/day	55 lbs/day
SO_X	150 lbs/day	150 lbs/day
CO	550 lbs/day	550 lbs/day
Lead	3 lbs/day	3 lbs/day
Toxic Air Contaminants (TACs), Odor, and GHG Thresholds		
TACs (including carcinogens and non-carcinogens)	Maximum Incremental Cancer Risk ≥ 10 in 1 million Cancer Burden > 0.5 excess cancer cases (in areas ≥ 1 in 1 million) Chronic & Acute Hazard Index ≥ 1.0 (project increment)	
Odor	Project creates an odor nuisance pursuant to SCAQMD Rule 402	
GHG	10,000 MT/yr CO2eq for industrial facilities	
Ambient Air Quality Standards for Criteria Pollutants[c]		
NO_2	SCAQMD is in attainment; project is significant if it causes or contributes to an exceedance of the following attainment standards:	
1-hr average	0.18 ppm (state)	
Annual arithmetic mean	0.03 ppm (state) and 0.0534 ppm (federal)	
PM10		
24-hour average	10.4 $\mu g/m^3$ (construction)[e] & 2.5 $\mu g/m^3$ (operation)	
Annual average	1.0 $\mu g/m^3$	
PM2.5		
24-hour average	10.4 $\mu g/m^3$ (construction)[d] & 2.5 $\mu g/m^3$ (operation)	
SO_2		
1-hour average	0.25 ppm (state) & 0.075 ppm (federal – 99th percentile)	
24-hour average	0.04 ppm (state)	
Sulfate		
24-hour average	25 $\mu g/m^3$ (state)	
CO	SCAQMD is in attainment; project is significant if it causes or contributes to an exceedance of the following attainment standards:	
1-hour average	20 ppm (state) and 35 ppm (federal)	
8-hour average	9.0 ppm (state/federal)	
Lead		
30-day average	1.5 $\mu g/m^3$ (state)	
Rolling 3-month average	0.15 $\mu g/m^3$ (federal)	

NOTES: N/A = not applicable

[a] Construction thresholds apply to both the South Coast Air Basin and Coachella Valley (Salton Sea and Mojave Desert Air Basins).

[b] For Coachella Valley, the mass daily thresholds for operation are the same as the construction thresholds.

[c] Ambient air quality thresholds for criteria pollutants based on SCAQMD Rule 1303, Table A-2 unless otherwise stated.

[d] Ambient air quality threshold based on SCAQMD Rule 403.

SOURCE: SCAQMD CEQA Handbook (SCAQMD, 1993).

4.0
Methodology

The methodology to evaluate potential impacts to regional and local air quality that may result from the construction and long-term operations of the Project is presented below.

4.1 Consistency with Air Quality Plan

The SCAQMD is required, pursuant to the Clean Air Act, to reduce emissions of criteria pollutants for which the Air Basin is in non-attainment of the NAAQS (e.g., O_3 and PM2.5). The Air Basin is also in non-attainment of the CAAQS (e.g., O_3, PM10, and PM2.5). The SCAQMD's AQMP contains a comprehensive list of pollution control strategies directed at reducing emissions and achieving the NAAQS and CAAQS. These strategies are developed, in part, based on regional growth projections prepared by the SCAG. Projects that are consistent with the assumptions used in the AQMP do not interfere with attainment because the growth is included in the projections utilized in the formulation of the AQMP. Thus, projects, uses, and activities that are consistent with the applicable growth projections and control strategies used in the development of the AQMP would not jeopardize attainment of the air quality levels identified in the AQMP, even if they exceed the SCAQMD's numeric indicators. As noted above, while the 2016 AQMP was adopted by the SCAQMD and CARB, it has not yet received USEPA approval for inclusion in the SIP. Therefore, until such time as the 2016 AQMP is approved by the USEPA, the 2012 AQMP remains the applicable AQMP, however, this analysis considers both the 2012 and 2016 AQMP as appropriate. The Project's consistency with the AQMP is evaluated based on consistency with the applicable growth projections and emission control strategies.

4.2 Construction Emissions

Construction of the Project has the potential to generate temporary criteria pollutant emissions through the use of heavy-duty construction equipment, such as excavators and forklifts, and through vehicle trips generated from worker trips and haul trucks traveling to and from the Project Site. In addition, fugitive dust emissions would result from demolition and various soil-handling activities. Mobile source emissions, primarily NO_X, would result from the use of construction equipment such as dozers and loaders. Construction emissions can vary substantially from day to day, depending on the level of activity, the specific type of construction activity, and prevailing weather conditions. The assessment of construction air quality impacts considers each of these potential sources.

Daily regional emissions during construction are forecasted by assuming a conservative estimate of construction activities (i.e., assuming all construction occurs at the earliest feasible date) and

applying the mobile source and fugitive dust emissions factors. The emissions are estimated using the CalEEMod (Version 2016.3.2) software, an emissions inventory software, which is a statewide land use emissions computer model designed to provide a uniform platform for government agencies, land use planners, and environmental professions to quantify potential criteria pollutant and GHG emissions from a variety of land use projects. CalEEMod was developed in collaboration with the air districts of California. Regional data (e.g., emission factors, trip lengths, meteorology, source inventory, etc.) have been provided by the various California air districts to account for local requirements and conditions. The model is considered to be an accurate and comprehensive tool for quantifying air quality and GHG impacts from land use projects throughout California and is recommended by the SCAQMD.[21]

Daily regional emissions during construction are forecasted by assuming a conservative estimate of construction activities (i.e., assuming all construction occurs at the earliest feasible date) and applying the mobile source and fugitive dust emission factors. The input values used in this analysis were adjusted to be Project-specific based on construction equipment and schedule information from similar land use development projects in the City. Subphases of construction would include demolition of the all existing on-site buildings and features, site clearing, grading, excavation, and building construction. The Project was estimated to result in the export of approximately 30,200 cubic yards of soil during grading and excavation activities. Demolition activities would generate approximately 17 tons of building and hardscape demolition debris. Emissions from these activities are estimated by construction phase. Construction haul and vendor truck emissions were evaluated using regional heavy-duty truck emission factors from EMFAC2014. Daily truck trips and default trip length data were used to assess roadway emissions from truck exhaust. The maximum daily emissions are estimated values for the worst-case day and do not represent the emissions that would occur for every day of Project construction. The maximum daily emissions are compared to the SCAQMD daily regional numeric indicators. Detailed construction equipment lists, construction scheduling, and emissions calculations are provided in Appendix A.

Construction of the Project was assumed to begin in late 2018. Construction may commence at a later date than that analyzed in this air quality impact analysis. If this occurs, construction impacts would be less than those analyzed herein, because a more energy-efficient and cleaner burning construction equipment fleet mix would be expected in the future, pursuant to State regulations that require construction equipment fleet operators to phase-in less polluting heavy-duty equipment. As a result, should the Project commence construction at a later date than that analyzed in this report, air quality impacts would be less than the impacts disclosed herein.

21 See: South Coast Air Quality Management District, California Emissions Estimator Model, http://www.aqmd.gov/caleemod/.

4.3 Operational Emissions

Operation of the Project has the potential to generate criteria pollutant emissions through vehicle trips traveling to and from the Project Site. In addition, emissions would result from area sources on-site such as natural gas combustion, landscaping equipment, and use of consumer products. Operational impacts were assessed for the full Project buildout year assumed to be 2020. If the Project would become operational at a later date, operational impacts would be less than those analyzed herein, largely due to a higher portion of vehicles meeting more stringent emissions standards, pursuant to State regulations that require newer model year vehicles to be more fuel efficient and less polluting. As a result, should the Project become operational at a later date, air quality impacts would be less than the impacts disclosed herein.

The operational emissions are estimated using the CalEEMod software. CalEEMod was used to forecast the daily regional emissions from area sources that would occur during long-term Project operations. In calculating mobile-source emissions, the trip length values were based on the distances provided in CalEEMod. The trip distances were applied to the maximum daily trip estimates, based on the trip rates in the Project Traffic Impact Analysis.[22] The trip rates take into account trip reductions due to proximity to public transportation options.

Area source emissions are based on natural gas (building heating and water heaters), landscaping equipment, and consumer product usage (including paints) rates provided in CalEEMod. Natural gas usage factors in CalEEMod are based on the California Energy Commission (CEC) *California Commercial End Use Survey* (CEUS) data set, which provides energy demand by building type and climate zone.[23] However, since the data from the CEUS is from 2002, correction factors are incorporated into CalEEMod to account for the appropriate version of the Title 24 Building Energy Efficiency Standards in effect.

Operational air quality impacts are assessed based on the incremental increase in emissions compared to baseline conditions. As discussed previously, the Project Site is currently developed with one office building and a parking lot that are currently unutilized. While the site operated as an occupied office building for many years, to be conservative, this analysis considers all Project-related emissions as new emissions. The maximum daily emissions from operation of the Project are compared to the SCAQMD daily regional numeric indicators. Detailed emissions calculations are provided in Appendix A.

4.4 Substantial Pollutant Concentrations

The localized effects from the on-site portion of the emissions are evaluated at nearby sensitive receptor locations potentially impacted by the Project according to the SCAQMD's Localized Significance Threshold Methodology (June 2003, revised July 2008), which relies on on-site mass emission rate screening tables and project-specific dispersion modeling, where appropriate.

22 City of Pasadena, Department of Transportation, Traffic Impact Analysis – Outside of CEQA Analysis, 253 South Los Robles Avenue, (2018).

23 California Energy Commission, California Commercial End-Use Survey, http://capabilities.itron.com/CeusWeb/Chart.aspx. Accessed July 2018.

The localized significance thresholds are only applicable to NO_X, CO, PM10, and PM2.5. For NO_X and CO, the thresholds are based on the ambient air quality standards. For PM10 and PM2.5, the thresholds are based on requirements in SCAQMD Rule 403, Fugitive Dust. The SCAQMD has established screening criteria that can be used to determine the maximum allowable daily emissions that would satisfy the localized significance thresholds and therefore not cause or contribute to an exceedance of the applicable ambient air quality standards without project-specific dispersion modeling. The localized analysis is based on this SCAQMD screening criteria. The screening criteria depend on: (1) the area in which the project is located, (2) the size of the project site, and (3) the distance between the project site and the nearest sensitive receptor (e.g., residences, schools, hospitals). The Project Site is located in the West San Gabriel Valley area and is approximately 0.815 acres in size. The nearest sensitive receptor would be Monterra Del Sol Apartments located southwest to the Project. Therefore, the screening criteria applicable to a 0.815-acre site in the West San Gabriel Valley area with sensitive receptors located adjacent to the Project Site were used.

Emissions of CO are produced in greatest quantities from motor vehicle combustion and are usually concentrated at or near ground level because they do not readily disperse into the atmosphere, particularly under cool, stable (i.e., low or no wind) atmospheric conditions. Localized areas where ambient concentrations exceed state and/or federal standards are termed CO hotspots. The potential for the Project to cause or contribute to the formation of off-site CO hotspots are evaluated based on prior dispersion modeling of the four busiest intersections in the Air Basin that has been conducted by the SCAQMD for its CO Attainment Demonstration Plan in the AQMP. The analysis compares the roadway intersections in the Project Traffic Impact Analysis[24] with the greatest peak-hour traffic volumes that would be impacted by the Project to the intersections modeled by the SCAQMD. Project-impacted intersections with peak-hour traffic volumes that are lower than the intersections modeled by the SCAQMD, in conjunction with lower background CO levels, would result in lower overall CO concentrations compared to the SCAQMD modeled values in its AQMP.

4.5 Odors

Potential odor impacts are evaluated by conducting a screening-level analysis followed by a more detailed analysis as necessary. The screening-level analysis consists of reviewing the Project's site plan and Project description to identify new or modified odor sources. If it is determined that the Project would introduce a potentially significant new odor source, or modify an existing odor source, then downwind sensitive receptor locations are identified and a site-specific analysis is conducted to determine Project impacts.

24 City of Pasadena, Department of Transportation, Traffic Impact Analysis – Outside of CEQA Analysis, 253 South Los Robles Avenue, (2018).

4.6 Land Use Characteristics and Project Design Features

4.6.1 Land Use Characteristics

The Project would represent an urban infill development, since it would be undertaken on a currently developed property, and would be located near existing off-site commercial, residential, and retail destinations and in close proximity to existing public transit stops. Infill development results in reduced vehicle trips and VMT, and reduced associated transportation-related emissions compared to a project without these characteristics. As discussed below under land use characteristic "Increased Transit Accessibility", because the Project consists of residential uses, and the Project Site is a previously developed "infill" site located within 0.35 miles of Metro's Del Mar Station, the Project Site meets the criteria of the City as a Transportation Priority Area (TPA).

The California (California Air Pollution Control Officers Association) CAPCOA has provided guidance for mitigating or reducing emissions from land use development projects within its guidance document titled *Quantifying Greenhouse Gas Mitigation Measures*.[25] The land use characteristics listed below are consistent with the CAPCOA guidance document, and would reduce vehicle trips to and from the Project Site and vehicle trip distances and, as a result, would achieve a reduction in transportation-related air pollutant and GHG emissions.

- **Increased Density:** Increased density, measured in terms of persons, jobs, and/or dwelling units per unit area, reduces emissions associated with transportation as it reduces the distance people travel for work or services and provides a foundation for the implementation of other strategies such as enhanced transit services. This characteristic corresponds to CAPCOA guidance strategy LUT-1. According to CAPCOA, the reduction in VMT from this characteristic applies to urban and suburban settings for residential, retail, office, industrial, and mixed-use projects. The Project is located in an urban infill[26] location and is residential; therefore, this characteristic applies to the Project. The Project would increase the Project Site density to approximately 112 dwelling units per acre.

- **Increased Transit Accessibility:** Locating a project with high density near transit facilitates encourages the use of transit by people traveling to or from a project site. This characteristic corresponds to CAPCOA guidance strategy LUT-5.[27] According to CAPCOA, the reduction in VMT from this characteristic applies to urban and suburban settings (also potentially for rural settings adjacent to a commuter rail station with convenient access to a major employment center) for residential, retail, office, industrial, and mixed-use projects. The Project is located in an urban infill location and is residential; therefore, this characteristic

26 California Air Pollution Control Officers Association, Quantifying Greenhouse Gas Mitigation Measures, p. 59-60, (2010). The project area meets the characteristics for an urban setting with respect to typical building heights of 6 stories or much higher, grid street pattern, minimal setbacks, constrained parking, high parking prices, high quality rail service (i.e., Metro Red and Purple Lines at the Grand Park/Civic Center Station), location relative to regional cores (5 miles or less) and jobs/housing balance (the Central City Community Plan Area has an existing jobs/housing ratio of approximately 7.2).

27 California Air Pollution Control Officers Association, Quantifying Greenhouse Gas Mitigation Measures, p. 171-175, (2010).

applies to the Project. According to the CAPCOA guidance, factors that contribute to VMT reductions under this characteristic include the distance to transit stations near the Project. The Project would be located within a quarter-mile of public transportation, including the Metro bus 264 and 267 routes, and LADOT's 549 route. The Project is also within 0.35 miles of the Metro Del Mar Station that serves the Gold Line. The Project would also provide parking for bicycles on-site to encourage utilization of alternative modes of transportation. The increased transit accessibility would reduce vehicle trips and VMT versus the statewide and South Coast Air Basin average, encourage walking and non-automotive forms of transportation, and would result in corresponding reductions in transportation-related emissions.

- **Integrated Affordable and Below Market Rate Housing:** Below market rate housing provides greater opportunity for people to live closer to job centers and to accommodate more people in urban infill areas. The Project would include 8 below market rate dwelling units (approximately 9 percent of the total number of dwelling units), which would result in an increase in alternative transit usage and a corresponding reduction in transportation-related emissions.

- **Improve Design of Development:** Improved street network characteristics within a neighborhood enhances walkability and connectivity. Characteristics include street accessibility usually measured in terms of number of intersections (e.g., 4-way intersections) per square mile. This characteristic corresponds to CAPCOA guidance strategy LUT-9.[28] According to CAPCOA, the reduction in VMT from this characteristic applies to urban and suburban settings for residential, retail, office, industrial, and mixed-use projects. The Project is located in an urban infill location and is residential; therefore, this characteristic applies to the Project. The Project would be located in a street-accessible area with over 75 four-way intersections within a 1-mile radius of the Project Site, which exceeds the standard intersection density assumed in baseline VMT modeling. The increased intersection density would reduce vehicle trips and VMT versus the statewide and South Coast Air Basin average, encourage walking and non-automotive forms of transportation, and would result in corresponding reductions in transportation-related emissions.

- **Provide Pedestrian Network Improvements:** Providing pedestrian access that minimizes barriers and links a project site with existing or planned external streets encourages people to walk instead of drive. This characteristic corresponds to CAPCOA guidance strategy SDT-1.[29] According to CAPCOA, the reduction in VMT from this characteristic applies to urban, suburban, and rural settings for residential, retail, office, industrial, and mixed-use projects. The Project is located in an urban infill location and is residential; therefore, this characteristic applies to the Project. According to the CAPCOA guidance, factors that contribute to VMT reductions under this characteristic include pedestrian access connectivity within the Project and to/from off-site destinations. The walkability of existing facilities is based on the availability of pedestrian routes necessary to accomplish daily tasks without the use of an automobile. These attributes are quantified by WalkScore.com and assigned a score out of 100 points. With the various commercial businesses and recreational and entertainment facilities adjacent to the Project Site and proximity to public transit, the walkability of rating

28 California Air Pollution Control Officers Association, Quantifying Greenhouse Gas Mitigation Measures, p. 182-185, (2010).

29 California Air Pollution Control Officers Association, Quantifying Greenhouse Gas Mitigation Measures, p. 186-189, (2010).

of the Project Site area is approximately 86 points;[30] this compares to the Citywide score of 66 points. The Project would provide common open space and walkways on its ground level that allow residents access South Los Robles Avenue from the South East and North Sides of the property. The Project would provide an internal pedestrian network for Project visitors and employees that links to the existing off-site pedestrian network including existing off-site sidewalks, and would therefore result in some reduction in VMT and associated transportation-related emissions.

Reductions in VMT were calculated for the above described land use characteristics. The Project's VMT would be reduced by approximately 33.3 percent compared to the Statewide and South Coast Air Basin default trip parameters in CalEEMod based on the calculation protocol from the CAPCOA guidance.

4.6.2 Project Design Features

The Project would be designed to incorporate green building techniques and other sustainability features. The following Project Design Features would reduce air pollutant emissions as well as greenhouse gas emissions. To the extent they can be quantified, these features have been assumed in the emissions calculations, but all of these features are considered in the consistency analysis:

Green Building Features: The Project will be designed to achieve the equivalent of the United States Green Building Council (USGBC) Leadership in Energy and Environmental Design (LEED) Silver Certification level for new buildings. The Project will be designed to meet the California Green Building Standards (CALGreen) Code, as adopted and amended by the City of Pasadena, through the incorporation of green building techniques and other sustainability features, including those within the City of Pasadena Green Building Code, where applicable.

- The Project will include key Project Design Features that would contribute to energy efficiencies include low albedo (high reflectivity) color paving to reduce heat island effect.
- The Project will include building features that would include such items as installation of energy-efficient lighting, heating, ventilation, air conditioning (HVAC) systems that utilize ozone-friendly refrigerants, and energy-efficient appliances for residential dishwashers and clothes washers (to the extent that these appliances are provided by the Project owner or operator and installed within the dwelling units).
- The Project would include bicycle parking, would encourage the use of alternative modes of transportation, and encourage carpooling and the use of electric vehicles by Project residents and visitor where the Project will provide pre-wiring or installing conduit and panel capacity for electric vehicle supply equipment (EVSE) for 5 percent of total on-site parking spaces.
- The Project will not include built-in fireplaces in residential units.

30 WalkScore.com (www.walkscore.com) rates the Project Site area (253 S Los Robles Avenue, Pasadena, CA) with a score of 86 of 100 possible points (scores accessed on March 23, 2018). Walk Score calculates the walkability of specific addresses by taking into account the ease of living in the neighborhood with a reduced reliance on automobile travel.

- The Project will minimize outdoor potable water use through drought-tolerant/California native plant species selection and/or artificial turf.
- The Project will reduce indoor potable water use by installing low-flow water fixtures for showerheads and bathroom faucets.
- The Project will provide new on-site residents with regional transit information available.

5.0
Environmental Impacts

5.1 Consistency with Air Quality Plan (AIR-1)

5.1.1 Construction

Under this criterion, the SCAQMD recommends that lead agencies demonstrate that a project would not directly obstruct implementation of an applicable air quality plan and that a project be consistent with the assumptions (typically land-use related, such as resultant employment or residential units) upon which the air quality plan are based. The Project would result in an increase in short-term employment compared to existing conditions. Being relatively small in number and temporary in nature, construction jobs under the Project would not conflict with the long-term employment projections upon which the AQMP is based. During construction, the Project would be required to comply with CARB requirements to minimize short-term emissions from on-road and off-road diesel equipment, and with SCAQMD's regulations for controlling fugitive dust and other construction emissions.

Compliance with these requirements is consistent with and meets or exceeds the AQMP requirements for control strategies intended to reduce emissions from construction equipment and activities. Because the Project would not conflict with the control strategies intended to reduce emissions from construction equipment, the Project would not conflict with or obstruct implementation of the AQMP, and impacts would be less than significant.

5.1.2 Operation

The AQMP was prepared to accommodate growth, reduce the levels of pollutants within the areas under the jurisdiction of SCAQMD, return clean air to the region, and minimize the impact on the economy. Projects that are considered consistent with the AQMP would not interfere with attainment because this growth is included in the projections used in the formulation of the AQMP.

The Project is a residential land use proposal and the Project Site is located in the CD-2 (Central District Specific Plan) zoning district. The Project would replace an existing 43,544 square-foot commercial use with a 94,165 square foot residential building. While the Project may result in an increase in population on the Project Site, the Project's location, design and land uses render it consistent with the AQMP. The AQMP includes Transportation Control Measures that are intended to reduce regional mobile source emissions. While the majority of the measures are implemented by cities, counties, and other regional agencies such as SCAG and SCAQMD, the

Project's location, design and land uses would support measures related to reducing vehicle trips for tenants by increasing residential density near public transportation. The Project is proposed on an infill site and would locate residential uses near multiple public transportation options, including bus stops and the Metro Gold Line Del Mar Station. The location of the Project would be consistent with AQMP by reducing vehicle trips, vehicle miles traveled and other associated emissions. Furthermore, the Project's Traffic Impact Analysis concluded that the Project would not cause roadway intersections to exceed the Level of Service (LOS) D cap.[31] As a result, the Project would not result in long-term operational population or employment growth that exceeds planned growth projections in the RTP/SCS or the AQMP or result in employment growth that would substantially add to traffic congestion. As the Project would not conflict with the growth projections in the AQMP, impacts would be less than significant.

5.2 Regional Emissions (AIR-2)

5.2.1 Construction Emissions

The worst-case daily emissions were calculated as maximum daily construction emissions for each phase by year. The maximum daily emissions are predicted values for the worst-case day and do not represent the emissions that would occur for every day of construction. Detailed emissions calculations are provided in Appendix A. Results of the criteria pollutant calculations are presented in **Table 5**, *Maximum Unmitigated Regional Construction Emissions*. As shown therein, construction-related daily emissions for the criteria and precursor pollutants (VOC, NO_X, CO, SO_X, PM10, and PM2.5) would be below the SCAQMD numeric indicators. These calculations include appropriate dust control measures required to be implemented during each phase of development, as required by SCAQMD Rule 403 (Control of Fugitive Dust). Therefore, with respect to regional emissions from construction activities, impacts would be less than significant.

5.2.2 Operational Emissions

Operational emissions were assessed for mobile, area, and stationary sources. Operational criteria pollutant emissions were calculated for the Project buildout year. Daily trip generation rates for the Project were provided by the Project Traffic Impact Analysis[32] and include trips associated with the residential uses. Operational emission estimates also assume compliance with PDF-AQ-1 (Green Building Features), which includes increased energy efficiency measures.

Results of the criteria pollutant calculations are presented in **Table 6,** *Maximum Unmitigated Regional Operational Emissions*. The increase in operational-related daily emissions for the criteria and precursor pollutants (VOC, NO_X, CO, SO_X, PM10, and PM2.5) would be substantially below the SCAQMD thresholds of significance. Therefore, Project-related operational emissions would result in a less-than-significant impact.

31 City of Pasadena, Department of Transportation, Traffic Impact Analysis – Outside of CEQA Analysis, 253 South Los Robles Avenue, (2018).

32 Ibid.

TABLE 5

MAXIMUM UNMITIGATED REGIONAL CONSTRUCTION EMISSIONS (POUNDS PER DAY) [A]

Source	VOC	NO_X	CO	SO_2	PM10 [b]	PM2.5 [b]
Demolition + Site Preparation	3	51	21	<1	2.6	1.6
Grading	2	34	16	<1	1.9	1.0
Drainage/Utilities/Trenching	1	9	8	<1	0.8	0.7
Foundations/Concrete Pour	2	19	15	<1	1.4	1.0
Building Construction	3	25	25	<1	2.0	1.6
Paving + Architectural Coating	8	7	9	<1	0.7	0.4
Maximum Regional (On-Site and Off-Site) Emissions	**8**	**51**	**25**	**<1**	**2.6**	**1.6**
SCAQMD Numeric Indicators	**75**	**100**	**550**	**150**	**150**	**55**
Over (Under)	(67)	(49)	(525)	(150)	(147)	(53)
Exceeds Indicator?	No	No	No	No	No	No

NOTES:
[a] Totals may not add up exactly due to rounding in the modeling calculations. Detailed emissions calculations are provided in Appendix A.
[b] Emissions include fugitive dust control measures consistent with SCAQMD Rule 403.

SOURCE: ESA 2018

TABLE 6

MAXIMUM UNMITIGATED REGIONAL OPERATIONAL EMISSIONS (POUNDS PER DAY) [A]

Source	VOC	NO_X	CO	SO_2	PM10	PM2.5
Area (Consumer Products, Landscaping)	2	<1	8	<1	<0.1	<0.1
Energy (Natural Gas)	<1	<1	<1	<1	<0.1	<0.1
Motor Vehicles	1	4	11	<1	2.6	0.7
Maximum Regional (On-Site and Off-Site) Emissions	**3**	**5**	**19**	**<1**	**3**	**1**
SCAQMD Numeric Indicators	**55**	**55**	**550**	**150**	**150**	**55**
Over/(Under)	(52)	(50)	(530)	(150)	(147.0)	(54.1)
Exceeds Thresholds?	No	No	No	No	No	No

NOTES:
[a] Totals may not add up exactly due to rounding in the modeling calculations. Detailed emissions calculations are provided in Appendix A.

SOURCE: ESA 2018

5.3 Cumulatively Considerable Non-Attainment Pollutants (AIR-3)

5.3.1 Construction

The Project would result in the emission of criteria pollutants for which the area is in non-attainment during construction. A significant impact may occur if a project would add a cumulatively considerable contribution of a federal or state non-attainment pollutant. The Air Basin is currently in non-attainment for O_3, PM10, and PM2.5.

The emissions from construction of the Project are not predicted to exceed the SCAQMD regional or localized impact thresholds and therefore, are not expected to cause or substantially contribute to ground level concentrations that exceed the NAAQS or CAAQS. Therefore, the Project would not result in a cumulatively considerable net increase for non-attainment pollutants or O_3 precursors and would result in a less than significant impact for construction emissions.

5.3.2 Operation

Future Project operations would result in emissions of criteria pollutants for which the area is in non-attainment. However, operational emissions would not exceed the SCAQMD regional or local thresholds and would not be expected to cause or substantially contribute to ground level concentrations that exceed the NAAQS or CAAQS. Therefore, operation of the Project would not result in a cumulatively considerable net increase for non-attainment of criteria pollutants or O_3 precursors. As a result, the Project would result in a less than significant impact for operational emissions.

5.4 Substantial Pollutant Concentrations (AIR-4)

5.4.1 Localized Construction Emissions

The localized construction air quality analysis was conducted using the methodology described in the SCAQMD *Localized Significance Threshold Methodology* (June 2003, revised July 2008).[33] The screening criteria provided in the *Localized Significance Threshold Methodology* were used to determine localized construction emissions thresholds for the Project. The maximum daily localized emissions for each of the construction phases and localized significance thresholds are presented in **Table 7**, *Maximum Unmitigated Localized Construction Emissions*. As shown therein, maximum localized construction emissions for sensitive receptors would not exceed the localized thresholds for NO_X, CO, PM10, and PM2.5. Therefore, with respect to localized construction emissions, impacts would be less than significant.

[33] South Coast Air Quality Management District, Localized Significance Thresholds, (2003, revised 2008), http://www.aqmd.gov/home/regulations/ceqa/air-quality-analysis-handbook/localized-significance-thresholds. Accessed March 2017.

TABLE 7

MAXIMUM UNMITIGATED LOCALIZED CONSTRUCTION EMISSIONS (POUNDS PER DAY) [A, B]

Source	NO_X	CO	PM10 [c]	PM2.5 [c]
Demolition + Site Preparation	30	15	1.0	1
Grading	15	11	0.7	0.6
Drainage/Utilities/Trenching	9	7	0.7	0.6
Foundations/Concrete Pour	13	13	0.9	0.9
Building Construction	22	22	1.5	1.4
Paving + Architectural Coating	7	7	0.4	0.4
Maximum Localized (On-Site) Emissions	**30**	**22**	**1.5**	**1.4**
SCAQMD Numeric Indicators [d]	**64**	**484**	**3.6**	**2.8**
Over (Under)	(33)	(461)	(2.1)	(1.4)
Exceed Threshold?	No	No	No	No

NOTES:
[a] Totals may not add up exactly due to rounding in the modeling calculations. Detailed emissions calculations are provided in Appendix A.
[b] The LST analysis and localized impacts are determined based on the Project's on-site emissions.
[c] Emissions include fugitive dust control measures consistent with SCAQMD Rule 403.
[d] The SCAQMD LSTs are based on Source Receptor Area 8 (West San Gabriel Valley) for a 0.815 acre site within a 25-meter receptor distance.

SOURCE: ESA 2018

5.4.2 Operational Emissions

The localized operational air quality analysis was conducted using the methodology described in the SCAQMD *Localized Significance Threshold Methodology* (June 2003, revised July 2008). The screening criteria provided in the *Localized Significance Threshold Methodology* were used to determine localized operational emissions thresholds for the Project. The maximum daily increase in localized emissions and localized significance thresholds are presented in **Table 8**, *Maximum Unmitigated Localized Operational Emissions*. As shown therein, the increase in maximum localized operational emissions for sensitive receptors would be substantially below the localized thresholds for NO_X, CO, PM10, and PM2.5. Therefore, with respect to localized operational emissions, impacts would be less than significant.

5.4.3 Carbon Monoxide Hotspots

The potential for the Project to cause or contribute to CO hotspots is evaluated by comparing Project intersections (both intersection geometry and traffic volumes) with prior studies conducted by the SCAQMD in support of their AQMPs and considering existing background CO concentrations. As discussed below, this comparison demonstrates that the Project would not cause or contribute considerably to the formation of CO hotspots, that CO concentrations at Project impacted intersections would remain well below the ambient air quality standards, and that no further CO analysis is warranted or required.

TABLE 8

MAXIMUM UNMITIGATED LOCALIZED OPERATIONAL EMISSIONS (POUNDS PER DAY) [A, B]

Source	NO_X	CO	PM10	PM2.5
Area (Consumer Products, Landscaping)	<1	8	<0.1	<0.1
Energy (Natural Gas)	<1	<1	<0.1	<0.1
Maximum Localized (On-Site) Emissions	**<1**	**8**	**0.1**	**0.1**
SCAQMD Numeric Indicators [c]	**64**	**484**	**1.0**	**1.0**
Over/(Under)	(63)	(476)	(0.9)	(0.9)
Exceeds Thresholds?	No	No	No	No

NOTES:
[a] Totals may not add up exactly due to rounding in the modeling calculations. Detailed emissions calculations are provided in Appendix A.
[b] The LST analysis and localized impacts are determined based on the Project's on-site emissions.
[c] The SCAQMD LSTs are based on Source Receptor Area 8 (West San Gabriel Valley) for a 0.815 acre site within a 25-meter receptor distance.

SOURCE: ESA 2018

As shown previously in **Table 1**, CO levels in the Project area are substantially below the federal and state standards. Maximum CO levels in recent years are 3.0 ppm (one-hour average) and 1.8 ppm (eight-hour average) compared to the thresholds of 20 ppm (one-hour average) and 9.0 ppm (eight-hour average). Carbon monoxide decreased dramatically in the Air Basin with the introduction of the catalytic converter in 1975. No exceedances of CO have been recorded at monitoring stations in the Air Basin for some time and the Air Basin is currently designated as a CO attainment area for both the CAAQS and NAAQS. Thus, it is not expected that CO levels at Project-impacted intersections would rise to the level of an exceedance of these standards.

Additionally, the SCAQMD conducted CO modeling for the 2003 AQMP for the four worst-case intersections in the Air Basin. These include: (a) Wilshire Boulevard and Veteran Avenue; (b) Sunset Boulevard and Highland Avenue; (c) La Cienega Boulevard and Century Boulevard; (d) Long Beach Boulevard and Imperial Highway. In the 2003 AQMP, the SCAQMD notes that the intersection of Wilshire Boulevard and Veteran Avenue is the most congested intersection in Los Angeles County, with an average daily traffic volume of about 100,000 vehicles per day. This

intersection is located near the on- and off-ramps to Interstate 405 in West Los Angeles. The evidence provided in Table 4-10 of Appendix V of the 2003 AQMP shows that the peak modeled CO concentration due to vehicle emissions at these four intersections was 4.6 ppm (one-hour average) and 3.2 (eight-hour average) at Wilshire Boulevard and Veteran Avenue.

Based on the Project's Traffic Impact Analysis, of the studied intersections that are predicted to operate at a Level of Service (LOS) of D under future operational year plus Project conditions, the intersections would potentially have peak traffic volumes of approximately 15,772.[34] As a result, CO concentrations are expected to be approximately 3.7 ppm (one-hour average) and 2.3 ppm (eight-hour average) or less, inclusive of background CO concentrations, which would not exceed the thresholds. Total traffic volumes at the maximum impacted intersection would likely have to increase by 6 times or more to contribute to a CO hotspot given that vehicles operating today have reduced CO emissions as compared to vehicles operating in year 2003 when the SCAQMD conducted the AQMP attainment demonstration modeling. Thus, this comparison demonstrates that the Project would not contribute considerably to the formation of CO hotspots and no further CO analysis is required. The Project would result in less than significant impacts with respect to CO hotspots.

5.5 Odors (AIR-5)

5.5.1 Construction

Potential activities that may emit odors during construction activities include the use of architectural coatings and solvents and the combustion of diesel fuel in on- and off-road equipment. As discussed in the Regulatory Setting, Section 2, of this technical report, SCAQMD Rule 1113 would limit the amount of VOCs in architectural coatings and solvents. In addition, the Project would comply with the applicable provisions of the CARB Air Toxics Control Measure regarding idling limitations for diesel trucks. Through mandatory compliance with SCAQMD Rules, no construction activities or materials are expected to create objectionable odors affecting a substantial number of people. Therefore, construction of the Project would result in less than significant impacts.

5.5.2 Operation

According to the SCAQMD *CEQA Air Quality Handbook*, land uses associated with odor complaints typically include agricultural uses, wastewater treatment plants, food processing plants, chemical plants, composting, refineries, landfills, dairies, and fiberglass molding. The Project does not include any uses identified by the SCAQMD as being associated with substantial odors. As a result, the Project is not expected to discharge contaminants into the air in quantities that would cause a nuisance, injury, or annoyance to the public or property pursuant to SCAQMD Rule 402. Therefore, the Project would not create adverse odors affecting a substantial number of people and impacts would be less than significant.

34 City of Pasadena, Department of Transportation, Traffic Impact Analysis – Outside of CEQA Analysis, 253 South Los Robles Avenue, (2018).

6.0
Cumulative Impacts

The Project would result in the emission of criteria pollutants for which the region is in non-attainment during both construction and operation. The Air Basin fails to meet national standards for O_3 and PM2.5 and the state standards for O_3, PM10, and PM2.5 and therefore is considered a federal "non-attainment" area for O_3 and PM2.5 and a state "non-attainment" area for O3, PM10, and PM2.5. The SCAQMD has provided guidance on an acceptable approach to addressing the cumulative impacts issue for air quality as discussed below:[35]

> *"As Lead Agency, the AQMD uses the same significance thresholds for project specific and cumulative impacts for all environmental topics analyzed in an Environmental Assessment or EIR… Projects that exceed the Project-specific significance thresholds are considered by the SCAQMD to be cumulatively considerable. This is the reason project-specific and cumulative significance thresholds are the same. Conversely, projects that do not exceed the project-specific thresholds are generally not considered to be cumulatively significant."*

Because the City has not adopted specific Citywide significance thresholds for air quality impacts, it is appropriate to rely on thresholds established by the SCAQMD (refer to CEQA Guidelines Section 15064.7). While it may be possible to add emissions from the list of related projects and the Project, it would not provide meaningful data for evaluating cumulative impacts under CEQA because neither the City nor the SCAQMD have established numerical thresholds applicable to the summation of multiple project emissions for comparison purposes. Additionally, regional emissions from a project have the potential to affect the Air Basin as a whole and it is not possible to establish a geographical radius from a specific project site where potential cumulative impacts from regional emissions would be limited. Meteorological factors, such as wind, can disperse pollutants, often times tens of miles downwind from a project site. Therefore, consistent with accepted and established SCAQMD cumulative impact evaluation methodologies, the potential for the Project to results in cumulative impacts from regional emissions is assessed based on the SCAQMD thresholds.

6.1 Construction Impacts

As shown in **Table 4** regional emissions calculated for Project construction would be less than the applicable SCAQMD daily significance thresholds. The thresholds are designed to assist the region in attaining the applicable State and national ambient air quality standards. These

35 South Coast Air Quality Management District, Cumulative Impacts White Paper, Appendix D, http://www.aqmd.gov/docs/default-source/Agendas/Environmental-Justice/cumulative-impacts-working-group/cumulative-impacts-white-paper-appendix.pdf?sfvrsn=4, accessed July 2018.

standards apply to both primary (criteria and precursor) and secondary pollutants (O_3). Although the Project Site is located in a region that is in non-attainment for O_3, PM10, and PM2.5, the emissions associated with the Project would not be cumulatively considerable as the emissions would fall below SCAQMD daily significance thresholds. In addition, the Project would be consistent with the AQMP, which is intended to bring the Air Basin into attainment for all criteria pollutants.

There are two planned projects that are adjacent to the Project Site to the north and south. The 245 South Los Robles Avenue project would be a 131-unit mixed-use building to the north of the proposed Project and the 399 East Del Mar Boulevard project would be a 55-unit multi-family residential building to the south of the proposed Project. Environmental documents prepared for both related projects concluded that air quality impacts would be less than significant. Therefore, because both related projects would also not exceed the SCAQMD daily significance thresholds, cumulative impacts from these projects would also be less than significant.

With respect to the Project's short-term construction-related air quality emissions and cumulative conditions, the SCAQMD has developed strategies to reduce criteria pollutant emissions outlined in the AQMP pursuant to the federal Clean Air Act mandates. Construction of the Project would comply with SCAQMD Rule 403 requirements and the ATCM to limit heavy duty diesel motor vehicle idling to no more than 5 minutes at any given time. In addition, the Project would utilize a construction contractor(s) that complies with required and applicable BACT and the In-Use Off-Road Diesel Vehicle Regulation. Per SCAQMD rules and mandates, as well as the CEQA requirement that significant impacts be mitigated to the extent feasible, these same requirements (i.e., Rule 403 compliance, the implementation of all feasible mitigation measures, and compliance with adopted AQMP emissions control measures) would also be imposed on construction projects in the Air Basin, which would include the cumulative projects in the Project area. As such, the Project's contribution to cumulatively significant construction impacts to air quality would not be cumulatively considerable and cumulative impacts would be less than significant for regional and localized criteria pollutants during construction.

6.2 Operational Impacts

The SCAQMD's approach for assessing cumulative impacts related to operations or long-term implementation is based on attainment of ambient air quality standards in accordance with the requirements of the federal and State Clean Air Acts. As discussed earlier, the SCAQMD has developed a comprehensive plan, the AQMP, which addresses the region's cumulative air quality condition.

A significant impact may occur if a project would add a cumulatively considerable contribution of a federal or state non-attainment pollutant. Because the Los Angeles County portion of the Air Basin is currently in non-attainment for O_3, PM10, and PM2.5, cumulative projects could exceed an air quality standard or contribute to an existing or projected air quality exceedance. Cumulative impacts to air quality are evaluated under two sets of thresholds for CEQA and the SCAQMD. In particular, Section 15064(h)(3) of the CEQA *Guidelines* provides guidance in

determining the significance of cumulative impacts. Specifically, Section 15064(h)(3) states in part that:

> *"A lead agency may determine that a project's incremental contribution to a cumulative effect is not cumulatively considerable if the project will comply with the requirements in a previously approved plan or mitigation program which provides specific requirements that will avoid or substantially lessen the cumulative problem (e.g., water quality control plan, air quality plan, integrated waste management plan) within the geographic area in which the project is located. Such plans or programs must be specified in law or adopted by the public agency with jurisdiction over the affected resources through a public review process to implement, interpret, or make specific the law enforced or administered by the public agency…"*

For purposes of the cumulative air quality analysis with respect to CEQA Guidelines Section 15064(h)(3), the Project's incremental contribution to cumulative air quality impacts is determined based on compliance with the SCAQMD AQMP. The Project would be consistent with the City's zoning designation and growth projections for the area. Therefore, the Project would not conflict with or obstruct implementation of AQMP and would be consistent with the growth projections in the AQMP.

Nonetheless, SCAQMD no longer recommends relying solely upon consistency with the AQMP as an appropriate methodology for assessing cumulative air quality impacts. The SCAQMD recommends that project-specific air quality impacts be used to determine the potential cumulative impacts to regional air quality.

As shown in **Table 5**, regional emissions calculated for Project operations would be less than the applicable SCAQMD daily significance thresholds. The thresholds are designed to assist the region in attaining the applicable State and national ambient air quality standards. These standards apply to both primary (criteria and precursor) and secondary pollutants (O_3). Although the Project Site is located in a region that is in non-attainment for O_3, PM10, and PM2.5, the emissions associated with the Project would not be cumulatively considerable as the emissions would fall below SCAQMD daily significance thresholds. In addition, the Project would be consistent with the AQMP, which is intended to bring the Air Basin into attainment for all criteria pollutants.

In addition, environmental documents prepared for the 245 South Los Robles Avenue project and the 399 East Del Mar Boulevard project concluded that air quality impacts would be less than significant. Therefore, because both related projects would also not exceed the SCAQMD daily significance thresholds, cumulative impacts from these projects would also be less than significant.

As discussed previously, the Project would not exceed the SCAQMD regional daily significance thresholds. Therefore, the Project's incremental contribution to long-term emissions of non-attainment pollutants and O_3 precursors, considered together with cumulative projects, would not be cumulatively considerable, and therefore the cumulative impact of the Project would be less than significant.

7.0
Summary of Results

Air pollutant emissions associated with the Project have been evaluated to determine the level of impact from construction activities and future operations of the Project.

7.1 Construction

Construction of the Project has the potential to create air quality impacts through the use of heavy-duty construction equipment and through vehicle trips generated from construction workers traveling to and from the Project Site. In addition, fugitive dust emissions would result from grading and construction activities. However, use of typical construction equipment (in terms of size and age/emission standards) and compliance with Rule 403 requirements (regarding dust control measures such as watering twice daily and track out prevention measures), minimizes air emissions to the extent warranted.

As shown in **Table 5**, regional construction emissions would not exceed the SCAQMD daily significance thresholds. Therefore, impacts related to regional construction emissions would be less than significant. As shown in **Table 7**, localized emissions would not exceed the SCAQMD localized significance thresholds. Therefore, impacts related to localized construction emissions would be less than significant. As a result, Project-related construction impacts would be less than significant.

7.2 Operation

Air pollutant emissions associated with Project operations would be generated by the consumption of natural gas and by the operation of on-road vehicles. As shown in **Table 6** and **Table 8**, regional and localized operational emissions associated with the Project would not exceed the SCAQMD daily significance thresholds. In addition, the Project would result in less-than-significant CO hotspot and odor impacts. Furthermore, the Project would be consistent with applicable air quality plans and policies. Therefore, impacts related to Project operational emissions and consistency with applicable air quality management plans, policies, or regulations would be less than significant.

Air Quality Technical Report Appendix

ESA

Appendix A
Project Construction Emissions

253 Los Robles Last Updated 3/12/2018
Air Quality and Greenhouse Gas Assessment

Table 1. Land Use and California Emissions Estimator Model (CalEEMod) Inputs

Land Use	CalEEMod Land Use Type	CalEEMod Land Use SubType	Value	Unit	Value	Unit
Existing						
Office Building	Commercial	General Office Building	43.54	ksf	43,544	sf
Landscaping			4.58	ksf	4,580	sf
Parking	Parking		124.00	spaces		

Proposed Project	CalEEMod Land Use Type	CalEEMod Land Use SubType	Value	Unit	Value	Unit
Residential						
Condominiums	**Residential**	**High-Rise Condo/Townhouse Rise**	**92**	**DU**	**94,165**	**sf**
One Bedroom			58	DU		
Two Bedroom			26	DU		
Gym	**Recreational**	**Health Club**	**2**	**ksf**	**1,699**	**sf**
Landscaping	**Recreational**	**City Park**	**16**	**ksf**	**15,546**	**sf**
Open Space	**Parking**	**Other Non-Asphalt Surfaces**	**22**	**ksf**	**22,320**	**sf**
Private Balconies	**Parking**	Other Non-Asphalt Surfaces	7	ksf	6,938	sf
Common Open Space			15	ksf	15,382	sf
Courtyard	**Parking**	Other Non-Asphalt Surfaces	2	ksf	2,432	sf
Additional Front Yard	**Parking**	Other Non-Asphalt Surfaces	1	ksf	963	sf
North Yard	**Parking**	Other Non-Asphalt Surfaces	3	ksf	3,051	sf
Patio Easement	**Parking**	Other Non-Asphalt Surfaces	2	ksf	2,251	sf
South Yard	**Parking**	Other Non-Asphalt Surfaces	3	ksf	2,556	sf
6th-Floor East Terrace	**Parking**	Other Non-Asphalt Surfaces	2	ksf	2,037	sf
6th-Floor Sundeck	**Parking**	Other Non-Asphalt Surfaces	2	ksf	2,092	sf
Parking	**Parking**	**Enclosed Parking Structure with Elevator**	**131**	**spaces**	**69,668**	**sf**
Basement 1	**Parking**	Enclosed Parking Structure with Elevator	41	spaces	23,157	sf
Basement 2	**Parking**	Enclosed Parking Structure with Elevator	43	spaces	23,158	sf
Basement 3	**Parking**	Enclosed Parking Structure with Elevator	47	spaces	23,353	sf

CALEEMOD INPUT SUMMARY	CalEEMod Land Use Type	CalEEMod Land Use SubType	Value	Unit	Value	Unit	Acreage
Condominiums	**Residential**	**High-Rise Condo/Townhouse Rise**	**92**	**DU**	**92,466**	**sf**	**0.35**
Health Club	**Recreational**	**Health Club**	**2**	**ksf**	**1,699**	**sf**	**0.1**
Other Non-Asphalt Surfaces	**Parking**	**Other Non-Asphalt Surfaces**	**22**	**ksf**	**22,320**	**sf**	**0.115**
Enclosed Parking Structure with Elevator	**Parking**	**Enclosed Parking Structure with Elevator**	**131**	**spaces**	**69,668**	**sf**	**0.25**
						Total	**0.815**

Table 2. Construction Schedule and California Emissions Estimator Model (CalEEMod) Inputs

Construction Phase	Start Date	End Date	No. Work Days [1]	Maximum Number of Daily Workers[2]	Worker One-Way Trips/Max Day [3]	Worker Trip length (mi) [4]
Demolition	11/1/2018	12/31/2018	52	5	10	14.7
Site Preparation	11/1/2018	12/31/2018	52	3	6	14.7
Grading/Excavation	1/1/2019	4/15/2019	90	5	10	14.7
Drainage/Utilities/Trenching	4/16/2019	6/15/2019	53	5	10	14.7
Foundations/Concrete Pouring	6/16/2019	11/15/2019	131	8	16	14.7
Building Construction	11/16/2019	5/15/2020	156	18	36	14.7
Paving	8/1/2020	9/30/2020	52	5	10	14.7
Architectural Coatings	5/16/2020	8/31/2020	92	8	16	14.7

Notes:
1. Number of days based on client provided data.
2. Max daily workers based on client provided data
3. Assumes trips to and from the site for each worker
4. Worker trip length provided by CalEEMod default
5. Accounts for water trucks onsite for reducing fugitive dust
6. Conservative estimtates for dispostal sites and concrete truck vendor locations

Work Hours
Mon-Fri 7am – 7pm
Saturday 8am - 5pm

Source: Odyssey Development Services, 2018. ESA, 2018.

253 Los Robles
Air Quality and Greenhouse Gas Assessment

Construction Assumptions - Demolition

Demolition Schedule		**Notes**
Start Date	11/1/2018	
End Date	12/31/2018	
Work Days	52	
Demolition Quantities		
Hardscape Demolition Volume		**Notes**
Total Area(KSF)	24,550.0	
Tons of Debris	6	
Building Demolition Volume		**Notes**
Total Area (KSF)	21,898.0	
Tons of Debris	11	
Total Debris (CY)	17	
Truck Size (CY)	14	
Total Trucks	91	
Trucks per day	30.00	
Total One-Way Trips	182	
Daily One-Way Trips	60	

Disposal Site Distance (mi) 20

Source: Odyssey Development Services, 2018. ESA, 2018.

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Air Quality and Greenhouse Gas Assessment

Site Preparation

Earthwork	Amount
Total Earthwork Removal Export (CY)	40
Daily Earthwork Export (CY)	40
Capacity of Haul Trucks (CY)	10
Total Truck Hauls	4
Daily Truck Hauls	1
Daily One-way Trips	2
Distance to Disposal Site	20
Total Work days	52

Disposal Site Distance (miles) 20

Source: Odyssey Development Services, 2018. ESA, 2018.

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Air Quality and Greenhouse Gas Assessment

Grading Phase Soil Hauling Trips

Excavation Volume	Value
Total Soil Exported (CY)	30,200
Maximum grading area one day (acres)	0.75
# of Work Days	90.0
Total Number of Haul Trucks	1,510.00
Daily Haul Trucks	30
Daily One-way Trips	60.00
Capacity of Haul Trucks	20.00
Distance to Disposal Site (miles)	20

Source: Odyssey Development Services, 2018. ESA, 2018.

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Air Quality and Greenhouse Gas Assessment

Concrete/Concrete Truck Estimates	Value
Total Concrete Volume (CY)	8,786
Cement Truck Capacity (CY) [1]	10
Total Trucks Needed	879
Total Number of One-way Truck Trips	1757.2
Working days	131
Daily (CY) of concrete	216
Daily Trucks	22
Daily One-way Truck Trips	44

Notes:

Source: Odyssey Development Services, 2018. ESA, 2018.

253 Los Robles
Resource Loaded Construction Schedule

last updated:
3/12/2018

On-Site/Off-Road Equipment	2018												2019												2020											
Month	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12
Phase:																																				
Demolition																																				
Rubber Tired Loader											1	1																								
Tractors/Loaders/Backhoes											1	1																								
Site Preparation																																				
Bore/Drill Rig											1	1																								
Rubber Tired Loader											1	1																								
Tractors/Loaders/Backhoes											1	1																								
Grading/Excavation																																				
Compactor													1	1	1	1																				
Excavators													1	1	1	1																				
Haul Trucks													1	1	1	1																				
Tractors/Loaders/Backhoes													1	1	1	1																				
Drainage/Utilities/Trenching																																				
Tractors/Loaders/Backhoes																1	1	1																		
Trencher																1	1	1																		
Foundations/Concrete Pouring																																				
Air Compressors																	1	1	1	1	1	1														
Tractors/Loaders/Backhoes																	1	1	1	1	1	1														
Cement/Mortar Mixers																	1	1	1	1	1	1														
Pumps																	1	1	1	1	1	1														
Building Construction																																				
Air Compressors																			2	2	2	2	2	2	2	2	2	2	2	2						
Concrete/Industrial Saws																			2	2	2	2	2	2	2	2	2	2	2	2						
Forklifts																			1	1	1	1	1	1	1	1	1	1	1	1						
Generator Sets																			1	1	1	1	1	1	1	1	1	1	1	1						
Paving																																				
Paving Equipment																																		1	1	
Architectural Coatings																																				
Air Compressors																															1	1	1	1		
Forklifts																															1	1	1	1		

253 S. Los Robles - Construction

Los Angeles-South Coast County, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Condo/Townhouse High Rise	92.00	Dwelling Unit	0.35	92,466.00	263
Health Club	1.70	1000sqft	0.10	1,699.00	0
Other Non-Asphalt Surfaces	22.32	1000sqft	0.12	22,320.00	0
Enclosed Parking with Elevator	131.00	Space	0.25	69,668.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	33
Climate Zone	12			**Operational Year**	2021
Utility Company	Pasadena Water & Power				
CO2 Intensity (lb/MWhr)	1664.14	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - see construction assumptions

Construction Phase - see construction assumptions

Off-road Equipment - see construction assumptions

Off-road Equipment - see construction assumptions

Off-road Equipment - see construction assumptions

Off-road Equipment - see construction assumptions

Off-road Equipment - see construction assumptions

Off-road Equipment - see construction assumptions

Off-road Equipment - see construction assumptions

Off-road Equipment - see construction assumptions

Grading - see construction assumptions

Demolition -

Trips and VMT - see construction assumptions. Hauling truck trips were increased to match client's number of max daily hauling trips for demolition, site preparation, grading phases and foundations/concrete pouring. Will be scaled down for GHG calculations.

Woodstoves - see construction assumptions

Construction Off-road Equipment Mitigation -

Waste Mitigation -

Table Name	Column Name	Default Value	New Value
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	15
tblConstructionPhase	NumDays	5.00	92.00
tblConstructionPhase	NumDays	100.00	156.00
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tblConstructionPhase	PhaseEndDate	11/14/2018	12/31/2018
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tblConstructionPhase	PhaseEndDate	4/15/2019	9/30/2020
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tblConstructionPhase	PhaseStartDate	4/16/2019	5/16/2020
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tblConstructionPhase	PhaseStartDate	4/9/2019	8/1/2020
tblConstructionPhase	PhaseStartDate	11/15/2018	11/1/2018
tblFireplaces	FireplaceDayYear	25.00	0.00
tblFireplaces	FireplaceHourDay	3.00	0.00
tblFireplaces	FireplaceWoodMass	1,019.20	0.00
tblFireplaces	NumberGas	78.20	0.00
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tblFireplaces	NumberWood	4.60	0.00
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tblGrading	AcresOfGrading	0.00	0.82
tblGrading	MaterialExported	0.00	30,200.00
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tblLandUse	LandUseSquareFeet	92,000.00	92,466.00
tblLandUse	LandUseSquareFeet	52,400.00	69,668.00
tblLandUse	LotAcreage	1.44	0.35
tblLandUse	LotAcreage	0.04	0.10
tblLandUse	LotAcreage	0.51	0.12
tblLandUse	LotAcreage	1.18	0.25
tblOffRoadEquipment	HorsePower	78.00	63.00
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tblOffRoadEquipment	LoadFactor	0.36	0.36
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tblOffRoadEquipment	OffRoadEquipmentType		Rubber Tired Loaders
tblOffRoadEquipment	OffRoadEquipmentType		Air Compressors
tblOffRoadEquipment	OffRoadEquipmentType		Concrete/Industrial Saws
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tblOffRoadEquipment	OffRoadEquipmentType		Paving Equipment
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tblOffRoadEquipment	OffRoadEquipmentType		Trenchers
tblOffRoadEquipment	OffRoadEquipmentType		Air Compressors
tblOffRoadEquipment	OffRoadEquipmentType		Cement and Mortar Mixers
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tblTripsAndVMT	HaulingTripNumber	5.00	104.00
tblTripsAndVMT	HaulingTripNumber	3,775.00	5,400.00
tblTripsAndVMT	VendorTripNumber	25.00	44.00
tblTripsAndVMT	WorkerTripNumber	5.00	10.00
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tblTripsAndVMT	WorkerTripNumber	106.00	16.00
tblTripsAndVMT	WorkerTripNumber	5.00	10.00
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tblWoodstoves	NumberNoncatalytic	4.60	0.00
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tblWoodstoves	WoodstoveWoodMass	999.60	0.00

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2018	3.2521	50.3661	20.4044	0.0946	1.2865	1.3599	2.6464	0.3474	1.2539	1.6014	0.0000	9,887.3617	9,887.3617	1.7068	0.0000	9,930.0320
2019	3.1284	33.6154	24.8057	0.0718	1.2084	1.4821	2.0445	0.3240	1.4677	1.6205	0.0000	7,524.7689	7,524.7689	1.0517	0.0000	7,551.0600
2020	7.6492	23.3302	24.4605	0.0478	0.5625	1.2798	1.8423	0.1528	1.2674	1.4202	0.0000	4,634.3967	4,634.3967	0.3379	0.0000	4,642.8438
Maximum	**7.6492**	**50.3661**	**24.8057**	**0.0946**	**1.2865**	**1.4821**	**2.6464**	**0.3474**	**1.4677**	**1.6205**	**0.0000**	**9,887.3617**	**9,887.3617**	**1.7068**	**0.0000**	**9,930.0320**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2018	3.2521	50.3661	20.4044	0.0946	1.2721	1.3599	2.6320	0.3457	1.2539	1.5996	0.0000	9,887.3617	9,887.3617	1.7068	0.0000	9,930.0320
2019	3.1284	33.6154	24.8057	0.0718	1.1794	1.4821	2.0445	0.3198	1.4677	1.6205	0.0000	7,524.7689	7,524.7689	1.0517	0.0000	7,551.0600
2020	7.6492	23.3302	24.4605	0.0478	0.5625	1.2798	1.8423	0.1528	1.2674	1.4202	0.0000	4,634.3967	4,634.3967	0.3379	0.0000	4,642.8438
Maximum	**7.6492**	**50.3661**	**24.8057**	**0.0946**	**1.2721**	**1.4821**	**2.6320**	**0.3457**	**1.4677**	**1.6205**	**0.0000**	**9,887.3617**	**9,887.3617**	**1.7068**	**0.0000**	**9,930.0320**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**1.42**	**0.00**	**0.22**	**0.71**	**0.00**	**0.04**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	11/1/2018	12/31/2018	6	52	
2	Site Preparation	Site Preparation	11/1/2018	12/31/2018	6	52	
3	Grading	Grading	1/1/2019	4/15/2019	6	90	
4	Building Construction	Building Construction	11/16/2019	5/15/2020	6	156	
5	Paving	Paving	8/1/2020	9/30/2020	6	52	
6	Architectural Coating	Architectural Coating	5/16/2020	8/31/2020	6	92	
7	Drainage/Utilities/Trenching	Trenching	4/16/2019	6/15/2019	6	53	
8	Foundations/Concrete Pouring	Building Construction	6/16/2019	11/15/2019	6	131	

Acres of Grading (Site Preparation Phase): 0.815

Acres of Grading (Grading Phase): 0.815

Acres of Paving: 0.365

Residential Indoor: 187,244; Residential Outdoor: 62,415; Non-Residential Indoor: 2,549; Non-Residential Outdoor: 850; Striped Parking

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Architectural Coating	Air Compressors	1	12.00	78	0.48
Paving	Cement and Mortar Mixers	0	6.00	9	0.56
Demolition	Concrete/Industrial Saws	0	8.00	81	0.73
Grading	Concrete/Industrial Saws	0	8.00	81	0.73
Building Construction	Cranes	0	4.00	231	0.29
Building Construction	Forklifts	1	12.00	89	0.20
Site Preparation	Graders	0	8.00	187	0.41
Paving	Pavers	0	7.00	130	0.42
Paving	Rollers	0	7.00	80	0.38
Demolition	Rubber Tired Dozers	0	1.00	247	0.40

Grading	Rubber Tired Dozers	0	1.00	247	0.40
Building Construction	Tractors/Loaders/Backhoes	0	8.00	97	0.37
Demolition	Tractors/Loaders/Backhoes	1	12.00	97	0.37
Grading	Tractors/Loaders/Backhoes	1	12.00	97	0.37
Paving	Tractors/Loaders/Backhoes	0	7.00	97	0.37
Site Preparation	Tractors/Loaders/Backhoes	1	12.00	97	0.37
Foundations/Concrete Pouring	Cranes	0	4.00	231	0.29
Foundations/Concrete Pouring	Forklifts	0	6.00	89	0.20
Foundations/Concrete Pouring	Tractors/Loaders/Backhoes	1	12.00	97	0.37
Demolition	Rubber Tired Loaders	1	12.00	203	0.36
Site Preparation	Rubber Tired Loaders	1	12.00	203	0.36
Site Preparation	Bore/Drill Rigs	1	12.00	221	0.50
Grading	Plate Compactors	1	12.00	8	0.43
Grading	Excavators	1	12.00	158	0.38
Grading	Rubber Tired Loaders	1	12.00	203	0.36
Building Construction	Air Compressors	2	12.00	63	0.31
Building Construction	Concrete/Industrial Saws	2	12.00	81	0.73
Building Construction	Generator Sets	1	12.00	84	0.74
Paving	Paving Equipment	1	12.00	132	0.36
Drainage/Utilities/Trenching	Tractors/Loaders/Backhoes	1	12.00	97	0.37
Drainage/Utilities/Trenching	Trenchers	1	12.00	78	0.50
Foundations/Concrete Pouring	Air Compressors	1	12.00	78	0.48
Foundations/Concrete Pouring	Cement and Mortar Mixers	1	12.00	9	0.56
Foundations/Concrete Pouring	Pumps	1	12.00	84	0.74

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	2	10.00	0.00	3,120.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	3	6.00	0.00	104.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Grading	4	10.00	0.00	5,400.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	6	36.00	25.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Paving	1	10.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	16.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Foundations/Concrete Pouring	4	16.00	44.00	0.00	14.70	6.90	25.00	LD_Mix	HDT_Mix	HHDT
Drainage/Utilities/Trenching	2	10.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Use Soil Stabilizer

Water Exposed Area

Reduce Vehicle Speed on Unpaved Roads

3.2 Demolition - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					7.0000e-003	0.0000	7.0000e-003	1.0600e-003	0.0000	1.0600e-003			0.0000			0.0000
Off-Road	1.0471	11.9719	6.1213	0.0141		0.5517	0.5517		0.5076	0.5076		1,417.1741	1,417.1741	0.4412		1,428.2038
Total	**1.0471**	**11.9719**	**6.1213**	**0.0141**	**7.0000e-003**	**0.5517**	**0.5587**	**1.0600e-003**	**0.5076**	**0.5086**		**1,417.1741**	**1,417.1741**	**0.4412**		**1,428.2038**

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	0.5955	19.3839	4.0108	0.0486	1.0490	0.0737	1.1227	0.2875	0.0706	0.3581		5,253.6874	5,253.6874	0.3617		5,262.7292
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0553	0.0417	0.5401	1.2600e-003	0.1118	1.0000e-003	0.1128	0.0296	9.2000e-004	0.0306		125.3690	125.3690	4.7000e-003		125.4865
Total	**0.6508**	**19.4256**	**4.5509**	**0.0499**	**1.1608**	**0.0747**	**1.2355**	**0.3172**	**0.0715**	**0.3886**		**5,379.0564**	**5,379.0564**	**0.3664**		**5,388.2157**

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					2.7300e-003	0.0000	2.7300e-003	4.1000e-004	0.0000	4.1000e-004			0.0000			0.0000
Off-Road	1.0471	11.9719	6.1213	0.0141		0.5517	0.5517		0.5076	0.5076	0.0000	1,417.1741	1,417.1741	0.4412		1,428.2037
Total	**1.0471**	**11.9719**	**6.1213**	**0.0141**	**2.7300e-003**	**0.5517**	**0.5544**	**4.1000e-004**	**0.5076**	**0.5080**	**0.0000**	**1,417.1741**	**1,417.1741**	**0.4412**		**1,428.2037**

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	0.5955	19.3839	4.0108	0.0486	1.0490	0.0737	1.1227	0.2875	0.0706	0.3581		5,253.6874	5,253.6874	0.3617		5,262.7292
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0553	0.0417	0.5401	1.2600e-003	0.1118	1.0000e-003	0.1128	0.0296	9.2000e-004	0.0306		125.3690	125.3690	4.7000e-003		125.4865
Total	**0.6508**	**19.4256**	**4.5509**	**0.0499**	**1.1608**	**0.0747**	**1.2355**	**0.3172**	**0.0715**	**0.3886**		**5,379.0564**	**5,379.0564**	**0.3664**		**5,388.2157**

3.3 Site Preparation - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.0167	0.0000	0.0167	1.8100e-003	0.0000	1.8100e-003			0.0000			0.0000
Off-Road	1.5012	18.2975	9.2745	0.0282		0.7305	0.7305		0.6720	0.6720		2,840.7869	2,840.7869	0.8844		2,862.8963
Total	**1.5012**	**18.2975**	**9.2745**	**0.0282**	**0.0167**	**0.7305**	**0.7472**	**1.8100e-003**	**0.6720**	**0.6738**		**2,840.7869**	**2,840.7869**	**0.8844**		**2,862.8963**

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	0.0199	0.6461	0.1337	1.6200e-003	0.0350	2.4600e-003	0.0374	9.5800e-003	2.3500e-003	0.0119		175.1229	175.1229	0.0121		175.4243
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0332	0.0250	0.3240	7.6000e-004	0.0671	6.0000e-004	0.0677	0.0178	5.5000e-004	0.0183		75.2214	75.2214	2.8200e-003		75.2919
Total	**0.0530**	**0.6712**	**0.4577**	**2.3800e-003**	**0.1020**	**3.0600e-003**	**0.1051**	**0.0274**	**2.9000e-003**	**0.0303**		**250.3443**	**250.3443**	**0.0149**		**250.7162**

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					6.5200e-003	0.0000	6.5200e-003	7.1000e-004	0.0000	7.1000e-004			0.0000			0.0000
Off-Road	1.5012	18.2975	9.2745	0.0282		0.7305	0.7305		0.6720	0.6720	0.0000	2,840.7869	2,840.7869	0.8844		2,862.8963
Total	**1.5012**	**18.2975**	**9.2745**	**0.0282**	**6.5200e-003**	**0.7305**	**0.7370**	**7.1000e-004**	**0.6720**	**0.6727**	**0.0000**	**2,840.7869**	**2,840.7869**	**0.8844**		**2,862.8963**

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	0.0199	0.6461	0.1337	1.6200e-003	0.0350	2.4600e-003	0.0374	9.5800e-003	2.3500e-003	0.0119		175.1229	175.1229	0.0121		175.4243
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0332	0.0250	0.3240	7.6000e-004	0.0671	6.0000e-004	0.0677	0.0178	5.5000e-004	0.0183		75.2214	75.2214	2.8200e-003		75.2919
Total	**0.0530**	**0.6712**	**0.4577**	**2.3800e-003**	**0.1020**	**3.0600e-003**	**0.1051**	**0.0274**	**2.9000e-003**	**0.0303**		**250.3443**	**250.3443**	**0.0149**		**250.7162**

3.4 Grading - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.0476	0.0000	0.0476	6.7800e-003	0.0000	6.7800e-003			0.0000			0.0000
Off-Road	1.4036	15.2017	11.2198	0.0226		0.6876	0.6876		0.6338	0.6338		2,216.4031	2,216.4031	0.6903		2,233.6594
Total	**1.4036**	**15.2017**	**11.2198**	**0.0226**	**0.0476**	**0.6876**	**0.7352**	**6.7800e-003**	**0.6338**	**0.6406**		**2,216.4031**	**2,216.4031**	**0.6903**		**2,233.6594**

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	0.5638	18.3770	3.9182	0.0479	1.0490	0.0674	1.1165	0.2876	0.0645	0.3521		5,187.0705	5,187.0705	0.3572		5,196.0012
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0500	0.0367	0.4822	1.2200e-003	0.1118	9.6000e-004	0.1127	0.0296	8.9000e-004	0.0305		121.2953	121.2953	4.1700e-003		121.3995
Total	**0.6138**	**18.4137**	**4.4003**	**0.0492**	**1.1608**	**0.0684**	**1.2292**	**0.3172**	**0.0654**	**0.3826**		**5,308.3658**	**5,308.3658**	**0.3614**		**5,317.4007**

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					0.0185	0.0000	0.0185	2.6500e-003	0.0000	2.6500e-003			0.0000			0.0000
Off-Road	1.4036	15.2017	11.2198	0.0226		0.6876	0.6876		0.6338	0.6338	0.0000	2,216.4031	2,216.4031	0.6903		2,233.6594
Total	**1.4036**	**15.2017**	**11.2198**	**0.0226**	**0.0185**	**0.6876**	**0.7062**	**2.6500e-003**	**0.6338**	**0.6364**	**0.0000**	**2,216.4031**	**2,216.4031**	**0.6903**		**2,233.6594**

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	0.5638	18.3770	3.9182	0.0479	1.0490	0.0674	1.1165	0.2876	0.0645	0.3521		5,187.0705	5,187.0705	0.3572		5,196.0012
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0500	0.0367	0.4822	1.2200e-003	0.1118	9.6000e-004	0.1127	0.0296	8.9000e-004	0.0305		121.2953	121.2953	4.1700e-003		121.3995
Total	**0.6138**	**18.4137**	**4.4003**	**0.0492**	**1.1608**	**0.0684**	**1.2292**	**0.3172**	**0.0654**	**0.3826**		**5,308.3658**	**5,308.3658**	**0.3614**		**5,317.4007**

3.5 Building Construction - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.8446	22.3823	22.3022	0.0371		1.4601	1.4601		1.4469	1.4469		3,523.3718	3,523.3718	0.3055		3,531.0087
Total	**2.8446**	**22.3823**	**22.3022**	**0.0371**		**1.4601**	**1.4601**		**1.4469**	**1.4469**		**3,523.3718**	**3,523.3718**	**0.3055**		**3,531.0087**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.1039	2.8932	0.7677	6.5300e-003	0.1601	0.0185	0.1785	0.0461	0.0177	0.0637		697.0366	697.0366	0.0447		698.1533
Worker	0.1798	0.1322	1.7358	4.3900e-003	0.4024	3.4700e-003	0.4059	0.1067	3.2000e-003	0.1099		436.6630	436.6630	0.0150		437.0380
Total	**0.2837**	**3.0254**	**2.5035**	**0.0109**	**0.5625**	**0.0219**	**0.5844**	**0.1528**	**0.0209**	**0.1736**		**1,133.6996**	**1,133.6996**	**0.0597**		**1,135.1913**

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	2.8446	22.3823	22.3022	0.0371		1.4601	1.4601		1.4469	1.4469	0.0000	3,523.3718	3,523.3718	0.3055		3,531.0087
Total	**2.8446**	**22.3823**	**22.3022**	**0.0371**		**1.4601**	**1.4601**		**1.4469**	**1.4469**	**0.0000**	**3,523.3718**	**3,523.3718**	**0.3055**		**3,531.0087**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.1039	2.8932	0.7677	6.5300e-003	0.1601	0.0185	0.1785	0.0461	0.0177	0.0637		697.0366	697.0366	0.0447		698.1533
Worker	0.1798	0.1322	1.7358	4.3900e-003	0.4024	3.4700e-003	0.4059	0.1067	3.2000e-003	0.1099		436.6630	436.6630	0.0150		437.0380
Total	**0.2837**	**3.0254**	**2.5035**	**0.0109**	**0.5625**	**0.0219**	**0.5844**	**0.1528**	**0.0209**	**0.1736**		**1,133.6996**	**1,133.6996**	**0.0597**		**1,135.1913**

3.5 Building Construction - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.5716	20.5530	22.1875	0.0371		1.2639	1.2639		1.2523	1.2523		3,518.4344	3,518.4344	0.2823		3,525.4911
Total	**2.5716**	**20.5530**	**22.1875**	**0.0371**		**1.2639**	**1.2639**		**1.2523**	**1.2523**		**3,518.4344**	**3,518.4344**	**0.2823**		**3,525.4911**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0889	2.6593	0.6968	6.4900e-003	0.1601	0.0125	0.1726	0.0461	0.0120	0.0581		692.5617	692.5617	0.0423		693.6183
Worker	0.1657	0.1179	1.5762	4.2500e-003	0.4024	3.3600e-003	0.4058	0.1067	3.1000e-003	0.1098		423.4006	423.4006	0.0134		423.7344
Total	**0.2546**	**2.7772**	**2.2730**	**0.0107**	**0.5625**	**0.0159**	**0.5783**	**0.1528**	**0.0151**	**0.1679**		**1,115.9624**	**1,115.9624**	**0.0556**		**1,117.3527**

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	2.5716	20.5530	22.1875	0.0371		1.2639	1.2639		1.2523	1.2523	0.0000	3,518.4343	3,518.4343	0.2823		3,525.4911
Total	**2.5716**	**20.5530**	**22.1875**	**0.0371**		**1.2639**	**1.2639**		**1.2523**	**1.2523**	**0.0000**	**3,518.4343**	**3,518.4343**	**0.2823**		**3,525.4911**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0889	2.6593	0.6968	6.4900e-003	0.1601	0.0125	0.1726	0.0461	0.0120	0.0581		692.5617	692.5617	0.0423		693.6183
Worker	0.1657	0.1179	1.5762	4.2500e-003	0.4024	3.3600e-003	0.4058	0.1067	3.1000e-003	0.1098		423.4006	423.4006	0.0134		423.7344
Total	**0.2546**	**2.7772**	**2.2730**	**0.0107**	**0.5625**	**0.0159**	**0.5783**	**0.1528**	**0.0151**	**0.1679**		**1,115.9624**	**1,115.9624**	**0.0556**		**1,117.3527**

3.6 Paving - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.3070	3.1683	3.7498	6.0300e-003		0.1585	0.1585		0.1458	0.1458		583.7373	583.7373	0.1888		588.4571
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**0.3070**	**3.1683**	**3.7498**	**6.0300e-003**		**0.1585**	**0.1585**		**0.1458**	**0.1458**		**583.7373**	**583.7373**	**0.1888**		**588.4571**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0460	0.0327	0.4378	1.1800e-003	0.1118	9.3000e-004	0.1127	0.0296	8.6000e-004	0.0305		117.6113	117.6113	3.7100e-003		117.7040
Total	**0.0460**	**0.0327**	**0.4378**	**1.1800e-003**	**0.1118**	**9.3000e-004**	**0.1127**	**0.0296**	**8.6000e-004**	**0.0305**		**117.6113**	**117.6113**	**3.7100e-003**		**117.7040**

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	0.3070	3.1683	3.7498	6.0300e-003		0.1585	0.1585		0.1458	0.1458	0.0000	583.7373	583.7373	0.1888		588.4571
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**0.3070**	**3.1683**	**3.7498**	**6.0300e-003**		**0.1585**	**0.1585**		**0.1458**	**0.1458**	**0.0000**	**583.7373**	**583.7373**	**0.1888**		**588.4571**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0460	0.0327	0.4378	1.1800e-003	0.1118	9.3000e-004	0.1127	0.0296	8.6000e-004	0.0305		117.6113	117.6113	3.7100e-003		117.7040
Total	**0.0460**	**0.0327**	**0.4378**	**1.1800e-003**	**0.1118**	**9.3000e-004**	**0.1127**	**0.0296**	**8.6000e-004**	**0.0305**		**117.6113**	**117.6113**	**3.7100e-003**		**117.7040**

3.7 Architectural Coating - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	6.7383					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.4844	3.3677	3.6628	5.9400e-003		0.2219	0.2219		0.2219	0.2219		562.8961	562.8961	0.0436		563.9856
Total	**7.2226**	**3.3677**	**3.6628**	**5.9400e-003**		**0.2219**	**0.2219**		**0.2219**	**0.2219**		**562.8961**	**562.8961**	**0.0436**		**563.9856**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0736	0.0524	0.7006	1.8900e-003	0.1788	1.4900e-003	0.1803	0.0474	1.3800e-003	0.0488		188.1781	188.1781	5.9300e-003		188.3264
Total	**0.0736**	**0.0524**	**0.7006**	**1.8900e-003**	**0.1788**	**1.4900e-003**	**0.1803**	**0.0474**	**1.3800e-003**	**0.0488**		**188.1781**	**188.1781**	**5.9300e-003**		**188.3264**

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	6.7383					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.4844	3.3677	3.6628	5.9400e-003		0.2219	0.2219		0.2219	0.2219	0.0000	562.8961	562.8961	0.0436		563.9856
Total	**7.2226**	**3.3677**	**3.6628**	**5.9400e-003**		**0.2219**	**0.2219**		**0.2219**	**0.2219**	**0.0000**	**562.8961**	**562.8961**	**0.0436**		**563.9856**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0736	0.0524	0.7006	1.8900e-003	0.1788	1.4900e-003	0.1803	0.0474	1.3800e-003	0.0488		188.1781	188.1781	5.9300e-003		188.3264
Total	**0.0736**	**0.0524**	**0.7006**	**1.8900e-003**	**0.1788**	**1.4900e-003**	**0.1803**	**0.0474**	**1.3800e-003**	**0.0488**		**188.1781**	**188.1781**	**5.9300e-003**		**188.3264**

3.8 Drainage/Utilities/Trenching - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.0025	9.3972	7.4185	9.7100e-003		0.6796	0.6796		0.6252	0.6252		962.7268	962.7268	0.3046		970.3418
Total	**1.0025**	**9.3972**	**7.4185**	**9.7100e-003**		**0.6796**	**0.6796**		**0.6252**	**0.6252**		**962.7268**	**962.7268**	**0.3046**		**970.3418**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0500	0.0367	0.4822	1.2200e-003	0.1118	9.6000e-004	0.1127	0.0296	8.9000e-004	0.0305		121.2953	121.2953	4.1700e-003		121.3995
Total	**0.0500**	**0.0367**	**0.4822**	**1.2200e-003**	**0.1118**	**9.6000e-004**	**0.1127**	**0.0296**	**8.9000e-004**	**0.0305**		**121.2953**	**121.2953**	**4.1700e-003**		**121.3995**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.0025	9.3972	7.4185	9.7100e-003		0.6796	0.6796		0.6252	0.6252	0.0000	962.7268	962.7268	0.3046		970.3418
Total	**1.0025**	**9.3972**	**7.4185**	**9.7100e-003**		**0.6796**	**0.6796**		**0.6252**	**0.6252**	**0.0000**	**962.7268**	**962.7268**	**0.3046**		**970.3418**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0500	0.0367	0.4822	1.2200e-003	0.1118	9.6000e-004	0.1127	0.0296	8.9000e-004	0.0305		121.2953	121.2953	4.1700e-003		121.3995
Total	**0.0500**	**0.0367**	**0.4822**	**1.2200e-003**	**0.1118**	**9.6000e-004**	**0.1127**	**0.0296**	**8.9000e-004**	**0.0305**		**121.2953**	**121.2953**	**4.1700e-003**		**121.3995**

3.9 Foundations/Concrete Pouring - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.6757	13.4798	13.2710	0.0215		0.8700	0.8700		0.8513	0.8513		2,034.5352	2,034.5352	0.2639		2,041.1316
Total	**1.6757**	**13.4798**	**13.2710**	**0.0215**		**0.8700**	**0.8700**		**0.8513**	**0.8513**		**2,034.5352**	**2,034.5352**	**0.2639**		**2,041.1316**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.1828	5.0921	1.3512	0.0115	0.2817	0.0325	0.3142	0.0811	0.0311	0.1122		1,226.7843	1,226.7843	0.0786		1,228.7497
Worker	0.0799	0.0587	0.7715	1.9500e-003	0.1788	1.5400e-003	0.1804	0.0474	1.4200e-003	0.0489		194.0725	194.0725	6.6700e-003		194.2391
Total	**0.2628**	**5.1508**	**2.1226**	**0.0135**	**0.4605**	**0.0340**	**0.4945**	**0.1285**	**0.0325**	**0.1610**		**1,420.8568**	**1,420.8568**	**0.0853**		**1,422.9888**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.6757	13.4798	13.2710	0.0215		0.8700	0.8700		0.8513	0.8513	0.0000	2,034.5352	2,034.5352	0.2639		2,041.1316
Total	**1.6757**	**13.4798**	**13.2710**	**0.0215**		**0.8700**	**0.8700**		**0.8513**	**0.8513**	**0.0000**	**2,034.5352**	**2,034.5352**	**0.2639**		**2,041.1316**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.1828	5.0921	1.3512	0.0115	0.2817	0.0325	0.3142	0.0811	0.0311	0.1122		1,226.7843	1,226.7843	0.0786		1,228.7497
Worker	0.0799	0.0587	0.7715	1.9500e-003	0.1788	1.5400e-003	0.1804	0.0474	1.4200e-003	0.0489		194.0725	194.0725	6.6700e-003		194.2391
Total	**0.2628**	**5.1508**	**2.1226**	**0.0135**	**0.4605**	**0.0340**	**0.4945**	**0.1285**	**0.0325**	**0.1610**		**1,420.8568**	**1,420.8568**	**0.0853**		**1,422.9888**

253 S. Los Robles - Construction

Los Angeles-South Coast County, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Condo/Townhouse High Rise	92.00	Dwelling Unit	0.35	92,466.00	263
Health Club	1.70	1000sqft	0.10	1,699.00	0
Other Non-Asphalt Surfaces	22.32	1000sqft	0.12	22,320.00	0
Enclosed Parking with Elevator	131.00	Space	0.25	69,668.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	33
Climate Zone	12			**Operational Year**	2021
Utility Company	Pasadena Water & Power				
CO2 Intensity (lb/MWhr)	1664.14	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - see construction assumptions

Construction Phase - see construction assumptions

Off-road Equipment - see construction assumptions

Off-road Equipment - see construction assumptions

Off-road Equipment - see construction assumptions

Off-road Equipment - see construction assumptions

Off-road Equipment - see construction assumptions

Off-road Equipment - see construction assumptions

Off-road Equipment - see construction assumptions

Off-road Equipment - see construction assumptions

Grading - see construction assumptions

Demolition -

Trips and VMT - see construction assumptions. Hauling truck trips were increased to match client's number of max daily hauling trips for demolition, site preparation, grading phases and foundations/concrete pouring. Will be scaled down for GHG calculations.

Woodstoves - see construction assumptions

Construction Off-road Equipment Mitigation -

Waste Mitigation -

Table Name	Column Name	Default Value	New Value
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	15
tblConstructionPhase	NumDays	5.00	92.00
tblConstructionPhase	NumDays	100.00	156.00
tblConstructionPhase	NumDays	10.00	52.00
tblConstructionPhase	NumDays	2.00	90.00
tblConstructionPhase	NumDays	5.00	52.00
tblConstructionPhase	NumDays	1.00	52.00
tblConstructionPhase	NumDays	100.00	131.00
tblConstructionPhase	NumDaysWeek	5.00	6.00
tblConstructionPhase	NumDaysWeek	5.00	6.00
tblConstructionPhase	NumDaysWeek	5.00	6.00
tblConstructionPhase	NumDaysWeek	5.00	6.00
tblConstructionPhase	NumDaysWeek	5.00	6.00
tblConstructionPhase	NumDaysWeek	5.00	6.00
tblConstructionPhase	NumDaysWeek	5.00	6.00
tblConstructionPhase	NumDaysWeek	5.00	6.00
tblConstructionPhase	PhaseEndDate	4/22/2019	8/31/2020
tblConstructionPhase	PhaseEndDate	4/8/2019	5/15/2020

tblConstructionPhase	PhaseEndDate	11/14/2018	12/31/2018
tblConstructionPhase	PhaseEndDate	11/19/2018	4/15/2019
tblConstructionPhase	PhaseEndDate	4/15/2019	9/30/2020
tblConstructionPhase	PhaseEndDate	11/15/2018	12/31/2018
tblConstructionPhase	PhaseStartDate	4/16/2019	5/16/2020
tblConstructionPhase	PhaseStartDate	11/20/2018	11/16/2019
tblConstructionPhase	PhaseStartDate	11/16/2018	1/1/2019
tblConstructionPhase	PhaseStartDate	4/9/2019	8/1/2020
tblConstructionPhase	PhaseStartDate	11/15/2018	11/1/2018
tblFireplaces	FireplaceDayYear	25.00	0.00
tblFireplaces	FireplaceHourDay	3.00	0.00
tblFireplaces	FireplaceWoodMass	1,019.20	0.00
tblFireplaces	NumberGas	78.20	0.00
tblFireplaces	NumberNoFireplace	9.20	0.00
tblFireplaces	NumberWood	4.60	0.00
tblGrading	AcresOfGrading	0.00	0.82
tblGrading	AcresOfGrading	0.00	0.82
tblGrading	MaterialExported	0.00	30,200.00
tblGrading	MaterialExported	0.00	40.00
tblLandUse	LandUseSquareFeet	92,000.00	92,466.00
tblLandUse	LandUseSquareFeet	52,400.00	69,668.00
tblLandUse	LotAcreage	1.44	0.35
tblLandUse	LotAcreage	0.04	0.10
tblLandUse	LotAcreage	0.51	0.12
tblLandUse	LotAcreage	1.18	0.25
tblOffRoadEquipment	HorsePower	78.00	63.00
tblOffRoadEquipment	LoadFactor	0.36	0.36
tblOffRoadEquipment	LoadFactor	0.36	0.36
tblOffRoadEquipment	LoadFactor	0.50	0.50
tblOffRoadEquipment	LoadFactor	0.38	0.38

tblOffRoadEquipment	LoadFactor	0.36	0.36
tblOffRoadEquipment	LoadFactor	0.48	0.31
tblOffRoadEquipment	LoadFactor	0.36	0.36
tblOffRoadEquipment	LoadFactor	0.37	0.37
tblOffRoadEquipment	LoadFactor	0.50	0.50
tblOffRoadEquipment	OffRoadEquipmentType		Rubber Tired Loaders
tblOffRoadEquipment	OffRoadEquipmentType		Rubber Tired Loaders
tblOffRoadEquipment	OffRoadEquipmentType		Bore/Drill Rigs
tblOffRoadEquipment	OffRoadEquipmentType		Plate Compactors
tblOffRoadEquipment	OffRoadEquipmentType		Excavators
tblOffRoadEquipment	OffRoadEquipmentType		Rubber Tired Loaders
tblOffRoadEquipment	OffRoadEquipmentType		Air Compressors
tblOffRoadEquipment	OffRoadEquipmentType		Concrete/Industrial Saws
tblOffRoadEquipment	OffRoadEquipmentType		Generator Sets
tblOffRoadEquipment	OffRoadEquipmentType		Paving Equipment
tblOffRoadEquipment	OffRoadEquipmentType		Tractors/Loaders/Backhoes
tblOffRoadEquipment	OffRoadEquipmentType		Trenchers
tblOffRoadEquipment	OffRoadEquipmentType		Air Compressors
tblOffRoadEquipment	OffRoadEquipmentType		Cement and Mortar Mixers
tblOffRoadEquipment	OffRoadEquipmentType		Pumps
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	4.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00

tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	UsageHours	6.00	12.00
tblOffRoadEquipment	UsageHours	6.00	12.00
tblOffRoadEquipment	UsageHours	6.00	12.00
tblOffRoadEquipment	UsageHours	6.00	12.00
tblOffRoadEquipment	UsageHours	8.00	12.00
tblOffRoadEquipment	UsageHours	8.00	12.00
tblTripsAndVMT	HaulingTripLength	20.00	25.00
tblTripsAndVMT	HaulingTripNumber	2.00	3,120.00
tblTripsAndVMT	HaulingTripNumber	5.00	104.00
tblTripsAndVMT	HaulingTripNumber	3,775.00	5,400.00
tblTripsAndVMT	VendorTripNumber	25.00	44.00
tblTripsAndVMT	WorkerTripNumber	5.00	10.00
tblTripsAndVMT	WorkerTripNumber	8.00	6.00
tblTripsAndVMT	WorkerTripNumber	106.00	36.00
tblTripsAndVMT	WorkerTripNumber	3.00	10.00
tblTripsAndVMT	WorkerTripNumber	21.00	16.00
tblTripsAndVMT	WorkerTripNumber	106.00	16.00
tblTripsAndVMT	WorkerTripNumber	5.00	10.00
tblWoodstoves	NumberCatalytic	4.60	0.00
tblWoodstoves	NumberNoncatalytic	4.60	0.00
tblWoodstoves	WoodstoveDayYear	25.00	0.00
tblWoodstoves	WoodstoveWoodMass	999.60	0.00

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2018	3.2771	50.6476	20.6251	0.0936	1.2865	1.3614	2.6479	0.3474	1.2554	1.6028	0.0000	9,784.8247	9,784.8247	1.7210	0.0000	9,827.8493
2019	3.1523	33.8645	24.7413	0.0709	1.2084	1.4824	2.0448	0.3240	1.4680	1.6208	0.0000	7,429.7142	7,429.7142	1.0650	0.0000	7,456.3398
2020	7.6624	23.3422	24.3996	0.0474	0.5625	1.2800	1.8425	0.1528	1.2676	1.4204	0.0000	4,590.7284	4,590.7284	0.3399	0.0000	4,599.2254
Maximum	**7.6624**	**50.6476**	**24.7413**	**0.0936**	**1.2865**	**1.4824**	**2.6479**	**0.3474**	**1.4680**	**1.6208**	**0.0000**	**9,784.8247**	**9,784.8247**	**1.7210**	**0.0000**	**9,827.8493**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2018	3.2771	50.6476	20.6251	0.0936	1.2721	1.3614	2.6335	0.3457	1.2554	1.6010	0.0000	9,784.8247	9,784.8247	1.7210	0.0000	9,827.8493
2019	3.1523	33.8645	24.7413	0.0709	1.1794	1.4824	2.0448	0.3198	1.4680	1.6208	0.0000	7,429.7142	7,429.7142	1.0650	0.0000	7,456.3398
2020	7.6624	23.3422	24.3996	0.0474	0.5625	1.2800	1.8425	0.1528	1.2676	1.4204	0.0000	4,590.7283	4,590.7283	0.3399	0.0000	4,599.2254
Maximum	**7.6624**	**50.6476**	**24.7413**	**0.0936**	**1.2721**	**1.4824**	**2.6335**	**0.3457**	**1.4680**	**1.6208**	**0.0000**	**9,784.8247**	**9,784.8247**	**1.7210**	**0.0000**	**9,827.8493**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**1.42**	**0.00**	**0.22**	**0.71**	**0.00**	**0.04**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	11/1/2018	12/31/2018	6	52	
2	Site Preparation	Site Preparation	11/1/2018	12/31/2018	6	52	
3	Grading	Grading	1/1/2019	4/15/2019	6	90	
4	Building Construction	Building Construction	11/16/2019	5/15/2020	6	156	
5	Paving	Paving	8/1/2020	9/30/2020	6	52	
6	Architectural Coating	Architectural Coating	5/16/2020	8/31/2020	6	92	
7	Drainage/Utilities/Trenching	Trenching	4/16/2019	6/15/2019	6	53	
8	Foundations/Concrete Pouring	Building Construction	6/16/2019	11/15/2019	6	131	

Acres of Grading (Site Preparation Phase): 0.815

Acres of Grading (Grading Phase): 0.815

Acres of Paving: 0.365

Residential Indoor: 187,244; Residential Outdoor: 62,415; Non-Residential Indoor: 2,549; Non-Residential Outdoor: 850; Striped Parking

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Architectural Coating	Air Compressors	1	12.00	78	0.48
Paving	Cement and Mortar Mixers	0	6.00	9	0.56
Demolition	Concrete/Industrial Saws	0	8.00	81	0.73
Grading	Concrete/Industrial Saws	0	8.00	81	0.73
Building Construction	Cranes	0	4.00	231	0.29
Building Construction	Forklifts	1	12.00	89	0.20
Site Preparation	Graders	0	8.00	187	0.41
Paving	Pavers	0	7.00	130	0.42
Paving	Rollers	0	7.00	80	0.38

Demolition	Rubber Tired Dozers	0	1.00	247	0.40
Grading	Rubber Tired Dozers	0	1.00	247	0.40
Building Construction	Tractors/Loaders/Backhoes	0	8.00	97	0.37
Demolition	Tractors/Loaders/Backhoes	1	12.00	97	0.37
Grading	Tractors/Loaders/Backhoes	1	12.00	97	0.37
Paving	Tractors/Loaders/Backhoes	0	7.00	97	0.37
Site Preparation	Tractors/Loaders/Backhoes	1	12.00	97	0.37
Foundations/Concrete Pouring	Cranes	0	4.00	231	0.29
Foundations/Concrete Pouring	Forklifts	0	6.00	89	0.20
Foundations/Concrete Pouring	Tractors/Loaders/Backhoes	1	12.00	97	0.37
Demolition	Rubber Tired Loaders	1	12.00	203	0.36
Site Preparation	Rubber Tired Loaders	1	12.00	203	0.36
Site Preparation	Bore/Drill Rigs	1	12.00	221	0.50
Grading	Plate Compactors	1	12.00	8	0.43
Grading	Excavators	1	12.00	158	0.38
Grading	Rubber Tired Loaders	1	12.00	203	0.36
Building Construction	Air Compressors	2	12.00	63	0.31
Building Construction	Concrete/Industrial Saws	2	12.00	81	0.73
Building Construction	Generator Sets	1	12.00	84	0.74
Paving	Paving Equipment	1	12.00	132	0.36
Drainage/Utilities/Trenching	Tractors/Loaders/Backhoes	1	12.00	97	0.37
Drainage/Utilities/Trenching	Trenchers	1	12.00	78	0.50
Foundations/Concrete Pouring	Air Compressors	1	12.00	78	0.48
Foundations/Concrete Pouring	Cement and Mortar Mixers	1	12.00	9	0.56
Foundations/Concrete Pouring	Pumps	1	12.00	84	0.74

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	2	10.00	0.00	3,120.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	3	6.00	0.00	104.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

Grading	4	10.00	0.00	5,400.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	6	36.00	25.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Paving	1	10.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	16.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Foundations/Concrete Pouring	4	16.00	44.00	0.00	14.70	6.90	25.00	LD_Mix	HDT_Mix	HHDT
Drainage/Utilities/Trenching	2	10.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Use Soil Stabilizer

Water Exposed Area

Reduce Vehicle Speed on Unpaved Roads

3.2 Demolition - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					7.0000e-003	0.0000	7.0000e-003	1.0600e-003	0.0000	1.0600e-003			0.0000			0.0000
Off-Road	1.0471	11.9719	6.1213	0.0141		0.5517	0.5517		0.5076	0.5076		1,417.1741	1,417.1741	0.4412		1,428.2038
Total	**1.0471**	**11.9719**	**6.1213**	**0.0141**	**7.0000e-003**	**0.5517**	**0.5587**	**1.0600e-003**	**0.5076**	**0.5086**		**1,417.1741**	**1,417.1741**	**0.4412**		**1,428.2038**

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	0.6106	19.6493	4.2907	0.0478	1.0490	0.0752	1.1242	0.2875	0.0719	0.3595		5,165.7790	5,165.7790	0.3758		5,175.1736
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0612	0.0462	0.4973	1.1900e-003	0.1118	1.0000e-003	0.1128	0.0296	9.2000e-004	0.0306		118.0576	118.0576	4.4400e-003		118.1687
Total	**0.6718**	**19.6955**	**4.7880**	**0.0490**	**1.1608**	**0.0762**	**1.2369**	**0.3172**	**0.0728**	**0.3900**		**5,283.8366**	**5,283.8366**	**0.3802**		**5,293.3423**

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					2.7300e-003	0.0000	2.7300e-003	4.1000e-004	0.0000	4.1000e-004			0.0000			0.0000
Off-Road	1.0471	11.9719	6.1213	0.0141		0.5517	0.5517		0.5076	0.5076	0.0000	1,417.1741	1,417.1741	0.4412		1,428.2037
Total	**1.0471**	**11.9719**	**6.1213**	**0.0141**	**2.7300e-003**	**0.5517**	**0.5544**	**4.1000e-004**	**0.5076**	**0.5080**	**0.0000**	**1,417.1741**	**1,417.1741**	**0.4412**		**1,428.2037**

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	0.6106	19.6493	4.2907	0.0478	1.0490	0.0752	1.1242	0.2875	0.0719	0.3595		5,165.7790	5,165.7790	0.3758		5,175.1736
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0612	0.0462	0.4973	1.1900e-003	0.1118	1.0000e-003	0.1128	0.0296	9.2000e-004	0.0306		118.0576	118.0576	4.4400e-003		118.1687
Total	**0.6718**	**19.6955**	**4.7880**	**0.0490**	**1.1608**	**0.0762**	**1.2369**	**0.3172**	**0.0728**	**0.3900**		**5,283.8366**	**5,283.8366**	**0.3802**		**5,293.3423**

3.3 Site Preparation - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.0167	0.0000	0.0167	1.8100e-003	0.0000	1.8100e-003			0.0000			0.0000
Off-Road	1.5012	18.2975	9.2745	0.0282		0.7305	0.7305		0.6720	0.6720		2,840.7869	2,840.7869	0.8844		2,862.8963
Total	**1.5012**	**18.2975**	**9.2745**	**0.0282**	**0.0167**	**0.7305**	**0.7472**	**1.8100e-003**	**0.6720**	**0.6738**		**2,840.7869**	**2,840.7869**	**0.8844**		**2,862.8963**

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	0.0204	0.6550	0.1430	1.5900e-003	0.0350	2.5100e-003	0.0375	9.5800e-003	2.4000e-003	0.0120		172.1926	172.1926	0.0125		172.5058
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0367	0.0277	0.2984	7.1000e-004	0.0671	6.0000e-004	0.0677	0.0178	5.5000e-004	0.0183		70.8346	70.8346	2.6700e-003		70.9012
Total	**0.0570**	**0.6827**	**0.4414**	**2.3000e-003**	**0.1020**	**3.1100e-003**	**0.1051**	**0.0274**	**2.9500e-003**	**0.0303**		**243.0272**	**243.0272**	**0.0152**		**243.4070**

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					6.5200e-003	0.0000	6.5200e-003	7.1000e-004	0.0000	7.1000e-004			0.0000			0.0000
Off-Road	1.5012	18.2975	9.2745	0.0282		0.7305	0.7305		0.6720	0.6720	0.0000	2,840.7869	2,840.7869	0.8844		2,862.8963
Total	**1.5012**	**18.2975**	**9.2745**	**0.0282**	**6.5200e-003**	**0.7305**	**0.7370**	**7.1000e-004**	**0.6720**	**0.6727**	**0.0000**	**2,840.7869**	**2,840.7869**	**0.8844**		**2,862.8963**

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	0.0204	0.6550	0.1430	1.5900e-003	0.0350	2.5100e-003	0.0375	9.5800e-003	2.4000e-003	0.0120		172.1926	172.1926	0.0125		172.5058
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0367	0.0277	0.2984	7.1000e-004	0.0671	6.0000e-004	0.0677	0.0178	5.5000e-004	0.0183		70.8346	70.8346	2.6700e-003		70.9012
Total	**0.0570**	**0.6827**	**0.4414**	**2.3000e-003**	**0.1020**	**3.1100e-003**	**0.1051**	**0.0274**	**2.9500e-003**	**0.0303**		**243.0272**	**243.0272**	**0.0152**		**243.4070**

3.4 Grading - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.0476	0.0000	0.0476	6.7800e-003	0.0000	6.7800e-003			0.0000			0.0000
Off-Road	1.4036	15.2017	11.2198	0.0226		0.6876	0.6876		0.6338	0.6338		2,216.4031	2,216.4031	0.6903		2,233.6594
Total	**1.4036**	**15.2017**	**11.2198**	**0.0226**	**0.0476**	**0.6876**	**0.7352**	**6.7800e-003**	**0.6338**	**0.6406**		**2,216.4031**	**2,216.4031**	**0.6903**		**2,233.6594**

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	0.5779	18.6222	4.1829	0.0471	1.0490	0.0687	1.1177	0.2876	0.0657	0.3533		5,099.0981	5,099.0981	0.3708		5,108.3691
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0554	0.0407	0.4425	1.1500e-003	0.1118	9.6000e-004	0.1127	0.0296	8.9000e-004	0.0305		114.2131	114.2131	3.9300e-003		114.3113
Total	**0.6333**	**18.6629**	**4.6254**	**0.0483**	**1.1608**	**0.0697**	**1.2305**	**0.3172**	**0.0666**	**0.3838**		**5,213.3112**	**5,213.3112**	**0.3748**		**5,222.6804**

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					0.0185	0.0000	0.0185	2.6500e-003	0.0000	2.6500e-003			0.0000			0.0000
Off-Road	1.4036	15.2017	11.2198	0.0226		0.6876	0.6876		0.6338	0.6338	0.0000	2,216.4031	2,216.4031	0.6903		2,233.6594
Total	**1.4036**	**15.2017**	**11.2198**	**0.0226**	**0.0185**	**0.6876**	**0.7062**	**2.6500e-003**	**0.6338**	**0.6364**	**0.0000**	**2,216.4031**	**2,216.4031**	**0.6903**		**2,233.6594**

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	0.5779	18.6222	4.1829	0.0471	1.0490	0.0687	1.1177	0.2876	0.0657	0.3533		5,099.0981	5,099.0981	0.3708		5,108.3691
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0554	0.0407	0.4425	1.1500e-003	0.1118	9.6000e-004	0.1127	0.0296	8.9000e-004	0.0305		114.2131	114.2131	3.9300e-003		114.3113
Total	**0.6333**	**18.6629**	**4.6254**	**0.0483**	**1.1608**	**0.0697**	**1.2305**	**0.3172**	**0.0666**	**0.3838**		**5,213.3112**	**5,213.3112**	**0.3748**		**5,222.6804**

3.5 Building Construction - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.8446	22.3823	22.3022	0.0371		1.4601	1.4601		1.4469	1.4469		3,523.3718	3,523.3718	0.3055		3,531.0087
Total	**2.8446**	**22.3823**	**22.3022**	**0.0371**		**1.4601**	**1.4601**		**1.4469**	**1.4469**		**3,523.3718**	**3,523.3718**	**0.3055**		**3,531.0087**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.1084	2.8971	0.8462	6.3600e-003	0.1601	0.0188	0.1788	0.0461	0.0179	0.0640		678.1928	678.1928	0.0476		679.3838
Worker	0.1994	0.1464	1.5929	4.1300e-003	0.4024	3.4700e-003	0.4059	0.1067	3.2000e-003	0.1099		411.1671	411.1671	0.0141		411.5207
Total	**0.3077**	**3.0435**	**2.4391**	**0.0105**	**0.5625**	**0.0222**	**0.5847**	**0.1528**	**0.0211**	**0.1739**		**1,089.3599**	**1,089.3599**	**0.0618**		**1,090.9046**

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	2.8446	22.3823	22.3022	0.0371		1.4601	1.4601		1.4469	1.4469	0.0000	3,523.3718	3,523.3718	0.3055		3,531.0087
Total	**2.8446**	**22.3823**	**22.3022**	**0.0371**		**1.4601**	**1.4601**		**1.4469**	**1.4469**	**0.0000**	**3,523.3718**	**3,523.3718**	**0.3055**		**3,531.0087**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.1084	2.8971	0.8462	6.3600e-003	0.1601	0.0188	0.1788	0.0461	0.0179	0.0640		678.1928	678.1928	0.0476		679.3838
Worker	0.1994	0.1464	1.5929	4.1300e-003	0.4024	3.4700e-003	0.4059	0.1067	3.2000e-003	0.1099		411.1671	411.1671	0.0141		411.5207
Total	**0.3077**	**3.0435**	**2.4391**	**0.0105**	**0.5625**	**0.0222**	**0.5847**	**0.1528**	**0.0211**	**0.1739**		**1,089.3599**	**1,089.3599**	**0.0618**		**1,090.9046**

3.5 Building Construction - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.5716	20.5530	22.1875	0.0371		1.2639	1.2639		1.2523	1.2523		3,518.4344	3,518.4344	0.2823		3,525.4911
Total	**2.5716**	**20.5530**	**22.1875**	**0.0371**		**1.2639**	**1.2639**		**1.2523**	**1.2523**		**3,518.4344**	**3,518.4344**	**0.2823**		**3,525.4911**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0930	2.6588	0.7685	6.3100e-003	0.1601	0.0127	0.1728	0.0461	0.0122	0.0582		673.6227	673.6227	0.0450		674.7488
Worker	0.1840	0.1305	1.4436	4.0000e-003	0.4024	3.3600e-003	0.4058	0.1067	3.1000e-003	0.1098		398.6713	398.6713	0.0126		398.9855
Total	**0.2769**	**2.7893**	**2.2121**	**0.0103**	**0.5625**	**0.0161**	**0.5785**	**0.1528**	**0.0153**	**0.1681**		**1,072.2940**	**1,072.2940**	**0.0576**		**1,073.7343**

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	2.5716	20.5530	22.1875	0.0371		1.2639	1.2639		1.2523	1.2523	0.0000	3,518.4343	3,518.4343	0.2823		3,525.4911
Total	**2.5716**	**20.5530**	**22.1875**	**0.0371**		**1.2639**	**1.2639**		**1.2523**	**1.2523**	**0.0000**	**3,518.4343**	**3,518.4343**	**0.2823**		**3,525.4911**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0930	2.6588	0.7685	6.3100e-003	0.1601	0.0127	0.1728	0.0461	0.0122	0.0582		673.6227	673.6227	0.0450		674.7488
Worker	0.1840	0.1305	1.4436	4.0000e-003	0.4024	3.3600e-003	0.4058	0.1067	3.1000e-003	0.1098		398.6713	398.6713	0.0126		398.9855
Total	**0.2769**	**2.7893**	**2.2121**	**0.0103**	**0.5625**	**0.0161**	**0.5785**	**0.1528**	**0.0153**	**0.1681**		**1,072.2940**	**1,072.2940**	**0.0576**		**1,073.7343**

3.6 Paving - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.3070	3.1683	3.7498	6.0300e-003		0.1585	0.1585		0.1458	0.1458		583.7373	583.7373	0.1888		588.4571
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**0.3070**	**3.1683**	**3.7498**	**6.0300e-003**		**0.1585**	**0.1585**		**0.1458**	**0.1458**		**583.7373**	**583.7373**	**0.1888**		**588.4571**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0511	0.0363	0.4010	1.1100e-003	0.1118	9.3000e-004	0.1127	0.0296	8.6000e-004	0.0305		110.7420	110.7420	3.4900e-003		110.8293
Total	**0.0511**	**0.0363**	**0.4010**	**1.1100e-003**	**0.1118**	**9.3000e-004**	**0.1127**	**0.0296**	**8.6000e-004**	**0.0305**		**110.7420**	**110.7420**	**3.4900e-003**		**110.8293**

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	0.3070	3.1683	3.7498	6.0300e-003		0.1585	0.1585		0.1458	0.1458	0.0000	583.7373	583.7373	0.1888		588.4571
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**0.3070**	**3.1683**	**3.7498**	**6.0300e-003**		**0.1585**	**0.1585**		**0.1458**	**0.1458**	**0.0000**	**583.7373**	**583.7373**	**0.1888**		**588.4571**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0511	0.0363	0.4010	1.1100e-003	0.1118	9.3000e-004	0.1127	0.0296	8.6000e-004	0.0305		110.7420	110.7420	3.4900e-003		110.8293
Total	**0.0511**	**0.0363**	**0.4010**	**1.1100e-003**	**0.1118**	**9.3000e-004**	**0.1127**	**0.0296**	**8.6000e-004**	**0.0305**		**110.7420**	**110.7420**	**3.4900e-003**		**110.8293**

3.7 Architectural Coating - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	6.7383					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.4844	3.3677	3.6628	5.9400e-003		0.2219	0.2219		0.2219	0.2219		562.8961	562.8961	0.0436		563.9856
Total	**7.2226**	**3.3677**	**3.6628**	**5.9400e-003**		**0.2219**	**0.2219**		**0.2219**	**0.2219**		**562.8961**	**562.8961**	**0.0436**		**563.9856**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0818	0.0580	0.6416	1.7800e-003	0.1788	1.4900e-003	0.1803	0.0474	1.3800e-003	0.0488		177.1873	177.1873	5.5800e-003		177.3269
Total	**0.0818**	**0.0580**	**0.6416**	**1.7800e-003**	**0.1788**	**1.4900e-003**	**0.1803**	**0.0474**	**1.3800e-003**	**0.0488**		**177.1873**	**177.1873**	**5.5800e-003**		**177.3269**

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	6.7383					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.4844	3.3677	3.6628	5.9400e-003		0.2219	0.2219		0.2219	0.2219	0.0000	562.8961	562.8961	0.0436		563.9856
Total	**7.2226**	**3.3677**	**3.6628**	**5.9400e-003**		**0.2219**	**0.2219**		**0.2219**	**0.2219**	**0.0000**	**562.8961**	**562.8961**	**0.0436**		**563.9856**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0818	0.0580	0.6416	1.7800e-003	0.1788	1.4900e-003	0.1803	0.0474	1.3800e-003	0.0488		177.1873	177.1873	5.5800e-003		177.3269
Total	**0.0818**	**0.0580**	**0.6416**	**1.7800e-003**	**0.1788**	**1.4900e-003**	**0.1803**	**0.0474**	**1.3800e-003**	**0.0488**		**177.1873**	**177.1873**	**5.5800e-003**		**177.3269**

3.8 Drainage/Utilities/Trenching - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.0025	9.3972	7.4185	9.7100e-003		0.6796	0.6796		0.6252	0.6252		962.7268	962.7268	0.3046		970.3418
Total	**1.0025**	**9.3972**	**7.4185**	**9.7100e-003**		**0.6796**	**0.6796**		**0.6252**	**0.6252**		**962.7268**	**962.7268**	**0.3046**		**970.3418**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0554	0.0407	0.4425	1.1500e-003	0.1118	9.6000e-004	0.1127	0.0296	8.9000e-004	0.0305		114.2131	114.2131	3.9300e-003		114.3113
Total	**0.0554**	**0.0407**	**0.4425**	**1.1500e-003**	**0.1118**	**9.6000e-004**	**0.1127**	**0.0296**	**8.9000e-004**	**0.0305**		**114.2131**	**114.2131**	**3.9300e-003**		**114.3113**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.0025	9.3972	7.4185	9.7100e-003		0.6796	0.6796		0.6252	0.6252	0.0000	962.7268	962.7268	0.3046		970.3418
Total	**1.0025**	**9.3972**	**7.4185**	**9.7100e-003**		**0.6796**	**0.6796**		**0.6252**	**0.6252**	**0.0000**	**962.7268**	**962.7268**	**0.3046**		**970.3418**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0554	0.0407	0.4425	1.1500e-003	0.1118	9.6000e-004	0.1127	0.0296	8.9000e-004	0.0305		114.2131	114.2131	3.9300e-003		114.3113
Total	**0.0554**	**0.0407**	**0.4425**	**1.1500e-003**	**0.1118**	**9.6000e-004**	**0.1127**	**0.0296**	**8.9000e-004**	**0.0305**		**114.2131**	**114.2131**	**3.9300e-003**		**114.3113**

3.9 Foundations/Concrete Pouring - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.6757	13.4798	13.2710	0.0215		0.8700	0.8700		0.8513	0.8513		2,034.5352	2,034.5352	0.2639		2,041.1316
Total	**1.6757**	**13.4798**	**13.2710**	**0.0215**		**0.8700**	**0.8700**		**0.8513**	**0.8513**		**2,034.5352**	**2,034.5352**	**0.2639**		**2,041.1316**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.1907	5.0989	1.4893	0.0112	0.2817	0.0330	0.3147	0.0811	0.0316	0.1127		1,193.6193	1,193.6193	0.0839		1,195.7156
Worker	0.0886	0.0651	0.7080	1.8400e-003	0.1788	1.5400e-003	0.1804	0.0474	1.4200e-003	0.0489		182.7409	182.7409	6.2900e-003		182.8981
Total	**0.2793**	**5.1640**	**2.1973**	**0.0130**	**0.4605**	**0.0345**	**0.4951**	**0.1285**	**0.0330**	**0.1615**		**1,376.3602**	**1,376.3602**	**0.0901**		**1,378.6136**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.6757	13.4798	13.2710	0.0215		0.8700	0.8700		0.8513	0.8513	0.0000	2,034.5352	2,034.5352	0.2639		2,041.1316
Total	**1.6757**	**13.4798**	**13.2710**	**0.0215**		**0.8700**	**0.8700**		**0.8513**	**0.8513**	**0.0000**	**2,034.5352**	**2,034.5352**	**0.2639**		**2,041.1316**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.1907	5.0989	1.4893	0.0112	0.2817	0.0330	0.3147	0.0811	0.0316	0.1127		1,193.6193	1,193.6193	0.0839		1,195.7156
Worker	0.0886	0.0651	0.7080	1.8400e-003	0.1788	1.5400e-003	0.1804	0.0474	1.4200e-003	0.0489		182.7409	182.7409	6.2900e-003		182.8981
Total	**0.2793**	**5.1640**	**2.1973**	**0.0130**	**0.4605**	**0.0345**	**0.4951**	**0.1285**	**0.0330**	**0.1615**		**1,376.3602**	**1,376.3602**	**0.0901**		**1,378.6136**

Appendix B
Project Operational Emissions

253 Los Robles Last Updated 3/12/2018
Air Quality and Greenhouse Gas Assessment

Table 1. Land Use and California Emissions Estimator Model (CalEEMod) Inputs

Land Use	CalEEMod Land Use Type	CalEEMod Land Use SubType	Value	Unit	Value	Unit
Existing						
Office Building	Commercial	General Office Building	43.54	ksf	43,544	sf
Landscaping			4.58	ksf	4,580	sf
Parking	Parking		124.00	spaces		

Proposed Project	CalEEMod Land Use Type	CalEEMod Land Use SubType	Value	Unit	Value	Unit
Residential						
Condominiums	**Residential**	**High-Rise Condo/Townhouse Rise**	**92**	**DU**	**94,165**	**sf**
One Bedroom			58	DU		
Two Bedroom			26	DU		
Gym	**Recreational**	**Health Club**	**2**	**ksf**	**1,699**	**sf**
Landscaping	**Recreational**	**City Park**	**16**	**ksf**	**15,546**	**sf**
Open Space	**Parking**	**Other Non-Asphalt Surfaces**	**22**	**ksf**	**22,320**	**sf**
Private Balconies	**Parking**	Other Non-Asphalt Surfaces	7	ksf	6,938	sf
Common Open Space			15	ksf	15,382	sf
Courtyard	**Parking**	Other Non-Asphalt Surfaces	2	ksf	2,432	sf
Additional Front Yard	**Parking**	Other Non-Asphalt Surfaces	1	ksf	963	sf
North Yard	**Parking**	Other Non-Asphalt Surfaces	3	ksf	3,051	sf
Patio Easement	**Parking**	Other Non-Asphalt Surfaces	2	ksf	2,251	sf
South Yard	**Parking**	Other Non-Asphalt Surfaces	3	ksf	2,556	sf
6th-Floor East Terrace	**Parking**	Other Non-Asphalt Surfaces	2	ksf	2,037	sf
6th-Floor Sundeck	**Parking**	Other Non-Asphalt Surfaces	2	ksf	2,092	sf
Parking	**Parking**	**Enclosed Parking Structure with Elevator**	**131**	**spaces**	**69,668**	**sf**
Basement 1	**Parking**	Enclosed Parking Structure with Elevator	41	spaces	23,157	sf
Basement 2	**Parking**	Enclosed Parking Structure with Elevator	43	spaces	23,158	sf
Basement 3	**Parking**	Enclosed Parking Structure with Elevator	47	spaces	23,353	sf

CALEEMOD INPUT SUMMARY	CalEEMod Land Use Type	CalEEMod Land Use SubType	Value	Unit	Value	Unit	Acreage
Condominiums	**Residential**	**High-Rise Condo/Townhouse Rise**	**92**	**DU**	**92,466**	**sf**	**0.35**
Health Club	**Recreational**	**Health Club**	**2**	**ksf**	**1,699**	**sf**	**0.1**
Other Non-Asphalt Surfaces	**Parking**	**Other Non-Asphalt Surfaces**	**22**	**ksf**	**22,320**	**sf**	**0.115**
Enclosed Parking Structure with Elevator	**Parking**	**Enclosed Parking Structure with Elevator**	**131**	**spaces**	**69,668**	**sf**	**0.25**
						Total	**0.815**

Source: Odyssey Development Services, 2018. ESA, 2018.

253 S Los Robles
Air Quality and Greenhouse Gas Assessment
Quantifying Greenhouse Gas Mitigation Measures - Transportation (Based on CAPCOA Guidance (August 2010))

PROJECT

Location Type	Global % VMT Reduction Cap	Location Type	Global % VMT Reduction Cap
Urban:	75%	***Suburban Center:***	20%
Less than 5 miles from central business district		Typically 20 miles or more from central business district	
Jobs-rich (jobs/housing ratio greater than 1.5)		Balanced jobs-housing	
Typical buildings are 6 stories or higher		Typical buildings are 2 stories	
Grid street pattern		Grid street pattern	
Minimal setbacks		Setbacks 0 - 20 feet	
Parking constrained on- and off-street		Parking somewhat constrained on-street; ample off-street	
Parking prices high/highest in the region		Parking prices low (if priced at all)	
High-quality rail; bus service at 10 min or less in peak hours		Bus service at 20 - 30 min and/or commuter rail station	
Compact Infill:	40%	***Suburban:***	15%
Typically 5 - 15 miles from central business district		Typically 20 miles or more from central business district	
Balanced jobs-housing (jobs/housing ratio from 0.9 to 1.2)		Housing-rich	
Typical buildings are 2 - 4 stories		Typical buildings are 1 - 2 stories	
Grid street pattern		Curvilinear street pattern (cul-de-sac based)	
Setbacks 0 - 20 feet		Parking between street and buildings; large lot residential	
Parking constrained		Parking ample; largely surface lot-based	
Parking prices low/moderate		No parking prices	
Rail w/in 2 miles; bus service at 15 min or less in peak hours		Limited bus service at 30 minute headways or more	

			Total Global Transportation VMT Reduction =	**33.29%** Cap: 75%
			(Includes double counting correction.)	
			Total LUT/SDT/PDT/TST VMT Reduction =	**33.29%** Cap: 70%
Land Use/Location Transportation Measures (65% Reduction Cap)			**Total LUT % VMT Reduction =**	**31.93%** Cap: 65%
LUT-1	Increase Density	% VMT Reduction = A × B [not to exceed 30%]	% VMT Reduction =	0.35% Cap: 30%
		A (housing) = (Number of DU/acre - 7.6) / 7.6	Number of DU/acre:	112.9 A = 500%
		A (jobs) = (Number of Jobs/acre - 20) / 20	Number of Jobs/acre:	- A = 0%
		B = 0.07%		
LUT-2	Increase Location Efficiency	% VMT Reduction Cap for all LUT measures	Urban LUT % VMT Reduction Cap:	65%
			Compact Infill LUT % VMT Reduction Cap:	30%
			Suburban Center LUT % VMT Reduction Cap:	10%
LUT-3	Increase Diversity of Urban and Suburban Developments (Mixed Use)	% VMT Reduction = Land Use × B [not to exceed 30%]	% VMT Reduction =	0.00% Cap: 30%
		Land Use = % increase in land use index vs. single use		
		= (Land Use Index - 0.15) / 0.15	Single family sqft:	- a_1 = -
Urban: The urban project will be predominantly characterized by properties on which various uses, such as office, commercial, institutional, and residential, are combined in a single building or on a single site in an integrated development project with functional interrelationships and a coherent physical design.		Land Use Index = -a / ln(6)	Multi-family sqft:	- a_2 = -
		$a = \sum a_i \times \ln(a_i)$	Commercial sqft:	- a_3 = -
		a_i = building floor area / total square feet of area considered	Industrial sqft:	- a_4 = -
		a_1 = single family	Institutional sqft:	- a_5 = -
Suburban: The suburban project will have at least three uses of the following on site and/or offsite within ½ mile: Residential Development, Retail Development		a_2 = multi-family	Park sqft:	- a_6 = -

	Site and/or offsite within ¼-mile: Residential Development, Retail Development, Park, Open Space, or Office. **(ACOUNTED FOR IN TRAFFIC STUDY)**	a_3 = commercial a_4 = industrial a_5 = institutional a_6 = park	B = 0.09	Total sqft: - (Note: If a_i = 0, then set a_i = 0.00000
LUT-4	Increase Destination Accessibility	% VMT Reduction = Center Distance × B [not to exceed 20%] Center Distance = (12 - Miles to downtown or job center) / 12 B = 0.20		% VMT Reduction = 0.00% Cap: 20% Miles to downtown or job center: 11.5 (Average distance to: Beverly Hills, Century City, Hollywood and Downtown L.A. These locations are identified as job centers by Metro and by SCAG.) (Note: Only effective for 8 miles or l
LUT-5	Increase Transit Accessibility **(ACOUNTED FOR IN TRAFFIC STUDY)**	% VMT Reduction = Transit × B [not to exceed 30%] Transit = % project transit - % typical ITE transit % project transit = -50x + 38 [where x = 0 - 0.5 miles to transit] -4.4x + 15.2 [where x = 0.5 - 3 miles to transit] % typical ITE transit = 1.3% B = 0.67		% VMT Reduction = 12.86% Cap: 30% Miles to transit: 0.35 (Note: Only effective for 3 miles or l
LUT-6	Integrated Affordable and Below Market Rate Housing	% VMT Reduction = 4% × % units BMR		% VMT Reduction = 0.35% % of units below market rate: 8.7% (Note: Only effective up to 30%)

LUT-7	Orient Project Toward Non-Auto Corridor	Not quantified separately; Assumed to be included in LUT-3 (If included in LUT-3, VMT reduction should be at least 0.5% per 1% inprovement in transit frequency and 0.5% per 10% increase in transit ridership)	
LUT-8	Locate Project near Bike Path/Bike Lanes	Not quantified separately; Assumed to be included in LUT-4 (If included in LUT-4, VMT reduction should be at least 0.625%)	
LUT-9	Improve Design of Development	% VMT Reduction = Intersections × B Intersections = % increase vs. typical ITE suburban = (Intersections per square mile of project - 36) / 36 B = 0.12	% VMT Reduction = 21.33% Intersections per square mile: 100 (Estimated based on count of 4-way intersections within 1 mile radius of project site.) (Note: Only effective up to 100)

Neighborhood/Site Enhancement Measures (5% Reduction Cap without NEV; 15% Reduction Cap with NEV)

Total SDT % VMT Reduction = 2.00%

Cap: 5%
Cap: 15%

SDT-1	Provide Pedestrian Network Improvements	VMT reduction based on urban/rural context and pedestrian accomodations	% VMT Reduction = 2.00% Pedestrian network on-site and connecting off-site (urban/suburban): X — 2% Pedestrian network on-site (urban/suburban): 1% (Mark an "X" in one of the above)
SDT-2	Provide Traffic Calming Measures	Marked crosswalks, count-down signal timers, curb extensions, speed tables, rasied crosswalks, raised intersections, median islands, tight corner radii, roundabouts, on-street parking, planter strips with trees, chicanes/chokers, and others.	% VMT Reduction = 0.00% 25% of streets with improvements: A 50% of streets with improvements: B 75% of streets with improvements: C 100% of streets with improvements: D 25% of intersctions with improvements: W 50% of intersctions with improvements: X 75% of intersctions with improvements: Y 100% of intersctions with improvements: Z % of intersections (Mark an "X" in one of the above fo
SDT-3	Neighborhood Electric Vehicle Network	% VMT Reduction = Pop × Number × NEV Pop × Number = NEVs per household [0.04 to 1.0] NEV = VMT reduction rate per household [12.7%]	% VMT Reduction = 0.00% Low NEVs per Household: 0.04 High NEVs per Household: 1.0 (Mark an "X" in one of the above)

SDT-4	Create Urban Non-Motorized Zones	Not quantified separately; Assumed to be included in SDT-1 (If included in SDT-1, VMT reduction should be at least 0.01% to 0.2%)
SDT-5	Incorporate Bike Lane Street Design	Not quantified separately; Assumed to be included in LUT-9 (If included in LUT-9, VMT reduction should be at least 1% of worker commute per additional mile of bike lanes per square mile)
SDT-6	Provide Bike Parking in Non-Residential Projects	Not quantified separately; Assumed to be included in LUT-9 (If included in LUT-9, VMT reduction should be at least 0.625%)
SDT-7	Provide Bike Parking in Multi-Unit Residential Projects	Not quantified separately; Assumed to be included in LUT-9
SDT-8	Provide Electric Vehicle Parking	Not quantified separately; Assumed to be included in SDT-3
SDT-9	Dedicated Land for Bike Trails	Not quantified separately; Assumed to be included in LUT-9

Parking Policy/Pricing (20% Reduction Cap)

Total PDT % VMT Reduction = **0.00%** Cap: 20%

PDT-1	Limit Parking Supply	% VMT Reduction = = (Actual Parking - ITE Parking) / ITE Parking × 0.5	% VMT Reduction = 0.00% Cap: 12.50% Actual Parking Spaces: - ITE Parking Spaces: -
PDT-2	Unbunble Parking Costs from Property	% VMT Reduction = Change in vehicle cost × elasticity × A Change in vehicle cost = Monthly parking cost × (12/$4000) Elasticity = 0.4 A = 85%	% VMT Reduction = 0.00% Cap: 13% Monthly parking cost: $ -
PDT-3	Implement Market Price Public Parking (On-Street)	% VMT Reduction = Park$ × B Park$ = Percent increase in on-street parking prices [minimum of 25%] B = 0.11	% VMT Reduction = 0.00% Cap: 5.5% Actual On-Street Parking Price: $ - Baseline On-Street Parking Price: $ -
PDT-4	Require Residential Area Parking Permits	Not quantified separately; Assumed to be included in PDT-1, -2-, and -3 (If included in LUT-9, VMT reduction should be at least 0.09% to 0.36% depending on land use)	

Transit System Improvements (10% Reduction Cap)

Total TST % VMT Reduction = **0.00%** Cap: 10%

TST-1	Provide a Bus Rapid Transit System	% VMT Reduction = Riders × Mode × Lines × D Riders = 28% Mode = 17% Urban Center 4% Urban 1.30% Suburban Lines = Percent of lines serving project converting to BRT D = 0.67	% VMT Reduction = 0.00% Cap: 3.2% Urban Center: 17% Urban: 4% Suburban: 1.30% (Mark an "X" in one of the above) Lines Converting to BRT: 0% Total Baseline Lines:
TST-2	Implement Transit Access Improvements	Not quantified separately; Assumed to be included in TST-3 and -4	
TST-3	Expand Transit Network	% VMT Reduction = Coverage × B × Mode × D Coverage = % increase in transit network coverage B = 0.65 Urban Center 0.72 Urban 1.01 Suburban Mode = 17% Urban Center 4% Urban 1.30% Suburban D = 0.67	% VMT Reduction = 0.00% Cap: 8.2% Urban Center: 17% 0.65 Urban: 4% 0.72 Suburban: 1.30% 1.01 (Mark an "X" in one of the above) Coverage:

TST-4	Increase Transit Service Frequency/Speed	% VMT Reduction = Headway × B × C × Mode × E			% VMT Reduction =	0.00%	Cap:	2.5%
		Headway = % reduction in headways [15% - 80%]						
		B =	0.32	Urban	Urban Center:		17%	0.32
			0.36	Suburban	Urban:		4%	0.32
		C =	50%	< 50% lines improved	Suburban:		1.30%	0.36
			85%	>= 50% lines improved				
		Mode =	17%	Urban Center		(Mark an "X" in one of the above)		
			4%	Urban				
			1.30%	Suburban	Headway:			
		E = 0.67			Percent of Lines Improved:			
TST-5	Provide Bike Parking Near Transit	Not quantified separately; Assumed to be included in TST-3 and -4						
TST-6	Provide Local Shuttles	Not quantified separately; Assumed to be included in TST-3 and -4						

Commute Trip Reduction (25% Reduction Cap - WORK VMT ONLY)

Total TRT % Work VMT Reduction =	**0.00%**	Cap:	25%
% Work VMT of Total VMT:	**2.5%**		
Total TRT % Overall VMT Reduction =	**0.00%**	Cap:	15%

TRT-1	Implement Voluntary Commute Trip Reduction Program	% Work VMT Reduction = A × B A = 6.2% Urban 5.4% Suburban Center 5.2% Suburban B = % employees eligible	% Work VMT Reduction =	0.00%	Cap:	6.2%
			Urban:	6.2%		
			Suburban Center:	5.4%		
			Suburban:	5.2%		
			(Mark an "X" in one of the above)			
			% Employees Eligible:			
TRT-2	Implement Required Commute Trip Reduction Program	% Work VMT Reduction = A × B A = 21% B = % employees eligible	% Work VMT Reduction =	0.00%	Cap:	21.0%
			% Employees Eligible:			
TRT-3	Provide Ride-Sharing Programs	% Work VMT Reduction = Commute × Employee Commute = 15% Urban 10% Suburban Center 5% Suburban Employee = % employees eligible	% Work VMT Reduction =	0.00%	Cap:	15.0%
			Urban:	15%		
			Suburban Center:	10%		
			Suburban:	5%		
			(Mark an "X" in one of the above)			
			% Employees Eligible:			
TRT-4	Implement Subsidized or Discounted Transit Program	% Work VMT Reduction = A × B × C A = % reduction in commute vehicle trips B = % employees eligible C = Adjustment from VT to VMT [1.0]	% Work VMT Reduction =	0.00%	Cap:	20.0%
			Urban:	A		
			Suburban Center:	B		
			Suburban:	C		
			Transit Subsidy: $0.75	W		
			Transit Subsidy: $1.49	X		
			Transit Subsidy: $2.98	Y		
			Transit Subsidy: $5.96	Z		
			(Mark an "X" in one of the above for			
			% Employees Eligible:			
TRT-5	Provide End of Trip Facilities	Not quantified separately; Assumed to be included in TRT-1 through -3 (If included, Work VMT reduction should be 2% to 5%, or total VMT reduction should be 0.02% to 0.625%)				

TRT-6	Encourage Telecommuting and Alternate Work Schedules	% Reduction in Commute VMT	% Work VMT Reduction = 0.00%	Cap: 5.5%
			9-day/80-hour Work Week:	A
			4-day/40-hour Work Week:	B
			Telecommuting 1.5 Days:	C
			Employee Participation: 1%	V
			Employee Participation: 3%	W
			Employee Participation: 5%	X
			Employee Participation: 10%	Y
			Employee Participation: 25%	Z
			(Mark an "X" in one of the above fo	
TRT-7	Implement Commute Trip Reduction Marketing	% Work VMT Reduction = A × B × C A = % reduction in commute vehicle trips [4%] B = % employees eligible C = Adjustment from VT to VMT [1.0]	% Work VMT Reduction = 0.00% % Employees Eligible:	Cap: 4.0%
TRT-8	Implement Preferential Permit Parking Program	Not quantified separately; Assumed to be included in TRT-1 through -3		
TRT-9	Implement Car-Sharing Program	% Work VMT Reduction = A × B / C A = % reduction in car-share member annual VMT [37%] B = number of car share members per shared car [20] C = 1,000 Urban 2,000 Suburban	% Work VMT Reduction = 0.00% Urban: 1,000 Suburban: 2,000 (Mark an "X" in one of the above)	Cap: 0.74%
TRT-10	Implement a School Pool Program	Not applicable.		
TRT-11	Provide Employer-Sponsored Vanpool/Shuttle	% Work VMT Reduction = A × B × C A = % shift in vanpool mode share of commute trips = 2% to 20% B = % employees eligible C = 0.67	% Work VMT Reduction = 0.00% A: Shift in Vanpool Mode Share: B: Employees Eligible:	Cap: 13.4%
TRT-12	Implement Bike Sharing Program	Not quantified separately; Assumed to be included in LUT-9 and SDT-5 (If included, total VMT reduction should be at least 0.03%)		
TRT-13	Implement School Bus Program	Not applicable.		
TRT-14	Price Workplace Parking	% Work VMT Reduction = A × B A = % reduction in commute VMT B = % employees subject to priced parking	% Work VMT Reduction = 0.00% Urban: A	Cap: 19.7%

Suburban Center:		B
Suburban:		C

Daily Parking Charge: $1		W
Daily Parking Charge: $2		X
Daily Parking Charge: $3		Y
Daily Parking Charge: $6		Z

(Mark an "X" in one of the above fo

% Employees Subject to Priced Parking:

TRT-15 Implement Employee Parking Cash-Out

% Work VMT Reduction = A × B

A = 7.7% Urban
4.5% Suburban Center
3.0% Suburban

B = % employees eligible

% Work VMT Reduction = 0.00% Cap: 7.7%

Urban:		7.7%
Suburban Center:		4.5%
Suburban:		3.0%

(Mark an "X" in one of the above)

% Employees Eligible:

---

253 S Los Robles

Air Quality and Greenhouse Gas Assessment

Project Trips and Vehicle Miles Traveled

Land Use (CalEEMod Land Use)	Unit Amount	Daily Project Trips	
PROJECT			
Residential Condominiums/Townhouse	92 DU	5.81	Baseline trip rate per DU
		0.0%	Deductions (Traffic Study)
		5.81	**Trip rate per DU less Adjustments**
		-33.3%	VMT Reduction (CAPCOA)
		14.7	H-W Trip Length (Baseline)
		5.9	H-S Trip Length (Baseline)
		8.7	H-O Trip Length (Baseline)
		9.8	**H-W Trip Length (Project)**
		3.9	**H-S Trip Length (Project)**
		5.8	**H-O Trip Length (Project)**

Source: Pasadena Department of Transportation, 2018; ESA 2018.

253 S. Los Robles - Operations

Los Angeles-South Coast County, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Enclosed Parking with Elevator	131.00	Space	0.25	69,668.00	0
Other Non-Asphalt Surfaces	22.32	1000sqft	0.12	22,320.00	0
Health Club	1.70	1000sqft	0.10	1,699.00	0
Condo/Townhouse High Rise	92.00	Dwelling Unit	0.35	92,466.00	223

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	33
Climate Zone	12			**Operational Year**	2020
Utility Company	Pasadena Water & Power				
CO2 Intensity (lb/MWhr)	773.97	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - see operational assumptions

Land Use - see operational assumptions

Vehicle Trips - see operational assumptions

Woodstoves - see operational assumptions

Energy Use - Used lighting energy intensity from "parking lot" for other non-asphalt surfaces land use.

Construction Off-road Equipment Mitigation -

Energy Mitigation - see operational assumptions.

Water Mitigation -

Waste Mitigation -

Table Name	Column Name	Default Value	New Value
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	15
tblEnergyUse	LightingElect	0.00	0.35
tblFireplaces	FireplaceDayYear	25.00	0.00
tblFireplaces	FireplaceHourDay	3.00	0.00
tblFireplaces	FireplaceWoodMass	1,019.20	0.00
tblFireplaces	NumberGas	78.20	0.00
tblFireplaces	NumberNoFireplace	9.20	0.00
tblFireplaces	NumberWood	4.60	0.00
tblLandUse	LandUseSquareFeet	52,400.00	69,668.00
tblLandUse	LandUseSquareFeet	1,700.00	1,699.00
tblLandUse	LandUseSquareFeet	92,000.00	92,466.00
tblLandUse	LotAcreage	1.18	0.25
tblLandUse	LotAcreage	0.51	0.12
tblLandUse	LotAcreage	0.04	0.10
tblLandUse	LotAcreage	1.44	0.35
tblLandUse	Population	263.00	223.00
tblProjectCharacteristics	CO2IntensityFactor	1664.14	773.97
tblVehicleTrips	DV_TP	39.00	0.00
tblVehicleTrips	HO_TL	8.70	5.80
tblVehicleTrips	HS_TL	5.90	3.90
tblVehicleTrips	HW_TL	14.70	9.80
tblVehicleTrips	PB_TP	9.00	0.00
tblVehicleTrips	PR_TP	52.00	0.00
tblVehicleTrips	ST_TR	4.31	5.81
tblVehicleTrips	ST_TR	20.87	0.00
tblVehicleTrips	SU_TR	3.43	5.81
tblVehicleTrips	SU_TR	26.73	0.00

tblVehicleTrips	WD_TR	4.18	5.81
tblVehicleTrips	WD_TR	32.93	0.00
tblWoodstoves	NumberCatalytic	4.60	0.00
tblWoodstoves	NumberNoncatalytic	4.60	0.00
tblWoodstoves	WoodstoveDayYear	25.00	0.00
tblWoodstoves	WoodstoveWoodMass	999.60	0.00

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	2.3003	0.0882	7.6313	4.0000e-004		0.0419	0.0419		0.0419	0.0419	0.0000	13.7007	13.7007	0.0134	0.0000	14.0362
Energy	0.0308	0.2633	0.1155	1.6800e-003		0.0213	0.0213		0.0213	0.0213		335.4535	335.4535	6.4300e-003	6.1500e-003	337.4469
Mobile	0.9521	4.1762	11.0356	0.0344	2.5875	0.0346	2.6220	0.6925	0.0324	0.7249		3,493.7829	3,493.7829	0.1975		3,498.7204
Total	**3.2831**	**4.5277**	**18.7823**	**0.0365**	**2.5875**	**0.0977**	**2.6852**	**0.6925**	**0.0956**	**0.7881**	**0.0000**	**3,842.9371**	**3,842.9371**	**0.2174**	**6.1500e-003**	**3,850.2035**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	2.3003	0.0882	7.6313	4.0000e-004		0.0419	0.0419		0.0419	0.0419	0.0000	13.7007	13.7007	0.0134	0.0000	14.0362
Energy	0.0301	0.2576	0.1129	1.6400e-003		0.0208	0.0208		0.0208	0.0208		328.2621	328.2621	6.2900e-003	6.0200e-003	330.2128
Mobile	0.9521	4.1762	11.0356	0.0344	2.5875	0.0346	2.6220	0.6925	0.0324	0.7249		3,493.7829	3,493.7829	0.1975		3,498.7204
Total	**3.2824**	**4.5221**	**18.7798**	**0.0364**	**2.5875**	**0.0973**	**2.6847**	**0.6925**	**0.0951**	**0.7876**	**0.0000**	**3,835.7458**	**3,835.7458**	**0.2172**	**6.0200e-003**	**3,842.9694**

	ROG	NOx	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	**0.02**	**0.12**	**0.01**	**0.11**	**0.00**	**0.47**	**0.02**	**0.00**	**0.48**	**0.06**	**0.00**	**0.19**	**0.19**	**0.06**	**2.11**	**0.19**

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	0.9521	4.1762	11.0356	0.0344	2.5875	0.0346	2.6220	0.6925	0.0324	0.7249		3,493.7829	3,493.7829	0.1975		3,498.7204
Unmitigated	0.9521	4.1762	11.0356	0.0344	2.5875	0.0346	2.6220	0.6925	0.0324	0.7249		3,493.7829	3,493.7829	0.1975		3,498.7204

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Condo/Townhouse High Rise	534.52	534.52	534.52	1,216,780	1,216,780
Enclosed Parking with Elevator	0.00	0.00	0.00		
Health Club	0.00	0.00	0.00		
Other Non-Asphalt Surfaces	0.00	0.00	0.00		
Total	534.52	534.52	534.52	1,216,780	1,216,780

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Condo/Townhouse High Rise	9.80	3.90	5.80	40.20	19.20	40.60	86	11	3
Enclosed Parking with Elevator	16.60	8.40	6.90	0.00	0.00	0.00	0	0	0
Health Club	16.60	8.40	6.90	16.90	64.10	19.00	0	0	0
Other Non-Asphalt Surfaces	16.60	8.40	6.90	0.00	0.00	0.00	0	0	0

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Condo/Townhouse High Rise	0.547726	0.045437	0.201480	0.122768	0.016614	0.006090	0.019326	0.029174	0.002438	0.002359	0.005005	0.000677	0.000907
Enclosed Parking with Elevator	0.547726	0.045437	0.201480	0.122768	0.016614	0.006090	0.019326	0.029174	0.002438	0.002359	0.005005	0.000677	0.000907
Health Club	0.547726	0.045437	0.201480	0.122768	0.016614	0.006090	0.019326	0.029174	0.002438	0.002359	0.005005	0.000677	0.000907
Other Non-Asphalt Surfaces	0.547726	0.045437	0.201480	0.122768	0.016614	0.006090	0.019326	0.029174	0.002438	0.002359	0.005005	0.000677	0.000907

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

Exceed Title 24

Install Energy Efficient Appliances

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.0301	0.2576	0.1129	1.6400e-003		0.0208	0.0208		0.0208	0.0208		328.2621	328.2621	6.2900e-003	6.0200e-003	330.2128
NaturalGas Unmitigated	0.0308	0.2633	0.1155	1.6800e-003		0.0213	0.0213		0.0213	0.0213		335.4535	335.4535	6.4300e-003	6.1500e-003	337.4469

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					
Condo/Townhouse High Rise	2767.1	0.0298	0.2550	0.1085	1.6300e-003		0.0206	0.0206		0.0206	0.0206		325.5415	325.5415	6.2400e-003	5.9700e-003	327.4761
Enclosed Parking with Elevator	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Health Club	84.2518	9.1000e-004	8.2600e-003	6.9400e-003	5.0000e-005		6.3000e-004	6.3000e-004		6.3000e-004	6.3000e-004		9.9120	9.9120	1.9000e-004	1.8000e-004	9.9709
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0308**	**0.2633**	**0.1155**	**1.6800e-003**		**0.0213**	**0.0213**		**0.0213**	**0.0213**		**335.4535**	**335.4535**	**6.4300e-003**	**6.1500e-003**	**337.4469**

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					
Condo/Townhouse High Rise	2.70909	0.0292	0.2497	0.1062	1.5900e-003		0.0202	0.0202		0.0202	0.0202		318.7164	318.7164	6.1100e-003	5.8400e-003	320.6104
Enclosed Parking with Elevator	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Health Club	0.0811384	8.8000e-004	7.9500e-003	6.6800e-003	5.0000e-005		6.0000e-004	6.0000e-004		6.0000e-004	6.0000e-004		9.5457	9.5457	1.8000e-004	1.8000e-004	9.6024
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0301**	**0.2576**	**0.1129**	**1.6400e-003**		**0.0208**	**0.0208**		**0.0208**	**0.0208**		**328.2621**	**328.2621**	**6.2900e-003**	**6.0200e-003**	**330.2128**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	2.3003	0.0882	7.6313	4.0000e-004		0.0419	0.0419		0.0419	0.0419	0.0000	13.7007	13.7007	0.0134	0.0000	14.0362
Unmitigated	2.3003	0.0882	7.6313	4.0000e-004		0.0419	0.0419		0.0419	0.0419	0.0000	13.7007	13.7007	0.0134	0.0000	14.0362

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.1698					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	1.8971					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.2334	0.0882	7.6313	4.0000e-004		0.0419	0.0419		0.0419	0.0419		13.7007	13.7007	0.0134		14.0362
Total	**2.3003**	**0.0882**	**7.6313**	**4.0000e-004**		**0.0419**	**0.0419**		**0.0419**	**0.0419**	**0.0000**	**13.7007**	**13.7007**	**0.0134**	**0.0000**	**14.0362**

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.1698					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	1.8971					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.2334	0.0882	7.6313	4.0000e-004		0.0419	0.0419		0.0419	0.0419		13.7007	13.7007	0.0134		14.0362
Total	**2.3003**	**0.0882**	**7.6313**	**4.0000e-004**		**0.0419**	**0.0419**		**0.0419**	**0.0419**	**0.0000**	**13.7007**	**13.7007**	**0.0134**	**0.0000**	**14.0362**

7.0 Water Detail

7.1 Mitigation Measures Water

Install Low Flow Bathroom Faucet

Install Low Flow Shower

Use Water Efficient Irrigation System

8.0 Waste Detail

8.1 Mitigation Measures Waste

Institute Recycling and Composting Services

9.0 Operational Offroad

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

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

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

Boilers

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

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

253 S. Los Robles - Operations

Los Angeles-South Coast County, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Enclosed Parking with Elevator	131.00	Space	0.25	69,668.00	0
Other Non-Asphalt Surfaces	22.32	1000sqft	0.12	22,320.00	0
Health Club	1.70	1000sqft	0.10	1,699.00	0
Condo/Townhouse High Rise	92.00	Dwelling Unit	0.35	92,466.00	223

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	33
Climate Zone	12			**Operational Year**	2020
Utility Company	Pasadena Water & Power				
CO2 Intensity (lb/MWhr)	773.97	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - see operational assumptions

Land Use - see operational assumptions

Vehicle Trips - see operational assumptions

Woodstoves - see operational assumptions

Energy Use - Used lighting energy intensity from "parking lot" for other non-asphalt surfaces land use.

Construction Off-road Equipment Mitigation -

Energy Mitigation - see operational assumptions.

Water Mitigation -

Waste Mitigation -

Table Name	Column Name	Default Value	New Value
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	15
tblEnergyUse	LightingElect	0.00	0.35
tblFireplaces	FireplaceDayYear	25.00	0.00
tblFireplaces	FireplaceHourDay	3.00	0.00
tblFireplaces	FireplaceWoodMass	1,019.20	0.00
tblFireplaces	NumberGas	78.20	0.00
tblFireplaces	NumberNoFireplace	9.20	0.00
tblFireplaces	NumberWood	4.60	0.00
tblLandUse	LandUseSquareFeet	52,400.00	69,668.00
tblLandUse	LandUseSquareFeet	1,700.00	1,699.00
tblLandUse	LandUseSquareFeet	92,000.00	92,466.00
tblLandUse	LotAcreage	1.18	0.25
tblLandUse	LotAcreage	0.51	0.12
tblLandUse	LotAcreage	0.04	0.10
tblLandUse	LotAcreage	1.44	0.35
tblLandUse	Population	263.00	223.00
tblProjectCharacteristics	CO2IntensityFactor	1664.14	773.97
tblVehicleTrips	DV_TP	39.00	0.00
tblVehicleTrips	HO_TL	8.70	5.80
tblVehicleTrips	HS_TL	5.90	3.90
tblVehicleTrips	HW_TL	14.70	9.80
tblVehicleTrips	PB_TP	9.00	0.00
tblVehicleTrips	PR_TP	52.00	0.00
tblVehicleTrips	ST_TR	4.31	5.81
tblVehicleTrips	ST_TR	20.87	0.00
tblVehicleTrips	SU_TR	3.43	5.81
tblVehicleTrips	SU_TR	26.73	0.00
tblVehicleTrips	WD_TR	4.18	5.81

tblVehicleTrips	WD_TR	32.93	0.00
tblWoodstoves	NumberCatalytic	4.60	0.00
tblWoodstoves	NumberNoncatalytic	4.60	0.00
tblWoodstoves	WoodstoveDayYear	25.00	0.00
tblWoodstoves	WoodstoveWoodMass	999.60	0.00

2.0 Emissions Summary

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	2.3003	0.0882	7.6313	4.0000e-004		0.0419	0.0419		0.0419	0.0419	0.0000	13.7007	13.7007	0.0134	0.0000	14.0362
Energy	0.0308	0.2633	0.1155	1.6800e-003		0.0213	0.0213		0.0213	0.0213		335.4535	335.4535	6.4300e-003	6.1500e-003	337.4469
Mobile	0.9262	4.2609	10.6722	0.0327	2.5875	0.0348	2.6223	0.6925	0.0326	0.7251		3,320.1977	3,320.1977	0.1982		3,325.1517
Total	**3.2572**	**4.6124**	**18.4190**	**0.0347**	**2.5875**	**0.0980**	**2.6854**	**0.6925**	**0.0958**	**0.7883**	**0.0000**	**3,669.3519**	**3,669.3519**	**0.2180**	**6.1500e-003**	**3,676.6348**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	2.3003	0.0882	7.6313	4.0000e-004		0.0419	0.0419		0.0419	0.0419	0.0000	13.7007	13.7007	0.0134	0.0000	14.0362
Energy	0.0301	0.2576	0.1129	1.6400e-003		0.0208	0.0208		0.0208	0.0208		328.2621	328.2621	6.2900e-003	6.0200e-003	330.2128
Mobile	0.9262	4.2609	10.6722	0.0327	2.5875	0.0348	2.6223	0.6925	0.0326	0.7251		3,320.1977	3,320.1977	0.1982		3,325.1517
Total	**3.2565**	**4.6067**	**18.4164**	**0.0347**	**2.5875**	**0.0975**	**2.6850**	**0.6925**	**0.0953**	**0.7879**	**0.0000**	**3,662.1605**	**3,662.1605**	**0.2179**	**6.0200e-003**	**3,669.4007**

	ROG	NOx	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	**0.02**	**0.12**	**0.01**	**0.12**	**0.00**	**0.47**	**0.02**	**0.00**	**0.48**	**0.06**	**0.00**	**0.20**	**0.20**	**0.06**	**2.11**	**0.20**

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	0.9262	4.2609	10.6722	0.0327	2.5875	0.0348	2.6223	0.6925	0.0326	0.7251		3,320.1977	3,320.1977	0.1982		3,325.1517
Unmitigated	0.9262	4.2609	10.6722	0.0327	2.5875	0.0348	2.6223	0.6925	0.0326	0.7251		3,320.1977	3,320.1977	0.1982		3,325.1517

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Condo/Townhouse High Rise	534.52	534.52	534.52	1,216,780	1,216,780
Enclosed Parking with Elevator	0.00	0.00	0.00		
Health Club	0.00	0.00	0.00		
Other Non-Asphalt Surfaces	0.00	0.00	0.00		
Total	534.52	534.52	534.52	1,216,780	1,216,780

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Condo/Townhouse High Rise	9.80	3.90	5.80	40.20	19.20	40.60	86	11	3
Enclosed Parking with Elevator	16.60	8.40	6.90	0.00	0.00	0.00	0	0	0
Health Club	16.60	8.40	6.90	16.90	64.10	19.00	0	0	0
Other Non-Asphalt Surfaces	16.60	8.40	6.90	0.00	0.00	0.00	0	0	0

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Condo/Townhouse High Rise	0.547726	0.045437	0.201480	0.122768	0.016614	0.006090	0.019326	0.029174	0.002438	0.002359	0.005005	0.000677	0.000907
Enclosed Parking with Elevator	0.547726	0.045437	0.201480	0.122768	0.016614	0.006090	0.019326	0.029174	0.002438	0.002359	0.005005	0.000677	0.000907
Health Club	0.547726	0.045437	0.201480	0.122768	0.016614	0.006090	0.019326	0.029174	0.002438	0.002359	0.005005	0.000677	0.000907
Other Non-Asphalt Surfaces	0.547726	0.045437	0.201480	0.122768	0.016614	0.006090	0.019326	0.029174	0.002438	0.002359	0.005005	0.000677	0.000907

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

Exceed Title 24

Install Energy Efficient Appliances

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.0301	0.2576	0.1129	1.6400e-003		0.0208	0.0208		0.0208	0.0208		328.2621	328.2621	6.2900e-003	6.0200e-003	330.2128
NaturalGas Unmitigated	0.0308	0.2633	0.1155	1.6800e-003		0.0213	0.0213		0.0213	0.0213		335.4535	335.4535	6.4300e-003	6.1500e-003	337.4469

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					
Condo/Townhouse High Rise	2767.1	0.0298	0.2550	0.1085	1.6300e-003		0.0206	0.0206		0.0206	0.0206		325.5415	325.5415	6.2400e-003	5.9700e-003	327.4761
Enclosed Parking with Elevator	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Health Club	84.2518	9.1000e-004	8.2600e-003	6.9400e-003	5.0000e-005		6.3000e-004	6.3000e-004		6.3000e-004	6.3000e-004		9.9120	9.9120	1.9000e-004	1.8000e-004	9.9709
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0308**	**0.2633**	**0.1155**	**1.6800e-003**		**0.0213**	**0.0213**		**0.0213**	**0.0213**		**335.4535**	**335.4535**	**6.4300e-003**	**6.1500e-003**	**337.4469**

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					
Condo/Townhouse High Rise	2.70909	0.0292	0.2497	0.1062	1.5900e-003		0.0202	0.0202		0.0202	0.0202		318.7164	318.7164	6.1100e-003	5.8400e-003	320.6104
Enclosed Parking with Elevator	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Health Club	0.0811384	8.8000e-004	7.9500e-003	6.6800e-003	5.0000e-005		6.0000e-004	6.0000e-004		6.0000e-004	6.0000e-004		9.5457	9.5457	1.8000e-004	1.8000e-004	9.6024
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0301**	**0.2576**	**0.1129**	**1.6400e-003**		**0.0208**	**0.0208**		**0.0208**	**0.0208**		**328.2621**	**328.2621**	**6.2900e-003**	**6.0200e-003**	**330.2128**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	2.3003	0.0882	7.6313	4.0000e-004		0.0419	0.0419		0.0419	0.0419	0.0000	13.7007	13.7007	0.0134	0.0000	14.0362
Unmitigated	2.3003	0.0882	7.6313	4.0000e-004		0.0419	0.0419		0.0419	0.0419	0.0000	13.7007	13.7007	0.0134	0.0000	14.0362

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.1698					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	1.8971					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.2334	0.0882	7.6313	4.0000e-004		0.0419	0.0419		0.0419	0.0419		13.7007	13.7007	0.0134		14.0362
Total	**2.3003**	**0.0882**	**7.6313**	**4.0000e-004**		**0.0419**	**0.0419**		**0.0419**	**0.0419**	**0.0000**	**13.7007**	**13.7007**	**0.0134**	**0.0000**	**14.0362**

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.1698					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	1.8971					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.2334	0.0882	7.6313	4.0000e-004		0.0419	0.0419		0.0419	0.0419		13.7007	13.7007	0.0134		14.0362
Total	**2.3003**	**0.0882**	**7.6313**	**4.0000e-004**		**0.0419**	**0.0419**		**0.0419**	**0.0419**	**0.0000**	**13.7007**	**13.7007**	**0.0134**	**0.0000**	**14.0362**

7.0 Water Detail

7.1 Mitigation Measures Water

Install Low Flow Bathroom Faucet

Install Low Flow Shower

Use Water Efficient Irrigation System

8.0 Waste Detail

8.1 Mitigation Measures Waste

Institute Recycling and Composting Services

9.0 Operational Offroad

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

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

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

Boilers

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

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Quick Links

List of Pasadena rentals (/apartments/featured/CA/Pasadena)
Dog friendly apartments Pasadena (/CA/Pasadena/dog-friendly-apartments)
Pet friendly apartments Pasadena (/CA/Pasadena/pet-friendly-apartments)
Hardwood floor apartments Pasadena (/CA/Pasadena/hardwood-floor-apartments)
Pool apartments Pasadena (/CA/Pasadena/pool-apartments)
Furnished apartments Pasadena (/CA/Pasadena/furnished-apartments)
Top floor apartments Pasadena (/CA/Pasadena/top-floor-apartments)
Single family apartments Pasadena (/CA/Pasadena/single-family-apartments)

Nearby Cities

Los Angeles Apartments (/CA/Los_Angeles) Glendale Apartments (/CA/Glendale) Fullerton Apartments (/CA/Fullerton) East Los Angeles Apartments (/CA/East_Los_Angeles) El Monte Apartments (/CA/El_Monte) Downey Apartments (/CA/Downey) Inglewood Apartments (/CA/Inglewood) West Covina Apartments (/CA/West_Covina) Norwalk Apartments (/CA/Norwalk) Burbank Apartments (/CA/Burbank)

Pasadena Neighborhoods

Rank	Name	Walk Score	Transit Score	Bike Score	Population
1	Downtown (/CA/Pasadena/Downtown)	88	-	94	16,017
2	South Lake (/CA/Pasadena/South_Lake)	87	-	91	5,354
3	Raymond Hill (/CA/Pasadena/Raymond_Hill)	87	-	92	719
4	Villa Parke (/CA/Pasadena/Villa_Parke)	80	-	93	7,834
5	The Oaks (/CA/Pasadena/The_Oaks)	79	-	89	3,768

See all Pasadena neighborhoods ▾

Eating & Drinking

There are about 700 restaurants, bars and coffee shops in Pasadena.

People in Pasadena can walk to an average of 4 restaurants, bars and coffee shops in 5 minutes.

Restaurant Choices Map ☐ = More Choices

The Arroyo Seco offers a wonderful array of experiences for walkers and hikers. The area is a welcome oasis from the urban hustle-and-bustle

Norma and Kyle - BLU DOT Realty Group on *Lower Arroyo Seco, Pasadena, Ca*

Pasadena has about 14 car shares from RelayRides and Zipcar.

Pasadena is Very Bikeable

Bike Score 72

Biking is convenient for most trips.

Bike Score

Bike Lanes

Hills

Bike Commuters


Central Park


Central Park


Central Park


Colorado Street Bridge, Pasadena, Ca

The Colorado Street Bridge is a historic concrete arch bridge spanning the Arroyo Seco in Pasadena, California. A magnificent bridge showcasing its awesome architecture. It's night lit lamp posts lights up the beautiful architecture all around it.

Norma and Kyle - BLU DOT Realty Group on *Colorado Street Bridge, Pasadena, Ca*


Cafe Alibi


Pasadena Memorial Park


Central Park


Memorial Park Station

Hiking pass the southern archery range which consists of 28 hay bale targets and 6 practice butts, the trail leads along the LA River's flood channel.

Norma and Kyle - BLU DOT Realty Group on *Arroyo Seco, Pasadena, Ca*

Pasadena is Talking About...

play blaze pizza coffee song food god drink school sleeping movies job california lunch pasadena city hall dinner read urth caffe walk eat car

Pasadena is all about:

Tweet @WalkScore

Incycle Bicycles

Pasadena Fire House 36

Color Me Mine

College & University Rentals

Art Center College of Design (/apartments/nearby/art-center-college-of-design-pasadena-ca)

California Institute of Technology (/apartments/nearby/california-institute-of-technology-pasadena-ca)

Pacific Oaks College (/apartments/nearby/pacific-oaks-college-pasadena-ca)

Apartments Near Parks

Hahamonga Watershed Natural Park (/apartments/nearby/hahamonga-watershed-natural-park-pasadena)

Eaton Canyon Park (/apartments/nearby/eaton-canyon-park-pasadena)

Oak Grove Park (/apartments/nearby/oak-grove-park-pasadena)

Brookside Park (/apartments/nearby/brookside-park-pasadena)

Victory Park (/apartments/nearby/victory-park-pasadena)

View more ▾

Apartments Near Pasadena Schools

Alverno High School (/apartments/nearby/alverno-high-school-pasadena)

Pasadena High School (/apartments/nearby/pasadena-high-school-pasadena)

Rhythms of the Village Charter High School (/apartments/nearby/rhythms-of-the-village-charter-high-school-pasadena)

La Salle High School (/apartments/nearby/la-salle-high-school-pasadena)

John Muir High School (/apartments/nearby/john-muir-high-school-pasadena)

View more ▾

Apartments Near Employers

Jacobs Engineering Group Headquarters (/apartments/nearby/jacobs-engineering-group-headquarters)

Avery Dennison Headquarters (/apartments/nearby/avery-dennison-headquarters)

Walk Score Professional (/professional/)

Real Estate

(/professional/walk-score-widget.php)

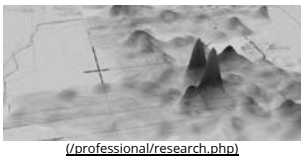
Add Walk Score, Bike Score, and Transit Score to your rental and for sale properties with the Walk Score Widget (/professional/walk-score-widget.php).

Software Developers

(/professional/walk-score-apis.php)

Build apps with Walk Score, public transit data, and commute and travel times via Walk Score APIs (/professional/walk-score-apis.php).

Data and Analysis



(/professional/research.php)

Use Walk Score data (/professional/research.php) for real estate, public health, finance, and urban planning research and analysis.

(http://taps.io/LaVw) (http://taps.io/LaVg)

Walk Score (/)

Blog (http://blog.walkscore.com/)
About (/about.shtml)
How It Works (/how-it-works/)
Press (/press/)
Android (https://play.google.com/store/apps/details?id=com.walkscore.neighborhoods)
iPhone (https://itunes.apple.com/us/app/walk-score/id536017866?ls=1&mt=8)
Terms & Privacy (/terms-of-use.shtml)
Feedback (/contact)

Professional (/professional/)

Walk Score Widget (/professional/walk-score-widget.php)
Walk Score APIs (/professional/walk-score-apis.php)
Data Services (/professional/research.php)
Real Estate Professionals (/professional/real-estate-professionals.php)
Walkability Research (/professional/walkability-research.php)
Badges (/professional/badges.php)

If you are using a screen reader or having trouble reading this website, please call Walk Score customer service at (253) 256-1634.

253 South Los Robles Avenue

Downtown, (/CA/Pasadena/Downtown) Pasadena (/CA/Pasadena), 91101

Add scores to your site (/professional/badges.php?address=253 South Los Robles Avenue Pasadena, CA 91101)

Commute to **Downtown Pasadena (/compare#edit-commutes)**

1 min 8 min 2 min 11 min View Routes

Favorite **Map**

Nearby Apartments (/apartments/search/253-s-los-robles-ave-pasadena-ca-91101)

Looking for a home for sale in Pasadena? (https://www.redfin.com/city/14498/CA/Pasadena)

Walk Score 86

Very Walkable
Most errands can be accomplished on foot.

Bike Score 96

Biker's Paradise
Flat as a pancake, excellent bike lanes.

About your score

About this Location

253 South Los Robles Avenue has a Walk Score of 86 out of 100. This location is Very Walkable so most errands can be accomplished on foot.

253 South Los Robles Avenue is an eight minute walk from the Metro Gold Line (804) at the Del Mar Station stop.

This location is in the Downtown neighborhood in Pasadena. Nearby parks include Central Park, Old Pasadena Historic District and Pasadena Memorial Park.

Travel Time Map

Add to your site (/professional/travel-time-js-api.php#widget-example)

Explore how far you can travel by car, bus, bike and foot from 253 South Los Robles Avenue.

Nearby Public Transit

Rail lines:

Metro Gold Line (804)	0.4 mi	Metro Gold Line (804)	0.6 mi

Bus lines:

267/264 Metro Local Line	0.0 mi	177 Metro Local Line	0.1 mi
187 Pasadena - Glendora -...	0.3 mi	687/686 Metro Local Line	0.3 mi
180/181 Metro Local Line	0.3 mi	256 Metro Local Line	0.3 mi
780 Metro Rapid Line	0.3 mi		

Car shares:

RelayRides: 1997 Nissan Ma...	0.1 mi	RelayRides: 2005 Lexus ES 3...	0.2 mi
RelayRides: 2001 Mazda MX...	0.6 mi	Zipcar: Westgate Apartments	0.6 mi
RelayRides: 2010 Audi A4	0.6 mi	Zipcar: Caltech - Lot 14 S Ca...	0.8 mi
RelayRides: 2011 Ford Must...	0.9 mi	RelayRides: 2011 Chevrolet...	0.9 mi
RelayRides: 2008 Toyota Hi...	0.9 mi	RelayRides: 2001 Ford Explo...	1.1 mi

Bike shares:

Incycle Bicycles	0.5 mi

Downtown Pasadena

Apartments for Rent | **Homes for Sale** (http://www.redfin.com)

View all Downtown apartments (/apartments/search/CA/Pasadena/Downtown) on a map.

from **$1,984**
Acappella Pasadena (/scor...
1 bed Walk Score 90

from **$1,999**
Westgate (/score/westgate...
Studio Walk Score 92

from **$2,182**
AVA Pasadena (/score/the-...
1 bed Walk Score 90

from **$1,967**
Villas of Pasadena (/score/...
1 bed Walk Score 84

from **$2,343**
Avalon Pasadena (/score/2...
1 bed Walk Score 93

from **$1,950**
Terraces at Paseo Colorad...
Studio Walk Score 91

from **$2,076**
Avalon Del Mar Station (/s...
Studio Walk Score 94

from **$1,864**
San Pasqual (/score/san-pa...
1 bed Walk Score 92

from **$2,010**
Arpeggio Pasadena (/score...
1 bed Walk Score 94

Popular apartment searches include fitness (/CA/Pasadena/Downtown/fitness-apartments), pool (/CA/Pasadena/Downtown/pool-apartments) and hardwood floor (/CA/Pasadena/Downtown/hardwood-floor-apartments).

Downtown Neighborhood

253 South Los Robles Avenue is in the Downtown neighborhood. Downtown is the most walkable neighborhood in **Pasadena** (/CA/Pasadena) with a neighborhood Walk Score of 88.

Learn More About Downtown (/CA/Pasadena/Downtown) **Learn More About Pasadena (/CA/Pasadena)**

United States (/cities-and-neighborhoods/) California (/CA) Pasadena (/CA/Pasadena)
Downtown (/CA/Pasadena/Downtown)

Walk Score (/)

Blog (http://blog.walkscore.com/)
About (/about.shtml)
How It Works (/how-it-works/)
Press (/press/)
Android (https://play.google.com/store/apps/details?id=com.walkscore.neighborhoods)
iPhone (https://itunes.apple.com/us/app/walk-score/id336017866?ls=1&mt=8)
Terms & Privacy (/terms-of-use.shtml)
Feedback (/contact)

Professional (/professional/)

Walk Score Widget (/professional/walk-score-widget.php)
Walk Score APIs (/professional/walk-score-apis.php)
Data Services (/professional/research.php)
Real Estate Professionals (/professional/real-estate-professionals.php)
Walkability Research (/professional/walkability-research.php)
Badges (/professional/badges.php)

If you are using a screen reader or having trouble reading this website, please call Walk Score customer service at (253) 256-1634.

Appendix C
Derivation of Localized Significance Thresholds

253 S Los Robles
Air Quality Assessment

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

Source Receptor Area 8
Screening Distance to Sensitive Receptors 25 meters [a]

	Screening Values			**Project Site** [b]
Acres	1	2	5	**0.82**
Construction LSTs				
NO_X	69	98	148	**63.6**
CO	535	812	1,540	**483.8**
PM10	4	6	16	**3.6**
PM2.5	3	4	8	**2.8**
Operational LSTs				
NO_X	69	98	148	**63.6**
CO	535	812	1,540	**483.8**
PM10	1	2	4	**1.0**
PM2.5	1	1	2	**1.0**

Notes:

a. The 25-meter (82-feet) screening distance is used as a conservative (i.e., health protective) measure.

b. Project screening levels are linearly interpolated. PM10 cannot be lower than PM2.5.

Appendix D

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

FINAL
2003 AQMP APPENDIX V

MODELING AND ATTAINMENT DEMONSTRATIONS

AUGUST 2003

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT

GOVERNING BOARD

Chair: WILLIAM A. BURKE, Ed.D.
Speaker of the Assembly Appointee

Vice Chair: S. ROY WILSON, Ed.D.
Supervisor, Fourth District
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REFERENCES

CHAPTER 4

REVISION TO THE FEDERAL CARBON MONOXIDE ATTAINMENT DEMONSTRATION PLAN

Hot Spot Analysis

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

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

TABLE 4-7

Selected Intersections for the CAL3QHC
Hot Spot Modeling Analysis

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

TABLE 4 -8

Emissions Predicted by EMFAC2002 in Year 1997 and 2002

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

TABLE 4-9

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

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

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

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

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

TABLE 4-10

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

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

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

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

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

CARBON MONOXIDE CONTROL STRATEGY

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

Contingency Measures

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