

COUNTY CLERK'S USE

CITY OF LOS ANGELES

OFFICE OF THE CITY CLERK

200 NORTH SPRING STREET, ROOM 395

LOS ANGELES, CALIFORNIA 90012

CALIFORNIA ENVIRONMENTAL QUALITY ACT**NOTICE OF EXEMPTION**

(PRC Section 21152; CEQA Guidelines Section 15062)

Pursuant to Public Resources Code § 21152(b) and CEQA Guidelines § 15062, the notice should be posted with the County Clerk by mailing the form and posting fee payment to the following address: Los Angeles County Clerk/Recorder, Environmental Notices, P.O. Box 1208, Norwalk, CA 90650. Pursuant to Public Resources Code § 21167 (d), the posting of this notice starts a 35-day statute of limitations on court challenges to reliance on an exemption for the project. Failure to file this notice as provided above, results in the statute of limitations being extended to 180 days.

PARENT CASE NUMBER(S) / REQUESTED ENTITLEMENTS

CPC-2021-10345-DB-SPP-SPR-VHCA

LEAD CITY AGENCY

City of Los Angeles (Department of City Planning)

CASE NUMBER

ENV-2020-10346-CE

PROJECT TITLE

4260 North Arch Drive

COUNCIL DISTRICT

4

PROJECT LOCATION (Street Address and Cross Streets and/or Attached Map)

4260 North Arch Drive and 11201 West Ventura Boulevard

☐ Map attached.

PROJECT DESCRIPTION:

☐ Additional page(s) attached.

Construction, use, maintenance of a multifamily building with 129 dwelling units, including 17 Very Low Income. 117,000 square feet floor area; maximum height 76 feet; 132 parking spaces, 43 of which will be compact spaces; parking provided within a partially subterranean garage; construction of a publicly accessible pedestrian path between Arch Drive and the Los Angeles River. The project includes any additional actions as deemed necessary or desirable, including but not limited to demolition, grading, excavation, haul route, street tree removal, on-site tree removal, and building permits. The amount of materials exported will be up to approximately 17,000 cubic yards.

NAME OF APPLICANT / OWNER:

Ezra Kest, Universal City Guest Home, L.P.

CONTACT PERSON (If different from Applicant/Owner above)

Jonathan Riker, Venable LLP

(AREA CODE) TELEPHONE NUMBER

310.229.9612

EXT.

EXEMPT STATUS: (Check all boxes, and include all exemptions, that apply and provide relevant citations.)

STATE CEQA STATUTE & GUIDELINES

☐ STATUTORY EXEMPTION(S)

Public Resources Code Section(s) _____

☒ CATEGORICAL EXEMPTION(S) (State CEQA Guidelines Sec. 15301-15333 / Class 1-Class 33)CEQA Guideline Section(s) / Class(es) **15332 / Class 32**☐ OTHER BASIS FOR EXEMPTION (E.g., CEQA Guidelines Section 15061(b)(3) or (b)(4) or Section 15378(b))

JUSTIFICATION FOR PROJECT EXEMPTION:

☒ Additional page(s) attached☒ None of the exceptions in CEQA Guidelines Section 15300.2 to the categorical exemption(s) apply to the Project.☐ The project is identified in one or more of the list of activities in the City of Los Angeles CEQA Guidelines as cited in the justification.

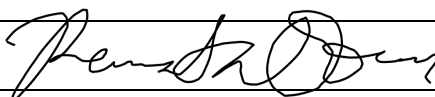
IF FILED BY APPLICANT, ATTACH CERTIFIED DOCUMENT ISSUED BY THE CITY PLANNING DEPARTMENT STATING THAT THE DEPARTMENT HAS FOUND THE PROJECT TO BE EXEMPT.

If different from the applicant, the identity of the person undertaking the project.

CITY STAFF USE ONLY:

CITY STAFF NAME AND SIGNATURE

Renata Ooms



STAFF TITLE

City Planner

ENTITLEMENTS APPROVED

Density Bonus, Site Plan Review, Specific Plan conformance.

DISTRIBUTION: County Clerk, Agency Record

Rev. 6-22-2021

**DEPARTMENT OF
CITY PLANNING**

COMMISSION OFFICE
(213) 978-1300

CITY PLANNING COMMISSION

SAMANTHA MILLMAN
PRESIDENT

CAROLINE CHOE
VICE-PRESIDENT

MARIA CABILDO
MONIQUE LAWSHE
HELEN LEUNG
KAREN MACK
DANA M. PERLMAN
ELIZABETH ZAMORA

CITY OF LOS ANGELES
CALIFORNIA



KAREN BASS
MAYOR

EXECUTIVE OFFICES

200 N. SPRING STREET, ROOM 525
LOS ANGELES, CA 90012-4801
(213) 978-1271

VINCENT P. BERTONI, AICP
DIRECTOR

SHANA M.M. BONSTIN
DEPUTY DIRECTOR

ARTHI L. VARMA, AICP
DEPUTY DIRECTOR

LISA M. WEBBER, AICP
DEPUTY DIRECTOR

JUSTIFICATION FOR PROJECT EXEMPTION

CASE NO. ENV-2020-10346-CE

On June 14, 2023 the Planning Department determined that the City of Los Angeles Guidelines for the implementation of the California Environmental Quality Act of 1970 and the State CEQA Guidelines designate the subject project as Categorical Exempt under Article 19, Section 15332, Class 32.

A project qualifies for a Class 32 Categorical Exemption if it is developed on an infill site and meets the following criteria:

- (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.

The project is for the demolition of existing uses and the construction, use and maintenance of a new multifamily residential building with 129 dwelling units, including 17 set aside for Very Low Income Households. The proposed building will have approximately 117,000 square feet of floor area and will reach a maximum height of 76 feet with stepbacks at the upper floors at the rear of the building. The proposed project will provide 132 parking spaces, 43 of which will be compact spaces. Parking is provided within a partially subterranean garage. The proposed project will provide a publicly accessible path between Arch Drive and the Los Angeles River, providing public pedestrian access to the Los Angeles River path. The project includes any additional actions as deemed necessary or desirable, including but not limited to demolition, grading, excavation, haul route, street tree removal, on-site tree removal, and building permits. The amount of materials exported will be up to approximately 17,000 cubic yards. As 129 unit multifamily project, and a project which is characterized as in-fill development, the project qualifies for the Class 32 Categorical Exemption.

The site is zoned C2-1VL-RIO and has a General Plan Land Use Designation of General Commercial. As shown in the case file, the project is consistent with the applicable Sherman Oaks – Studio City Community Plan designation and policies and all applicable zoning designations and regulations. The subject site is wholly within the City of Los Angeles, on a site that is approximately 1.03 acres. Lots adjacent to the subject site are developed with the following urban

uses: commercial shopping center to the west, multifamily residential to the east, commercial to the south, public facilities to the southeast, and the Los Angeles River path to the north. The site is previously disturbed and surrounded by development and therefore is not, and has no value as, a habitat for endangered, rare or threatened species. There are no protected trees on or near the site, as identified in the Tree Report prepared by Carlberg Associates dated June 2023. There are also no street trees.

The project will be subject to Regulatory Compliance Measures (RCMs), which require compliance with the City of Los Angeles Noise Ordinance as well as other local and state regulations regarding pollutant discharge, dewatering, and stormwater mitigations. These RCMs will ensure the project will not have significant impacts on noise and water. The Department of Transportation (LADOT) has reviewed the transportation assessment prepared by Overland Traffic Consultants, Inc., dated April 2022, and concluded the project will not result in a significant transportation impact on VMT. Therefore, the project will not have any significant impacts to traffic or transportation. The Noise and Air Quality Studies prepared by MD Acoustics, LLC, dated October 11, 2022 concluded the project will not result in impacts to air quality or noise. The project site will be adequately served by all public utilities and services given that the construction of a 129 unit apartment building will be on a site which has been previously developed and is consistent with the General Plan. Therefore, the project meets all of the Criteria for the Class 32.

Exceptions Narrative for Class 32 Categorical Exemption

There are five (5) Exceptions which must be considered in order to find a project exempt under Class 32: (a) Cumulative Impacts; (b) Significant Effect; (c) Scenic Highways; (d) Hazardous Waste Sites; and (e) Historical Resources.

There is not a succession of known projects of the same type and in the same place as the subject project. As mentioned, the project proposes 129 apartment units in an area zoned and designated for such development. All adjacent lots are developed with commercial, multifamily residential, public facilities, or open space uses, and the subject site is of a similar size and slope to nearby properties. The project proposes a Floor Area Ratio (FAR) of 3:1 on a site that is permitted to have a maximum FAR of 1:1 by-right and a height of 76 feet on a site that is permitted to have a maximum of 45 feet by-right. The proposed FAR and height are requested properly in conjunction with a Density Bonus request and in exchange for the provision of on-site deed-restricted affordable dwelling units are subject to the City Planning Commissions approval. Multistory buildings are not unusual for the vicinity of the subject site, and is similar in scope to other existing multifamily developments in the area. Thus, there are no unusual circumstances which may lead to a significant effect on the environment. Additionally, the only State Scenic Highway within the City of Los Angeles is the Topanga Canyon State Scenic Highway, State Route 27, which travels through a portion of Topanga State Park which is not near the subject site. Therefore the subject site will not create any impacts within a designated as a state scenic highway. Furthermore, according to Envirostor, the State of California's database of Hazardous Waste Sites, neither the subject site, nor any site in the vicinity, is identified as a hazardous waste site. The project site has not been identified as a historic resource by local or state agencies, and the project site has not been determined to be eligible for listing in the National Register of Historic Places, California Register of Historical Resources, the Los Angeles Historic-Cultural Monuments Register, and/or any local register; and was not found to be a potential historic resource based on the City's HistoricPlacesLA website or SurveyLA, the citywide survey of Los Angeles. Finally, the City does not choose to treat the site as a historic resource. Based on this, the project will not result in a substantial adverse change to the significance of a historic resource and this exception does not apply.



Horticulturists and
Registered Consulting
ARBORISTS

**CITY OF LOS ANGELES TREE REPORT
THE CRESCENT APARTMENTS
4260 N. ARCH DRIVE
LOS ANGELES, CALIFORNIA 91604**

SUBMITTED TO:

**MADISON BAKER
DEVELOPMENT MANAGER
GOLDRICH KEST
5150 OVERLAND AVENUE
CULVER CITY, CALIFORNIA 90230**

PREPARED BY:

**CY CARLBERG
ASCA REGISTERED CONSULTING ARBORIST #405
ISA CERTIFIED ARBORIST #WE 0575A
ISA QUALIFIED TREE RISK ASSESSOR
CAUFC CERTIFIED URBAN FORESTER #013**

**SCOTT McALLASTER
ISA CERTIFIED ARBORIST #WE 7011A
ISA QUALIFIED TREE RISK ASSESSOR**

**DANIEL COWELL
STAFF ARBORIST, BIOLOGIST**

Santa Monica Office
828 Fifth Street, Suite 3
Santa Monica, California 90403
Office: 310.451.4804

Sierra Madre Office
80 West Sierra Madre Boulevard, #241
Sierra Madre, California 91024
Office: 626.428.5072



JULY 14, 2023

www.cycarlberg.com

TREE INVENTORY AND REPORT – 4260 N. ARCH DRIVE, LOS ANGELES, CA

TABLE OF CONTENTS

EXECUTIVE SUMMARY.....	1
ASSIGNMENT AND PURPOSE OF THE TREE REPORT.....	2
PROJECT OVERVIEW	3
TABLE 1 – PROJECT INFORMATION	3
EXHIBIT A – PROJECT LOCATION MAP	4
EXHIBIT B – AERIAL IMAGE OF THE PROJECT SITE	5
TREE ASSESSMENT METHODOLOGY AND DATA PRESENTATION.....	6
OBSERVATIONS.....	7
TABLE 2 – SUMMARY OF INVENTORIED PROJECT SITE AND IMMEDIATE OFFSITE TREES	7
TABLE 3 – SUMMARY OF OFFSITE TREES	8
TABLE 4 – SUMMARY OF PRIVATE PROPERTY TREES	9
EXHIBIT C - REDUCED COPY OF THE TREE LOCATION EXHIBIT (11" x 17" pages)	13
DISCUSSION OF PROJECT IMPACTS.....	15
TABLE 5 – OFF-SITE TREES TO BE PRESERVED	17
TABLE 6 – NON-PROTECTED TREES TO BE REMOVED	18
TABLE 7 – NON-PROTECTED TREES TO BE PRESERVED	19
EXHIBIT D – TREE IMPACT EXHIBIT AND PROTECTION PLAN (11' X 17").....	23
CONCLUSION AND RECOMMENDATIONS	24
 ADDITIONAL EXHIBITS / APPENDICES / ATTACHMENTS	
CERTIFICATION OF PERFORMANCE.....	26
ARBORIST DISCLOSURE STATEMENT	27



LIST OF CONTIBUTORS AND RESUMES OF KEY STAFF	28
EXHIBIT E – DEFINITION OF HEALTH AND STRUCTURE GRADES	32
EXHIBIT F - GLOSSARY OF ARBORICULTURAL & DENDROLOGICAL TERMS	34
EXHIBIT G – LIST OF ACRONYMS	37
EXHIBIT H – TREE INVENTORY FIELD DATA (TABLE 8)	38
EXHIBIT I – TREE PHOTOGRAPHS	44
EXHIBIT J – TREE LEAF PHOTOGRAPHS	51
EXHIBIT K - BIBLIOGRAPHY OF GENERAL REFERENCES USED TO PREPARE THE DOCUMENT	61
<u>IN-PROCESS EXHIBITS / APPENDICES / ATTACHMENTS</u>	
TREE DISCLOSURE STATEMENT (CP-4067)	63



July 14, 2023

Madison Baker
Development Manager
Goldrich Kest
5150 Overland Avenue
Culver City, California 90230

**Re: The Crescent Apartments, 4260 N. Arch Drive, Los Angeles, California 91604
City of Los Angeles Tree Report**

Dear Ms. Baker,

This report is submitted in response to your request for arboricultural consulting services for the properties located at 4260 North Arch Drive in the Studio City area of Los Angeles, California.

EXECUTIVE SUMMARY

The future site of The Crescent Apartments (Project) encompasses approximately 1 acre (43,560 sq. ft.) and is located at 4260 N. Arch Drive in the City of Los Angeles. Commercial buildings and surface parking were recently demolished and the site has been graded and is vacant of any structures or hardscape. The property is bounded by existing retail structures to the west, Arch Drive to the east, the Los Angeles River to the north, and Ventura Boulevard to the south.

Carlberg prepared a Tree Inventory Report on August 30, 2017 and inventoried 36 non-protected private property trees and 10 non-protected offsite trees. Since then, nine non-protected private property trees (nos. 1-5, 13-14, and 26-27) were removed in accordance with a City Planning Demolition Permit. Tree no. 15, although approved for removal, is still standing as of June 2023. Sometime in 2022, the property owner to the west of the subject property cut down seven non-protected eucalyptus trees (tree nos. 6-12) at the southwest edge of the subject property; six of the tree stumps are sprouting new growth and one stump is no longer present.

Santa Monica Office
828 Fifth Street, Suite 3
Santa Monica, California 90403
Office: 310.451.4804

Sierra Madre Office
80 West Sierra Madre Boulevard, #241
Sierra Madre, California 91024
Office: 626.428.5072

www.cycarlberg.com

The Project proposes 13 additional non-protected tree removals. Remaining are 28 non-protected private property trees and ten offsite trees.

Carlberg Associates (Carlberg) was retained to conduct a tree inventory and to prepare a Tree Report in accordance with guidelines set forth by the City of Los Angeles's Tree Protection Ordinance and Tree Report Template. We prepared a Tree Inventory Report on August 30, 2017 and updated the inventory and report to be in accordance with the City's Template requirements in July 2023.

Carlberg arborists conducted the tree inventory on June 29, 2023. The one-acre property was walked in order to capture all trees, regardless of species or size, in the inventory. The inventory included offsite trees whose canopies or protected zones overhang the project site boundaries.

Carlberg inventoried a total of 51 private property trees. Ten of the private property trees are off-site trees whose canopies overhang the project site. No Ordinance-protected trees (of size) were encountered.

ASSIGNMENT AND PURPOSE OF THE TREE REPORT

Carlberg was retained to conduct a tree inventory and to prepare a Tree Report in accordance with guidelines set forth by the City of Los Angeles's Tree Protection Ordinance and Tree Report Template.

City of Los Angeles's Tree Protection Ordinance No. 186,873 (Ordinance)

Protected trees and shrubs as set forth in the Ordinance comprise the following species that measure four inches or greater in "cumulative"¹ trunk diameter (measured at 4.5 feet above natural grade):

- coast live oak (*Quercus agrifolia*)
- valley oak (*Quercus lobata*)
- any other southern California indigenous oak trees but excluding scrub oak (*Quercus berberidifolia*)
- western sycamore (*Platanus racemosa*)
- Southern California black walnut (*Juglans californica*)
- California bay laurel (*Umbellularia californica*)
- Mexican elderberry (*Sambucus mexicana*)
- toyon (*Heteromeles californica*)

Public rights-of-way, parkway, median, and street trees are protected regardless of species or size and must be included in the tree inventory and report.

Los Angeles City Planning CP-4068 [07.07.2022] Tree Report Template (Template)

The Template (dated September 7, 2022) requires the collection and reporting on additional data beyond that required by the Ordinance, both on- and offsite. Some key requirements of the Template include inventory and assessment of all onsite trees regardless of species or size, inventory of offsite trees whose protected zones (15-feet from the edge of their canopy) may be impacted by the project, inventory of all adjacent street trees, photographs of each tree along with a photograph of a leaf from each tree type, mapping of all trees' locations and their canopies (driplines) plus protected zones, and the tree expert's opinion as to whether the tree occurs naturally or was planted. The Template also requires an analysis of impacts to Ordinance-

¹ For purposes of value assessments and other analyses, trunk diameters of multi-stemmed trees will be converted to a single trunk diameter using the methodology set forth in the *Guide for Plant Appraisal*, 10th Edition.



protected trees that occur within 200 feet of the property boundaries. These impacts may be estimated if access is restricted. *There are no additional trees of concern existing within 200 feet of the property boundaries.*

This Tree Report will be used during the entitlement and environmental approval process to aid decision-makers and the public in understanding the existing tree resources present on and immediately adjacent to the project site, the potential impacts of the project on the existing tree resources, and the proposed recommendations for tree protection, monitoring, and required mitigation during implementation of the Project.

PROJECT OVERVIEW

Project Location

Table 1 includes basic project information for the Project.

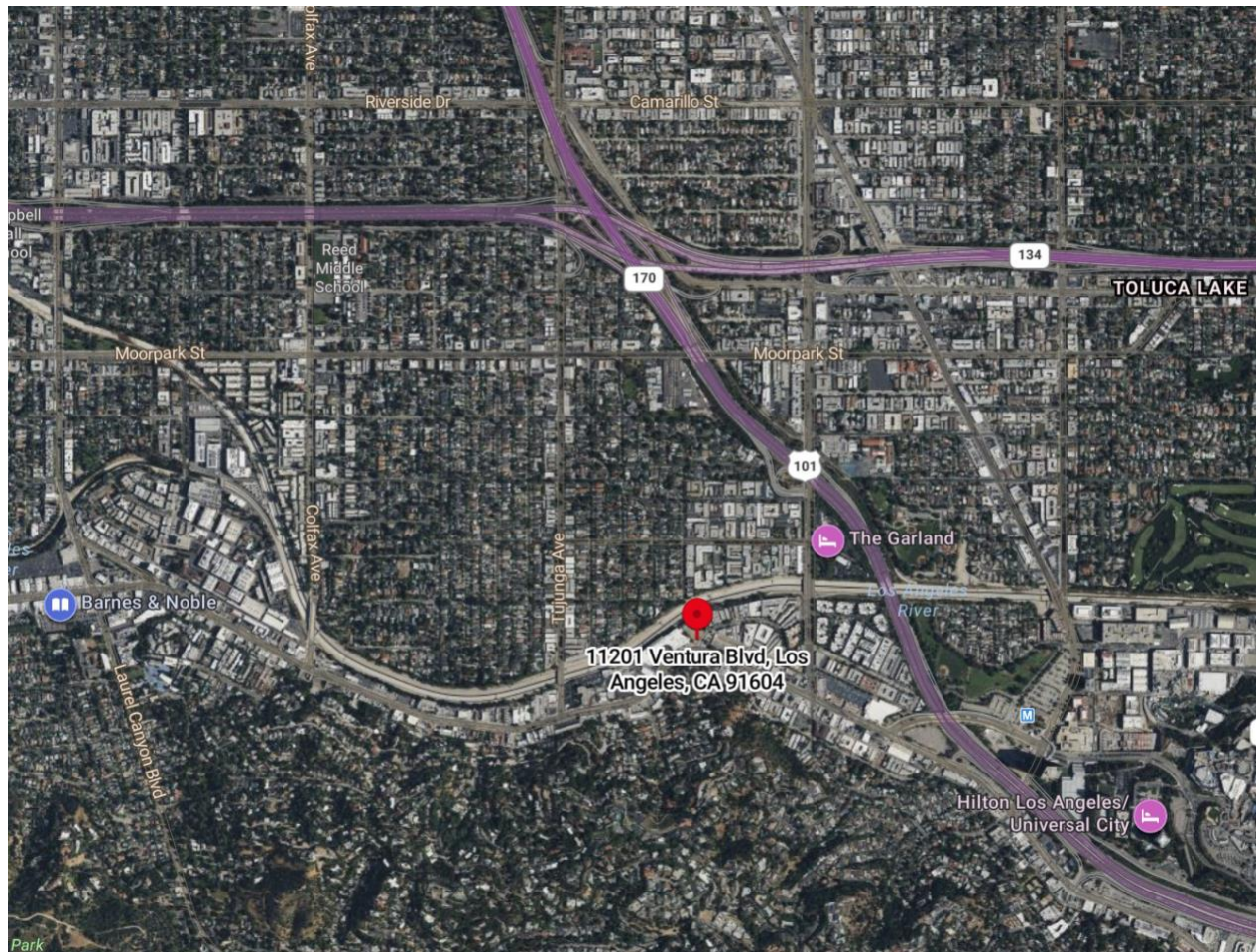
TABLE 1 – PROJECT INFORMATION

Project Name	The Crescent Apartments
Project Address	4260 N. Arch Drive, Los Angeles, CA 91604
Project APN	
Project Site Area	Approximately one acre
Entitlement Case No.	TBD
Environmental Case No.	TBD
Owner / Applicant	Goldrich Kest
Owner Representative	Madison Baker Development Manager Goldrich Kest 5150 Overland Avenue Culver City, California 90230

Exhibits A and B on the following pages illustrate the general project location and an aerial image of the site.



EXHIBIT A – PROJECT LOCATION MAP

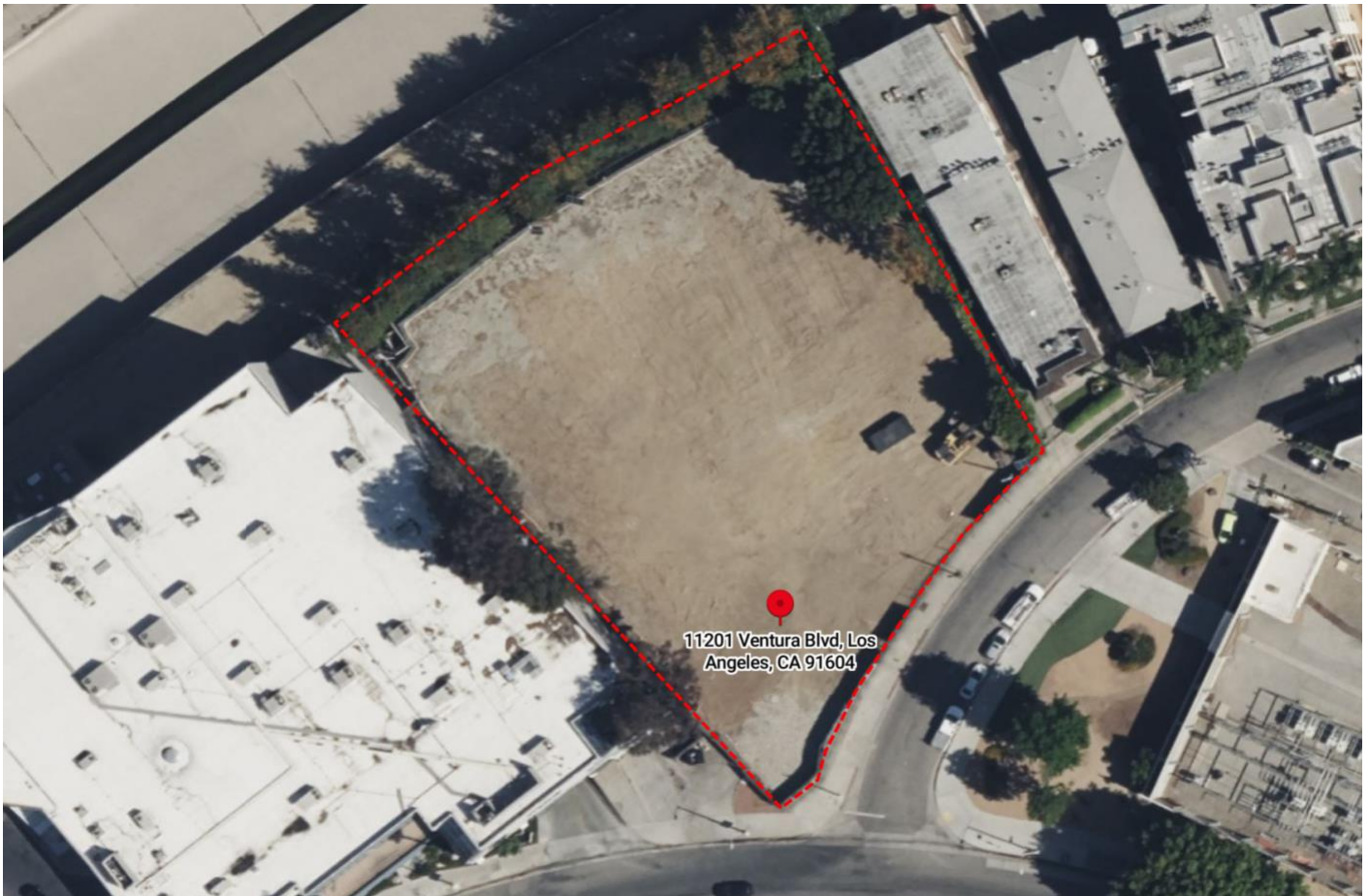


Source – Bing Maps
No Scale

4260 N. Arch Drive, Los Angeles, CA 91604



EXHIBIT B – AERIAL IMAGE OF THE PROJECT SITE



Source – Bing Maps
No Scale

4260 N. Arch Drive, Los Angeles, CA 91604



Project Description

The future site of The Crescent Apartments (Project) encompasses approximately 1 acre (43,560 sq. ft.) and is located at 4260 N. Arch Drive in the City of Los Angeles. Commercial buildings and surface parking were recently demolished and the site has been graded and is vacant of any structures or hardscape. The property is bounded by existing retail structures to the west, Arch Drive to the east, the Los Angeles River to the north, and Ventura Boulevard to the south.

A 2020 Demolition Permit allowed the removal of 10 non-protected private property trees, and as stated above, the property owner to the west removed 7 non-protected private property trees on the southwest edge of the site immediately adjacent to their building. No Ordinance-protected trees were encountered on or directly adjacent to the property.

TREE ASSESSMENT METHODOLOGY AND DATA PRESENTATION

Project Trees

Carlberg arborists and field technicians conducted the tree inventory on June 29, 2023. Weather conditions were mostly sunny throughout the duration of the inventory.

The tree inventory was conducted on foot. We walked the entire project site to inventory and assess all onsite trees and all offsite trees whose canopies or protected zones² extended into the project site.

The trees were identified, their health and structural condition evaluated³, trunk diameters measured, heights and canopy spreads approximated, and trunk locations plotted on the topographic survey map provided to us by the project team. More specifically, the inventory included the following assessment factors for protected and non-protected, onsite, immediately offsite, and street trees:

- **Tree Number** (unique tree number engraved on an aluminum tag affixed to each tree, as access allowed)
- **Botanical and Common Name**
- **Trunk Diameter** (diameter at standard height (DSH) / diameter at breast height (DBH) is measured at 4.5 feet above natural grade, or as indicted in the spreadsheet if deviated)
- **Indication** if the tree is a sapling or has a diameter of less than 4 inches
- **Height and Canopy Spread** (approximated)
- **Physiological Condition (health)**
- **Structural Condition**
- **Presence of infectious tree diseases and / or pests**
- **Treatments** (if pests or diseases are outwardly apparent, treatment is generally recommended, but no specific treatment will be called out since only a licensed pest control advisor may opine on specific treatments)
- **Expert opinion** if the tree appears to be naturally occurring or intentionally planted
- **Photographs of All Trees** (or groups of trees where applicable)
- **Leaf photographs** close-up of the individual leaf

² 'Protected zone' equals 15 feet from the dripline of a tree or 15 feet from the trunk of an unbalanced or young tree, whichever is greater.

³ Each tree is assigned two letter grades, one for overall health and one for structure. Definitions for the letter grades are included in the appendices of this report.



Field data was collected on tablets, tree trunk locations were generally mapped on a 50-scale, 36" x 48" topographic sheet map, and photographs were recorded with digital cameras. Tree identification numbers, trunk locations, and tree canopies with protection zones are graphically represented on the Tree Location Exhibit prepared by Carlberg in AutoCAD. Protected and non-protected trees are color-coded as required by the Template and the Ordinance.

A Tree Photograph Exhibit provides captioned photographs of the trees and provides an idea of site context, tree densities, conformation, and vigor. Photographs of a leaf or leaves, as appropriate, for each of the different inventoried tree species are included in the Tree Leaf Photographic Exhibit.

OBSERVATIONS

PROJECT SITE TREES

We inventoried and assessed 51 trees of 10 species on and immediately adjacent to the one-acre property: ten of the inventoried trees are off-site, overhanging trees.

Of the 51 trees, none are Ordinance-Protected trees (of size). **Table 2** summarizes the 10 types of trees found, their onsite, offsite, or street tree status, and how many of each type are included in the inventory.

**TABLE 2 – SUMMARY OF INVENTORIED PROJECT SITE, IMMEDIATE OFFSITE
AND IMMEDIATELY ADJACENT STREET TREES**

COMMON NAME	BOTANICAL NAME	TOTAL NO. ONSITE	TOTAL NO. OFFSITE PRIVATE	TOTAL NO. STREET TREE	TOTAL NO. TREE SPECIES
Chinese elm	<i>Ulmus parvifolia</i>	1			1
coast live oak	<i>Quercus agrifolia</i>	1			1
glossy privet	<i>Ligustrum lucidum</i>	5			5
holly oak	<i>Quercus ilex</i>	1			1
Indian laurel fig	<i>Ficus microcarpa</i>	13			13
lemon-scented gum	<i>Corymbia citriodora</i>	1			1
shamel ash	<i>Fraxinus uhdei</i>	2			2
silk oak	<i>Grevillea robusta</i>	9	10		19
silver dollar gum	<i>Eucalyptus polyanthemos</i>	7			7
Southern California black walnut	<i>Juglans californica</i>	1			1
		41	10	0	51



Exhibit C – Reduced Copy of the Tree Location Exhibit on page 13 provides an illustrative presentation of the existing trees

Exhibit H of the appendices includes **Table 8 - Tree Inventory Field Data**, which comprises the complete field data spreadsheets for all trees. The Tree Photograph Exhibit, included as **Exhibit I**, provides captioned photographs of the trees, and provides an idea of site context, tree densities, conformation, and vigor. Photographs of leaves for each of the different inventoried tree species are included in **Exhibit J – Tree Leaf Photographs**.

The following **Tables 3-5** summarize the offsite trees and private property trees. Complete field data information on all other inventoried trees can be found in **Exhibit H** as mentioned above.

TABLE 3 – SUMMARY OF OFFSITE TREES

OFF SITE (OS)	TREE ID NO.	COMMON NAME	BOTANICAL NAME	DSH /DBH (IN.) 2017	DSH /DBH (IN.) 2023	DSH < 4" OR SAPLING	HEIGHT (FT.)	CANOPY N (FT.)	CANOPY E (FT.)	CANOPY S (FT.)	CANOPY W (FT.)	HEALTH GRADE	STRUCTURE GRADE
OS	37	silk oak	<i>Grevillea robusta</i>	10.5	11.1		35	4	1	15	8	A-	B
OS	38	silk oak	<i>Grevillea robusta</i>	20	21.2		40	18	15	15	15	A	B+
OS	39	silk oak	<i>Grevillea robusta</i>	16	16.9		40	14	9	12	13	A	B
OS	40	silk oak	<i>Grevillea robusta</i>	12.5	12.8		35	15	11	16	10	A	B
OS	41	silk oak	<i>Grevillea robusta</i>	20	21.8		40	9	11	13	10	A	A-
OS	42	silk oak	<i>Grevillea robusta</i>	9.5	10.3		30	15	4	5	14	B	B
OS	43	silk oak	<i>Grevillea robusta</i>	20.5	21.7		40	7	5	25	14	A	C
OS	44	silk oak	<i>Grevillea robusta</i>	14	15		40	15	10	12	15	A-	B
OS	45	silk oak	<i>Grevillea robusta</i>	18	19.5		35	10	4	12	12	A	B
OS	46	silk oak	<i>Grevillea robusta</i>	32.5	33.1		40	30	20	18	22	A	C



TABLE 4 – SUMMARY OF PRIVATE PROPERTY TREES

OFFSITE (OS)	TREE ID NO.	COMMON NAME	BOTANICAL NAME	DSH /DBH (IN.) 2017	DSH /DBH (IN.) 2023	DSH < 4" OR SAPLING	HEIGHT (FT.)	CANOPY N (FT.)	CANOPY E (FT.)	CANOPY S (FT.)	CANOPY W (FT.)	HEALTH GRADE	STRUCTURE GRADE
	1	fern pine	<i>Afrocarpus falcatus</i>	14		Tree removed per 2020 Demolition Permit							
	2	fern pine	<i>Afrocarpus falcatus</i>	14.5		Tree removed per 2020 Demolition Permit							
	3	queen palm	<i>Syagrus romanzoffiana</i>	18' BT		Tree removed per 2020 Demolition Permit							
	4	queen palm	<i>Syagrus romanzoffiana</i>	18' BT		Tree removed per 2020 Demolition Permit							
	5	fern pine	<i>Afrocarpus falcatus</i>	8.5		Tree removed per 2020 Demolition Permit							
	6	silver dollar gum	<i>Eucalyptus polyanthemos</i>	23	Stump sprout		8	6	6	4	4	B	B
	7	silver dollar gum	<i>Eucalyptus polyanthemos</i>	21.5	Stump sprout		8	6	6	4	4	B	B
	8	silver dollar gum	<i>Eucalyptus polyanthemos</i>	15	Stump sprout		8	6	6	3	3	B	B
	9	silver dollar gum	<i>Eucalyptus polyanthemos</i>	16	Stump sprout		8	7	7	7	7	B	B
	10	lemon-scented gum	<i>Corymbia citriodora</i>	20.5	No stump remaining								
	11	silver dollar gum	<i>Eucalyptus polyanthemos</i>	31.5	Stump sprout		7	5	4	2	2	B	B
	12	silver dollar gum	<i>Eucalyptus polyanthemos</i>	20	Stump sprout		10	5	5	2	2	B	B
	13	silver dollar gum	<i>Eucalyptus polyanthemos</i>	9, 12, 19	Stump sprout		7	9	11	4	4	B	B



TABLE 4 – SUMMARY OF PRIVATE PROPERTY TREES

OFFSITE (OS)	TREE ID NO.	COMMON NAME	BOTANICAL NAME	DSH /DBH (IN.) 2017	DSH /DBH (IN.) 2023	DSH < 4" OR SAPLING	HEIGHT (FT.)	CANOPY N (FT.)	CANOPY E (FT.)	CANOPY S (FT.)	CANOPY W (FT.)	HEALTH GRADE	STRUCTURE GRADE
	14	lemon-scented gum	<i>Corymbia citriodora</i>	18.5	Stump sprout		14	5	2	2	0	B	B
	15	silk oak	<i>Grevillea robusta</i>	13	13.7		40	10	10	15	13	A-	C
	16	Indian laurel fig	<i>Ficus microcarpa</i>	14	15.6		45	5	13	15	6	A	A
	17	Indian laurel fig	<i>Ficus microcarpa</i>	12.5	14.4		45	4	13	7	3	A	A
	18	Indian laurel fig	<i>Ficus microcarpa</i>	15.5	17.9		45	2	10	25	21	A	A
	19	Indian laurel fig	<i>Ficus microcarpa</i>	11	12.3		45	2	10	4	10	A	A
	20	Indian laurel fig	<i>Ficus microcarpa</i>	11	11.3		45	4	15	3	3	A	A
	21	Indian laurel fig	<i>Ficus microcarpa</i>	13.5	15.3		45	6	7	10	25	A	A
	22	Indian laurel fig	<i>Ficus microcarpa</i>	9.5	9.5		40	3	15	4	0	A	A
	23	Indian laurel fig	<i>Ficus microcarpa</i>	9.5	10.6		40	5	5	7	5	A	A
	24	Indian laurel fig	<i>Ficus microcarpa</i>	9.5	10.5		40	4	4	6	6	A	A
	25	Indian laurel fig	<i>Ficus microcarpa</i>	9	10.3		40	3	4	4	15	A	A
	26	Indian laurel fig	<i>Ficus microcarpa</i>	12	N/A		Tree removed per 2020 Demolition Permit						
	27	Indian laurel fig	<i>Ficus microcarpa</i>	9	N/A		Tree removed per 2020 Demolition Permit						



TABLE 4 – SUMMARY OF PRIVATE PROPERTY TREES

OFFSITE (OS)	TREE ID NO.	COMMON NAME	BOTANICAL NAME	DSH /DBH (IN.) 2017	DSH /DBH (IN.) 2023	DSH < 4" OR SAPLING	HEIGHT (FT.)	CANOPY N (FT.)	CANOPY E (FT.)	CANOPY S (FT.)	CANOPY W (FT.)	HEALTH GRADE	STRUCTURE GRADE
	28	Indian laurel fig	<i>Ficus microcarpa</i>	11	13.8, 4.8		40	7	3	7	15	A	A
	29	holly oak	<i>Quercus ilex</i>	3, 5.5	4.1, 6.4		20	12	4	0	8	A	B
	30	silk oak	<i>Grevillea robusta</i>	18	18.6		40	8	15	20	10	A	B
	31	silk oak	<i>Grevillea robusta</i>	15	16.4		40	15	10	14	9	A-	B-
	32	silk oak	<i>Grevillea robusta</i>	9	10		30	12	10	10	0	B	B-
	33	silk oak	<i>Grevillea robusta</i>	13	14.2		40	16	8	14	12	B	B
	34	silk oak	<i>Grevillea robusta</i>	12	12.9		40	13	10	15	8	A	B
	35	silk oak	<i>Grevillea robusta</i>	16	17.3		35	10	10	11	10	A	B+
	36	silk oak	<i>Grevillea robusta</i>	13	13.7		35	14	11	15	15	A	B
	47	Indian laurel fig	<i>Ficus microcarpa</i>	Not of size	10, 7, 5		30	12	14	12	12	A	B
	48	Chinese elm	<i>Ulmus parvifolia</i>	Not of size	1.3		12	6	7	7	7	A	A-
	49	glossy privet	<i>Ligustrum lucidum</i>	Not of size	1.4		14	5	5	3	3	A	A-
	50	glossy privet	<i>Ligustrum lucidum</i>	Not of size	1		14	5	5	3	3	A	A-
	51	glossy privet	<i>Ligustrum lucidum</i>	Not of size	1, 1		10	4	4	3	3	A	A-



TABLE 4 – SUMMARY OF PRIVATE PROPERTY TREES

OFFSITE (OS)	TREE ID NO.	COMMON NAME	BOTANICAL NAME	DSH /DBH (IN.) 2017	DSH /DBH (IN.) 2023	DSH < 4" OR SAPLING	HEIGHT (FT.)	CANOPY N (FT.)	CANOPY E (FT.)	CANOPY S (FT.)	CANOPY W (FT.)	HEALTH GRADE	STRUCTURE GRADE
	52	glossy privet	<i>Ligustrum lucidum</i>	Not of size	1.2		12	5	5	3	3	A	A-
	53	glossy privet	<i>Ligustrum lucidum</i>	Not of size	1.2		10	4	4	3	3	A	A-
	54	Southern California black walnut	<i>Juglans californica</i>	Not of size	1		8	7	6	4	4	A	A-
	55	coast live oak	<i>Quercus agrifolia</i>	Not of size	3.6		14	10	5	5	9	A	B+
	56	Indian laurel fig	<i>Ficus microcarpa</i>	N/A	10.6, 4.6		25	10	10	8	9	A	B
	57	shamel ash	<i>Fraxinus uhdei</i>	Not of size	3.9		20	4	10	7	7	A-	B-
	58	shamel ash	<i>Fraxinus uhdei</i>	Not of size	2.9		20	4	12	6	4	A-	B-
	59	silk oak	<i>Grevillea robusta</i>	Not of size	3.4		22	8	7	7	8	A	B

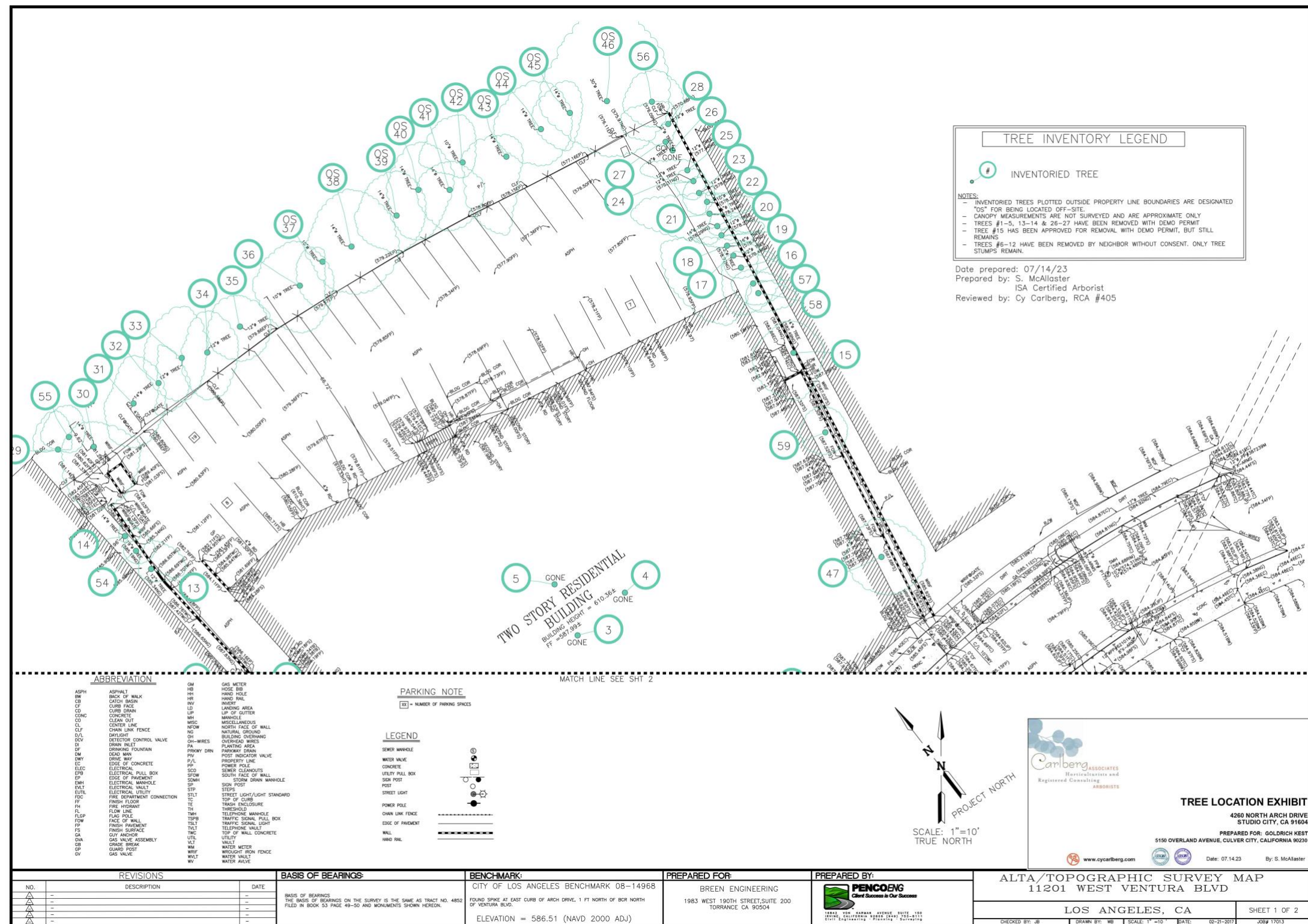
In our opinion, it is obvious that the private property and street trees associated with this project have been planted into the landscape.

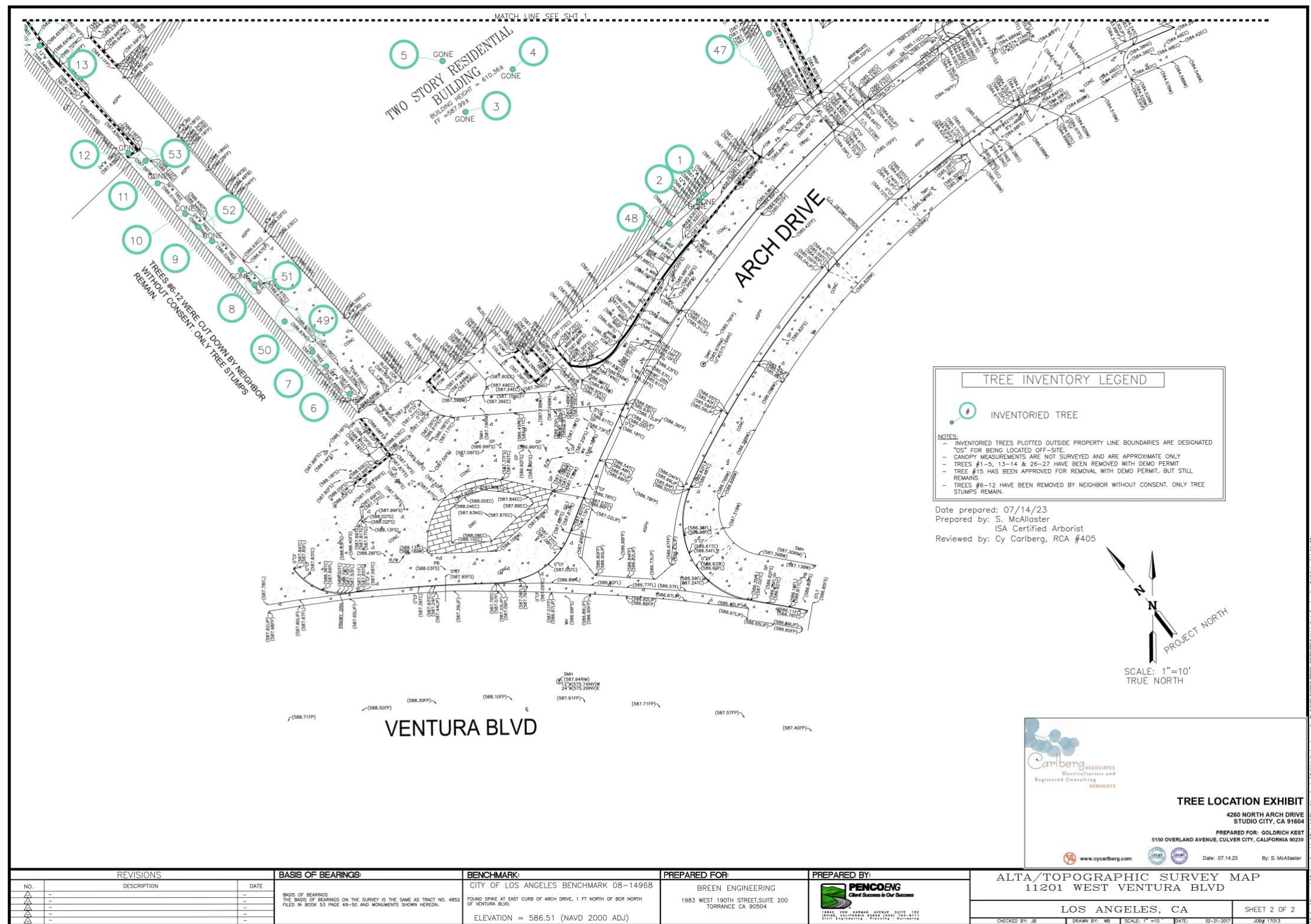
Dbh: diameter at breast height – a forestry term used to describe a tree trunk’s diameter measured at 4.5 feet above grade; typically used as a representation of tree size. Also known as Diameter at Shoulder Height.

BT – Brown Trunk. Because palms do not generally increase in trunk diameter as they mature, they are measured in their brown trunk height, the distance between natural grade and the newest emerging spear.



EXHIBIT C – REDUCED COPY OF THE TREE LOCATION EXHIBIT (NOT TO SCALE)





DISCUSSION OF PROJECT IMPACTS

There are numerous potential consequences related to residential construction that may affect trees during and after a typical construction process. They are as follows:

- EXCAVATION - ROOT SEVERANCE
- SOIL COMPACTION (DURING AND POST-CONSTRUCTION)
- ALTERATION OF THE WATER TABLE/SITE DRAINAGE
- CHANGES IN GRADE – CUT OR FILL
- SUBSTANTIAL TRIMMING OF CANOPY OR ROOTS

A. Excavation/Trenching—Root Severance

Trenching can include excavation for irrigation, utility, or drainage lines. Trenching and excavation can also be required for foundations of structures and free-standing walls. Trenching and excavation removes soil and tree roots. When performed in the critical root zone (approximately 5x the trunk diameter of any tree) or within the dripline (outer edge of the natural canopy), there is the potential to remove large areas of root mass, and to shatter and tear roots that will remain connected to the tree(s). Torn and shattered roots cannot callous over or generate new roots in the manner of cleanly-cut roots. Torn and shattered roots are potentially unstable, are entry points for disease and decay organisms, and eventually die. Significant root loss and/or severance can be critical to the health and structure of trees to remain in a landscape.

B. Soil Compaction

Soil compaction is a complex set of physical, chemical, and biological constraints on tree growth. Principal components leading to limited growth are the loss of aeration and pore space, poor gas exchange with the atmosphere, lack of available water, and mechanical hindrance of root growth. Soil compaction is considered the largest single factor responsible for the decline of trees on construction sites.

C. Changes in Grade

Changes in grade, by the addition or removal of soil (filling or cutting), can be injurious. Lowering the grade around trees can have immediate and long-term effects on trees. The addition of soil and compaction for common engineering practices also results in long-term effects on trees. Typically, the vast majority of the root mass exists within the top three feet of soil, and most of the fine roots active in water and nutrient absorption are in the top 12 inches.

D. Alteration of the Water Table/Site Drainage

The water table is the upper surface of the zone in which soil macropores are saturated with water; water tables may vary seasonally. Rather than a flat, static surface, the water moves down a gradient. Its depth varies, depending on the structure of the soil and rocks through which it flows. A perched water table may form in soils that have impermeable strata. Swamps are created where the water table intersects level ground.

Structures such as footings, basements, subterranean buildings, and retaining walls may intercept impermeable layers in the soil on which water perches. If adequate drainage is not provided, the water table uphill may gradually rise and interfere with tree roots. This type of damage usually takes a period of time to be recognized and diagnosed.⁴

⁴ Nelda Matheny and James R. Clark, Trees and Development: A Technical Guide to Preservation of Trees During Land Development, (Champaign, Illinois: International Society of Arboriculture, 1998), pp. 88-89.



Numerous trees are particularly susceptible to root infections, such as *Armillaria* and *Phytophthora*. Both of these fungal diseases can progressively weaken a root system, resulting in dead branches in the canopy of the tree, loss of stability of the entire tree because of decaying roots, and premature death of the tree. Trees form roots in accordance with existing soil composition and water availability. Minor drainage changes in the winter and spring months are significant to the health of the trees.

E. Canopy and Root Pruning

Leaves perform vital functions for trees. Through photosynthesis, they manufacture sugars that feed the tree and are used to create the building blocks of wood. Leaves help to move water and nutrients up from the roots and around the tree through their vascular system and cool the tree down through transpiration.

Leaves moderate temperatures beneath the tree, lessen the drying action of winds, and intercept rainfall, which reduces erosion. On the ground, they moderate soil temperatures, retain moisture, and as they decompose, return their nutrients back to the soil to be recycled and reused by the tree. A healthy canopy of leaves is essential to ensure an adequate food supply for the roots to perform their important functions.

Typically, root systems extend outward past the dripline, two to four times the diameter of the average tree's crown. Main root functions include water and mineral conduction, food and water storage, and anchorage of the tree to the soil. Root systems consist of short-lived, fine-textured, feeder roots and larger, woody, perennial roots. Feeder roots, while averaging only 1/16 inch in diameter, constitute the major portion of the root system's surface area. Feeder roots act like sponges, growing predominantly outward and upward from the large roots near the soil surface where minerals, water, and oxygen are usually abundant. Larger, woody roots and their subordinates tend to annually increase in diameter and grow horizontally. Predominantly located in the top 6 to 24 inches of the soil, these structural and storage roots usually do not grow deeper than three to seven feet. Root growth is generally inhibited by soil compaction and temperature. As the depth increases, soil compaction increases, and the availability of water, minerals, oxygen, and soil temperature all decrease.

Removal of significant amounts of the canopy and/or root system can lead to both immediate and long-term detrimental effects on trees. Effects can be physiological, structural, or both.

Trees to be preserved or removed, along with the proposed location of recommended protective fencing, are illustrated on the reduced and full-sized copies of the Tree Impact Exhibit and Protection Plan. The reduced copies are included as **Exhibit D** on page 23.

Tables 5-7 on the following pages provide details of the trees proposed for preservation and removal. As summarized in the tables:

- **0 street trees will be removed**
- **0 street trees will be preserved**
- **23 non-protected tree will be removed**
- **16 non-protected trees will be preserved**
- **0 offsite trees will be removed**
- **10 offsite trees will be preserved**



TABLE 5 – OFF-SITE TREES TO BE PRESERVED

Street or Parkway (ST)	Tree ID No.	Common Name	Botanical Name	DSH / DBH (in.)	Brown Trunk (palms – Ft.)	Height (Ft.)	Canopy N (Ft.)	Canopy E (Ft.)	Canopy S (Ft.)	Canopy W (Ft.)	Health Grade	Structure Grade	Naturally Occurring (N) or Planted (P)	Reason for Removal	Replacement Ratio
OS	37	silk oak	<i>Grevillea robusta</i>	11.1		35	4	1	15	8	A-	B	P		
OS	38	silk oak	<i>Grevillea robusta</i>	21.2		40	18	15	15	15	A	B+	P		
OS	39	silk oak	<i>Grevillea robusta</i>	16.9		40	14	9	12	13	A	B	P		
OS	40	silk oak	<i>Grevillea robusta</i>	12.8		35	15	11	16	10	A	B	P		
OS	41	silk oak	<i>Grevillea robusta</i>	21.8		40	9	11	13	10	A	A-	P		
OS	42	silk oak	<i>Grevillea robusta</i>	10.3		30	15	4	5	14	B	B	P		
OS	43	silk oak	<i>Grevillea robusta</i>	21.7		40	7	5	25	14	A	C	P		
OS	44	silk oak	<i>Grevillea robusta</i>	15		40	15	10	12	15	A-	B	P		
OS	45	silk oak	<i>Grevillea robusta</i>	19.5		35	10	4	12	12	A	B	P		



OS	46	silk oak	<i>Grevillea robusta</i>	33.1		40	30	20	18	22	A	C	P		
----	----	----------	--------------------------	------	--	----	----	----	----	----	---	---	---	--	--

TABLE 6 – NON-PROTECTED TREES TO BE REMOVED

Off-Site (OS)	Tree ID No.	Common Name	Botanical Name	DSH / DBH (in.)	Brown Trunk (palms – Ft.)	Height (Ft.)	Canopy N (Ft.)	Canopy E (Ft.)	Canopy S (Ft.)	Canopy W (Ft.)	Health Grade	Structure Grade	Naturally Occurring (N) or Planted (P)	Reason for Removal	Replacement Ratio
	6	silver dollar gum	<i>Eucalyptus polyanthemos</i>	20 x <1		8	6	6	4	4	A-	C	P	Development	
	7	silver dollar gum	<i>Eucalyptus polyanthemos</i>	20 x <1		8	6	6	4	4	A-	C	P	Development	
	8	silver dollar gum	<i>Eucalyptus polyanthemos</i>	15 x <1		28	6	6	3	3	A-	C	P	Development	
	9	silver dollar gum	<i>Eucalyptus polyanthemos</i>	15 x <1		50	7	7	7	7	A-	C	P	Development	
	11	silver dollar gum	<i>Eucalyptus polyanthemos</i>	12 x <1		7	5	4	2	2	B+	C	P	Development	
	12	silver dollar gum	<i>Eucalyptus polyanthemos</i>	15 x <1		10	5	5	2	2	B	C	P	Development	
	15	silk oak	<i>Grevillea robusta</i>	13.9		40	10	10	15	13	A-	C	P	Demolition Permit	



16	Indian laurel fig	<i>Ficus microcarpa</i>	15.6	45	5	13	15	6	A	A	P	Development
30	silk oak	<i>Grevillea robusta</i>	18.6	40	8	15	20	10	A	B	P	Development
31	silk oak	<i>Grevillea robusta</i>	16.4	40	15	10	14	9	A-	B-	P	Development
32	silk oak	<i>Grevillea robusta</i>	10	30	12	10	10	0	B	B-	P	Development
34	silk oak	<i>Grevillea robusta</i>	12.9	40	13	10	15	8	A	B	P	Development
35	silk oak	<i>Grevillea robusta</i>	17.3	35	10	10	11	10	A	B+	P	Development
36	silk oak	<i>Grevillea robusta</i>	13.7	35	14	11	15	15	A	B	P	Development
47	Indian laurel fig	<i>Ficus microcarpa</i>	10, 7, 5	30	12	14	12	12	A	B	P	Development
48	Chinese elm	<i>Ulmus parvifolia</i>	1.3	12	6	7	7	7	A	A-	N	Development
49	glossy privet	<i>Ligustrum lucidum</i>	1.4	14	5	5	3	3	A	A-	P	Development
51	glossy privet	<i>Ligustrum lucidum</i>	1, 1	10	4	4	3	3	A	A-	P	Development



53	glossy privet	<i>Ligustrum lucidum</i>	1.2	10	4	4	3	3	A	A-	P	Development
54	Southern California black walnut	<i>Juglans californica</i>	1	8	7	6	4	4	A	A-	N	Development
56	Indian laurel fig	<i>Ficus microcarpa</i>	10.6, 4.6	25	10	10	8	9	A	B	P	Development
57	shamel ash	<i>Fraxinus uhdei</i>	3.9	20	4	10	7	7	A-	B-	N	Development
58	shamel ash	<i>Fraxinus uhdei</i>	2.9	20	4	12	6	4	A-	B-	N	Development

TABLE 7 – NON-PROTECTED TREES TO BE PRESERVED

Street or Parkway (ST)	Tree ID No.	Common Name	Botanical Name	DSH / DBH (in.)	Brown Trunk (palms – Ft.)	Height (Ft.)	Canopy N (Ft.)	Canopy E (Ft.)	Canopy S (Ft.)	Canopy W (Ft.)	Health Grade	Structure Grade	Naturally Occurring (N) or Planted (P)	Reason for Removal	Replacement Ratio
	17	Indian laurel fig	<i>Ficus microcarpa</i>	14.4		45	4	13	7	3	A	A	P		
	18	Indian laurel fig	<i>Ficus microcarpa</i>	17.9		45	2	10	25	21	A	A	P		
	19	Indian laurel fig	<i>Ficus microcarpa</i>	12.3		45	2	10	4	10	A	A	P		
	20	Indian laurel fig	<i>Ficus microcarpa</i>	11.3		45	4	15	3	3	A	A	P		



21	Indian laurel fig	<i>Ficus microcarpa</i>	15.3	45	6	7	10	25	A	A	P
22	Indian laurel fig	<i>Ficus microcarpa</i>	9.5	40	3	15	4	0	A	A	P
23	Indian laurel fig	<i>Ficus microcarpa</i>	10.6	40	5	5	7	5	A	A	P
24	Indian laurel fig	<i>Ficus microcarpa</i>	10.5	40	4	4	6	6	A	A	P
25	Indian laurel fig	<i>Ficus microcarpa</i>	10.3	40	3	4	4	15	A	A	P
28	Indian laurel fig	<i>Ficus microcarpa</i>	13.8, 4.8	40	7	3	7	15	A	A	P
29	holly oak	<i>Quercus ilex</i>	4.1, 6.4	20	12	4	0	8	A	B	P
33	silk oak	<i>Grevillea robusta</i>	14.2	40	16	8	14	12	B	B	P
50	glossy privet	<i>Ligustrum lucidum</i>	1	14	5	5	3	3	A	A-	P
52	glossy privet	<i>Ligustrum lucidum</i>	1.2	12	5	5	3	3	A	A-	P
55	coast live oak	<i>Quercus agrifolia</i>	3.6	14	10	5	5	9	A	B+	N

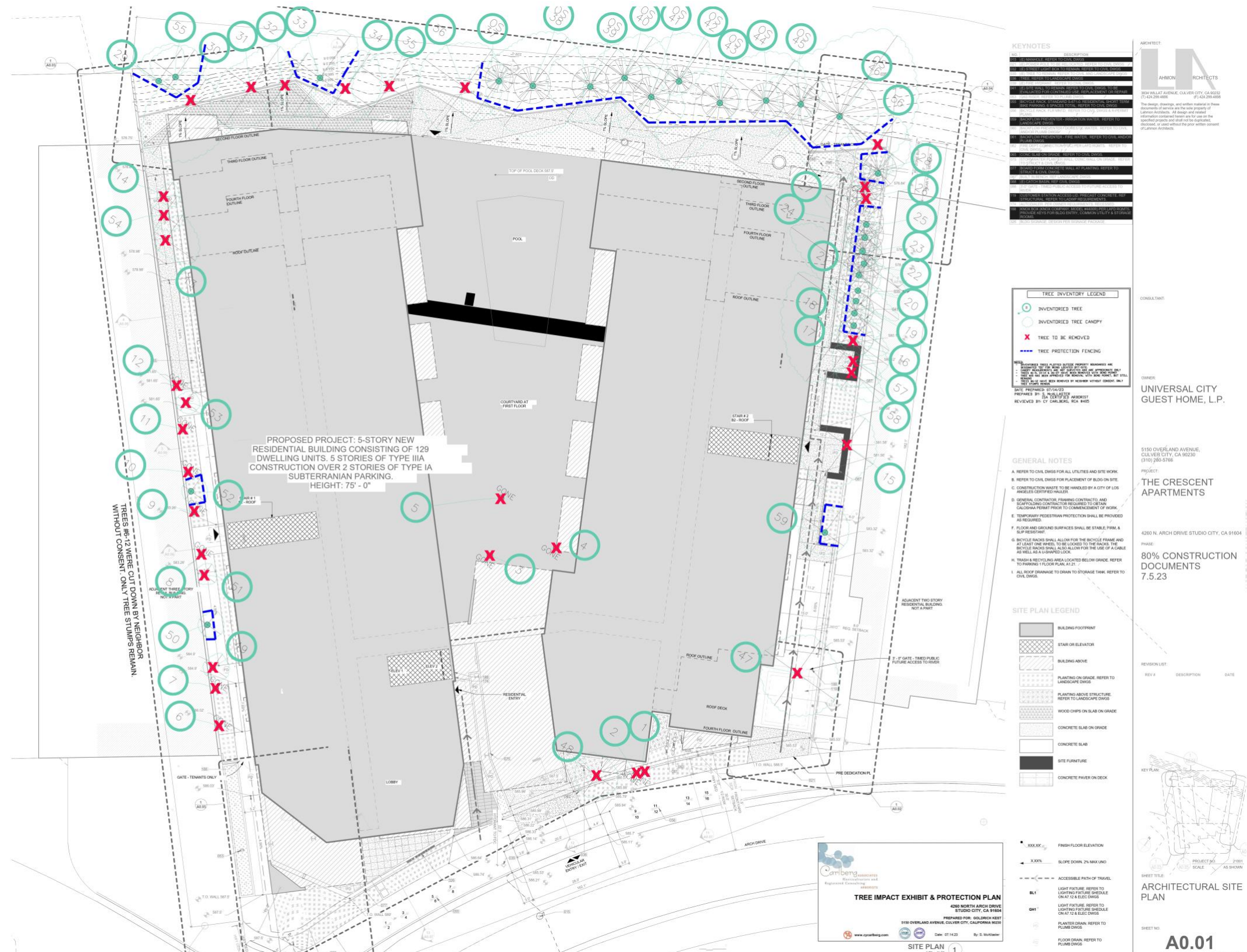


59	silk oak	<i>Grevillea robusta</i>	3.4	22	8	7	7	8	A	B	N
----	----------	--------------------------	-----	----	---	---	---	---	---	---	---

No Ordinance-Protected or off-site trees are proposed for removal, therefore there are no tables for removals of Ordinance-protected or off-site trees.



EXHIBIT D – TREE IMPACT EXHIBIT AND PROTECTION PLAN



CONCLUSION AND RECOMMENDATIONS

Implementation of the Project, including demolition, grading, construction of improvements, and installation of streets and utilities for the proposed new parking, roads (driveways), new entry, buildings and utility changes will likely result in the following:

Total Offsite Ordinance- Protected trees = 0

Removals = 0

Preserve = 0

Total Onsite Ordinance- Protected trees = 0

Removals = 0

Preserve = 0

Total Street trees = 0

Removals = 0

Preserve = 0

Total Offsite Non-Protected trees = 10

Removals = 0

Preserve = 10

Total Non-Protected trees = 41

Removals = 25

Preserve = 16



In my professional opinion, the following Best Management Practices (BMPs), recommendations, and conditions should be implementation:

General Recommendations and Best Management Practices:

1. Any demolition, digging, excavating, or trenching within the protected zone of any tree to remain shall be monitored by the project arborist.
2. Exposed roots to remain should be covered with burlap, carpet remnants or other material that may be kept moist until soil can be replaced.
3. This report shall be part of the set of plans given to the contractors. Contractors should be familiar with the specific instructions and responsibilities pertaining to protected trees. It is recommended that a professional arborist be retained and meet with the contractor and his personnel prior to commencement of the project.
4. If canopy pruning is found to be necessary for trees to remain, it should only be performed by a qualified ISA Certified Arborist or ISA Certified Tree Worker. Climbing "gafts" shall not be used by any tree climber except in an emergency to reach an injured climber or when removing a tree.
5. Pruning or Removals shall occur outside of the nesting bird season as defined by the California Department of Fish and Wildlife and other jurisdictional agencies. If removals must occur in nesting bird season, biological monitoring should be required.
6. If required, a maintenance and monitoring program for mitigation trees will be included in the monitoring and reporting program that will be developed by the project arborist. This program will be developed in coordination with the project landscape architect. At least three (3) years of monitoring for mitigation trees is recommended. The Urban Forestry Division will dictate the actual monitoring period for mitigation trees.
7. Equipment, materials, and vehicles shall not be stored, parked, or operated within the protected zones of trees to remain.
8. Equipment with overhead exhaust shall not be placed in such a manner as to scorch overhanging branches or foliage. Smaller equipment shall be used in such areas as deemed necessary by the monitoring arborist.
9. Five (5) foot high chain link fencing shall be installed as illustrated on the Tree Protection Plan prior to submission of this report to the Urban Forestry Division of the City of Los Angeles (reports may not be deemed complete by the Division if fencing is not in place). Photographs of the fencing should be submitted with the report. When performing their inspection, Urban Forestry requires that the protective fencing be in place.

Please feel welcome to contact me at our Santa Monica office if you have any immediate questions or concerns.

Respectfully submitted,



Cy Carlberg, Registered Consulting Arborist
Principal, Carlberg Associates



This report comprises a total of 64 pages. Reduced copies of graphics are within the report; full-size graphic files have been submitted electronically. Unauthorized separation or removal of any portion of this report deems it invalid as a whole.

Conditions represented in this report are limited to the inventory dates and times. Formal risk assessments were not performed for the purposes of this report. Ratings for health, aesthetics, and structure do not constitute a health or structural guarantee beyond that date and time.

CERTIFICATION OF PERFORMANCE

I, Cy Carlberg, certify:

- That I have personally inspected the tree(s) and/or the property referred to in this report and have stated my findings accurately. The extent of the evaluation and appraisal is stated in the attached report and the Terms of Assignment.
- That I have no current or prospective interest in the vegetation or the property that is the subject of this report and have no personal interest or bias with respect to the parties involved.
- That the analysis, opinions, and conclusions stated herein are my own.
- That my analysis, opinions, and conclusions were developed, and this report has been prepared according to commonly accepted arboricultural practices.
- That no one provided significant professional assistance to the consultant, except as indicated within the report.
- That my compensation is not contingent upon the reporting of a predetermined conclusion that favors the cause of the client or any other party.

I further certify that I am a Registered Consulting Arborist and member of the American Society of Consulting Arborists, and that I acknowledge, accept, and adhere to the ASCA Standards of Professional Practice. I am an International Society of Arboriculture Certified Arborist and Qualified Tree Risk Assessor and have been involved in the practice of arboriculture and the study of trees for over twenty-five years.

Signed:



Date: July 14, 2023

Cy Carlberg
ASCA Registered Consulting Arborist #405
ISA Certified Arborist, WE-0575A
Qualified Tree Risk Assessor
CAUFC Certified Urban Forester #013



ARBORIST DISCLOSURE STATEMENT

Arborists are tree specialists who use their education, knowledge, training and experience to examine trees, recommend measures to enhance the beauty and health of trees, and attempt to reduce the risk of living near trees. Clients may choose to accept or disregard the recommendations of the arborist, or to seek additional advice.

Arborists cannot detect every condition that could possibly lead to the structural failure of a tree. Trees are living organisms that fail in ways we do not fully understand. Conditions are often hidden within trees and below ground. Arborists cannot guarantee that a tree will be healthy or safe under all circumstances, or for a specified period of time. Likewise, remedial treatments, like any medicine, cannot be guaranteed.

Treatment, pruning and removal of trees may involve considerations beyond the scope of the arborist's services such as property boundaries, property ownership, site lines, disputes between neighbors, and other issues. Arborists cannot take such considerations into account unless complete and accurate information is disclosed to the arborist. An arborist should then be expected to reasonably rely upon the completeness and accuracy of the information provided.

Trees contribute greatly to our enjoyment and appreciation of life. Nonetheless, they are subject to the laws of gravity and physiological decline. Therefore, neither arborists nor tree owners can be reasonably expected to warrant unflinching predictability or elimination of risk.

Trees can be managed, but they cannot be controlled. To live near trees is to accept some degree of risk. The only way to eliminate all risk associated with trees is to eliminate all trees.



LIST OF CONTRIBUTORS AND RESUMES OF KEY STAFF

Ms. Cy Carlberg, Principal
Ms. Christy Cuba, Senior Arborist
Mr. Scott McAllaster, Staff Arborist and AutoCAD Master
Mr. Daniel Cowell, Staff Arborist, Biologist



**CY CARLBERG
CARLBERG ASSOCIATES**

828 Fifth Street, Suite 3 • Santa Monica • California • 90403
cy@cycarlberg.com • o: 310.451.4804 • www.cycarlberg.com

<u>Education</u>	B.S., Landscape Architecture, California State Polytechnic University, Pomona, 1985 Graduate, Arboricultural Consulting Academy, American Society of Consulting Arborists, Chicago, Illinois, February 2002 Graduate, Municipal Forestry Institute, Lied, Nebraska, 2012
<u>Experience</u>	Consulting Arborist, Carlberg Associates, 1998-present Manager of Grounds Services, California Institute of Technology, Pasadena, 1992-1998 Director of Grounds, Scripps College, Claremont, 1988-1992
<u>Certificates</u>	Certified Arborist (#WE-0575A), International Society of Arboriculture, 1990 Registered Consulting Arborist (#405), American Society of Consulting Arborists, 2002 Certified Urban Forester (#013), California Urban Forests Council, 2004 Qualified Tree Risk Assessor, International Society of Arboriculture, 2011

AREAS OF EXPERTISE

Ms. Carlberg is experienced in the following areas of tree management and preservation:

- Tree health and risk assessment
- Master Planning
- Historic landscape assessments, preservation plans, reports
- Tree inventories and reports to satisfy jurisdictional requirements
- Expert Testimony
- Post-fire assessment, valuation, and mitigation for trees and native plant communities
- Value assessments for native and non-native trees
- Pest and disease identification
- Guidelines for oak preservation
- Selection of appropriate tree species
- Planting, pruning, and maintenance specifications
- Tree and landscape resource mapping – GPS, GIS, and AutoCAD
- Planning Commission, City Council, and community meetings representation

PREVIOUS CONSULTING EXPERIENCE

Ms. Carlberg has overseen residential and commercial construction projects to prevent damage to protected and specimen trees. She has thirty-five years of experience in arboriculture and horticulture and has performed tree health evaluation, value and risk assessment, and expert testimony for private clients, government agencies, cities, school districts, and colleges. Representative clients include:

The Huntington Library and Botanical Gardens	The City of Claremont
The Los Angeles Zoo and Botanical Gardens	The City of Beverly Hills
The Rose Bowl and Brookside Golf Course, Pasadena	The City of Pasadena
Walt Disney Concert Hall and Gardens	The City of Los Angeles
The Art Center College of Design, Pasadena	The City of Santa Monica
Pepperdine University	Santa Monica/Malibu Unified School District
Loyola Marymount University	San Diego Gas & Electric
The Claremont Colleges (Pomona, Scripps, CMC, Harvey Mudd,	Los Angeles Department of Water and Power
Claremont Graduate University, Pitzer, Claremont University Center)	Rancho Santa Ana Botanic Garden, Claremont
Quinn, Emanuel, Urquhart and Sullivan (attorneys at law)	Latham & Watkins, LLP (attorneys at law)
Getty Trust – Eames House	Architectural Resources Group
Historic Resources Group	AHBE Landscape Architects
Mia Lehrer + Associates	Moule and Polyzoides, Architects and Urbanists

AFFILIATIONS

Ms. Carlberg serves with the following national, state, and community professional organizations:

- California Urban Forests Council, Board Member, 1995-2006
- Street Tree Seminar, Past President, 2000-present
- American Society of Consulting Arborists Academy, Faculty Member, 2003-2005; 2014
- American Society of Consulting Arborists, Board of Directors, 2013-2015
- Member, Los Angeles Oak Woodland Habitat Conservation Strategic Alliance, 2010-present



CHRISTINE CUBA

CARLBERG ASSOCIATES

828 Fifth Street, Suite 3 • Santa Monica • California • 90403

Satellite Office – 80 W. Sierra Madre Blvd., #241 • Sierra Madre • California • 91024

christy@cycarlberg.com • o: 626.428.5072 • www.cycarlberg.com

Education

B.A., Environmental Analysis & Design, Cum Laude, University of California, Irvine, 1993
Graduate, International Society of Arboriculture Certification Study Program, April 1998
Graduate, Consulting Academy, American Society of Consulting Arborists, February 2008

Experience

Senior Arborist/Associate, Carlberg Associates, 2011 - Present
Director of Environmental Services & Senior Arborist, Land Design Consultants, Pasadena, 1994 – 2011
Park Specialist/Naturalist, City of Monrovia, 1988-1996

Certificates

Certified Arborist, WE-1982A, International Society of Arboriculture, 1998
Registered Consulting Arborist, #502, American Society of Consulting Arborists, 2011
Qualified Tree Risk Assessor, International Society of Arboriculture, 2013

AREAS OF EXPERTISE

Ms. Cuba is experienced in the following areas of tree management and preservation:

- Tree health & risk assessments
- Inventories & reports for native and non-native trees
- Master planning
- Evaluation of trees for preservation, encroachment, relocation, restoration, and hazards
- Value assessments (appraisals) for native and non-native trees
- Post-fire inventories, assessments, and valuations for native and non-native trees
- Guidelines for tree preservation, planting, pruning and maintenance specifications
- Pest and disease identification
- Tree and landscape resource mapping – GPS, GIS, and AutoCAD
- Planning Commission, City Council, and community meetings representation
- Review of landscape plans for mitigation compliance & fire fuel modification planning
- Preparation of native habitat and woodland management plans
- Performance of long-term mitigation compliance monitoring & reporting
- Expert testimony

PREVIOUS CONSULTING EXPERIENCE

Ms. Cuba has performed hundreds of tree inventories, health evaluations, impact analyses, hazard, and value assessments for counties, cities, sanitation districts, and water districts, as well as private developers, architects, engineers, and homeowners. She has over 23 of experience in arboriculture and is trained in environmental planning, state and federal regulatory permitting, preparation of CEQA analyses, and habitat mitigation planning and implementation. Representative clients include:

City of Pasadena	San Diego Gas & Electric
City of Monrovia	Quinn, Emanuel, Urquhart and Sullivan (attorneys at law)
City of Santa Clarita	The New Home Company
City of Glendora	City of South Gate
Los Angeles County Fire Department	City of Sierra Madre
California Institute of Technology	Belzberg Architects
Mia Lehrer + Associates	Occidental College
Pulte/Centex Homes	Rose Bowl Stadium
Newhall Land and Farming	Las Encinas Hospital/Aurora Health Services
KOVAC Design Studio	The Claremont Colleges (Pomona College, Claremont University Consortium,
EPT Design	Claremont Graduate University)
Pamela Burton & Company	Gensler Architects
Chandler School	Mesivta of Greater Los Angeles

AFFILIATIONS

Ms. Cuba serves with the following national and regional professional organizations:

- Member, American Society of Consulting Arborists
- Member, International Society of Arboriculture, Western Chapter
- Member, Los Angeles Oak Woodland Habitat Conservation Strategic Alliance
- Past President (2015), Street Tree Seminar, Inc.



SCOTT MCALLASTER

CARLBERG ASSOCIATES

Satellite Office – 80 W. Sierra Madre Blvd., #241 • Sierra Madre • California • 91024
828 Fifth Street, Suite 3 • Santa Monica • California • 90403
scott@cycarlberg.com • m: 424.285.3334 • www.cycarlberg.com

Education B.A., Environmental Studies, University of California, Santa Barbara, 2000

Experience Project Planner & Senior Arborist, Land Design Consultants, Inc.
Pasadena, 1999 – 2014

Certificates Certified Arborist, WE-7011A, International Society of Arboriculture, 2004
Qualified Tree Risk Assessor, International Society of Arboriculture, 2015

AREAS OF EXPERTISE

Mr. McAllaster is experienced in the following areas of tree management and preservation:

- Tree health & risk assessments
- Inventories & reports for native and non-native trees
- Master planning
- Evaluation of trees for preservation, encroachment, relocation, restoration, and hazards
- Construction monitoring and reporting
- Value assessments (appraisals) for native and non-native trees
- Post-fire inventories, assessments, and valuations for native and non-native trees
- Guidelines for tree preservation, planting, pruning and maintenance specifications
- Tree and landscape resource mapping – GPS, GIS, and AutoCAD
- Planning Commission, City Council, and community meetings representation
- Review of landscape plans for mitigation compliance & fire fuel modification planning
- Performance of long-term mitigation compliance monitoring & reporting

PREVIOUS CONSULTING EXPERIENCE

Mr. McAllaster has performed hundreds of tree inventories, health evaluations, impact analyses, hazard, and value assessments for counties, cities, sanitation districts, and water districts, as well as private developers, architects, engineers, and homeowners. He has over 17 years of experience in arboriculture and is trained in environmental planning, state and federal regulatory permitting, preparation of CEQA analyses, and habitat mitigation planning and implementation. Representative clients include:

City of Pasadena	San Diego Gas & Electric
City of Santa Clarita	Corky McMillin Companies
City of Glendora	City of South Gate
Los Angeles County Fire Department	City of Arcadia
Los Angeles County Sanitation Districts	D2 Development
Newhall County Water District	Burrtec, Inc.
Pulte/Centex Homes	The Claremont Colleges
Newhall Land and Farming	The New Home Company
E & S Ring, Inc.	William Carey University
Hollywood Forever Cemetery	Claremont Golf Course
Archdiocese of Los Angeles	Universal Hilton
St. John's Hospital, Santa Monica	Gensler Architects
Kovac Architects	Marmol Radziner, Architects
Tim Barber, Ltd., Architects	NAC Architecture
Ojai Valley Community Hospital	Aurora/Signature Health Services
The Kibo Group	Monte Vista Grove Homes
El Monte Garden Senior Center	Highpointe Communities
IMT Capital, LLC	Claremont University Center

AFFILIATIONS

Mr. McAllaster serves with the following national and regional professional organizations:

- Member, International Society of Arboriculture, Western Chapter
- Member, Street Tree Seminar, Inc.



EXHIBIT E – DEFINITION OF HEALTH AND STRUCTURE GRADES

Health and structure ratings of the trees are based on the archetype tree of the same species through a subjective evaluation of its physiological health, aesthetic quality, and structural integrity.

Overall physiological condition (health) and structural condition were rated A-F:

Health

- A) Outstanding – Exceptional trees of good growth form and vigor for their age class; exhibiting very good to excellent health as evidenced by normal to exceptional shoot growth during current season, good bud development and leaf color, lack of leaf, twig or branch dieback throughout the crown, and the absence of decay, bleeding, or cankers. Common leaf and/or twig pests may be noted at very minor levels.
- B) Above average – Good to very good trees that exhibit minor necrotic or physiological symptoms of stress and/or disease; shoot growth is less than reasonably expected, leaf color is less than optimal in some areas, the crown may be thinning, minor levels of leaf, twig, and branch dieback may be present, and minor areas of decay, bleeding, or cankers may be manifesting. Minor amounts of epicormic growth may be present. Minor amounts of fire damage or mechanical damage may be present. Still healthy, but with moderately diminished vigor and vitality. No significant decline noted.
- C) Average – Average, moderately good trees whose growth habit and physiological or fire-induced symptoms indicate an equal chance to either decline or continue with good health into the near future. Most of these trees exhibit moderate to significant small deadwood in outer crown areas, decreased shoot growth and diminished leaf color and mass. Some stem and branch dieback are usually present and epicormic growth may be moderate to extensive. Cavities, pockets of decay, relatively significant fire damage, bark exfoliation, or cracks may be present. Moderate to significant amounts of insect or disease symptoms may be present; the tree may be shaded or crowded in such a way that it is expected to negatively impact the lifespan of the tree. Tree may be in early decline.
- D) Below Average/Poor - trees whose growth habit and physiological or fire-induced symptoms indicate significant, irreversible decline. Most of these trees exhibit significant dieback of wood in the crown, possibly accompanied by significant epicormic sprouting. Shoot growth and leaf color and mass is either significantly diminished or nonexistent throughout the crown. Cavities, pockets of decay, significant fire damage, bark exfoliation, and/or cracks may be present. Significant amounts of insect or disease symptoms may be present; the tree may be shaded or crowded in such a way that it has negatively impacted the lifespan of the tree. Tree appears to be in irreversible decline.
- F) Dead or in spiral of decline – this tree exhibits very little to no signs of life.

STRUCTURE

- A) Outstanding – Trees with outstanding structure for their species exhibit trunk and branch arrangement and orientation that result in a sturdy form or architecture that resists failure under normal circumstances. The spacing, orientation, and size of the branches relative to the trunk are quintessential for the species and free from defects. No outward sign of decay or pathological disease is present. Some trees exhibit naturally inherent branching defects, like multiple, narrow



- points of attachment from one point on the trunk, which would preclude them from achieving an “A” grade.
- B) Above average - Trees with good to very good structure for their species. They exhibit trunk and branch arrangement and orientation that result in a relatively sturdy form or architecture that resists failure under normal circumstances, but may have some mechanical damage, over-pruning, or other minor structural defects. The spacing, orientation, and size of the branches relative to the trunk are still in the normal range for the species, but they exhibit a minor degree of defects. Minor, sub-critical levels of decay or pathological disease may be present, but the degree of damage is not yet structurally significant. Trees that exhibit naturally inherent branching defects, like multiple, narrow points of attachment from one point on the trunk, would generally fall in to this category. A small percentage of the canopy may be shaded or crowded, but not in such a way that it is expected to negatively impact the structural integrity or lifespan of the tree.
- C) Average - Trees with moderately good structure for their species, but with obvious defects. They exhibit trunk and branch arrangement and orientation that result in a less than sturdy form or architecture, which reduces their resistance to failure under normal circumstances. Moderate levels of mechanical damage, over-pruning, or other structural defects may be present. The spacing, orientation, and size of some of the branches relative to the trunk are not in the normal range for the species. Moderate to significant levels of decay or pathological disease may be present that increase the likelihood of structural instability. Influences such as an excessive trunk lean, slope erosion, root pruning, or other growth-inhibiting factors may be present. A moderate to significant percentage of the canopy may be shaded or crowded in such a way that it is expected to negatively impact the structural integrity or lifespan of the tree. Risk of full or partial failure in the near future appears to be moderately elevated.
- D) Well Below Average/Poor - Trees poor structure for their species and with obvious defects. They exhibit trunk and branch arrangement and orientation that result in a significantly less than sturdy form or architecture, significantly reducing their resistance to failure under normal circumstances. Significant levels of mechanical damage, over-pruning, or other structural defects may be present. The spacing, orientation, and size of many of the branches relative to the trunk are not in the normal range for the species. Significant levels of decay or pathological disease may be present that increase the likelihood of structural instability. Influences such as an excessive trunk lean, slope erosion, root pruning, or other growth-inhibiting factors may be present. A significant percentage of the canopy may be shaded or crowded in such a way that it is expected to negatively impact the structural integrity or lifespan of the tree. Risk of full or partial failure in the near future appears to be advanced.
- F) Severely Compromised – trees with very poor structure and numerous or severe defects due to growing conditions, historical or recent pruning, mechanical damage, history of limb or trunk failures, advanced decay, disease, or severe fire damage. Risk of full or partial failure in the near future appears to be severe.



EXHIBIT F - GLOSSARY OF ARBORICULTURAL & DENDROLOGICAL TERMS

Abiotic: Non-living agents including environmental, physiological, & other nonbiological factors (i.e., aeration or water deficit, mechanical injury, or gas line leak).

Arboriculture: Management of individual trees or groups of trees primarily for their amenity value.

Basal wound: A cut or puncture at the base of the trunk of a tree, particularly bad in younger (developing) specimens. Often these wounds are caused by mowers and other gardening equipment and can be prevented by protective staking and the creation of dirt (no turf) surrounding areas - adjacent to the trunk.

Bleeding (from wood): Flow of sap, typically from pruning wounds.

Branch collar: The swelling at the base of a branch, to be left intact in any pruning.

Callus / wound wood: Lignified, partially differentiated tissue which develops from the callus associated with wounds.

Cambium / cambial: Meristematic tissue that gives rise to phloem & xylem.

Canker: An area of dead or malformed bark caused by a pathogen.

Canopy: A term used for the crown or spread of a tree's branches to emphasize its size and enclosing character. Parts of the tree above the trunk, including scaffold limbs, lateral branches, twigs, and leaves. The canopy spread is often measured in feet.

Cavity: A void in a tree trunk, branch or root that may or may not be open to the exterior, generally created by decay. Over many years the wound may become entirely grown over (occluded) while the decay progresses within.

Co-dominant stems: Branches and stems that are nearly equal in size and relative importance

Compartmentalization: A form of defense in woody plants, in which barriers resistant to invasion by pathogens or wood decay fungi are laid down while the wood is living (sapwood), and which continue to act passively once the wood is incorporated into heartwood.

Conifer: A botanical definition embracing trees with cones (ie. seeds not formed within ovaries), mostly with needle-like or scale-like leaves and mostly evergreen. Sometimes conifers are called 'softwoods'.

Crotch: Where two branches of a tree intersect. A narrow crotch arise at an acute (narrow) angle, as when both branches are close to the vertical. The union is relatively weak if there is included bark.

Crown: The branches, twigs and foliage of a tree, considered collectively.

Crown thinning, crown reduction and crown raising: Crown thinning removes branches from the crown without reducing the extent of the crown. Crown reduction decreases the extent of the crown without decreasing its density. Crown raising increases the headroom to the base of the canopy by removing lower branches.

Crown cleaning: The removal of dead, dying, damaged or diseased wood from the crown of a tree.

Deadwood: In the growth and development of a tree, branches compete with each other and weaker branches are eventually suppressed and die. The deadwood is then liable to fall (sometimes called 'natural pruning'). Deadwood develops naturally, largely in the inner and lower crown, of all trees that are mature and unmanaged.

Decay: The progressive degradation of woody tissues caused by specialized fungi & bacteria through decomposition of cellulose & lignin. The pathogen typically enters through wounds in the roots (root rots), main stem or branches (butt and stem rots) and can then extend internally, over a timescale of years or decades, longitudinally or horizontally.

Deciduous: Leaves are lost in winter, as opposed to evergreen.

Diameter at breast height (dbh): The diameter of a tree measured at height 4.5 feet above natural grade. Typically used as a representation of tree size.



Dieback: Death of shoots or roots starting at the extremities.

Dripline: The outermost edge of the tree's canopy. When depicted on a map, the dripline will appear as an irregular shape that follows the contour of the tree's branches as seen from overhead.

Epicormic shoots: Shoots arising from the base of a tree, its trunk or main framework branches, from buds dormant more than one season. May be stimulated by pruning (which increases the light reaching the lower part of the tree), or indicative of damage or decline in the upper crown.

Evergreen: Foliated throughout the year (although there is a gradual turnover of leaves).

Flush cut: A pruning cut that removes the branch collar and/or part of the branch ridge, slowing the occlusion of the wound or damaging its compartmentalization.

Framework: Typically, the main branches (sometimes also called scaffold branches), each of which supports a significant portion of the crown. They largely determine the shape of the tree's crown depending on their height of origin, orientation etc. There is no precise distinction between framework branches and other lesser branches.

Gall: Abnormal growth of leaves, buds, stems etc. in reaction to the presence of an intrusive parasite, often an insect or mite.

Girdle/girdling: Damage that kills the bark all the way round the stem; such as caused by wires or ties that were never removed when the tree was young. That which circles & constricts the stem or roots causing death of phloem &/or cambial tissue.

Habit (growth habit): Giving a tree its characteristic form, for example owing to the stoutness and orientation (fastigiated, ascending, spreading, pendulous, weeping etc.) of a tree's branches.

Hanger: Dead branch fallen from the crown but caught by, and resting on, branches lower down, which be liable to fall.

Heart rot: Decay in the center of the tree (heartwood).

Included bark: Areas of bark on adjacent parts of a tree, typically on the inner faces of a narrow fork, which becomes grown over to occupy part of the internal joint. The bark-to-bark contact is weaker than the more usual woody union.

Lateral branch / limb: The next order of branch that rises from the scaffold limbs.

Leader: The topmost vertical shoot of a tree, present if the tree has strong apical dominance, characteristic of young trees and conifers. Trees with a rounded crown have no leader.

Mulch: a material (such as decaying leaves, bark, or compost) spread around or over a plant to enrich or insulate the soil.

Parasite: An organism that exploits another, e.g., for food, to the prejudice of the host. Parasites may kill their hosts, be pathogenic or have little significant effect.

Pathogen: A kind of parasite that causes disease.

Phloem: A transport tissue characterized by sieve tubes and companion cells, found the vascular bundles of higher plants. Functions in the transport of dissolved organic substances by translocation.

Photosynthesis: The chemical process by which chlorophyll-containing plants use light to convert carbon dioxide and water into carbohydrates, releasing oxygen as a by-product.

Pruning: The cutting off or cutting back of shoots or branches from a tree, whether to direct growth (formative pruning), make safe, to remove an obstructing or diseased part, to increase longevity (veteran trees), to maintain productivity (fruit trees) etc.

Root crown /collar / Root flare: The outwardly curving base of a tree where it joins the roots, often distinguishable as individual root buttresses.



Root crown inspection: Extensive examination of the junction of root & stem, including the area immediately below, aimed at determining stability, presence of disease, decay, etc.

Root plate: The area needed by a tree's root system to keep the tree stable; broadly, that part of the root system displaced when a tree is uprooted.

Root zone: The area of ground around the base of a tree that supports root growth; often extends far beyond the dripline of a tree.

Scaffold branch / limb: The first order of limbs or branches that arise from the trunk of a tree.

Soil: A mixture of mineral particles, often of various sizes due to weathering, roots and other living things, soil organic matter and the associated voids (pores) filled with air and/or water.

Soil aeration: The movement of gases in soil, primarily by diffusion through the soil pores. For example, oxygen diffuses from the atmosphere to the vicinity of the plant root while carbon dioxide diffuses in the opposite direction. The rate of diffusion is related to the proportion of the soil volume that contains air

Soil compaction: An increase in bulk density due to the pressure exerted by animals, vehicles, (locally) by root growth etc. Pore space is reduced, which may also restrict soil aeration, water infiltration and drainage.

Soil structure: The aggregation of soil particles into clumps (peds) of various shapes and the associated spaces between them, affecting many properties of soil including its porosity to air and water, and its fertility.

Soil texture: The size of the mineral particles in the soil, classified (from fine to coarse) as clay, silt, sand, gravel or stones, or some mixture of these to give a characteristic particle size distribution. Sandy soils give a light texture, clayey soils give a heavy texture.

Stub: That part of a pruned branch protruding beyond the branch collar. It is not good practice to leave stubs since they impede occlusion and are prone to decay.

Suckers: Shoots arising from the roots of a tree, which can arise surprisingly far from the parent.

Target: A target is the subject of injury or damage within range of a tree hazard

Topping: A kind of pruning in which the branches of a tree are all decapitated to reduce the tree to a specific height. An indiscriminate form of pruning not regarded as good practice, to which some trees, such as most conifers, are intolerant.

Training: To change the shape of a tree by means other than (formative) pruning, typically by tying young branches into a particular position.

Transpiration: Loss of water vapor from the surface of leaves & other aboveground parts of the plant.

Vigor / vigorous: Overall health; the capacity to grow & resist physiological stress.



EXHIBIT G – LIST OF ACRONYMS

ANTH – Anthracnose disease

BT – brown trunk – commonly used to measure palm tree trunk heights instead of diameters; it excludes the palm head, or canopy

CANK – canker – an area of dead tissue; can be caused by sunburn or disease

CLPD – common leaf pests and diseases (usually subcritical and non-lethal to tree)

COD – codominant stems or trunks – similar diameter trunks or stems arising from the same point of origin – can be a defect depending on the angle of attachment

Compass directions – N=north, E=east, S=south, W=west

DBH – Diameter at breast height (4 ft. 6 in. from grade) – a standard forestry term / protocol used for measuring tree trunk diameter

DSH – Diameter Standard Height – same as DBH but politically correct without the reference to breasts

DN – drippy nut (acorn) disease (common and non-lethal bacterial infection of acorns)

DW – dead wood

EG – epicormic growth – usually stress-induced growth that originates from previously dormant buds located on trunks or branches

GR – girdling root – can cause structural instability

HOB – history of breakage – usually refers to branches, not twiggy growth

HR – heart rot – decay of the heartwood

H2O – water or irrigation

IB – included bark – can cause structurally weak attachments

LCR – live crown ratio – a ratio of canopy foliage to bare trunk – informs structural grade, as low LCR can increase likelihood of failures

Lerp psyllid / Tipu psyllid – sap sucking insects

Lg - large

MBA – multiple branch attachments – can be a structural defect

Mech. Dam or MD – mechanical damage

MPE – multiple pruning events – can lead to reduced structural integrity based on secondary growth characteristics

P/D – pest/disease

PP – poor pruning – usually refers to stub cuts, flush cuts, excessive thinning, topping, etc.

Prune/DPR-QA - prune out dead/infested/diseased portion(s) & consult a licensed Department of Pesticide Regulation Qualified Applicator for potential chemical pest/disease treatments

RRD – root rot disease

SB – sycamore borer – a clear-winged moth that lays eggs on the bark of trees (mostly sycamore and oak species) – larvae burrow and feed in bark layer, usually non-damaging to tree

SS – stump sprouts – epicormic growth that arises from cut trunks – can originate from the remaining trunk tissue or the root crown

T – trunk

TG – Twig girdler – a stem girdling insect (this condition may also be noted under the umbrella of 'CLPD')

Topping cuts – refers to the substandard practice of arbitrarily pruning with no regard to lateral branch points; can include excessive and disfiguring pruning

WW – wound wood – callus tissue growing over a wound

Xylella = suspected bacterial infection with Xylella fastidiosa



EXHIBIT H – TREE INVENTORY FIELD DATA

THE FOLLOWING SHEETS ARE 11" X 17"



TABLE 8 – TREE FIELD DATA AND PROPOSED DISPOSITIONS
(THIS TABLE IS 11" X 17")

Street Tree / Off Site (ST, OS)	Tree ID No.	Common Name	Botanical Name	DSH / DBH (in.)	BT Ht. (palms/palm-like) (Ft.)	DSH < 4" or Sapling	Height (Ft.)	Canopy N (Ft.)	Canopy E (Ft.)	Canopy S (Ft.)	Canopy W (Ft.)	Health Grade	Structure Grade	Infectious Disease	Suggested Treatments	Naturally Occurring (N) or Planted (P)	Comments	Disposition (Preserve, Remove)	Reason for Removal	Replacement Ratio
	1	fern pine	<i>Afrocarpus falcatus</i>	14			35	6	20	0	0	B	B-			P	tree has been removed	Removed	Demolition Permit	
	2	fern pine	<i>Afrocarpus falcatus</i>	14.5			35	3	18	13	5	A-	B-			P	tree has been removed	Removed	Demolition Permit	
	3	queen palm	<i>Syagrus romanzoffiana</i>		18' BT		28	10	10	10	10	A-	A			P	tree has been removed	Removed	Demolition Permit	
	4	queen palm	<i>Syagrus romanzoffiana</i>		18' BT		28	12	12	12	12	A-	A			P	tree has been removed	Removed	Demolition Permit	
	5	fern pine	<i>Afrocarpus falcatus</i>	8.5			30	1	4	4	4	A-	B-			P	tree has been removed	Removed	Demolition Permit	
	6	silver dollar gum	<i>Eucalyptus polyanthemos</i>	20 sprouts under 1"		X	8	6	6	4	4	B	B			P	tree removed by neighbor, now only SS	Remove	Development	
	7	silver dollar gum	<i>Eucalyptus polyanthemos</i>	20 sprouts under 1"		X	8	6	6	4	4	B	B			P	tree removed by neighbor, now only SS	Remove	Development	
	8	silver dollar gum	<i>Eucalyptus polyanthemos</i>	15 sprouts under 1"		X	8	6	6	3	3	B	B			P	tree removed by neighbor, now only SS	Remove	Development	
	9	silver dollar gum	<i>Eucalyptus polyanthemos</i>	15 sprouts under 1"		X	8	7	7	7	7	B	B			P	tree removed by neighbor, now only SS	Remove	Development	
	10	lemon-scented gum	<i>Corymbia citriodora</i>	N/A												P	tree has been removed – no stump sprouts existing – neighbor removed	Removed	Development	
	11	silver dollar gum	<i>Eucalyptus polyanthemos</i>	12 sprouts under 1"		X	7	5	4	2	2	B	B			P	tree removed by neighbor, now only SS	Remove	Development	
	12	silver dollar gum	<i>Eucalyptus polyanthemos</i>	15 sprouts under 1"		X	10	5	5	2	2	B	B			P	tree removed by neighbor, now only SS	Remove	Development	



TABLE 8 – TREE FIELD DATA AND PROPOSED DISPOSITIONS
(THIS TABLE IS 11" X 17")

Street Tree / Off Site (ST, OS)	Tree ID No.	Common Name	Botanical Name	DSH / DBH (in.)	BT Ht. (palms/palm-like) (Ft.)	DSH < 4" or Sapling	Height (Ft.)	Canopy N (Ft.)	Canopy E (Ft.)	Canopy S (Ft.)	Canopy W (Ft.)	Health Grade	Structure Grade	Infectious Disease	Suggested Treatments	Naturally Occurring (N) or Planted (P)	Comments	Disposition (Preserve, Remove)	Reason for Removal	Replacement Ratio
	13	silver dollar gum	<i>Eucalyptus polyanthemos</i>	10 sprouts under 1"		X	8	9	11	4	4	B	B			P	tree removed, now only SS	Removed	Demolition Permit	
	14	lemon-scented gum	<i>Corymbia citriodora</i>	1		X	14	5	2	2	0	B	B			P	tree removed, now only SS	Removed	Demolition Permit	
	15	silk oak	<i>Grevillea robusta</i>	13.9			40	10	10	15	13	A-	C			P	tree behind temporary fencing	Remove	Demolition Permit	
	16	Indian laurel fig	<i>Ficus microcarpa</i>	15.6			45	5	13	15	6	A	A			P	~2-3 feet from PL in planter; raised but otherwise not heavily pruned	Remove	Development	
	17	Indian laurel fig	<i>Ficus microcarpa</i>	14.4			45	4	13	7	3	A	A			P	~2-3 feet from PL in planter; raised but otherwise not heavily pruned	Preserve		
	18	Indian laurel fig	<i>Ficus microcarpa</i>	17.9			45	2	10	25	21	A	A			P	~2-3 feet from PL in planter; raised but otherwise not heavily pruned	Preserve		
	19	Indian laurel fig	<i>Ficus microcarpa</i>	12.3			45	2	10	4	10	A	A			P	~2-3 feet from PL in planter; raised but otherwise not heavily pruned	Preserve		
	20	Indian laurel fig	<i>Ficus microcarpa</i>	11.3			45	4	15	3	3	A	A			P	~2-3 feet from PL in planter; raised but otherwise not heavily pruned	Preserve		
	21	Indian laurel fig	<i>Ficus microcarpa</i>	15.3			45	6	7	10	25	A	A			P	~2-3 feet from PL in planter; raised but otherwise not heavily pruned	Preserve		
	22	Indian laurel fig	<i>Ficus microcarpa</i>	9.5			40	3	15	4	0	A	A			P	~2-3 feet from PL in planter; raised but otherwise not heavily pruned	Preserve		
	23	Indian laurel fig	<i>Ficus microcarpa</i>	10.6			40	5	5	7	5	A	A			P	~2-3 feet from PL in planter; raised but otherwise not heavily pruned	Preserve		
	24	Indian laurel fig	<i>Ficus microcarpa</i>	10.5			40	4	4	6	6	A	A			P	~2-3 feet from PL in planter; raised but otherwise not heavily pruned	Preserve		



TABLE 8 – TREE FIELD DATA AND PROPOSED DISPOSITIONS
(THIS TABLE IS 11" X 17")

Street Tree / Off Site (ST, OS)	Tree ID No.	Common Name	Botanical Name	DSH / DBH (in.)	BT Ht. (palms/palm-like) (Ft.)	DSH < 4" or Sapling	Height (Ft.)	Canopy N (Ft.)	Canopy E (Ft.)	Canopy S (Ft.)	Canopy W (Ft.)	Health Grade	Structure Grade	Infectious Disease	Suggested Treatments	Naturally Occurring (N) or Planted (P)	Comments	Disposition (Preserve, Remove)	Reason for Removal	Replacement Ratio
	25	Indian laurel fig	<i>Ficus microcarpa</i>	10.3			40	3	4	4	15	A	A			P	~2-3 feet from PL in planter; raised but otherwise not heavily pruned	Preserve		
	26	Indian laurel fig	<i>Ficus microcarpa</i>	N/A												P	tree has been removed	Removed	Demolition Permit	
	27	Indian laurel fig	<i>Ficus microcarpa</i>	N/A												P	tree has been removed	Removed	Demolition Permit	
	28	Indian laurel fig	<i>Ficus microcarpa</i>	13.8, 4.8			40	7	3	7	15	A	A			P	~2-3 feet from PL in planter; raised but otherwise not heavily pruned	Preserve	Demolition Permit	
	29	holly oak	<i>Quercus ilex</i>	4.1, 6.4			20	12	4	0	8	A	B			P	~10 feet from neighboring bldg., downslope from trash enclosure; codominant stems	Preserve		
	30	silk oak	<i>Grevillea robusta</i>	18.6			40	8	15	20	10	A	B			P	codominant stems; first in row of trees in the NW corner of the property	Remove	Development	
	31	silk oak	<i>Grevillea robusta</i>	16.4			40	15	10	14	9	A-	B-			P	codominant stems; history of breakage; minor deadwood	Remove	Development	
	32	silk oak	<i>Grevillea robusta</i>	10			30	12	10	10	0	B	B-			P	history of breakage; unbalanced crown	Remove	Development	
	33	silk oak	<i>Grevillea robusta</i>	14.2			40	16	8	14	12	B	B			P	codominant stems	Preserve		
	34	silk oak	<i>Grevillea robusta</i>	12.9			40	13	10	15	8	A	B			P	history of breakage; codominant stems	Remove	Development	
	35	silk oak	<i>Grevillea robusta</i>	17.3			35	10	10	11	10	A	B+			P	codominant stems at top	Remove	Development	
	36	silk oak	<i>Grevillea robusta</i>	13.7			35	14	11	15	15	A	B			P	history of breakage; codominant stems	Remove	Development	



TABLE 8 – TREE FIELD DATA AND PROPOSED DISPOSITIONS
(THIS TABLE IS 11" X 17")

Street Tree / Off Site (ST, OS)	Tree ID No.	Common Name	Botanical Name	DSH / DBH (in.)	BT Ht. (palms/palm-like) (Ft.)	DSH < 4" or Sapling	Height (Ft.)	Canopy N (Ft.)	Canopy E (Ft.)	Canopy S (Ft.)	Canopy W (Ft.)	Health Grade	Structure Grade	Infectious Disease	Suggested Treatments	Naturally Occurring (N) or Planted (P)	Comments	Disposition (Preserve, Remove)	Reason for Removal	Replacement Ratio
OS	37	silk oak	<i>Grevillea robusta</i>	11.1			35	4	1	15	8	A-	B			P	multiple branch attachments; codominants; low live crown ratio	Preserve		
OS	38	silk oak	<i>Grevillea robusta</i>	21.2			40	18	15	15	15	A	B+			P	history of breakage; pruned; stub cuts on lower trunk	Preserve		
OS	39	silk oak	<i>Grevillea robusta</i>	16.9			40	14	9	12	13	A	B			P	codominants with included bark; history of breakage	Preserve		
OS	40	silk oak	<i>Grevillea robusta</i>	12.8			35	15	11	16	10	A	B			P		Preserve		
OS	41	silk oak	<i>Grevillea robusta</i>	21.8			40	9	11	13	10	A	A-			P	small twig breakage	Preserve		
OS	42	silk oak	<i>Grevillea robusta</i>	10.3			30	15	4	5	14	B	B			P		Preserve		
OS	43	silk oak	<i>Grevillea robusta</i>	21.7			40	7	5	25	14	A	C			P	large codominant branch break; multiple branch attachments	Preserve		
OS	44	silk oak	<i>Grevillea robusta</i>	15			40	15	10	12	15	A-	B			P	shaded-out	Preserve		
OS	45	silk oak	<i>Grevillea robusta</i>	19.5			35	10	4	12	12	A	B			P	shaded-out	Preserve		
OS	46	silk oak	<i>Grevillea robusta</i>	33.1			40	30	20	18	22	A	C			P	large codominant scaffold; history of breakage; last in row of trees in NE corner of property	Preserve		
	47	Indian laurel fig	<i>Ficus microcarpa</i>	10, 7, 5			30	12	14	12	12	A	B			P	trump growing against fence on the property, multiple additional SS at base along fenceline	Remove	Development	
	48	Chinese elm	<i>Ulmus parvifolia</i>	1.3		X	12	6	7	7	7	A	A-			N	SS volunteer along fenceline on the property, additional trunks under one inch	Remove	Development	



TABLE 8 – TREE FIELD DATA AND PROPOSED DISPOSITIONS
(THIS TABLE IS 11" X 17")

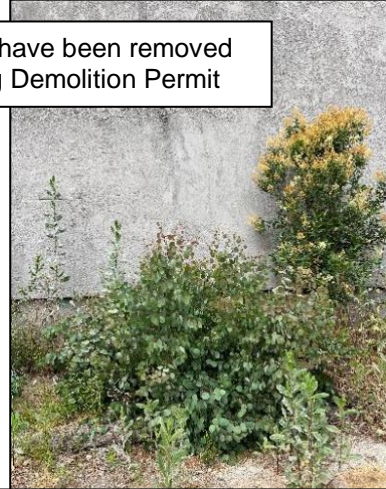
Street Tree / Off Site (ST, OS)	Tree ID No.	Common Name	Botanical Name	DSH / DBH (in.)	BT Ht. (palms/palm- like) (Ft.)	DSH < 4" or Sapling	Height (Ft.)	Canopy N (Ft.)	Canopy E (Ft.)	Canopy S (Ft.)	Canopy W (Ft.)	Health Grade	Structure Grade	Infectious Disease	Suggested Treatments	Naturally Occurring (N) or Planted (P)	Comments	Disposition (Preserve, Remove)	Reason for Removal	Replacement Ratio
	49	glossy privet	<i>Ligustrum lucidum</i>	1.4		X	14	5	5	3	3	A	A-			P	adjacent to existing structure on E side	Remove	Development	
	50	glossy privet	<i>Ligustrum lucidum</i>	1		X	14	5	5	3	3	A	A-			P	adjacent to existing structure on E side	Preserve		
	51	glossy privet	<i>Ligustrum lucidum</i>	1, 1		X	10	4	4	3	3	A	A-			P	adjacent to existing structure on E side	Remove	Development	
	52	glossy privet	<i>Ligustrum lucidum</i>	1.2		X	12	5	5	3	3	A	A-			P	adjacent to existing structure on E side	Preserve		
	53	glossy privet	<i>Ligustrum lucidum</i>	1.2		X	10	4	4	3	3	A	A-			P	adjacent to existing structure on E side	Remove	Development	
	54	Southern California black walnut	<i>Juglans californica</i>	1		X	8	7	6	4	4	A	A-			N	adjacent to existing structure on E side	Remove	Development	
	55	coast live oak	<i>Quercus agrifolia</i>	3.6		X	14	10	5	5	9	A	B+			N	shaded out, on slope	Preserve		
	56	Indian laurel fig	<i>Ficus microcarpa</i>	10.6, 4.6			25	10	10	8	9	A	B			P	in between temporary fencing and PL	Remove	Development	
	57	shamel ash	<i>Fraxinus uhdei</i>	3.9		X	20	4	10	7	7	A-	B-			N	on fenceline	Remove	Development	
	58	shamel ash	<i>Fraxinus uhdei</i>	2.9		X	20	4	12	6	4	A-	B-			N	on fenceline	Remove	Development	
	59	silk oak	<i>Grevillea robusta</i>	3.4		X	22	8	7	7	8	A	B			N	volunteer on fenceline	Preserve		

EXHIBIT I – TREE PHOTOGRAPHS

Note: Tree nos. 1-5, 13-15, & 26-7 have been removed in accordance with a City Planning Demolition Permit



Tree 6 – *Eucalyptus polyanthemos*
facing southwest



Tree 7 – *Eucalyptus polyanthemos*
facing west



Tree 8 – *Eucalyptus polyanthemos*
facing west



Tree 9 – *Eucalyptus polyanthemos*
facing west



Facing southwest, showing the sprouts from the trees that were removed by the building's owner (nos. 6-12)



Note: There is no stump or other remnants remaining for Tree no. 10 (*Corymbia citriodora*, lemon-scented gum)



Tree 11 – *Eucalyptus polyanthemos*
facing west



Tree 12 – *Eucalyptus polyanthemos*
facing west



Tree 13 – *Eucalyptus polyanthemos*
facing west

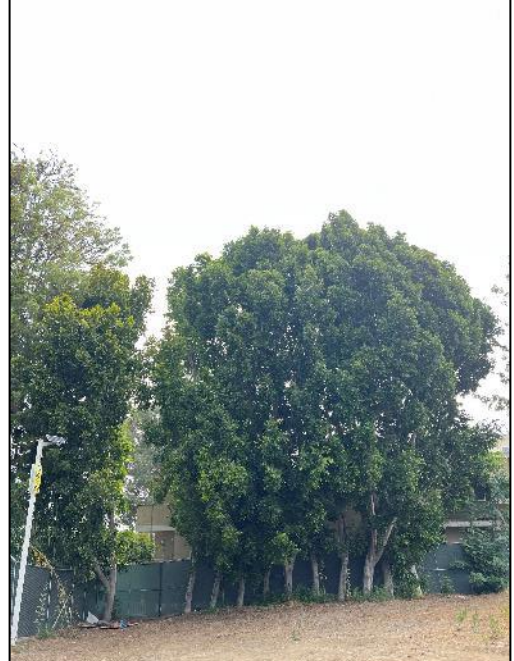


Tree 14 – *Corymbia citriodora* facing
south





Tree 15 – *Grevillea robusta* facing northeast



Trees 16-25 (right to left) – *Ficus microcarpa* facing north



Tree 28 – *Ficus microcarpa* facing north



Trees 29-36 (right to left) – *Grevillea robusta* facing northeast





Trees OS37-OS46 (right to left) –
Grevillea robusta facing northeast



Tree 47 – *Ficus microcarpa* facing
north



Tree 48 – *Ulmus parvifolia* facing east



Tree 49 – *Ligustrum lucidum* facing
east





Tree 50 – *Ligustrum lucidum* facing east



Tree 51 – *Ligustrum lucidum* facing east



Tree 52 – *Ligustrum lucidum* facing east

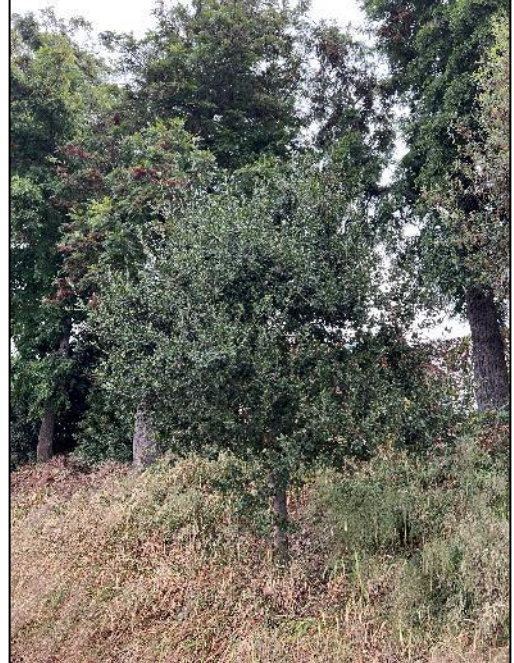


Tree 53 – *Ligustrum lucidum* facing east





Tree 54 – *Juglans californica* facing east



Tree 55 – *Quercus agrifolia* facing northeast



Tree 56 – *Ficus microcarpa* facing northeast

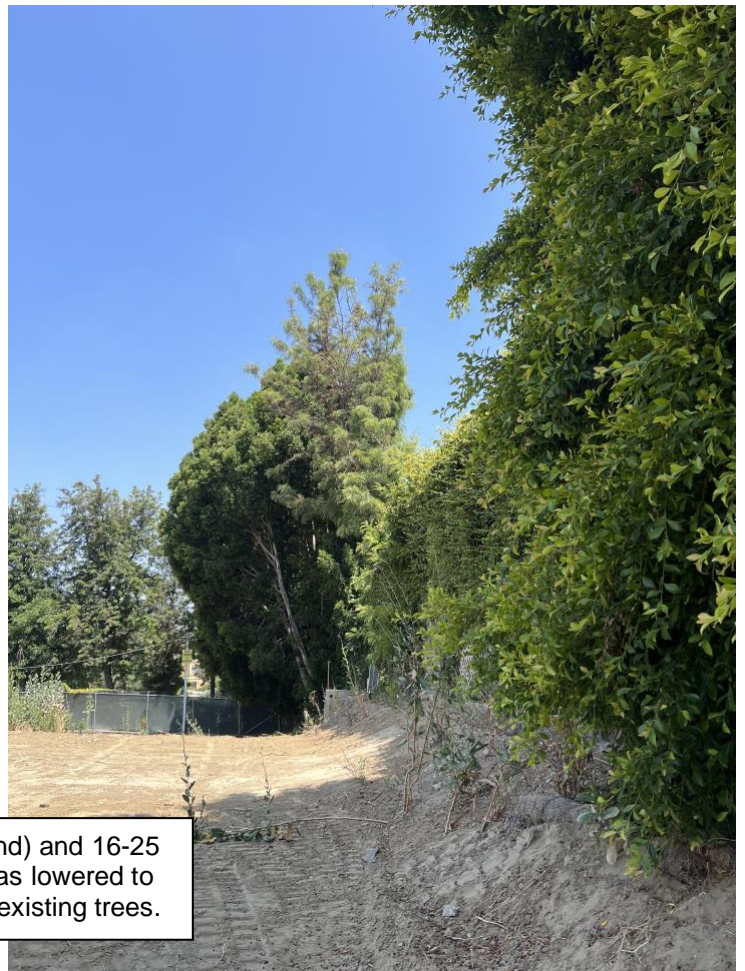


Tree 57-58 (left to right) – *Fraxinus uhdei* facing north





Tree 59 – *Grevillea robusta* facing northwest



Facing north/northwest, showing tree nos. 47 (foreground) and 16-25 in the background. The grade will be raised where it was lowered to provide additional planting area and soil volume for the existing trees.



EXHIBIT J – TREE LEAF PHOTOGRAPHS



Chinese elm (*Ulmus parvifolia*)





coast live oak (*Quercus agrifolia*)





glossy privet (*Ligustrum lucidum*)





holly oak (*Quercus ilex*)





Indian laurel fig (*Ficus microcarpa* 'Nitida')





lemon-scented gum (*Corymbia citriodora*)





shamel ash (*Fraxinus uhdei*)





silk oak (*Grevillea robusta*)





silver dollar gum (*Eucalyptus polyanthemus*)





Southern California black walnut (*Juglans californica*)



EXHIBIT K – BIBLIOGRAPHY OF GENERAL REFERENCES USED TO PREPARE THE DOCUMENT

Rev. 2023

Sunset Western Garden Book. 5th ed. By the Editors of Sunset Books and Sunset Magazine. Menlo Park, CA: Sunset Publishing Corporation, 1988.

Abeyta, Dorothy, ASCA. *Guide to Report Writing for Consulting Arborist*. Champaign, IL: International Society of Arboriculture, 1995.

Costello, Laurence R., Pamela M. Geisel, J. Michael Henry, Edward J. Perry, and Nelda P. Matheny. *Abiotic Disorders of Landscape Plants, A Diagnostic Guide*. Oakland: University of California Agriculture and Natural Resources, 2003

Ewing, Reid. *Best Development Practices*. Chicago: American Planning Association, 1996.

Johnson, Warren T., and Howard H. Lyon. *Insects that Feed on Trees and Shrubs*. 2nd ed. Ithaca and London: Comstock Publishing Associates, a division of Cornell University Press, 1991

Mattheck, Claus, and Helge Breloer. *The Body Language of Trees*. London: The Stationary Office, 2001.

Matheny, Nelda P., and James R. Clark. *A Photographic Guide to Evaluation of Hazard Trees in Urban Areas*. 2nd ed. Champaign, IL: International Society of Arboriculture, 1994.

Matheny, Nelda, and James R. Clark. *Trees and Development – a technical guide to preservation of trees during land development*. Champaign, IL: International Society of Arboriculture, 1998.

Meerow, Alan W. *Betrock's Landscape Palms*. Hollywood, FL: Betrock Information Systems, Inc., 2006.

Pavlik, Bruce M., Pamela C. Muick, Sharon G. Johnson, and Marjorie Popper. *Oaks of California*. Los Olivos, CA: Cachuma Press, 1991.

Pirone, P.P., J.R. Hartman, T.P. Pirone, and M.A. Sall. *Tree Maintenance*. 6th ed. New York: Oxford University Press, 1988.

Shigo, Alex L. *Modern Arboriculture*. Durham, NH: Shigo and Trees, Associates, 1991.

Sinclair, Wayne A., Howard H. Lyon, and Warren T. Johnson. *Diseases of Trees and Shrubs*. Ithaca and London: Comstock Publishing Associates, a division of Cornell University Press, 1987.

Watson, Gary W., and E.B. Himelick. *Principals and Practice of Planting Trees and Shrubs*. Champaign, IL: International Society of Arboriculture, 1997.

Watson, Gary W., and Dr. Dan Neely. *Trees and Building Sites*. Champaign, IL: International Society of Arboriculture, 1995.

Costello, L. R. , and K.S. Jones. *Reducing Infrastructure Damage by Tree Roots: A Compendium of Strategies*. Porterville, CA: Western Chapter International Society of Arboriculture, 2003.

Council of Tree & Landscape Appraisers. *Guide for Plant Appraisal, 9th Edition*. Champaign, IL: International Society of Arboriculture, 2000.



Gilman, Edward F. *An Illustrated Guide to Pruning, 3rd Edition*. Clifton Park, NY. Delmar, Cengage Learning, 2012.

Hatch, Charles R. *Trees of the California Landscape*. Berkeley and Los Angeles, California. University of California Press, 2007

Mattheck, Claus and Weber, Karlheinz. *Manual of Wood Decays in Trees*. Cheltenham, Gloucestershire, UK. Arboricultural Association, 2003

Schwarze, Francis W.M.R., Engles, Julia, and Mattheck, Claus. *Fungal Strategies of Wood Decay in Trees*. Springer -Verlag, Berlin, Heidelberg, New York, 2000

Hickman, Gary W. and Perry, Ed. *Ten Common Wood Decay Fungi on California Landscape Trees – Identification Handbook*. The Western Chapter of the International Society of Arboriculture. Sacramento, CA. 1997

Swiecki, Tedmund J. and Bernhardt, Elizabeth A. *A Field Guide to Insects and Diseases of California Oaks*. Gen. Tech Rep. PSW-GTR-197. Albany, CA: Pacific Southwest Research Station, Forest Service, U.S. Department of Agriculture. 2006



APPLICATIONS



TREE DISCLOSURE STATEMENT

Los Angeles Municipal Code (LAMC) Section 46.00 requires disclosure and protection of certain trees located on private and public property, and that they be shown on submitted and approved site plans. Any discretionary application that includes changes to the building footprint, including demolition or grading permit applications, shall provide a Tree Disclosure Statement completed and signed by the Property Owner.

If there are any protected trees or protected shrubs on the project site and/or any trees within the adjacent public right-of-way that may be impacted or removed as a result of the project, a Tree Report will be required, and the field visit must be conducted by a qualified Tree Expert.

Property Address: 4260 N. Arch Drive, Los Angeles, CA 91604
Date Of Field Visit: June 29, 2023

Does the property contain any of the following protected trees or shrubs?

- ☐ **Yes** (Mark any that apply below)
- ☐ Oak, including Valley Oak (*Quercus lobota*) and California Live Oak (*Quercus agrifolia*) or any other tree of the oak genus indigenous to California, but excluding the Scrub Oak
 - ☐ Southern California Black Walnut (*Juglans californica*)
 - ☐ Western Sycamore (*Platanus racemosa*)
 - ☐ California Bay (*Umbellularia californica*)
 - ☐ Mexican Elderberry (*Sambucus mexicana*)
 - ☐ Toyon (*Heteromeles arbutifolia*)
- ☒ **No** Note: There is one undersize coast live oak and one undersize southern California black walnut

Does the property contain any street trees in the adjacent public right-of-way?

- ☐ **Yes** ☒ **No**

Does the project occur within the Mt. Washington/Glassell Park Specific Plan Area and contain any trees 12 inches or more diameter at 4.5 feet above average natural grade at base of tree and/or is more than 35 feet in height?

- ☐ **Yes** ☒ **No**



Does the project occur within the Coastal Zone and contain any of the following trees?

- ☐ **Yes** (Mark any that apply below)
- ☐ Blue Gum Eucalyptus (*Eucalyptus globulus*)
 - ☐ Red River Gum Eucalyptus (*Eucalyptus camaldulensis*)
 - ☐ Other Eucalyptus species
- ☒ **No**

Tree Expert Credentials (if applicable)

Name of Tree Expert: Cy Carlberg, ISA Certified Arborist and ASCA Registered Consulting Arborist

Mark which of the following qualifications apply:

- ☐ Certified arborist with the International Society of Arboriculture who holds a license as an agricultural pest control advisor
- ☐ Certified arborist with the International Society of Arboriculture who is a licensed landscape architect
- ☒ Registered consulting arborist with the American Society of Consulting Arborists

Certification/License No.: ISA Certified Arborist # 0575A; Registered Consulting Arborist #405

Owner's Declaration

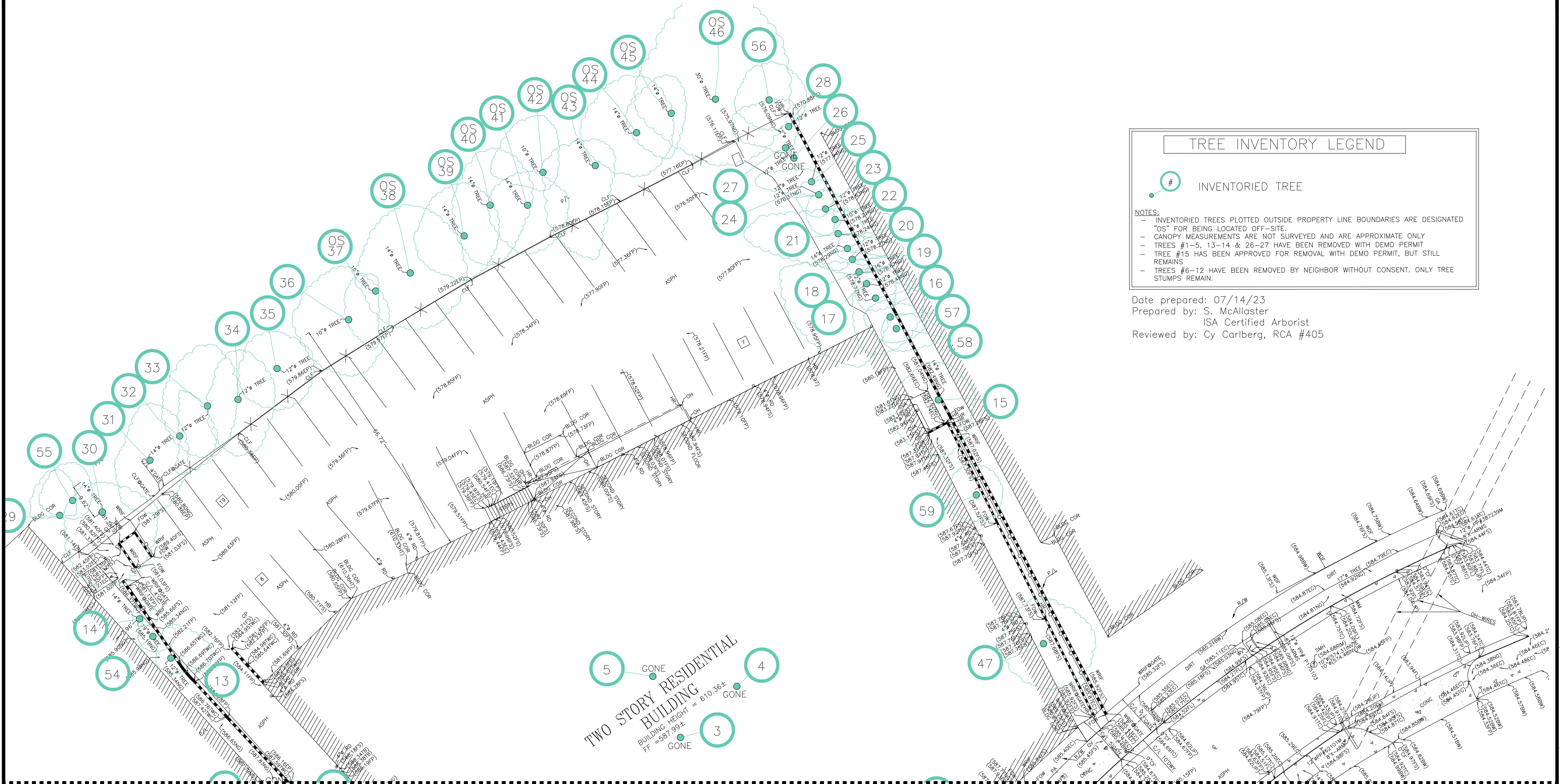
I acknowledge and understand that knowingly or negligently providing false or misleading information in response to this disclosure requirement constitutes a violation of the Los Angeles Municipal Code Section 46.00, which can lead to criminal and/or civil legal action. I certify that the information provided on this form relating to the project site and any of the above biological resources is accurate to the best of my knowledge.

Name of the Owner (Print) _____

Owner Signature _____

Date _____





TREE INVENTORY LEGEND

INVENTORIED TREE

NOTES:

- INVENTORIED TREES PLOTTED OUTSIDE PROPERTY LINE BOUNDARIES ARE DESIGNATED "OS" FOR BEING LOCATED OFF-SITE.
- CANOPY MEASUREMENTS ARE NOT SURVEYED AND ARE APPROXIMATE ONLY
- TREES #1-5, 13-14 & 26-27 HAVE BEEN REMOVED WITH DEMO PERMIT
- TREE #15 HAS BEEN APPROVED FOR REMOVAL WITH DEMO PERMIT, BUT STILL REMAINS
- TREES #6-12 HAVE BEEN REMOVED BY NEIGHBOR WITHOUT CONSENT. ONLY TREE STUMPS REMAIN.

Date prepared: 07/14/23
Prepared by: S. McAllaster
ISA Certified Arborist
Reviewed by: Cy Carlberg, RCA #405

ABBREVIATION

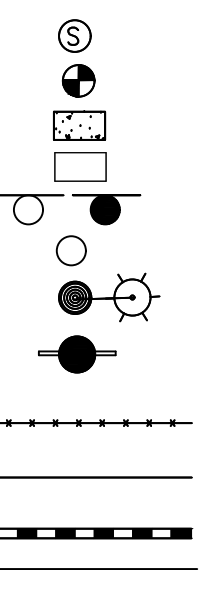
ASPH	ASPHALT	GM	GAS METER
BW	BACK OF WALK	HB	HOSE BIG
CB	CATCH BASIN	HH	HAND HOLE
CF	CURB FACE	HR	HAND RAIL
CD	CURB DRAIN	INV	INVERT
CONC	CONCRETE	LD	LANDING AREA
CL	CLEAN OUT	LIP	LIP OF GUTTER
CLF	CHAIN LINK FENCE	MH	MANHOLE
D/L	DAYLIGHT	MISC	MISCELLANEOUS
DCV	DETECTOR CONTROL VALVE	NFOW	NORTH FACE OF WALL
DI	DRAIN INLET	NG	NATURAL GROUND
DM	DEAD MAN	OH	BUILDING OVERHANG
DWY	DRIVE WAY	PA	OVERHEAD WIRES
EC	EDGE OF CONCRETE	PARKWAY DRN	PLANTING AREA
ELEC	ELECTRICAL	PIV	POST INDICATOR VALVE
EPB	ELECTRICAL PULL BOX	P/L	PROPERTY LINE
EP	EDGE OF PAVEMENT	PP	POWER POLE
EMH	ELECTRICAL MANHOLE	SCO	SEWER CLEANOUTS
EVL	ELECTRICAL VAULT	SFOW	SOUTH FACE OF WALL
EUTL	ELECTRICAL UTILITY	SDMH	STORM DRAIN MANHOLE
FDG	FIRE DEPARTMENT CONNECTION	SP	SIGN POST
FF	FINISH FLOOR	STP	STEPS
FH	FIRE HYDRANT	STLT	STREET LIGHT/LIGHT STANDARD
FL	FLAG	TC	TOP OF CURB
FLGP	FLAG POLE	TE	TRASH ENCLOSURE
FP	FINISH PAVEMENT	TMH	TELEPHONE MANHOLE
FS	FINISH SURFACE	TSPB	TRAFFIC SIGNAL PULL BOX
GVA	GAS VALVE ASSEMBLY	TSMT	TRAFFIC SIGNAL LIGHT
GB	GRADE BREAK	TVLT	TELEPHONE VAULT
GP	GUARD POST	TWC	TOP OF WALL CONCRETE
GV	GAS VALVE	UTL	UTILITY
		VLT	VAULT
		WM	WATER METER
		WRIF	WROUGHT IRON FENCE
		WV	WATER VAULT
			WATER VALVE

PARKING NOTE

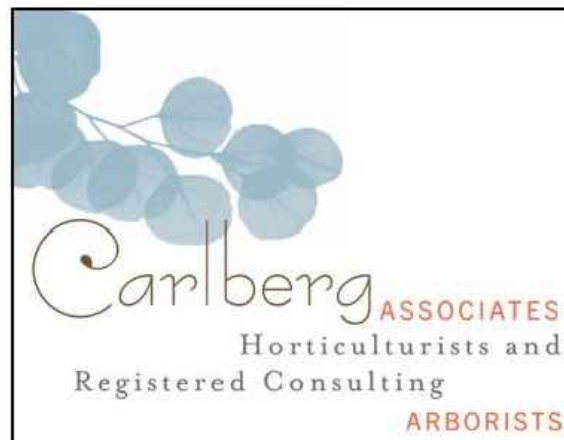
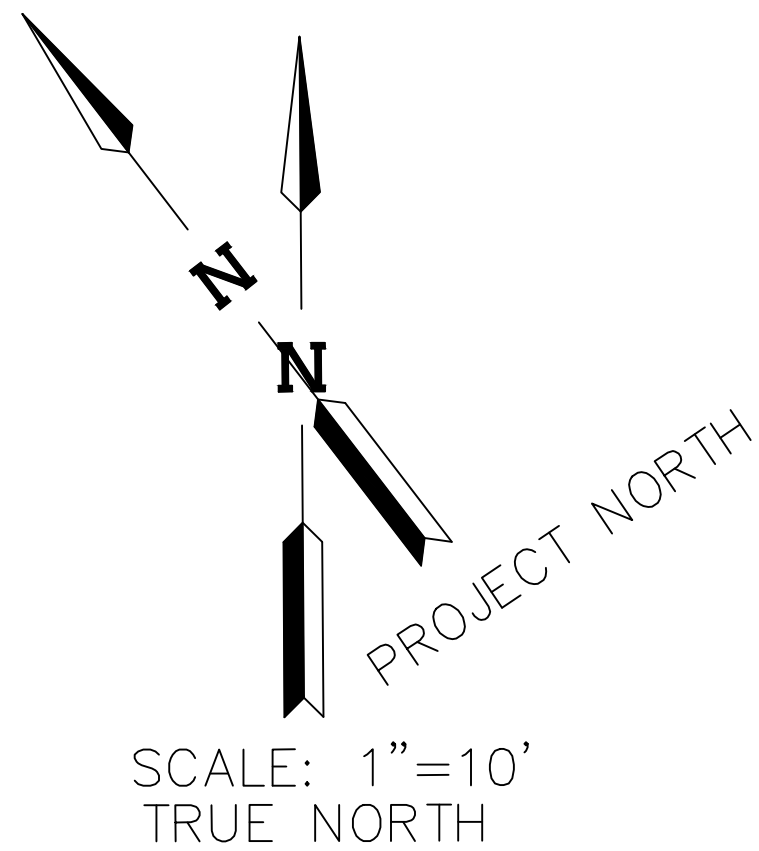
[XX] = NUMBER OF PARKING SPACES

LEGEND

SEWER MANHOLE
WATER VALVE
CONCRETE
UTILITY PULL BOX
SIGN POST
POST
STREET LIGHT
POWER POLE
CHAIN LINK FENCE
EDGE OF PAVEMENT
WALL
HAND RAIL



MATCH LINE SEE SHT 2



TREE LOCATION EXHIBIT

4260 NORTH ARCH DRIVE
STUDIO CITY, CA 91604
PREPARED FOR: GOLDRICH KEST
5150 OVERLAND AVENUE, CULVER CITY, CALIFORNIA 90230

www.cycarlberg.com



Date: 07.14.23

By: S. McAllaster

REVISIONS

NO.	DESCRIPTION	DATE
1		
2		
3		
4		
5		

BASIS OF BEARINGS:

BASIS OF BEARINGS
THE BASIS OF BEARINGS ON THE SURVEY IS THE SAME AS TRACT NO. 4852
FILED IN BOOK 53 PAGE 49-50 AND MONUMENTS SHOWN HEREON.

BENCHMARK:

CITY OF LOS ANGELES BENCHMARK 08-14968
FOUND SPIKE AT EAST CURB OF ARCH DRIVE, 1 FT NORTH OF BCR NORTH
OF VENTURA BLVD.

ELEVATION = 586.51 (NAVD 2000 ADJ)

PREPARED FOR:

BREEN ENGINEERING
1983 WEST 190TH STREET, SUITE 200
TORRANCE CA 90504

PREPARED BY:

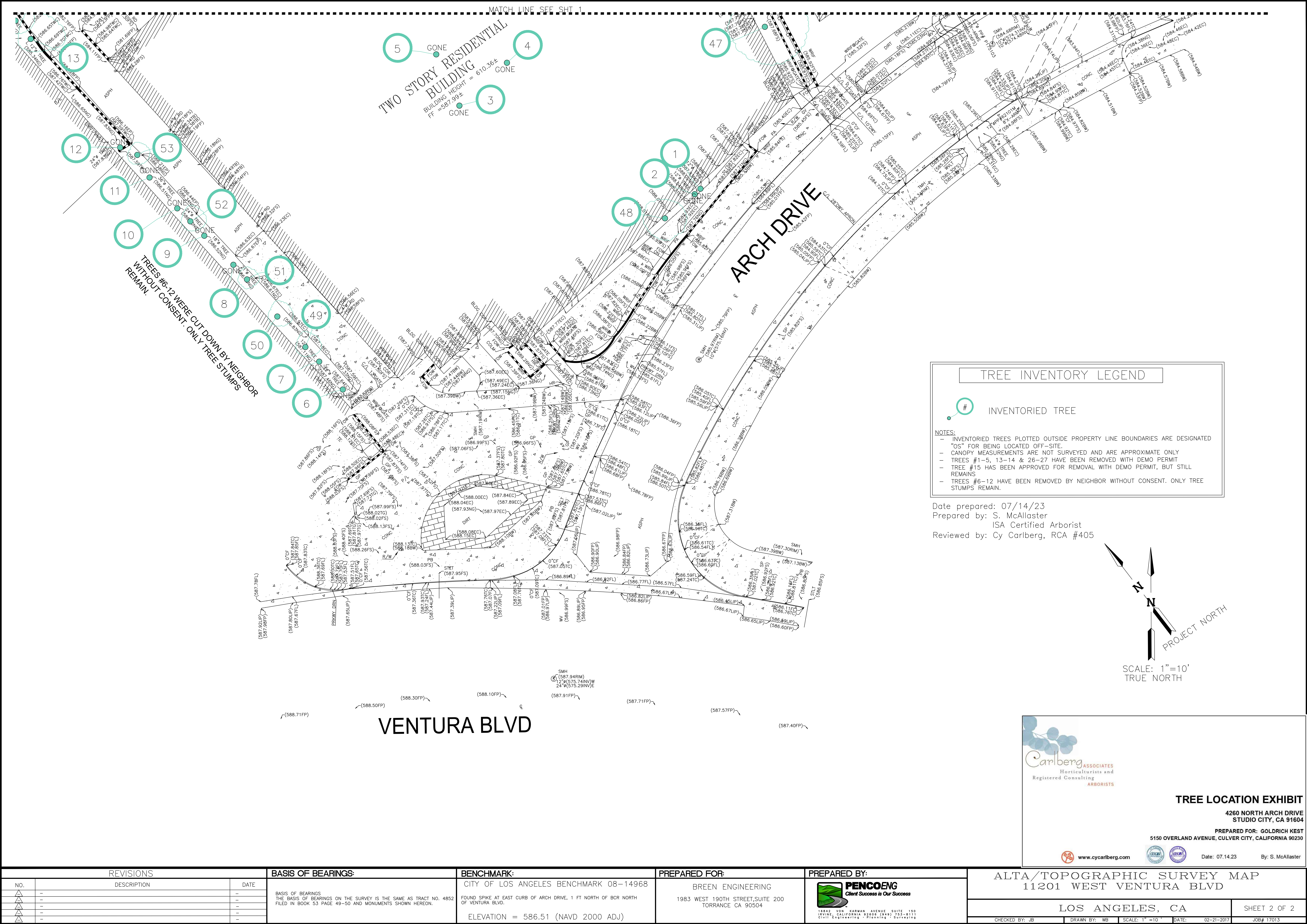


ALTA/TOPOGRAPHIC SURVEY MAP
11201 WEST VENTURA BLVD

LOS ANGELES, CA

SHEET 1 OF 2

CHECKED BY: JB DRAWN BY: WB SCALE: 1"=10' DATE: 02-21-2017 JOB# 17013





KEYNOTES	
NO.	DESCRIPTION
011	(E) MANHOLE. REFER TO CIVIL DWGS.
012	SEWER. REFER TO CIVIL DWGS.
013	(E) STREET LIGHT BOX TO REMAIN. REFER TO CIVIL DWGS.
014	(E) TREE. REFER TO LANDSCAPE DWGS.
015	(E) FIRE HYDRANT. REFER TO CIVIL DWGS.
016	(E) SITE WALL TO REMAIN. REFER TO CIVIL DWGS. TO BE EVALUATED FOR CONTINUED USE. REPLACEMENT OR REPAIR.
017	(E) GAS RISER. REFER TO PLUMB DWGS.
018	BIKE PARKING. 6 SPACES TOTAL. REFER TO CIVIL DWGS.
019	BICYCLE RACK. L.R. MNTD. REFER TO CIVIL DWGS & R-PERMIT PLANS.
020	BACKFLOW PREVENTER - IRRIGATION WATER. REFER TO LANDSCAPE DWGS.
021	BACKFLOW PREVENTER - FIRE WATER. REFER TO CIVIL AND/OR PLUMB DWGS.
022	BACKFLOW PREVENTER - FIRE WATER. REFER TO CIVIL AND/OR PLUMB DWGS.
023	FIRE DEPT CONNECTION (FDC) PER LAFD REQTS. REFER TO CIVIL DWGS.
024	(CONC) SLAB ON GRADE. REFER TO CIVIL DWGS.
025	STORMWATER PLANTER WALL. CONC. WALL ON GRADE. REFER TO STRUCT & CIVIL DWGS.
026	BOARD FORM CONCRETE WALL AT PLANTING. REFER TO STRUCT & CIVIL DWGS.
027	BUILT IN BENCH. REF LANDSCAPE DWGS.
028	(E) CATCH BASIN. REF CIVIL DWGS.
029	ACCESS TO FUTURE ACCESS TO RIVER.
030	CUSTOMER STATION ACCESS. L.D. PRECAST CONCRETE. REF STRUCTURAL. REFER TO LAJWP REQUIREMENTS.
031	UTILITY DATE. PER OWNER REQUIREMENTS. REVEALED.
032	AND/OR IRING COMPANY. IRING. REFER TO LAJWP REQTS. PROVIDE KEYS FOR BLDG ENTRY, COMMON UTILITY & STORAGE ROOMS.
033	WATER DAMAGE. DESIGN PER DAMAGE PACKAGE.

TREE INVENTORY LEGEND

INVENTORIED TREE

INVENTORIED TREE CANOPY

TREE TO BE REMOVED

TREE PROTECTION FENCING

NOTES:

INVENTORIED TREES PLANTED OUTSIDE PROPERTY BOUNDARIES ARE DESIGNATED "OFF-SITE" FOR REMOVAL OFF-SITE. TREE MEASUREMENTS ARE APPROXIMATE ONLY. TREE REMOVAL HAS BEEN APPROVED FOR REMOVAL WITH REMOVAL PERMIT. BUT STILL, TREES HAVE BEEN REMOVED BY NEIGHBOR WITHOUT CONSENT. ONLY TREE STUMPS REMAIN.

DATE PREPARED: 07/14/23

PREPARED BY: S. McAllister

REVIEWED BY: CY CARLBERG, RCA #405

- GENERAL NOTES
- A. REFER TO CIVIL DWGS FOR ALL UTILITIES AND SITE WORK.

B. REFER TO CIVIL DWGS FOR PLACEMENT OF BLDG ON SITE.

C. CONSTRUCTION WASTE TO BE HANDLED BY A CITY OF LOS ANGELES CERTIFIED HAULER.

D. GENERAL CONTRACTOR, FRAMING CONTRACTOR, AND SCAFFOLDING CONTRACTOR REQUIRED TO OBTAIN CALIFORNIA PERMIT PRIOR TO COMMENCEMENT OF WORK.

E. TEMPORARY PEDESTRIAN PROTECTION SHALL BE PROVIDED AS REQUIRED.

F. FLOOR AND GROUND SURFACES SHALL BE STABLE/FIRM & SLIP RESISTANT.

G. BICYCLE RACKS SHALL ALLOW FOR THE BICYCLE FRAME AND AT LEAST ONE WHEEL TO BE LOCKED TO THE RACKS. THE BICYCLE RACKS SHALL ALSO ALLOW FOR THE USE OF A CABLE AS WELL AS A U-SHAPED LOCK.

H. TRASH & RECYCLING AREA LOCATED BELOW GRADE. REFER TO PARKING 1 FLOOR PLAN, A1.21.

I. ALL ROOF DRAINAGE TO DRAIN TO STORAGE TANK. REFER TO CIVIL DWGS.

SITE PLAN LEGEND

BUILDING FOOTPRINT

STAIR OR ELEVATOR

BUILDING ABOVE

PLANTING ON GRADE. REFER TO LANDSCAPE DWGS

PLANTING ABOVE STRUCTURE. REFER TO LANDSCAPE DWGS

WOOD CHIPS ON SLAB ON GRADE

CONCRETE SLAB ON GRADE

CONCRETE SLAB

SITE FURNITURE

CONCRETE PAVEMENT ON DECK

FINISH FLOOR ELEVATION

SLOPE DOWN 2% MAX UNID

ACCESSIBLE PATH OF TRAVEL

LIGHT FIXTURE. REFER TO LIGHTING FUTURE SCHEDULE ON A7.12 & ELEC DWGS

LIGHT FIXTURE. REFER TO LIGHTING FUTURE SCHEDULE ON A7.12 & ELEC DWGS

PLANTER DRAIN. REFER TO PLUMB DWGS

FLOOR DRAIN. REFER TO PLUMB DWGS

DATE: 07.14.23

BY: S. McAllister

Camborg ASSOCIATES

Horizontalists and Registered Consulting ARBORISTS

TREE IMPACT EXHIBIT & PROTECTION PLAN

4260 NORTH ARCH DRIVE
STUDIO CITY, CA 91604

PREPARED FOR: GOLDRICH KEST
5150 OVERLAND AVENUE, CULVER CITY, CALIFORNIA 90230

DATE: 07.14.23

BY: S. McAllister

SITE PLAN

1/8" = 1'-0"

1

ARCHITECT:

AHMON ARCHITECTS

3834 WILLAT AVENUE, CULVER CITY, CA 90232
(T) 424.299.4666 (F) 424.299.4668

The design, drawings, and written material in these documents of service are the sole property of Lahmon Architects. All design and related information contained herein are for use on the specified projects and shall not be duplicated, disclosed, or used without the prior written consent of Lahmon Architects.

CONSULTANT:

OWNER:

5150 OVERLAND AVENUE,
CULVER CITY, CA 90230
(310) 280-5766

PROJECT:

THE CRESCENT APARTMENTS

4260 N. ARCH DRIVE STUDIO CITY, CA 91604

PHASE:

80% CONSTRUCTION DOCUMENTS
7.5.23

REVISION LIST:

REV #	DESCRIPTION	DATE
-------	-------------	------

KEY PLAN

PROJECT NO. 21001
SCALE AS SHOWN

SHEET TITLE:

ARCHITECTURAL SITE PLAN

SHEET NO.

A0.01

CITY OF LOS ANGELES
INTER-DEPARTMENTAL CORRESPONDENCE

4260 Arch Drive/11201 Ventura Boulevard
LADOT Case Nos. VEN22-110828 & VEN20-109071
LADOT Project ID Nos. 53606 & 49258

Date: June 23, 2022

To: Susan Jimenez, Administrative Clerk
Department of City Planning



From: Vicente Cordero, Transportation Engineer
Department of Transportation

Subject: **TRANSPORTATION IMPACT ASSESSMENT FOR THE PROPOSED MULTI-FAMILY RESIDENTIAL PROJECT AT 4260 ARCH DRIVE/11201 VENTURA BOULEVARD (CPC-2021-10345-DB-SPP-SPR-VHCA/ENV-2021-10346-EAF)**

The Department of Transportation (LADOT) has reviewed the transportation assessment prepared by Overland Traffic Consultants, Inc., dated April 2022, for the proposed multi-family residential development located at 4260 Arch Drive/11201 Ventura Boulevard in the Sherman Oaks - Studio City - Toluca Lake - Cahuenga Pass Community Planning Area of the City of Los Angeles. LADOT previously issued revised traffic assessment reports for a mixed-use project for this site dated January 6, 2020, and February 14, 2020. The previously approved mixed-use project consisted of 106 apartment units and 1,201 square feet of commercial space. No significant traffic impacts were identified in the prior reviews of this Project site. The purpose of this new traffic analysis is to evaluate the Project change to 129 apartment units with no commercial use. On July 30, 2019, pursuant to Senate Bill (SB) 743 and the recent changes to Section 15064.3 of the State's California Environmental Quality Act (CEQA) Guidelines, the City of Los Angeles adopted vehicle miles traveled (VMT) as the criteria by which to determine transportation impacts under CEQA. Based on the VMT thresholds established in LADOT's Transportation Assessment Guidelines (TAG), the proposed project would not result in a significant transportation impact on VMT as described below.

DISCUSSION AND FINDINGS

A. Project Description

The Project proposes to construct a 4-story building with 112 market-rate apartment units and 17 affordable housing units. The existing 76-room assisted living facility, which has been vacant since 2018, would be demolished and replaced as part of the Project design. The Project would provide a total of 146 automobile parking spaces and 116 bicycle parking spaces. Access to the Project would be provided via one new full-access driveway on Arch Drive. The Project is anticipated to be completed in the Year 2025.

B. Freeway Safety Analysis

Per the Interim Guidance for Freeway Safety Analysis memorandum issued by LADOT on May 1, 2020,

to address Caltrans safety concerns on freeways, the study addresses the project's effects on vehicle queuing on freeway off-ramps. Such an evaluation measures the project's potential to lengthen a forecasted off-ramp queue and create speed differentials between vehicles exiting the freeway off-ramps and vehicles operating on the freeway mainline. The evaluation identified the number of project trips expected to be added to nearby freeway off-ramps serving the project site. It was determined that project traffic at any freeway off-ramp will not exceed 25 peak hour trips. Therefore, a freeway ramp analysis is not required. Furthermore, the Project would not result in a significant safety impact and no corrective measures at any freeway off-ramps would be required.

C. CEQA Screening Threshold

Prior to accounting for trip reductions resulting from the application of Transportation Demand Management (TDM) Strategies, a trip generation analysis was conducted to determine if the project would exceed the net 250 daily vehicle trips screening threshold. Using the City of Los Angeles VMT Calculator tool Version 1.3, which draws upon trip rate estimates published in the Institute of Transportation Engineers (ITE) Trip Generation Manual, 10th Edition as well as applying trip generation adjustments when applicable. This trip generation adjustment is based on sociodemographic data and the built environment factors of the project's surroundings, it was determined that the project does exceed the net 250 daily vehicle trips threshold. A copy of the VMT Calculator summary report is provided in **Attachment A**. Additionally, the analysis included further discussion of the CEQA transportation impact thresholds:

1. **Threshold T-1: Conflicting with Plans, Programs, Ordinances, or Policies**

The transportation assessment evaluated the proposed project for conformance with the adopted City's transportation plans and policies for all travel modes. According to the analysis, the Project does not obstruct or conflict with the City's development policies and standards for the transportation system. Therefore, no Project or cumulative significant transportation impact was identified for this threshold.

2. **Threshold T-2.1: Causing Substantial Vehicle Miles Traveled**

Using the VMT Calculator, the assessment determined that the project would generate a 627 net increase in DVT and a 4,921 net increase in daily VMT, therefore further analysis was required. The analysis concluded that the project would not result in a significant VMT impact as discussed below under Section D, CEQA Transportation Analysis.

3. **Threshold T-3: Substantially Increasing Hazards Due To a Geometric Design Feature or Incompatible Use**

The project does not involve any design features that are unusual for the area or any incompatible use.

D. CEQA Transportation Analysis

The new LADOT Transportation Assessment Guidelines (TAG) provide instructions on preparing transportation assessments for land use proposals and define the significant impact thresholds. The LADOT VMT Calculator tool measures project impact in terms of Household VMT per Capita, and Work VMT per Employee. LADOT identified distinct thresholds for significant VMT impacts for each of the seven Area Planning Commission (APC) areas in the City. For the South Valley APC area, in which the project is located, the following threshold has been established:

- Daily Household VMT per Capita: 9.4
- Daily Work VMT per Employee: 11.6

As cited in the VMT analysis report prepared by Overland Traffic Consultants, Inc., the VMT generated by the project with proposed mitigation results in 8.6 Household VMT per Capita, Work VMT per Employee is not applicable due to the nature of the Project. These results are acceptable for the South Valley APC; therefore, it is concluded that the implementation of the proposed project will **not** result in a significant VMT impact.

E. Access and Circulation

During the preparation of the new CEQA guidelines, the State's Office of Planning and Research stressed that lead agencies can continue to apply traditional operational analysis requirements to inform land-use decisions provided that such analyses were outside of the CEQA process. The authority for requiring non-CEQA transportation analysis and requiring improvements to address potential circulation deficiencies lies in the City of Los Angeles' Site Plan Review authority as established in Section 16.05 of the LAMC. Therefore, LADOT continues to require and review a project's site access, circulation, and operational plan to determine if any access enhancements, transit amenities, intersection improvements, traffic signal upgrades, neighborhood traffic calming, or other improvements are needed.

In accordance with this authority, the project has completed a circulation analysis using a "level of service" screening methodology that indicates that the trips generated by the proposed development will not likely result in adverse circulation conditions at several locations. The access and circulation analysis included a delay study of the following intersections using the Highway Capacity Manual (HCM) methodology, which calculates the amount of delay per vehicle, based on the intersection traffic volumes, lane configurations, and signal timing:

- Ventura Boulevard and Vineland Avenue
- Ventura Boulevard and Campo de Cahuenga/ Riverton Avenue
- Ventura Boulevard and Tujunga Avenue
- Ventura Boulevard and Lankershim Boulevard

LADOT has reviewed this analysis and determined that it adequately discloses operational concerns. A copy of the tables for Delay and Level of Service analysis that summarizes these potential deficiencies is provided as **Attachment B** to this report.

PROJECT REQUIREMENTS

A. CEQA - Related Requirements

The following Transportation Demand Management (TDM) strategies are proposed as part of the project in the VMT evaluation:

- Bike Parking - This strategy involves implementation of short and long-term bicycle parking to support safe and comfortable bicycle travel by providing parking facilities at destinations under

existing LAMC regulations applicable to the Project (LAMC Section 12.21.A.16). The Project is providing 116 bicycle parking spaces on-site (105 long-term spaces and 11 short-term spaces).

- **Reduce Parking Supply** - This strategy changes the on-site parking supply to provide less than the amount of vehicle parking required by direct application of the Los Angeles Municipal Code (LAMC) without consideration of parking reduction mechanisms permitted in the code. Permitted reductions in parking supply could utilize parking reduction mechanisms such as TOC, Density Bonus, Bike Parking ordinance, or locating in an Enterprise Zone or Specific Plan area.

B. Non - CEQA-Related Requirements and Considerations

As required per the adopted TAG and pursuant to the City's Site Plan Review Authority (L.A.M.C. 16.05 and relevant code sections), the analysis included a review of current deficiencies and potential future deficiencies that may result from this project. There are no corrective measures required that would result from the construction of this Project.

C. Project Impact Assessment (PIA) Fee

Pursuant to Section 11 of the Specific Plan, the applicant shall pay or guarantee to pay an Application for Consideration Fee in addition to a PIA Fee to LADOT before the issuance of any building permit. The Application for Consideration Fee is \$400.00 for this project. The gross PIA Fee for this Project is calculated below and can be paid in either a single payment or through a deferred payment plan. The existing use credit is based upon a legally-permitted use previously in existence for a minimum of one year between November 9, 1985, and the date of this letter. The PIA Fee shall be indexed annually; therefore, the PIA Fee may change depending on the actual date when payment is made.

Land Use	Category	Community	Floor Area (sq.ft.)	PIA Fee Rate (\$ per sq.ft.)	Total PIA Fee (Floor Area x PIA Fee Rate)
Proposed Project					
Apartment	A	Studio City	113,351	\$1.52	\$172,293.52
Existing Use					
Assisted Living	A	Studio City	41,697	\$1.52	\$63,379.44
Net PIA Fee (proposed - existing)					\$108,914.08

D. Parking Requirements

The traffic study indicated that the Project would provide a total of 146 automobile parking spaces, 11 short-term bicycle parking spaces, and 105 long-term bicycle parking spaces in one two-level subterranean on-site parking facility. The applicant should check with the Department of Building and Safety regarding the number of Code-required parking spaces needed for this Project.

E. Highway Dedication and Street Widening Requirement

Ventura Boulevard is designated a Boulevard II, which requires a 40-foot half-width roadway within a 55-foot half-width right-of-way. The north side of Ventura Boulevard currently consists of a 50-foot half-width right-of-way with a 40-foot half roadway and a 10-foot sidewalk. The applicant shall

dedicate 5 feet of land along the entire proposed Project frontage on Ventura Boulevard to bring the right-of-way up to the standard required by the Mobility Plan. **Arch Drive** is a designated Local Street that would require an 18-foot half-width roadway within a 30-foot half-width right-of-way. The applicant should check with the Bureau of Engineering's Land Development Group who will determine if there are any other applicable highway dedication, street widening, and/or sidewalk requirements for this Project.

F. Project Access and Circulation

The proposed Project will utilize one new full-access existing driveway on Arch Drive. A copy of the project's conceptual site plan is provided in **Attachment C**. The ultimate design of the driveways, passenger loading zone, and internal circulation will meet the standards of the building code and will be subject to review by LADOT and the Department of Building and Safety. The review of this study does not constitute approval for any new proposed driveway. Review and approval of the driveways should be coordinated with LADOT's Citywide Planning Coordination Section (6262 Van Nuys Boulevard, 3rd Floor, Room 320, (818-374-4699)). To minimize and prevent last-minute building design changes, the applicant should contact LADOT for driveway width, passenger loading zone, and internal circulation requirements prior to the commencement of building or parking layout design. The applicant should check with City Planning regarding the project's vehicular access and design.

G. High Injury Network

The City of Los Angeles Vision Zero Identified a strategic plan to reduce traffic deaths to zero by focusing on engineering, enforcement, education, and evaluation. The LADOT identified a High Injury Network (HIN) of city streets. The HIN identifies streets with a high number of traffic-related severe injuries and deaths across all modes of travel with emphasis on those involving pedestrians and cyclists. Ventura Boulevard is included in the High Injury Network. Preventative measures by the Project include providing Project access from Arch Drive, a local street, to improve the safety of pedestrians and passing motorists along Ventura Boulevard. The project access or project-related changes to the public right-of-way will not affect relative proximity to the High Injury Network.

H. Worksite Traffic Control Plan

LADOT recommends that a construction worksite traffic control plan be submitted to LADOT's Citywide Temporary Traffic Control Section or Permit Plan Review Section for review and approval before the start of any construction work. Refer to <http://ladot.lacity.org/what-we-do/plan-review> to determine which section to coordinate the review of the worksite traffic control plan. The plan should show the location of any roadway or sidewalk closures, traffic detours, haul routes, hours of operation, protective devices, warning signs, and access to abutting properties. LADOT also recommends that all construction-related truck traffic be restricted to off-peak hours.

I. TDM Ordinance Requirements

The TDM Ordinance (LAMC 12.26 J) is currently being updated. The updated ordinance, which is currently progressing through the City's approval process, will:

- Expand the reach and application of TDM strategies to more land uses and neighborhoods
- Rely on a broader range of strategies that can be updated to keep pace with technology.

- Provide flexibility for developments and communities to choose strategies that work best for their neighborhood context.

Although not yet adopted, LADOT recommends that the applicant be subject to the terms of the proposed TDM Ordinance. The updated ordinance is expected to be completed before the anticipated construction of this project.

J. Development Review Fees

Section 19.15 of the LAMC identifies specific fees for traffic study review, condition clearance, and permit issuance. The applicant shall comply with any applicable fees per this ordinance.

If you have any questions, please contact Brandon Wilson of my staff at brandon.wilson@lacity.org.

Attachments

J:\Projects\VEN22-113326 -4260 Arch Dr-11201 Ventura Bl

- c: Mashael Majid, Council District 4
Renata Ooms, LADCP
Steve Rostam, LADOT East Valley District
Ali Nahass, BOE Valley District
Quyen Phan, BOE Land Development Group
Jerry Overland, Overland Traffic Consultants, Inc.


Attachment A

City of Los Angeles VMT Calculator Results

Project Screening Criteria: Is this project required to conduct a vehicle miles traveled analysis?

Project Information

Project: Crescent Apartments
 Scenario: [www](#)
 Address: 11201 W VENTURA BLVD, 91604



Is the project replacing an existing number of residential units with a smaller number of residential units AND is located within one-half mile of a fixed-rail or fixed-guideway transit station?

☒ Yes ☐ No

Existing Land Use

Land Use Type	Value	Unit
Housing Hotel	122	Rooms

[Click here to add a single custom land use type \(will be included in the above list\)](#)

Project Screening Summary

Existing Land Use	Proposed Project
0 Daily Vehicle Trips	627 Daily Vehicle Trips
0 Daily VMT	4,921 Daily VMT

Tier 1 Screening Criteria

Project will have less residential units compared to existing residential units & is within one-half mile of a fixed-rail station. ☐

Tier 2 Screening Criteria


The net increase in daily trips < 250 trips 627
Net Daily Trips

The net increase in daily VMT ≤ 0 4,921
Net Daily VMT

The proposed project consists of only retail land uses ≤ 50,000 square feet total. 0.000
ksf

The proposed project is required to perform VMT analysis.


[Reset all user inputs \(clean template\)](#)



CITY OF LOS ANGELES VMT CALCULATOR Version 1.3

Project Information

Project: Crescent Apartments
 Scenario: [www](#)
 Address: 11201 W VENTURA BLVD, 91604



TDM Strategies

Select each section to show individual strategies
 Use ☒ to denote if the TDM strategy is part of the proposed project or is a mitigation strategy

Strategy	Proposed Project	With Mitigation
Max Home Based TDM Achieved?	No	No
Max Work Based TDM Achieved?	No	No

Parking

Reduce Parking Supply: 162 city code parking provision for the project site
☒ Proposed Pg ☐ Mitigation 146 actual parking provision for the project site

Unbundle Parking: 175 monthly parking cost (dollar) for the project site
☐ Proposed Pg ☐ Mitigation

Parking Cash-Out: 50 percent of employees eligible
☐ Proposed Pg ☐ Mitigation

Price Workplace Parking: 6.00 daily parking charge (dollar)
☐ Proposed Pg ☐ Mitigation 50 percent of employees subject to priced parking

Residential Area Parking Permits: 200 cost (dollar) of annual permit
☐ Proposed Pg ☐ Mitigation

Transit

☐ Education & Encouragement

☐ Commute Trip Reductions

☐ Shared Mobility

☐ Bicycle Infrastructure

☐ Neighborhood Enhancement


Analysis Results

Proposed Project	With Mitigation
593 Daily Vehicle Trips	593 Daily Vehicle Trips
4,649 Daily VMT	4,649 Daily VMT
8.2 Household VMT per Capita	8.2 Household VMT per Capita
N/A Work VMT per Employee	N/A Work VMT per Employee

Significant VMT Impact?

Household: No
 Threshold = 9.4
 15% Below APC

Work: N/A
 Threshold = 11.6
 15% Below APC



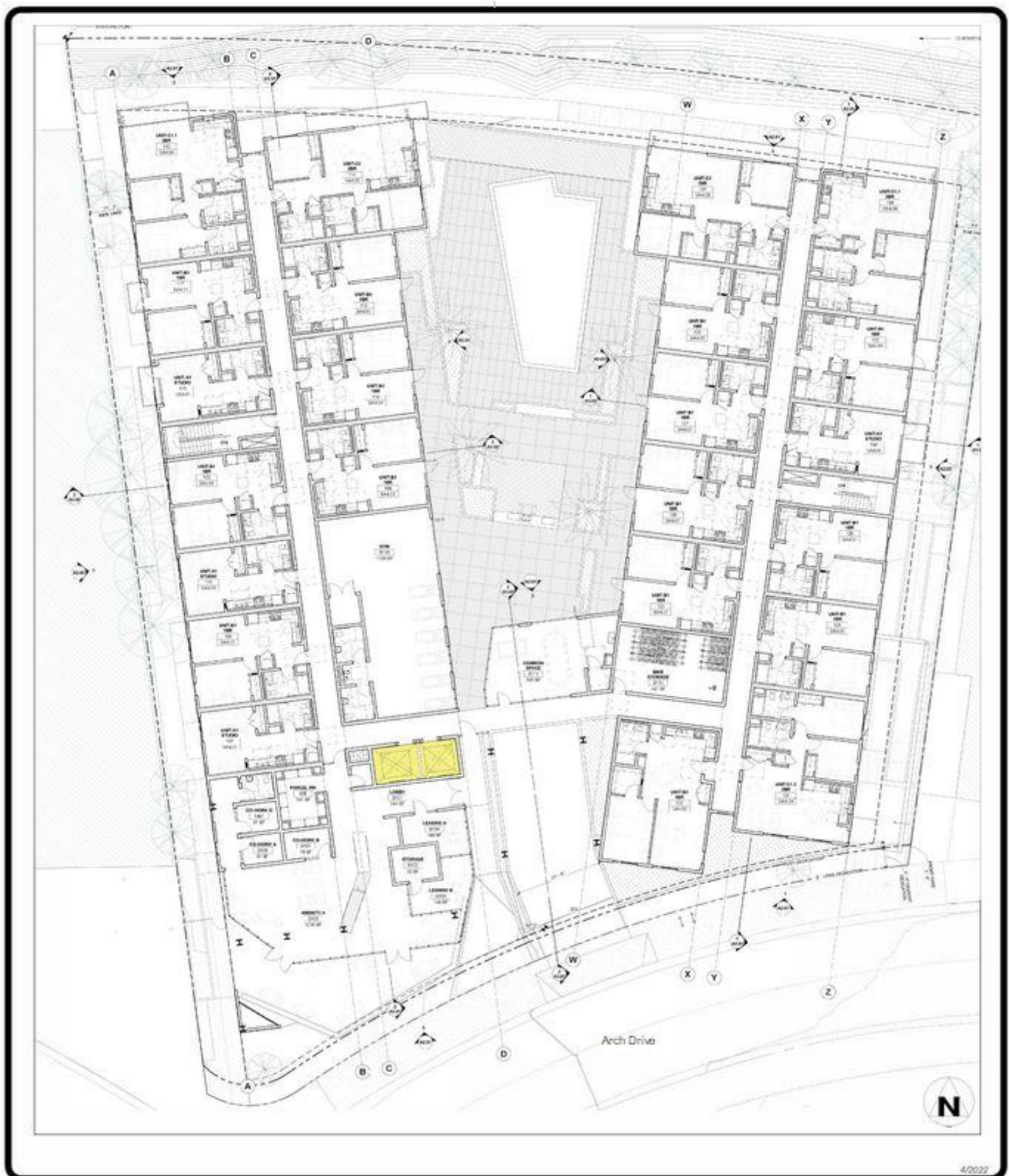
Attachment B

Summary of Delay and Levels of Service

No.	Intersection	Peak Hour	Existing (2022)		Existing + Project		Future (2025) Without Project		Future (2025) With Project	
			Delay (s)	LOS	Delay (s)	LOS	Delay (s)	LOS	Delay (s)	LOS
1	Ventura Boulevard & Vineland Avenue	AM	68.9	E	70.7	E	84.3	F	89.0	F
		PM	45.5	D	46.6	D	64.4	E	66.0	E
2	Ventura Boulevard & Campo De Cahuenga / Riverton Avenue	AM	54.2	D	55.3	E	54.5	D	53.4	D
		PM	23.6	C	23.5	C	26.9	C	26.2	C
3	Ventura Boulevard & Lankershim Boulevard	AM	39.8	D	38.7	D	47.0	D	47.1	D
		PM	23.0	C	23.0	C	25.6	C	25.3	C
4	Ventura Boulevard & Tujunga Avenue	AM	18.2	B	18.4	B	22.5	C	23.1	C
		PM	19.3	B	19.3	B	21.0	C	20.8	C

s = seconds

Attachment C **Project Site Plan**





www.mdacoustics.com

AZ Office
4960 S. Gilbert Road, Ste 1-461
Chandler, AZ 85249
p. (602) 774-1950

CA Office
1197 Los Angeles Avenue, Ste C-256
Simi Valley, CA 93065
p. (805) 426-4477

October 11, 2022

Mr. Craig Fajnor
EcoTierra Consulting
633 W 5th Street, 26th Floor
Los Angeles, CA 90071

Subject: 4260 Arch Drive Multi-Family Residential – Cat32 Exemption Noise Impact Assessment – Los Angeles, CA

Dear Mr. Fajnor:

MD Acoustics, LLC (MD) has completed a noise impact assessment for the proposed Multi-Family Residential Development project located at 4260 Arch Drive in the City of Los Angeles, CA. The project has filed for a Categorical 32 Exemption (Cat32) in which an “Infill” Categorical Exemption (CEQA Guideline Section 15332), exempts infill development within urbanized areas if it meets certain criteria. The class consists of environmentally benign infill projects that are consistent with the local General Plan and Zoning requirements. This class is not intended for projects that would result in any significant traffic, noise, air quality, or water quality impacts. It may apply to residential, commercial, industrial, and/or mixed-use projects.

This noise assessment intends to demonstrate the project’s compliance with applicable noise regulations and lack of significant noise impacts. A list of definitions and terminology is located in Appendix A.

1.0 Project Description and Assessment Overview

The Project Site is approximately 44,572 square feet. The Project includes construction of a new multifamily residential 5-story building containing 129 residential dwelling units. The Project would include a total of 145 parking stalls in a subterranean parking garage. The project includes on-site amenities such as a 1st floor pool deck and courtyard. The proposed project site plan is in Exhibit B.

Land uses and the closest existing sensitive receptors surrounding the site include single-family residential uses to the northwest and south, multi-family residential uses to the east, and commercial uses to the west, northeast, and southeast. The project is not within two miles of a public airport or public use airport. The proposed project location is in Exhibit A.

2.0 Local Acoustical Requirements and CEQA Guidelines

The City of Los Angeles has outlined the following within the Los Angeles Municipal Code as it relates to noise regulation:

Per Section 111.03, the minimum ambient level for all residential zones is 50 dBA from 7AM to 10PM and 40 dBA from 10PM to 7AM.

Per Section 112.02, air conditioning, refrigeration, and heating equipment cannot cause a noise level to exceed the ambient noise level on the premises of another occupied property by more than 5 dB.

Per Section 112.05(A), construction machinery must not exceed 75 dBA at 50 feet.

Per Section 41.40, construction must occur between the hours of 7 AM and 9 PM on Monday through Friday and 8 AM to 6 PM on Saturday. Construction may not occur on Sundays or national holidays.

According to CEQA guidelines, the project would have a potential impact if it resulted in:

- a) Generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?
- b) Generation of excessive groundborne vibration or groundborne noise levels?
- c) For a project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?

3.0 Study Method and Procedure

3.1 Ambient Noise Measurements

MD performed two (2) 15-minute measurements on 10/10/22 between 1 PM and 2 PM as shown in Appendix B. NM1 was placed near the south corner of the project site and NM2 was placed near the east corner of the site. The main source of ambient noise throughout the project site and surrounding areas came from traffic on Ventura Boulevard. The noise level was 61 to 65 dBA Leq as shown in Table 1. Further notes and pictures are provided in Appendix B.

Table 1: Short-Term Measurement Summary, dBA

Location	Start	Stop	Leq	Lmax	Lmin	L2	L8	L25	L50	L90
NM1	1:09 PM	1:24 PM	64.5	71.2	48.3	69.5	67.8	65.8	63.7	56
NM2	1:25 PM	1:40 PM	61.0	73.1	48.7	68.4	64.9	61	58.9	54.1

3.2 FHWA Traffic Noise Model

The traffic noise analysis utilizes the Federal Highway Administration (FHWA) Traffic Noise Model, together with several key construction parameters. Key input speed, site conditions, average daily traffic (ADT), and vehicle mix data. The modeling does not take into account any existing barriers, structures, and/or topographical features that may further reduce noise levels.

The traffic noise model indicated that the noise level at the eastern corner of the site is 64 dBA Leq during the peak hour of the day, 62 dBA Leq during daytime hours, 59 dBA Leq during evening hours, and 54 dBA Leq during nighttime hours. The CNEL level is calculated to be 63 dBA. See Appendix C.

3.3 FHWA Construction Noise Model

The construction noise analysis utilizes the FHWA Roadway Construction Noise Model methodology, together with several key construction parameters. Key inputs include distance to the sensitive receiver, equipment usage, % usage factor, and baseline parameters for the project site. The project was analyzed based on the different construction phases. The FHWA has compiled data regarding the noise-generated characteristics of typical construction activities and is presented in Table 2.

Table 2: RCNM Measured Noise Emission Reference Levels¹

Type	Typical Noise Level at 50 Feet (dBA)
Concrete Saw	90
Dozer	82
Grader	85
Tractor	84
Roller	80
Crane	81
Man Lift	75
Concrete Mixer Truck	79
Air Compressor	78
Notes: ¹ Referenced Noise Levels from the FHWA RCNM.	

3.3 Construction Vibration Model

Construction activities can produce vibration that may be felt by adjacent land uses. The construction of the proposed project would not require the use of equipment such as pile drivers, which are known to generate substantial construction vibration levels. The primary vibration source during construction may be from a bulldozer. A large bulldozer has a vibration impact of 0.089 inches per second peak particle velocity (PPV) at 25 feet which is likely perceptible but below any risk of architectural damage.

The fundamental equation used to calculate vibration propagation through average soil conditions and distance is as follows:

$$PPV_{\text{equipment}} = PPV_{\text{ref}} (25/D_{\text{rec}})^n$$

Where: PPV_{ref} = reference PPV at 25ft.

D_{rec} = distance from equipment to receiver in ft.

$n = 1.1$ (the value related to the attenuation rate through ground)

The thresholds from the Caltrans Transportation and Construction Induced Vibration Guidance Manual provide general thresholds and guidelines as to the vibration damage potential from vibratory impacts.

4.0 Traffic Noise Level Projections

Traffic noise along Ventura Boulevard will be the main source of noise impacting the project site and the surrounding area. The structure has subterranean parking and has no above ground parking. The project projects 593 daily trips. Per the Project traffic study (Overland Traffic Consultants, Inc. 2022), Ventura Boulevard has 26,300 trips by the project site.

It takes a change of 3 dB or more to hear an audible difference which would occur with a doubling of traffic. The project is anticipated to not increase the existing noise level due to an increase in traffic, and therefore the impact is less than significant.

5.0 Project Operational Noise Level Projections

On-site operational noise includes a transformer and HVAC. All HVAC equipment is located on the rooftop and will be blocked by a 5' parapet wall. Equipment will be at least 57 feet away from adjacent residences. The maximum sound power level from a single unit is 75 dBA. At 57 feet away, the sound pressure level is estimated to be 42 dBA. For all 34 units near the residential property operating simultaneously, the sound level is 58 dBA. This is a simplification assuming all units are 57 feet away from the receiver when in reality most will be over 57 feet away. The parapet will provide a 15 dB reduction. The maximum sound level at the nearby residential receivers will be 43 dBA and will therefore not increase the overall nighttime ambient level of 54 dBA Leq. See Appendix D.

Per ANSI and NEPA requirements for transformer noise, transformers must be no louder than 65 dBA at 6 feet. Transformers should be placed at least 20 feet from the adjacent residential receptors or should be shielded to stay below the nighttime ambient level.

Operational noise complies with Section 122.02 of the Los Angeles Municipal Code. The impact is, therefore, less than significant.

6.0 Construction Noise Level Projections

The degree of construction noise may vary for different areas of the project site and also vary depending on the construction activities. Noise levels associated with the construction will vary with the different phases of construction. Table 3 presents the construction noise levels at sensitive receptors with the implementation of 15 dB mufflers on all heavy equipment. See Appendix E for calculations.

Table 3: Projected Construction Noise Levels (dBA, Lmax)¹

Location	Phase	Construction Noise Level	Exceeds Significant Threshold?
Adjacent Residential Properties	Grade	70	No
	Build	69	No
	Pave	69	No
	Arch Coat	63	No

Assuming the implementation of 15 dB mufflers on all heavy equipment, the regulatory noise level limit of 75 dBA is never exceeded during each phase of construction at 50 feet from the source. The impact is, therefore, less than significant.

7.0 Construction Vibration Level Projections

Bulldozers will get as close as 19 ft to the nearest residential buildings surrounding the project site. The vibration will be up to 0.120 in/sec PPV during construction. This is perceptible but below the threshold of damage of 0.2 in/sec PPV for the adjacent buildings. The impact is, therefore, less than significant. See Appendix E for calculations.

8.0 Conclusions

The Project will be compliant with the City's noise ordinance and CEQA guidelines with the implementation of typical construction noise best practices. In addition, the project will not generate a noise impact during operation. The project is not within 2 miles of a private or public airport. MD is pleased to provide this noise assessment for the proposed project. If you have any questions regarding this analysis, please call our office at (805) 426-4477.

Sincerely,
MD Acoustics, LLC



Rachel Edelman
Acoustical Consultant



Claire Pincock, INCE-USA
Acoustical Consultant

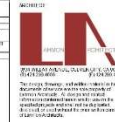
Exhibit A Location Map



7



KEYNOTES	
NO.	DESCRIPTION
201	FEAR (BACARA) ENTER TO CHANGE PAGES
202	TRANSFORM VALUE TO FEAR (BACARA) ENTER TO SELECT DATA
203	SELECT BACK ELEMENT ENTER TO CHOOSE AND RETURN TO DATA
204	RETURN



CONSULTANT

UNIVERSAL CITY
GUEST HOME, L.P.









5150 OVERLAND AVENUE, CULVER CITY, CA
90230
(310) 290-5152

PROJECT

THE CRESCENT APARTMENTS

4285 N. ARCH DRIVE STUDIO CITY, CA 91604
 TRASE
AHRF SUBMISSION
07.07.21

NOT FOR CONSTRUCTION
11E04

SITE PLAN LEGEND	
	BUILDING FOOTPRINT
	STAIRS OR ELEVATOR
	ELEVATOR SHAFT
	GLASS CURTAIN WALL TO ADJACENT SPACE
	CONCRETE OR GRADE
	GLASS/STEEL OR POLYMER GLASS
	CONCRETE FRAME GLASS
	UPVUL. REFER TO CH. 10

REVISED LIST	REVISED LIST	REVISED LIST
--------------	--------------	--------------



ARCHITECTURAL SITE
PLAN

A0.10

Appendix A
Glossary of Acoustical Terms

Glossary of Terms

A-Weighted Sound Level: The sound pressure level in decibels as measured on a sound level meter using the A-weighted filter network. The A-weighting filter de-emphasizes the very low and very high-frequency components of the sound in a manner similar to the response of the human ear. A numerical method of rating human judgment of loudness.

Ambient Noise Level: The composite of noise from all sources, near and far. In this context, the ambient noise level constitutes the normal or existing level of environmental noise at a given location.

Community Noise Equivalent Level (CNEL): The average equivalent A-weighted sound level during a 24-hour day, obtained after the addition of five (5) decibels to sound levels in the evening from 7:00 to 10:00 PM and after the addition of ten (10) decibels to sound levels in the night before 7:00 AM and after 10:00 PM.

Decibel (dB): A unit for measuring the amplitude of a sound, equal to 20 times the logarithm to the base 10 of the ratio of the pressure of the sound measured to the reference pressure, which is 20 micro-pascals.

dB(A): A-weighted sound level (see definition above).

Equivalent Sound Level (LEQ): The sound level corresponding to a steady noise level over a given sample period with the same amount of acoustic energy as the actual time-varying noise level. The energy average noise level during the sample period.

Habitable Room: Any room meeting the requirements of the Uniform Building Code or other applicable regulations which is intended to be used for sleeping, living, cooking, or dining purposes, excluding such enclosed spaces as closets, pantries, bath or toilet rooms, service rooms, connecting corridors, laundries, unfinished attics, foyers, storage spaces, cellars, utility rooms, and similar spaces.

L(n): The A-weighted sound level exceeded during a certain percentage of the sample time. For example, L10 in the sound level exceeded 10 percent of the sample time. Similarly L50, L90, L99, etc.

Noise: Any unwanted sound or sound which is undesirable because it interferes with speech and hearing or is intense enough to damage hearing, or is otherwise annoying. The State Noise Control Act defines noise as "...excessive undesirable sound...".

Noise Criteria (NC) Method: This metric plots octave band sound levels against a family of reference curves, with the number rating equal to the highest tangent line value as demonstrated in Figure 1.

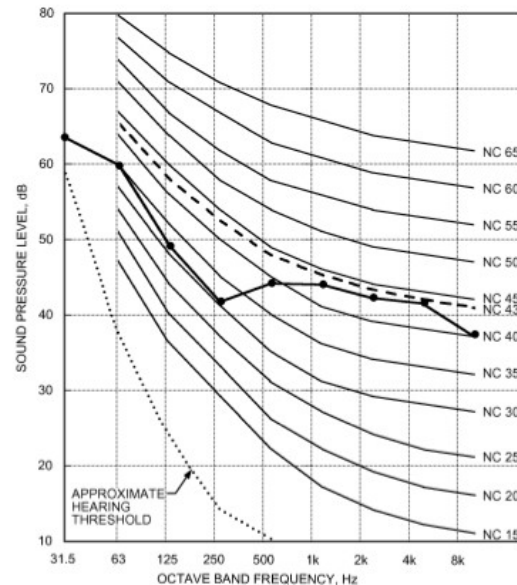
Percent Noise Levels: See L(n).

Room Criterion (RC) Method: When sound quality in the space is important, the RC metric provides a diagnostic tool to quantify both the speech interference level and spectral imbalance.

Sound Level (Noise Level): The weighted sound pressure level obtained by use of a sound level meter having a standard frequency filter for attenuating part of the sound spectrum.

Sound Level Meter: An instrument, including a microphone, an amplifier, an output meter, and frequency weighting networks for the measurement and determination of noise and sound levels.

FIGURE 1: Sample NC Curves and Sample Spectrum Levels



Sound Transmission Class (STC): To quantify STC, a Transmission Loss (TL) measurement is performed in a laboratory over a range of 16 third-octave bands between 125 – 4,000 Hertz (Hz). The average human voice creates sound within the 125 – 4,000 Hz $1/3^{\text{rd}}$ octave bands.

STC is a single-number rating given to a particular material or assembly. The STC rating measures the ability of a material or an assembly to resist airborne sound transfer over the specified frequencies (see ASTM International Classification E413 and E90). In general, a higher STC rating corresponds with a greater reduction of noise transmitting through a partition.

STC is highly dependent on the construction of the partition. The STC of a partition can be increased by: adding mass, increasing or adding air space, and adding absorptive materials within the assembly. The STC rating does not assess low-frequency sound transfer (e.g. sounds less than 125 Hz). Special consideration must be given to spaces where the noise transfer concern has lower frequencies than speech, such as mechanical equipment and or/or music. The STC rating is a lab test that does not take into consideration weak points, penetrations, or flanking paths.

Even with a high STC rating, any penetration, air-gap, or “flanking path can seriously degrade the isolation quality of a wall. Flanking paths are the means for sound to transfer from one space to another other than through the wall. Sound can flank over, under, or around a wall. Sound can also travel through common ductwork, plumbing, or corridors. Noise will travel between spaces at the weakest points. Typically, there is no reason to spend money or effort to improve the walls until all weak points are controlled first.

Outdoor Living Area: Outdoor spaces that are associated with residential land uses typically used for passive recreational activities or other noise-sensitive uses. Such spaces include patio areas, barbecue areas, jacuzzi areas, etc. associated with residential uses; outdoor patient recovery or resting areas associated with hospitals, convalescent hospitals, or rest homes; outdoor areas associated with places of worship which have a significant role in services or other noise-sensitive activities; and outdoor school facilities routinely used for educational purposes which may be adversely impacted by noise. Outdoor areas usually not included in this definition are: front yard areas, driveways, greenbelts, maintenance areas and storage areas associated with residential land uses; exterior areas at hospitals that are not used for patient activities; outdoor areas associated with places of worship and principally used for short-term social gatherings; and, outdoor areas associated with school facilities that are not typically associated with educational uses prone to adverse noise impacts (for example, school play yard areas).

Percent Noise Levels: See L(n).

Sound Level (Noise Level): The weighted sound pressure level obtained by use of a sound level meter having a standard frequency filter for attenuating part of the sound spectrum.

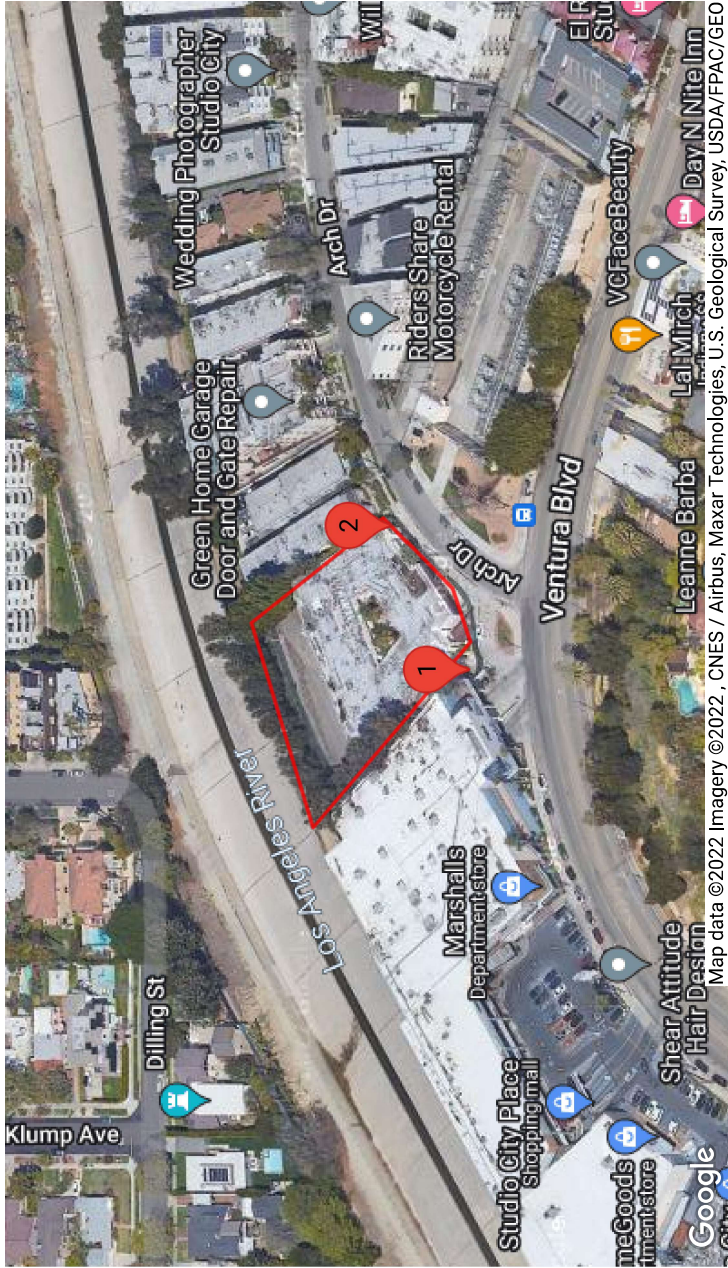
Sound Level Meter: An instrument, including a microphone, an amplifier, an output meter, and frequency weighting networks for the measurement and determination of noise and sound levels.

Single Event Noise Exposure Level (SENEL): The dB(A) level which, if it lasted for one second, would produce the same A-weighted sound energy as the actual event.

Appendix B
Field Sheet

15-Minute Continuous Noise Measurement Datasheet

Project Name:	4260 Arch Drive Multi-Family - Cat32	Site Observations:
Project: #/Name:	0332-2022-013	Sunny, scattered clouds 76F winds 0-3mph from S SE and swirling. No people passed by the meters during testing, several trucks drove by and a couple of plug-in vehicle owners were charging their cars about 80' from NM2.
Site Address/Location:	4260 N Arch Drive, Studio City,	
Date:	10/10/2022	
Field Tech/Engineer:		
Sound Meter:	XL2, NTI	SN: A2A-08562-E0
Settings:	A-weighted, slow, 1-sec, 15-minute interval	
Site Id:	NM1, NM2	



15-Minute Continuous Noise Measurement Datasheet - Cont.

Project Name: 4260 Arch Drive Multi-Family - Cat32

Site Address/Location: 4260 N Arch Drive, Studio City,

Site Id: NM1, NM2

Figure 1: NM1



Figure 2: NM2

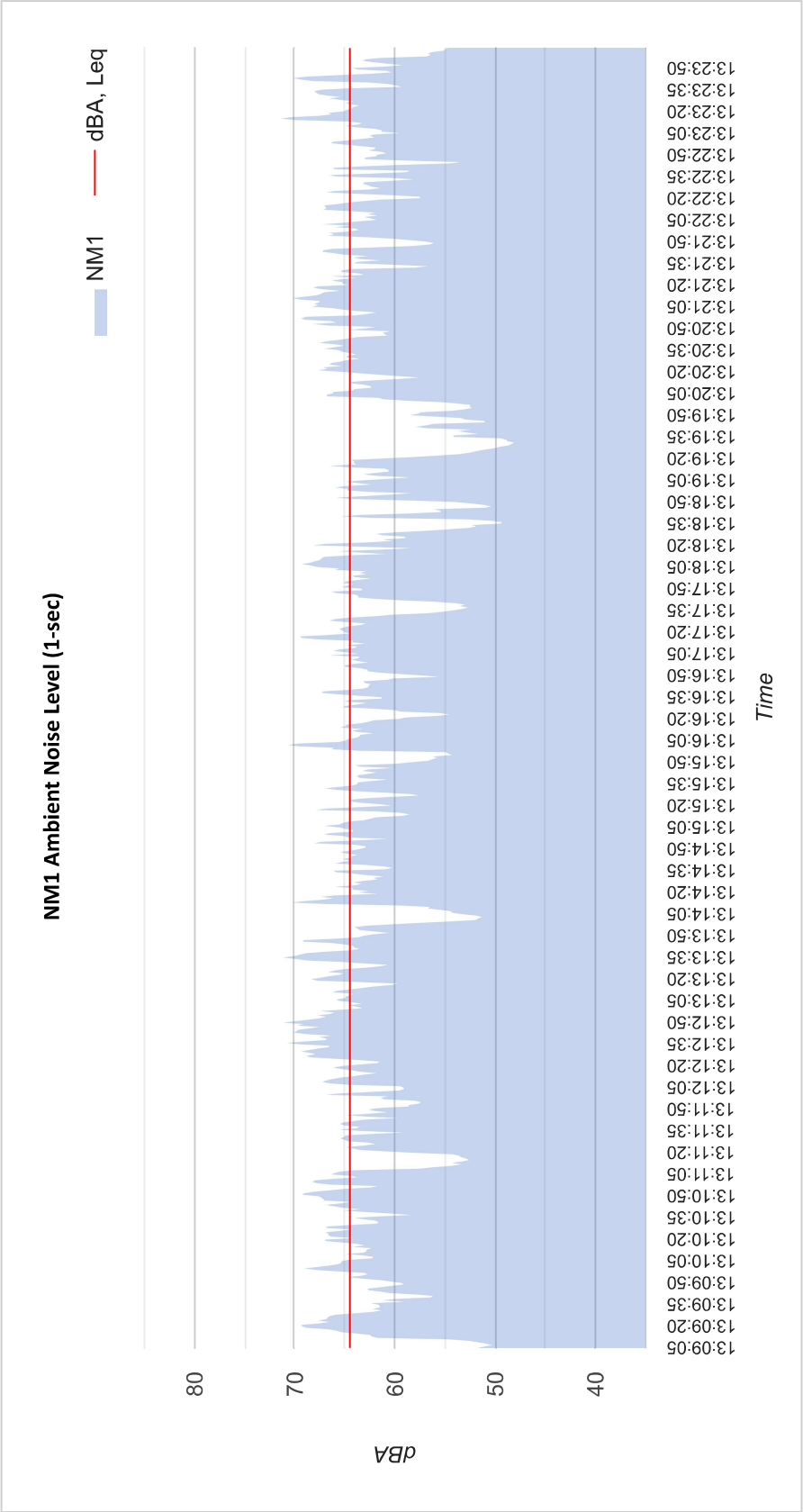


Table 1: Baseline Noise Measurement Summary

Location	Start	Stop	Leq	Lmax	Lmin	L2	L8	L25	L50	L90
NM1	1:09 PM	1:24 PM	64.5	71.2	48.3	69.5	67.8	65.8	63.7	56
NM2	1:25 PM	1:40 PM	61	73.1	48.7	68.4	64.9	61	58.9	54.1

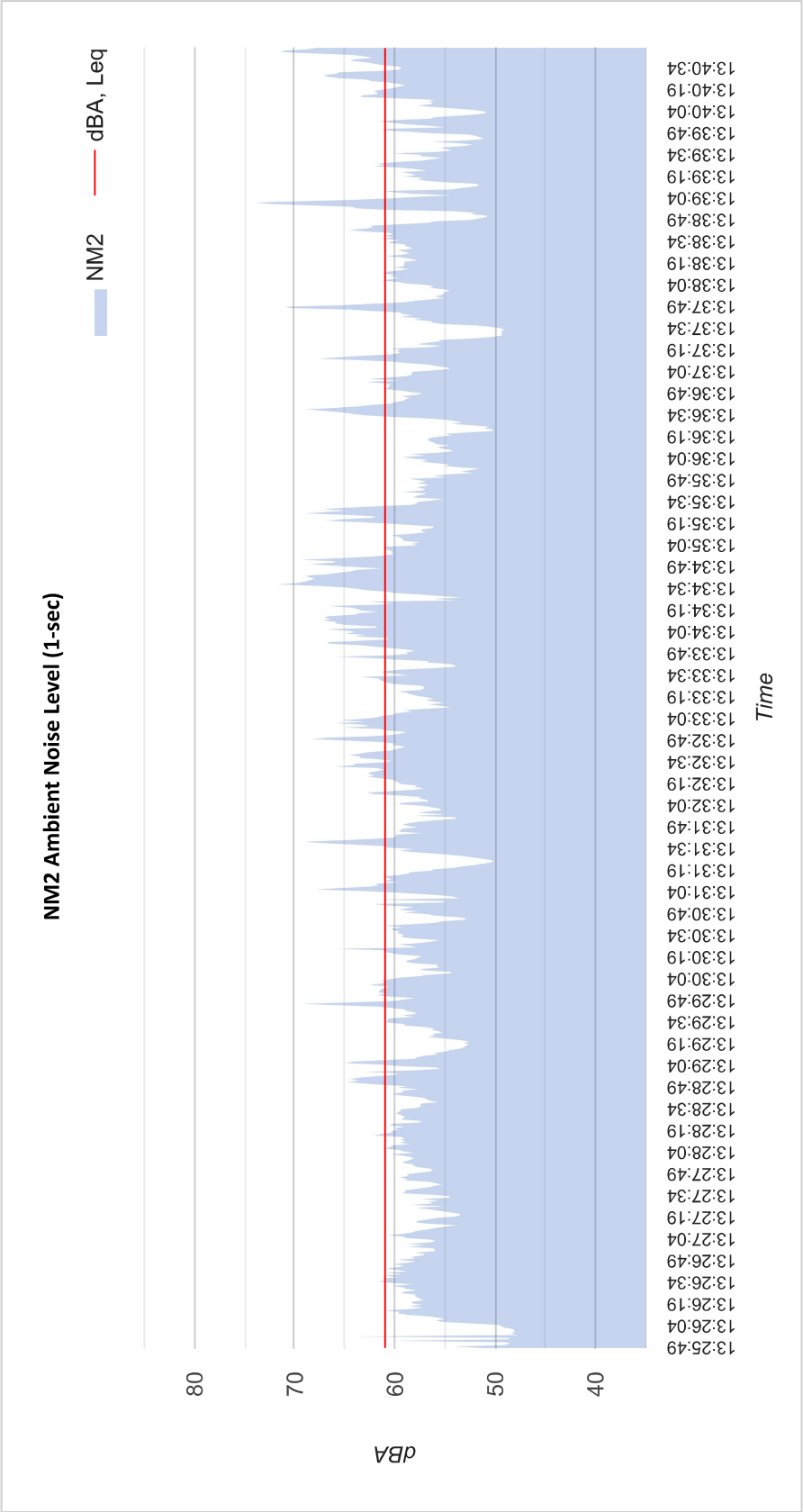
15-Minute Continuous Noise Measurement Datasheet - Cont.

Project Name:	4260 Arch Drive Multi-Family - Cat32	Site Topo:	Buildings 1-2 stories tall site	Noise Source(s) w/ Distance:
Site Address/Location:	4260 N Arch Drive, Studio City,	Meteorological Cond.:	76F Winds 1-3mph	Road Noise
Site Id:	NM1	Ground Type:	buildings and asphalt	



15-Minute Continuous Noise Measurement Datasheet - Cont.

Project Name:	4260 Arch Drive Multi-Family - Cat32	Site Topo:	Buildings 1-2 stories tall site	Noise Source(s) w/ Distance:
Site Address/Location:	4260 N Arch Drive, Studio City,	Meteorological Cond.:	76F Winds 3-1mph	Road Noise
Site Id:	NM2	Ground Type:	buildings and asphalt	



Appendix C

Traffic

EXISTING ADT'S BY LEG

FACTOR=

10

Use 10, 12, or 11 in LA

[illegible]

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

PROJECT: 4260 Arch Drive
 ROADWAY: Ventura Blvd
 LOCATION: East PL

JOB #: 0332-21-13
 DATE: 11-Oct-22
 ENGINEER: C Pincock

NOISE INPUT DATA

ROADWAY CONDITIONS

ADT = 26,300
 SPEED = 35
 PK HR % = 10
 NEAR LANE/FAR LANE DIS 45
 ROAD ELEVATION = 0.0
 GRADE = 1.0 %
 PK HR VOL = 2,630

RECEIVER INPUT DATA

RECEIVER DISTANCE = 204
 DIST C/L TO WALL = 80
 RECEIVER HEIGHT = 5.0
 WALL DISTANCE FROM RECEIVER 124
 PAD ELEVATION = 0.5
 ROADWAY VIEW: LF ANGLE= -90
 RT ANGLE= 90
 DF ANGLE= 180

SITE CONDITIONS

AUTOMOBILES = 10
 MEDIUM TRUCKS = 10 (10 = HARD SITE, 15 = SOFT SITE)
 HEAVY TRUCKS = 10

WALL INFORMATION

HTH WALL 0.0
 AMBIENT= 0.0
 BARRIER = 0 (0 = WALL, 1 = BERM)

VEHICLE MIX DATA

VEHICLE TYPE	DAY	EVENING	NIGHT	DAILY
AUTOMOBILES	0.775	0.129	0.096	0.9742
MEDIUM TRUCK	0.848	0.049	0.103	0.0184
HEAVY TRUCKS	0.865	0.027	0.108	0.0074

MISC. VEHICLE INFO

VEHICLE TYPE	HEIGHT	SLE DISTANCE	GRADE ADJUSTMENT
AUTOMOBILES	2.0	202.79	--
MEDIUM TRUCKS	4.0	202.76	--
HEAVY TRUCKS	8.0	202.77	0.00

NOISE OUTPUT DATA

NOISE IMPACTS (WITHOUT TOPO OR BARRIER SHIELDING)

VEHICLE TYPE	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES	62.3	60.4	58.6	52.6	61.2	61.8
MEDIUM TRUCKS	54.8	53.3	46.9	45.4	53.8	54.1
HEAVY TRUCKS	56.0	54.6	45.6	46.8	55.2	55.3
NOISE LEVELS (dBA)	63.8	62.0	59.1	54.2	62.8	63.2

NOISE IMPACTS (WITH TOPO AND BARRIER SHIELDING)

VEHICLE TYPE	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES	62.3	60.4	58.6	52.6	61.2	61.8
MEDIUM TRUCKS	54.8	53.3	46.9	45.4	53.8	54.1
HEAVY TRUCKS	56.0	54.6	45.6	46.8	55.2	55.3
NOISE LEVELS (dBA)	63.8	62.0	59.1	54.2	62.8	63.2

NOISE CONTOUR (FT)

NOISE LEVELS	70 dBA	65 dBA	60 dBA	55 dBA
CNEL	43	136	431	1362
LDN	39	122	386	1220

Appendix D
Noise Calculations Input/Output

APPLICATION & ACCESSORIES

Refer to Price Manual for specific model numbers.

Standard Application Limits*		
Maximum Lineset Equivalent Length		80 Ft
Outdoor Ambient Temperature Limits		
Cooling Operation	Maximum DB	125°F
	Minimum DB	55°F
Heating Operation	Maximum DB	75°F
	Minimum DB	-10°F

* For applications such as Low Ambient, reduced linesets, and/or long linesets, see the accessories listed below.

Non-Standard Lineset Applications - For installations with reduced diameter or long linesets, refer to the current version of the Piping Application Guide P/N 247077, available in the Application Bulletins section on www.upgnet.com.

Standard Low Ambient Control Kit S1-2LA06700424: Allows the use of air conditioning at low outdoor ambient temperatures down to +20°F (-7°C). For use with all R-410A single stage AC & HP models.

Advanced Low Ambient Control Kit S1-2LA04701024: Contains the necessary components and controls to allow cooling operation down to -20°F (-29°C). For use with all R-410A single stage AC & HP models.

High Ambient Condenser Fan Motor S1-FHM**HT:** Class F 70°C motor to allow cooling operation up to 160°F air entering the condenser. For use with all R-410A single stage AC & HP models containing R-410A refrigerant only.

Outdoor Communicating Board Kit (S1-33102952310): Electronic control upgrade for standard AC & HP units to provide compatibility with the Residential Touch Screen Communicating Control.

Start Assist Kit S1-2SA067***:** Provides increased compressor starting torque for areas with low supply voltage. Required for units with recip compressors when applied with indoor TXV, and for all units when applied with long linesets or low ambient kits. May be factory installed on select AC & HP units (see Physical & Electrical Table). See Price Pages or Source1 SmartSearch for the correct kit for each application.

Compressor Crankcase Heater Kit (S1-025-***-***):** A wrap-around electrical resistance heater that warms the compressor sump, reducing the chance of liquid slugging on startup. Required on all long lineset and low ambient applications. See Price Pages or Source1 SmartSearch for the correct part for each application.

Indoor Blower-Off Delay Kit S1-2FD06700224: Provides a 1-minute blower-off delay at the end of the cooling cycle. May be required for retrofits with non-Johnson Controls Unitary Products indoor units. This feature is factory-provided on all JCUP indoor products.

Low Temperature Cutoff S1-2LT067224: Locks the compressor out at temperatures below -6°F, allowing the system thermostat to cycle on supplemental heat.

Support Feet S1-HPRKIT:** Kit of 5 support feet to raise unit above snow or landscaping. Available in heights of 3", 6" or 12".

Anchor Bracket Kit S1-1HK0401: Firmly anchors unit to pad or support structure. When properly installed, approved for ground-mounted or roof-mounted applications.

Indoor TXV Kit S1-1TVM*:** Thermal expansion valves precisely meter refrigerant for optimum performance over a wide range of conditions. See System Charge Table, Price Pages, or Source1 Smart Search for TXV part number for each AC & HP model.

Wall Mount Kit (S1-ACB):** Includes two brackets to allow outdoor unit to be securely mounted to a vertical wall. Mounting hardware is field sourced according to the specific application.

Winter Cover Kit S1-CCVRE*:** Custom fit winter cover protects AC condensing unit from debris during the off-season. Must be removed prior to unit operation. See Price Pages or Source1 SmartSearch for the correct cover for each application.

Cold Weather Charging Tent S1-CHGTENT01: Provides warm environment to accurately service AC & HP systems in ambient conditions 55°F (13°C) or colder.

Touch-up Paint S1-5130153**:** Color matched aerosol paint for touching up unit chassis and panels. See Price Pages or Source1 SmartSearch for the correct color for each application.

Compressor Sound Blanket S1-010-07xxx-000: A field installed dense foam cover that provides 2dBA sound level reduction. See Price Pages or Source1 SmartSearch for the correct blanket for each application.

Thermostat: Compatible thermostat controls are available through accessory sourcing. For optimum performance, these outdoor units are fully compatible with our [YorkColemanLuxair-residential](#) touch screen thermostat with proprietary (patent-pending) hexagon interface. For more information, see the thermostat section of the Product Equipment Catalog.

SOUND POWER RATINGS - COOLING

Cooling	Octave Band Sound Power Level (db re. 1-pW)									
Model Number	63	125	250	500	1000	2000	4000	8000	dBA	SQI
YHE18B21S	69.3	72.8	66.8	69.1	66.7	63.6	59.3	59.7	72	19.1
YHE24B21S	70.0	70.1	67.6	70.0	67.3	63.5	60.7	56.8	72	19.1
YHE30B21S	68.0	70.6	68.3	70.0	68.9	65.5	64.7	61.1	74	19.0
YHE35B21S	67.9	72.6	68.3	70.5	68.0	63.6	59.7	56.5	72	19.2
YHE36B21H	68.4	70.2	68.8	68.9	69.0	65.0	63.3	60.2	73	19.1
YHE42B21H	56.0	71.2	68.1	70.0	65.9	65.5	58.8	54.9	75	19.0
YHE48B21S	58.0	70.7	64.1	68.3	66.1	61.7	57.9	56.0	75	19.0
YHE60B21S	69.1	71.6	68.9	71.3	70.2	65.5	61.5	58.4	74	19.0

Rated in accordance with ARI Standard 270.

SOUND POWER RATINGS - HEATING

Heating	Octave Band Sound Power Level (db re. 1-pW)									
Model Number	63	125	250	500	1000	2000	4000	8000	dBA	SQI
YHE18B21S	69.9	73.1	68.0	69.3	66.1	63.6	59.2	58.0	72	19.0
YHE24B21S	69.7	69.7	66.7	71.2	66.9	63.2	60.3	56.5	72	19.0
YHE30B21S	70.3	74.6	70.5	71.9	68.9	66.0	60.4	58.7	74	19.2
YHE35B21S	64.3	73.7	67.7	73.6	68.0	63.4	60.2	61.1	73	19.1
YHE36B21H	69.3	70.0	70.8	71.3	70.8	67.1	62.5	61.3	75	19.0
YHE42B21H	58.0	75.1	72.2	67.1	62.4	60.7	55.3	52.3	75	19.0
YHE48B21S	61.2	69.6	65.8	68.1	65.5	60.3	55.2	52.4	74	19.0
YHE60B21S	72.6	73.4	70.8	71.9	69.0	67.2	65.4	65.5	75	19.1

Rated in accordance with ARI Standard 270.

MECHANICAL SPECIFICATIONS**MANUFACTURE AND CERTIFICATIONS**

- Units shall be manufactured in an ISO 9001 certified facility.
- Units shall be certified by CSA to UL 1995 / CSA 22.2 and performance certified to ANSI/AHRI Standard 210/240.
- Units shall be sound tested according to ANSI/AHRI Standard 270.
- Certified matched system ratings will be available for download from the AHRI online directory at www.ahridirectory.org.
- Unit packaging shall be marked, "Assembled in the USA"

UNIT APPLICATION

- Units shall be approved for cooling operation between 55°F and 125°F without modification.
- Units shall be approved for heating operation between -20°F and 75°F without modification.
- Units shall be approved for linesets up to 80 feet equivalent length without modification.
- Units shall be approved for installation within 6 inches of a flat vertical wall without modification, according to the instructions in the technical literature.
- Units shall be certified to the 5th Edition (2014) of the Florida Building Code for a combined allowable lateral and uplift wind force of 200 psf and 100 psf, respectively, for both ground-mounted and rooftop-mounted applications up to 200 feet above grade with approved mounting kit
- Units shall be designed to 76dBA or less to minimize sound pollution.

UNIT ACCESS

- Units shall have a removable fan guard that can be removed independently of the top for interior access through the top of the unit without damaging the coil.
- Units shall have two removable stamped steel coil guards for exterior coil access.
- Units shall have a separate compartment for electrical controls that can be accessed without disturbing the unit airflow.
- Units shall have a blockoff panel that can be removed to provide interior unit access through the side of the unit.
- Units shall have a removable blockoff panel and a swing away removable electrical panel that provides sufficient interior unit access for removing the compressor through the side of the unit.

UNIT CONSTRUCTION

- Units shall be shipped completely wired, piped and assembled. Wiring pigtails shall be provided for field control wiring connections. Service valves shall be provided for field refrigerant line connections.

- Units shall be factory leak checked, run tested, and shipped with a holding charge of R-410A refrigerant.
- Unit cabinet components shall be G90 equivalent steel finished with powder-coat paint rated at a minimum of 500 hours under ASTM B117 testing.
- Unit base pan shall be stamped G90 equivalent steel finished with powder-coat paint rated at a minimum of 500 hours under ASTM B117 testing.
- Units shall have a single corner post opposite the electrical control box and two independently removable steel coil guard panels to optimize cabinet strength and serviceability.
- Units shall have L-shaped stamped sheet metal coil guards with punched and extruded slots for maximum panel durability and stiffness.
- Units shall have a factory installed filter-drier for faster installation and improved system reliability.
- Unit base valves shall be mounted diagonally on the unit base pan with service ports that provide sufficient clearance for low-loss hose fittings.
- Units shall be constructed with a high pressure switch for system protection.
- Units shall be constructed with all badging and labels applied at the factory.

UNIT COMPONENTS

- Compressor shall be hermetic with internal electrical overload protection and internal overpressure protection.
- Compressor shall be mounted on rubber vibration isolators that do not require the removal of transportation clips or brackets.
- Units shall be constructed with internally sprung reciprocating compressors for low vibration. (Applies to select models).
- Condenser fan shall be direct drive with vertical air discharge for low sound levels.
- Condenser fan motor shall be totally enclosed with permanently lubricated ball bearings motors approved for vertical shaft applications.
- Condenser coil shall be air cooled and constructed of enhanced aluminum fins mechanically bonded to internally enhanced Ø 7mm copper tubing.

UNIT WARRANTIES

- Unit manufacturer shall provide a 10-Year compressor warranty without a requirement for unit registration.
- Unit manufacturer shall provide a 5-Year parts warranty without a requirement for unit registration.

Appendix E
Construction Noise and Vibration Calculations

Receptor - Residences to the East

Construction Phase Equipment Item	# of Items	Item Lmax at 50 feet, dBA ¹	Edge of Site to Receptor, feet	Center of Site to Receptor, feet	Item Usage Percent ¹	Ground Factor ²	Usage Factor	Receptor Item Lmax, dBA	Recptor. Item Leq, dBA
GRADE									
Grader	1	70	50	100	40	0	0.40	70.0	60.0
Dozer	1	67	50	100	40	0	0.40	67.0	57.0
Tractor	2	69	50	100	40	0	0.40	69.0	59.0
								70.0	64.9
BUILD									
Crane	1	66	50	100	16	0	0.16	66.0	52.0
Man lift	1	60	50	100	20	0	0.20	60.0	47.0
Generator	1	66	50	100	50	0	0.50	66.0	57.0
Tractor	1	69	50	100	40	0	0.40	69.0	59.0
Welder/Torch	3	59	50	100	40	0	0.40	59.0	49.0
								69.0	62.4
PAVE									
Paver	1	62	50	100	50	0	0.50	62.0	53.0
Tractor	1	69	50	100	40	0	0.40	69.0	59.0
Roller	1	65	50	100	20	0	0.20	65.0	52.0
Concrete Mixer Truck	1	64	50	100	40	0	0.40	64.0	54.0
								69.0	60.6
ARCH COAT									
Compressor (air)	1	63	50	100	40	0	0.40	63.0	53.0
								63.0	53.0

¹FHWA Construction Noise Handbook: Table 9.1 RCNM Default Noise Emission Reference Levels and Usage Factors

VIBRATION LEVEL IMPACT

Project: 4260 Arch Drive

Date: 10/11/22

Source: Large Bulldozer

Scenario: Unmitigated

Location: Adjacent residences

Address: 4260 Arch Drive

PPV = $PPV_{ref}(25/D)^n$ (in/sec)

DATA INPUT

Equipment = 2 Large Bulldozer INPUT SECTION IN BLUE
Type

PPVref = 0.089 Reference PPV (in/sec) at 25 ft.

D = 19.00 Distance from Equipment to Receiver (ft)

n = 1.10 Vibration attenuation rate through the ground

Note: Based on reference equations from Vibration Guidance Manual, California Department of Transportation, 2006, pgs 38-43.

DATA OUT RESULTS

PPV = 0.120 IN/SEC OUTPUT IN RED



www.mdacoustics.com

AZ Office
4960 S. Gilbert Road, Ste 1-461
Chandler, AZ 85249
p. (602) 774-1950

CA Office
1197 Los Angeles Avenue, Ste C-256
Simi Valley, CA 93065
p. (805) 426-4477

October 11, 2022

Mr. Craig Fajnor
EcoTierra Consulting
633 W 5th Street, 26th Floor
Los Angeles, CA 90071

Subject:

4260 Arch Drive Multi-Family Project – Cat32 Exemption – Focused Air Quality, Greenhouse Gas, and Energy Impact Evaluation, City of Los Angeles, CA

Dear Mr. Heller:

MD Acoustics, LLC (MD) has completed a focused Air Quality, Greenhouse Gas, and Energy Impact Evaluation for the proposed 4260 Arch Drive Multi-Family Project located in the City of Los Angeles, CA. The purpose of this focused study is to evaluate the air quality, greenhouse gas, and energy construction and operational emissions generated by the proposed project and to compare the project emissions to South Coast Air Quality Management District's (SCAQMD) thresholds of significance as it relates to residential and commercial uses and consistency to the City's General Plan. A list of definitions and terminology is located in Appendix A.

1.0 Project Description

The Project Site is approximately one acre and is currently vacant and was previously occupied by an assisted living building, which has since been demolished. The Project includes construction of a new multifamily residential building containing 129 residential dwelling units. The proposed building would include five stories. The Project would include a total of 145 residential vehicular parking spaces on two subterranean levels of the building. The proposed project site plan is in Appendix B.

Land uses and the closest existing sensitive receptors surrounding the site include multi-family residential uses 10 feet to the northeast, commercial uses 10 feet to the southwest, a water and power distribution station across Arch Drive to the east, and the Los Angeles River to the northwest.

2.0 AQ/GHG Thresholds of Significance

2.1 AQ Significance Thresholds

Project emissions were compared to both regional and localized SCAQMD's thresholds of significance for construction and operational emissions^{1,2}.

2.2 GHG Significance Thresholds

The project emissions were compared to the SCAQMD's 3,000 MTCO₂e draft threshold for all land uses³.

¹ <https://www.aqmd.gov/docs/default-source/ceqa/handbook/scaqmd-air-quality-significance-thresholds.pdf>

² <https://www.aqmd.gov/home/regulations/ceqa/air-quality-analysis-handbook/localized-significance-thresholds>

³ <https://www.aqmd.gov/home/regulations/ceqa/air-quality-analysis-handbook/ghg-significance-thresholds/page/2>

3.0 Evaluation Procedure/Methodology

MD utilized the latest version of CalEEMod (2020.4.0) to calculate both the construction and operational emissions from the project site⁴. Project construction is modeled to commence no earlier than June 2023 and be completed by July 2025. Construction assumes grading, building construction, paving, and architectural coating. CalEEMod defaults were utilized. Assumptions and output calculations for winter, summer and annual are provided in Appendix C.

4.0 Local Ambient Conditions

The project site is located in South Coast Air Basin (SCAB) in the Central Los Angeles Source Receptor Area (SRA) ⁵. The nearest air monitoring station to the project site is the Los Angeles – North Main Street Monitoring Station. Historical air quality data for the vicinity can be found both at CARB and SCAQMD’s websites^{6,7}. Temperature and historical precipitation data can be found at the WRCC⁸.

5.0 Findings

The following outlines the emissions for the project:

5.1 Regional Construction Emissions

The construction emissions for the project would not exceed the SCAQMD’s daily emission thresholds at the regional level as indicated in Table 1, and therefore the impact would be considered less than significant.

<Table 1, next page>

⁴ <https://www.caleemod.com/>

⁵ <https://www.aqmd.gov/docs/default-source/default-document-library/map-of-monitoring-areas.pdf?sfvrsn=6>

⁶ <https://www.aqmd.gov/home/library/air-quality-data-studies/historical-data-by-year>

⁷ <https://www.arb.ca.gov/adam/>

⁸ <https://www.wrcc.dri.edu/summary/Climsmsca.html>

Table 1: Regional Significance – Construction Emissions (lbs/day)

Activity	Pollutant Emissions (pounds/day)					
	VOC	NOx	CO	SO ₂	PM10	PM2.5
Grading						
On-Site ²	1.33	14.47	8.70	0.02	3.58	1.92
Off-Site ³	0.98	54.36	11.86	0.25	8.15	2.59
Total	2.32	68.82	20.56	0.27	11.73	4.51
Building Construction						
On-Site ²	1.52	11.71	12.61	0.02	0.51	0.50
Off-Site ³	0.50	1.38	4.19	0.01	1.15	0.32
Total	2.02	13.09	16.80	0.04	1.67	0.81
Paving						
On-Site ²	0.57	5.33	8.80	0.01	0.25	0.23
Off-Site ³	0.04	0.03	0.36	0.00	0.11	0.03
Total	0.62	5.35	9.16	0.01	0.35	0.26
Architectural Coating						
On-Site ²	33.39	1.15	1.81	0.00	0.05	0.05
Off-Site ³	0.08	0.05	0.67	0.00	0.20	0.05
Total	33.47	1.19	2.48	0.00	0.25	0.10
Total of overlapping phases⁴	34.09	6.54	11.63	0.02	0.60	0.36
SCAQMD Thresholds	75	100	550	150	150	55
Exceeds Thresholds	No	No	No	No	No	No
Notes:						
¹ Source: CalEEMod Version 2020.4.0						
² On-site emissions from equipment operated on-site that is not operated on public roads.						
³ Off-site emissions from equipment operated on public roads.						
⁴ Architectural coatings and paving phases may overlap.						

5.2 Localized Construction Emissions

Utilizing the construction equipment list and associated acreages per 8-hour day provided in the SCAQMD “Fact Sheet for Applying CalEEMod to Localized Significance Thresholds” (South Coast Air Quality Management District 2011b), the maximum number of acres disturbed in a day would be 2.0 acres during grading (as shown in Table 2 below); however, as the project is approximately one acre, the project emissions have been compared to the 1-acre per day localized significance threshold.

Table 2: Maximum Number of Acres Disturbed Per Day¹

Activity	Equipment	Number	Acres/8hr-day	Total Acres
Grading	Graders	1	0.5	0.5
	Rubber Tired Dozers	1	0.5	0.5
	Tractors/Loaders/Backhoes	2	0.5	1.0
Total Per Phase				2.0
Notes:				
¹ Source: CalEEMod output and South Coast AQMD, Fact Sheet for Applying CalEEMod to Localized Significance Thresholds. http://www.aqmd.gov/docs/default-source/ceqa/handbook/localized-significance-thresholds/caleemod-guidance.pdf?sfvrsn=2				

None of the analyzed criteria pollutants would exceed the LST emission thresholds at the nearest sensitive receptors as shown in Table 3. Therefore, the impact would be less than significant from construction.

Table 3: Localized Significance – Construction Emissions (lbs/day)

Phase	On-Site Pollutant Emissions (pounds/day) ¹			
	NOx	CO	PM10	PM2.5
Grading	14.47	8.70	3.58	1.92
Building Construction	11.71	12.61	0.51	0.50
Paving	5.33	8.80	0.25	0.23
Architectural Coating	1.15	1.81	0.05	0.05
Total for overlapping construction phases	18.18	23.22	0.81	0.78
SCAQMD Threshold²	74	680	5	3
Exceeds Threshold?	No	No	No	No
Notes: ¹ Source: Calculated from CalEEMod and SCAQMD's Mass Rate Look-up Tables for one-acre (see Table 2), to be conservative, in Central Los Angeles Source Receptor Area (SRA 1). ² The nearest sensitive receptors are the multi-family residential uses located approximately 10 feet (~3 meters) to the northeast of the project site; therefore, the 25-meter threshold was utilized.				

5.3 Regional Operational Emissions

The operating emissions were based on year 2025, which is the anticipated opening year for the project. The CalEEMod default project trips and vehicle miles traveled (VMTs) were used.

The summer and winter emissions created by the proposed project's long-term operations were calculated and the highest emissions from either summer or winter are summarized in Table 4. The data in Table 3 shows that the operational emissions for the project would not exceed the SCAQMD's regional significance thresholds.

Table 4: Regional Significance – Operational Emissions (lbs/day)

Activity	Pollutant Emissions (pounds/day) ¹					
	VOC	NOx	CO	SO2	PM10	PM2.5
Area Sources ²	3.12	1.30	11.15	0.01	0.15	0.15
Energy Usage ³	0.04	0.38	0.16	0.00	0.03	0.03
Mobile Sources ⁴	1.92	2.92	15.61	0.04	3.24	0.89
Total Emissions	5.08	4.60	26.92	0.05	3.43	1.07
SCAQMD Thresholds	55	55	550	150	150	55
Exceeds Threshold?	No	No	No	No	No	No
Notes: ¹ Source: CalEEMod Version 2020.4.0 ² Area sources consist of emissions from consumer products, architectural coatings, and landscaping equipment. ³ Energy usage consists of emissions from on-site natural gas usage. ⁴ Mobile sources consist of emissions from vehicles and road dust.						

5.4 Localized Operational Emissions

Project-related air emissions from on-site sources such as architectural coatings, landscaping equipment, on-site usage of natural gas appliances as well as the operation of vehicles on-site may have the potential to exceed the State and Federal air quality standards in the project vicinity, even though these pollutant emissions may not be significant enough to create a regional impact to the Air Basin.

According to SCAQMD LST methodology, LSTs would apply to the operational phase of a project, if the project includes stationary sources, or attracts mobile sources (such as heavy-duty trucks) that may spend long periods queuing and idling at the site; such as industrial warehouse/transfer facilities. The proposed

project is a residential project and does not include such uses. Therefore, due to the lack of stationary source emissions, no long-term localized significance threshold analysis is warranted.

5.5 GHG Emissions

Table 5 outlines the construction and operational GHG emissions for the project. The project's emissions are below (996.70 MTCO₂e) the SCAQMD's draft screening threshold of 3,000 MTCO₂e for all land uses and; therefore, the impact is less than significant.

Table 5: Opening Year Project-Related Greenhouse Gas Emissions

Category	Greenhouse Gas Emissions (Metric Tons/Year) ¹					
	Bio-CO ₂	NonBio-CO ₂	CO ₂	CH ₄	N ₂ O	CO ₂ e
Area Sources ²	0.00	57.45	57.45	0.00	0.00	57.82
Energy Usage ³	0.00	229.74	229.74	0.01	0.00	230.99
Mobile Sources ⁴	0.00	568.31	568.31	0.03	0.03	578.57
Solid Waste ⁶	12.05	0.00	12.05	0.71	0.00	29.84
Water ⁷	2.67	11.35	14.02	0.27	0.01	22.85
Construction ⁸	0.00	29.16	29.16	0.00	0.00	29.62
Total Emissions	14.71	896.02	910.73	1.04	0.04	949.69
SCAQMD Draft Screening Threshold						3,000
Exceeds Threshold?						No
Notes:						
¹ Source: CalEEMod Version 2020.4.0						
² Area sources consist of GHG emissions from consumer products, architectural coatings, and landscape equipment.						
³ Energy usage consist of GHG emissions from electricity and natural gas usage.						
⁴ Mobile sources consist of GHG emissions from vehicles.						
⁵ Solid waste includes the CO ₂ and CH ₄ emissions created from the solid waste placed in landfills.						
⁶ Water includes GHG emissions from electricity used for transport of water and processing of wastewater.						
⁷ Construction GHG emissions based on a 30-year amortization rate.						

5.6 Consistency with Applicable Plans

Consistency with the City's General Plan

The project site is located in the City of Los Angeles. The project site has a current land use classification of "C2" Commercial Zone (C2-1VL-RIO) according to the Zone Information and Map Access System (ZIMAS). C2 zones allow for apartment housing per Section 12.14 of the Los Angeles Planning and Zoning Code. The proposed project is a multi-family residential building with 129 units. Therefore, the proposed project is consistent with the land use and zoning designations of the City's General Plan and Community Plan.

The project will be subject to the policies and ordinances pertaining to air quality and climate change in the City's General Plan. Although the project would generate greenhouse gas emissions, either directly or indirectly, these emissions are short-term and not considered to have a significant impact on the environment. Furthermore, project emissions have demonstrated that they will be below any significant thresholds as outlined by SCAQMD.

In addition, as shown below, the project's GHG impacts have been evaluated by assessing the project's consistency with applicable statewide, regional, and local GHG reduction plans and strategies.

Consistency with the City of Los Angeles' Sustainable City pLAN and Green New Deal

The proposed project could have the potential to conflict with any applicable plan, policy or regulation of an agency adopted for the purpose of reducing the emissions of greenhouse gases. The applicable plan for the proposed project is the L.A. Green New Deal Sustainable city pLAN 2019, which is an update to the City of Los Angeles' Sustainable City pLAN (Plan) adopted by the City in April 2015. The Green New Deal Sustainable City pLAN establishes visions for the City in thirteen topic areas including environmental justice, renewable energy, local water, clean and healthy buildings, housing and development, mobility and public transit, zero emission vehicles, industrial emissions and air quality monitoring, waste and resource recovery, food systems, urban ecosystems and resilience, prosperity and green jobs, and lead by example.

Project consistency with all of the applicable targets within the Green New Deal Sustainable City pLAN are assessed in Table 6. As shown in Table 6, the project is consistent with the applicable targets within the Green New Deal Sustainable City Plan.

Table 6: Project Consistency with the City of Los Angeles Green New Deal¹

Targets	Consistency Analysis
Environment	
<i>Renewable Energy</i>	
LADWP will supply 55% renewable energy by 2025; 80% by 2036; and 100% by 2045.	Not Applicable. This target calls for LADWP to utilize renewable energy in their supply. However, the proposed project is to follow the California Green Building Standards Code (proposed Part 11, Title 24) adopted as part of the California Building Standards Code in the CCR. Part 11 establishes voluntary standards, that are mandatory in the 2019 edition of the Code, on planning and design for sustainable site development which includes energy efficiency (in excess of the California Energy Code requirements). The project will be required to include these mandatory standards.
Increase cumulative MW by 2025; 2035; and 2050 of: -Local solar to 900-1,500 MW; 1,500-1,800 MW; and 1,950 MW -Energy storage capacity to 1,654-1,750 MW; 3,000 MW; and 4,000 MW -Demand response (DR) programs to 234 MW (2025) and 600 MW (2035)	Consistent. The California Green Building Standards Code (proposed Part 11, Title 24) was adopted as part of the California Building Standards Code in the CCR. Part 11 establishes voluntary standards, that are mandatory in the 2019 edition of the Code, on planning and design for sustainable site development, energy efficiency (in excess of the California Energy Code requirements), water conservation, material conservation, and internal air contaminants. The project will be subject to these mandatory standards.

<i>Local Water</i>	
Source 70% of L.A.'s water locally and capture 150,000 acre ft/yr of stormwater by 2035.	Consistent. The California Green Building Standards Code (proposed Part 11, Title 24) was adopted as part of the California Building Standards Code in the CCR. Part 11 establishes voluntary standards, that are mandatory in the 2019 edition of the Code, on planning and design for sustainable site development, energy efficiency (in excess of the California Energy Code requirements), water conservation, material conservation, and internal air contaminants. The project will be subject to these mandatory standards.
Recycle 100% of all wastewater for beneficial reuse by 2035.	Consistent. The California Green Building Standards Code (proposed Part 11, Title 24) was adopted as part of the California Building Standards Code in the CCR. Part 11 establishes voluntary standards, that are mandatory in the 2019 edition of the Code, on planning and design for sustainable site development, energy efficiency (in excess of the California Energy Code requirements), water conservation, material conservation, and internal air contaminants. The project will be subject to these mandatory standards.
Reduce potable water use per capita by 22.5% by 2025; and 25% by 2035; and maintain or reduce 2035 per capita water use through 2050.	Consistent. The project will comply with all applicable City ordinances and CAL Green requirements.
<i>Clean and Healthy Buildings</i>	
All new buildings will be net zero carbon by 2030; and 100% of buildings will be net zero carbon by 2050.	Consistent. The California Green Building Standards Code (proposed Part 11, Title 24) was adopted as part of the California Building Standards Code in the CCR. Part 11 establishes voluntary standards, that are mandatory in the 2019 edition of the Code, on planning and design for sustainable site development, energy efficiency (in excess of the California Energy Code requirements), water conservation, material conservation, and internal air contaminants. The project will be subject to these mandatory standards.
Reduce building energy use per sq.ft. for all building types 22% by 2025; 34% by 2035; and 44% by 2050.	Consistent. The California Green Building Standards Code (proposed Part 11, Title 24) was adopted as part of the California Building Standards Code in the CCR. Part 11 establishes voluntary standards, that are mandatory in the 2019 edition of the Code, on planning and design for sustainable site development, energy efficiency (in excess of the California Energy Code requirements), water conservation, material conservation, and internal air contaminants. The project will be subject to these mandatory standards.

<i>Mobility and Public Transit</i>	
Increase the percentage of all trips made by walking, biking, micro-mobility / matched rides or transit to at least 35% by 2025; 50% by 2035; and maintain at least 50% by 2050	Consistent. The proposed project is an infill development in close proximity to existing transit and development. The project is a residential use and is surrounded by other commercial development and residential uses.
Reduce VMT per capita by at least 13% by 2025; 39% by 2035; and 45% by 2050.	Consistent. The proposed project is an infill development in close proximity to existing transit and development. The project is a residential use and is surrounded by other commercial development and residential uses.
<i>Zero Emission Vehicles</i>	
Increase the percentage of electric and zero emission vehicles in the city to 25% by 2025; 80% by 2035; and 100% by 2050.	Consistent. The City's Building Code requires the proposed building to provide conduit for on-site electric vehicle charging stalls, which the project is to provide in the proposed parking garage.
<i>Waste and Resource Recovery</i>	
Increase landfill diversion rate to 90% by 2025; 95% by 2035; and 100% by 2050.	Consistent. The proposed project is required to have recycling programs that reduce waste to landfills by a minimum of 75 percent (per AB 341).
Eliminate organic waste going to landfill by 2028.	Consistent. The proposed project is required to have recycling programs that reduce waste to landfills by a minimum of 75 percent (per AB 341).
Increase proportion of waste products and recyclables productively reused and/or repurposed within L.A. County to at least 25% by 2025; and 50% by 2035.	Consistent. The proposed project is required to have recycling programs that reduce waste to landfills by a minimum of 75 percent (per AB 341).
Notes: ¹ Source: City of Los Angeles Green New Deal Sustainable City pLAn, 2019.	

Additional relevant plans and policies that govern climate change include:

Executive Orders S-305 and B-30-15;

AB 32 Scoping Plan;

SCAG's Regional Transportation Plan/Sustainable Communities Strategy;

City of Los Angeles Climate LA Implementation Plan; and

City of Los Angeles Building Ordinance

Consistency with Executive Orders S-03-05 and B-30-15

Executive Orders S-3-05 and B-30-15 are orders from the State's Executive Branch for the purpose of reducing GHG emissions. These strategies call for developing more efficient land-use patterns to match population increases, workforce, and socioeconomic needs for the full spectrum of the population. The project includes elements of smart land use as it is an infill development well-served by transportation infrastructure and near public transit.

Although the project's emissions level in 2050 cannot be reliably quantified, statewide efforts are underway to facilitate the State's achievement of that goal and it is reasonable to expect the project's emissions profile to decline as the regulatory initiatives identified by ARB in the First Update are implemented, and other technological innovations occur. As such, given the reasonably anticipated decline in project emissions once fully constructed and operational, the project is consistent with the

Executive Order’s horizon-year goal. Therefore, the project is consistent with Executive Orders S-3-05 and B-30-15.

Consistency with AB32 Scoping Plan

The ARB Board approved a Climate Change Scoping Plan in December 2008. The Scoping Plan outlines the State’s strategy to achieve the 2020 greenhouse gas emissions limit. The Scoping Plan “proposes a comprehensive set of actions designed to reduce overall greenhouse gas emissions in California, improve our environment, reduce our dependence on oil, diversify our energy sources, save energy, create new jobs, and enhance public health” (California Air Resources Board 2008). The measures in the Scoping Plan have been in place since 2012.

This Scoping Plan calls for an “ambitious but achievable” reduction in California’s greenhouse gas emissions, cutting approximately 30 percent from business-as-usual emission levels projected for 2020, or about 10 percent from today’s levels. In May 2014, the CARB released its *First Update to the Climate Change Scoping Plan* (CARB 2014). This *Update* identifies the next steps for California’s leadership on climate change. In November 2017, the CARB released the 2017 Scoping Plan. This Scoping Plan incorporates, coordinates, and leverages many existing and ongoing efforts and identifies new policies and actions to accomplish the State’s climate goals, and includes a description of a suite of specific actions to meet the State’s 2030 GHG limit. The 2017 Scoping Plan builds upon the successful framework established by the Initial Scoping Plan and First Update, while identifying new, technologically feasible, and cost-effective strategies to ensure that California meets its GHG reduction targets.

As the latest, 2017 Scoping Plan builds upon previous versions, project consistency with applicable strategies of both the 2008 and 2017 Plan are assessed in Table 7. As shown in Table 7, the project is consistent with the applicable strategies within the Scoping Plan.

Table 7: Project Consistency with CARB Scoping Plan Policies and Measures¹

2008 Scoping Plan Measures to Reduce Greenhouse Gas Emissions	Project Compliance with Measure
California Light-Duty Vehicle Greenhouse Gas Standards – Implement adopted standards and planned second phase of the program. Align zero-emission vehicle, alternative and renewable fuel and vehicle technology programs with long-term climate change goals.	Consistent. These are CARB enforced standards; vehicles that access the project that are required to comply with the standards will comply with the strategy.
Energy Efficiency – Maximize energy efficiency building and appliance standards; pursue additional efficiency including new technologies, policy, and implementation mechanisms. Pursue comparable investment in energy efficiency from all retail providers of electricity in California.	Consistent. The project will be compliant with the current Title 24 standards.
Low Carbon Fuel Standard – Develop and adopt the Low Carbon Fuel Standard.	Consistent. These are CARB enforced standards; vehicles that access the project that are required to comply with the standards will comply with the strategy.
Vehicle Efficiency Measures – Implement light-duty vehicle efficiency measures.	Consistent. These are CARB enforced standards; vehicles that access the project that are required to comply with the standards will comply with the

	strategy.
Medium/Heavy-Duty Vehicles – Adopt medium and heavy-duty vehicle efficiency measures.	Consistent. These are CARB enforced standards; vehicles that access the project that are required to comply with the standards will comply with the strategy.
Green Building Strategy – Expand the use of green building practices to reduce the carbon footprint of California’s new and existing inventory of buildings.	Consistent. The California Green Building Standards Code (proposed Part 11, Title 24) was adopted as part of the California Building Standards Code in the CCR. Part 11 establishes voluntary standards, that are mandatory in the 2019 edition of the Code, on planning and design for sustainable site development, energy efficiency (in excess of the California Energy Code requirements), water conservation, material conservation, and internal air contaminants. The project will be subject to these mandatory standards.
High Global Warming Potential Gases – Adopt measures to reduce high global warming potential gases.	Consistent. CARB identified five measures that reduce HFC emissions from vehicular and commercial refrigeration systems; vehicles that access the project that are required to comply with the measures will comply with the strategy.
Recycling and Waste – Reduce methane emissions at landfills. Increase waste diversion, composting, and commercial recycling. Move toward zero-waste.	Consistent. The state is currently developing a regulation to reduce methane emissions from municipal solid waste landfills. The project will be required to comply with City programs, such as City’s recycling and waste reduction program, which comply, with the 75 percent reduction required by 2020 per AB 341.
Water – Continue efficiency programs and use cleaner energy sources to move and treat water.	Consistent. The project will comply with all applicable City ordinances and CAL Green requirements.
2017 Scoping Plan Recommended Actions to Reduce Greenhouse Gas Emissions	Project Compliance with Recommended Action
Implement Mobile Source Strategy: Further increase GHG stringency on all light-duty vehicles beyond existing Advanced Clean Car regulations.	Consistent. These are CARB enforced standards; vehicles that access the project that are required to comply with the standards will comply with the strategy.
Implement Mobile Source Strategy: At least 1.5 million zero emission and plug-in hybrid light-duty electric vehicles by 2025 and at least 4.2 million zero emission and plug-in hybrid light-duty electric vehicles by 2030.	Consistent. These are CARB enforced standards; vehicles that access the project that are required to comply with the standards will comply with the strategy.
Implement Mobile Source Strategy: Innovative Clean Transit: Transition to a suite of to-be-determined innovative clean transit options. Assumed 20 percent of new urban buses purchased beginning in 2018 will be zero emission buses with the penetration of zero-emission technology ramped up to 100 percent of new sales in 2030. Also, new natural gas buses, starting in 2018, and diesel buses, starting in 2020, meet the optional heavy-duty low-NOX standard.	Consistent. These are CARB enforced standards; vehicles that access the project that are required to comply with the standards will comply with the strategy.
Implement Mobile Source Strategy: Last Mile Delivery: New regulation that would result in the use of low NOX or cleaner engines and the deployment of increasing numbers of zero-emission trucks primarily for class 3-7 last mile delivery trucks in California. This measure assumes ZEVs comprise 2.5 percent of new Class 3–7 truck sales in local fleets starting in 2020,	Consistent. These are CARB enforced standards; vehicles that access the project that are required to comply with the standards will comply with the strategy.

increasing to 10 percent in 2025 and remaining flat through 2030.	
Implement SB 350 by 2030: Establish annual targets for statewide energy efficiency savings and demand reduction that will achieve a cumulative doubling of statewide energy efficiency savings in electricity and natural gas end uses by 2030.	Consistent. The project will be compliant with the current Title 24 standards.
By 2019, develop regulations and programs to support organic waste landfill reduction goals in the SLCP and SB 1383.	Consistent. The project will be required to comply with City programs, such as City's recycling and waste reduction program, which comply with the 75 percent reduction required by 2020 per AB 341.
Notes: ¹ Source: CARB Scoping Plan (2008 and 2017)	

Consistency with SCAG's 2016-2040 RTP/SCS

At the regional level, the 2016-2040 RTP and Sustainable Communities Strategy represent the region's Climate Action Plan that defines strategies for reducing GHGs. In order to assess the project's potential to conflict with the RTP/SCS, this section analyzes the project's land use profile for consistency with those in the Sustainable Communities Strategy. Generally, projects are considered consistent with the provisions and general policies of applicable City and regional land use plans and regulations, such as SCAG's Sustainable Communities Strategy, if they are compatible with the general intent of the plans and would not preclude the attainment of their primary goals.

Table 8 demonstrates the project's consistency with the Actions and Strategies set forth in the 2016-2040 RTP/SCS. As shown in Table 8, the project would be consistent with the GHG reduction related actions and strategies contained in the 2016-2040 RTP/SCS.

Table 8: Project Consistency with SCAG 2016-2040 RTP/SCS¹

Actions and Strategies	Responsible Party(ies)	Consistency Analysis
Land Use Strategies		
Reflect the changing population and demands, including combating gentrification and displacement, by increasing housing supply at a variety of affordability levels.	Local Jurisdictions	Consistent. The proposed project is an infill development, which is replacing existing single family residential buildings with a proposed multifamily residential use; therefore, it will not displace existing housing.
Focus new growth around transit.	Local Jurisdictions	Consistent. The proposed project is an infill development that would be consistent with the 2016 RTP/SCS focus on growing near transit facilities.
Plan for growth around livable corridors, including growth on the Livable Corridors network.	SCAG, Local Jurisdictions	Consistent. The proposed project is an infill development that would be consistent with the 2016 RTP/SCS focus on growing along the 2,980 miles of Livable Corridors in the region.
Provide more options for short trips through Neighborhood Mobility Areas and Complete Communities.	SCAG, Local Jurisdictions	Consistent. The proposed project would help further jobs/housing balance objectives. The proposed project is also consistent with the Complete Communities initiative that focuses on creation of mixed-use districts in growth areas.
Support local sustainability planning, including	Local	Not Applicable. This strategy calls on local

developing sustainable planning and design policies, sustainable zoning codes, and Climate Action Plans.	Jurisdictions	governments to adopt General Plan updates, zoning codes, and Climate Action Plans to further sustainable communities. The proposed project would not interfere with such policymaking and would be consistent with those policy objectives.
Protect natural and farmlands, including developing conservation strategies.	SCAG, Local Jurisdictions	Consistent. The proposed project is an infill development that would help reduce demand for growth in urbanizing areas that threaten green fields and open spaces.
Transportation Strategies		
Preserve our existing transportation system.	SCAG, County Transportation Commissions, Local Jurisdictions	Not Applicable. This strategy calls on investing in the maintenance of our existing transportation system. The proposed project would not interfere with such policymaking.
Manage congestion through programs like the Congestion Management Program, Transportation Demand Management, and Transportation Systems Management strategies.	County Transportation Commissions, Local Jurisdictions	Consistent. The proposed project is an infill development that will minimize congestion impacts on the region because of its proximity to public transit and general density of population and jobs.
Promote safety and security in the transportation system.	SCAG, County Transportation Commissions, Local Jurisdictions	Not Applicable. This strategy aims to improve the safety of the transportation system and protect users from security threats. The proposed project would not interfere with such policymaking.
Complete our transit, passenger rail, active transportation, highways and arterials, regional express lanes goods movement, and airport ground transportation systems.	SCAG, County Transportation Commissions, Local Jurisdictions	Not Applicable. This strategy calls for transportation planning partners to implement major capital and operational projects that are designed to address regional growth. The proposed project would not interfere with this larger goal of investing in the transportation system.
Technological Innovation and 21st Century Transportation		
Promote zero-emissions vehicles.	SCAG, Local Jurisdictions	Consistent. While this action/strategy is not necessarily applicable on a project-specific basis, the City's Building Code requires the proposed building to provide conduit for on-site electric vehicle charging stalls, which the project is to provide in the proposed parking garage.
Promote neighborhood electric vehicles.	SCAG, Local Jurisdictions	Consistent. While this action/strategy is not necessarily applicable on a project-specific basis, the City's Building Code requires the proposed building to provide conduit for on-site electric vehicle charging stalls, which the project is to provide in the proposed parking garage.
Implement shared mobility programs.	SCAG, Local Jurisdictions	Not Applicable. This strategy is designed to integrate new technologies for last-mile and alternative transportation programs. The proposed project would not interfere with these emerging programs.
Notes: ¹ Source: Southern California Association of Governments; 2016–2040 RTP/SCS, Chapter 5: The Road to Greater Mobility and Sustainable Growth; April 2016.		

Consistency with the City of Los Angeles ClimateLA Implementation Plan

The “ClimateLA” plan focuses on transportation, energy, water use, land use, waste, open space and greening, and economic factors to achieve emissions reductions. The project is required to comply with CALGreen and the City’s Green Building Code, as well as solid waste diversion policies administered by CalRecycle, and is an infill location with immediate access to significant public transit, pedestrian, and bicycle facilities. Therefore, the project is consistent with the “ClimateLA” plan.

Consistency with the City of Los Angeles Green Building Ordinance

The Los Angeles Green Building Ordinance requires that all projects filed on or after January 1, 2014 comply with the current Los Angeles Green Building Code as amended to comply with the 2016 and 2019 CALGreen Codes. Mandatory measures under the Green Building Ordinance that would help reduce GHG emissions include short- and long-term bicycle parking measures; designated parking measure; and electric vehicle supply wiring. The project provides 11 short-term and 159 long-term bicycle parking spaces and 13 on-site electric automobile charging stations as well as 44 EV capable spaces in the parking garage as required per the City’s Building Code. The Green Building Ordinance also includes measures that would increase energy efficiency on the project site, including installing Energy Star rated appliances and installation of water conserving fixtures, that the project is required to comply with. Therefore, the project is consistent with the Los Angeles Green Building Ordinance.

5.7 Energy Analysis

Information from the CalEEMod 2020.4.0 Daily and Annual Outputs contained in the air quality and greenhouse gas analyses above was utilized for this analysis. The CalEEMod outputs detail project related construction equipment, transportation energy demands, and facility energy demands.

Construction Energy Demand

Construction Equipment Electricity Usage Estimates

Electrical service will be provided by the Los Angeles Department of Water and Power (LADWP). Based on the 2017 National Construction Estimator, Richard Pray (2017)⁹, the typical power cost per 1,000 square feet of building construction per month is estimated to be \$2.32. The project plans to develop the site with a 175,528.4 square foot building including 129 multi-family residential dwelling units over the course of approximately 24 months. Based on Table 9, the total power cost of the on-site electricity usage during the construction of the proposed project is estimated to be approximately \$9,773.42. As shown in Table 9, the total electricity usage from Project construction related activities is estimated to be approximately 177,699 kWh.¹⁰

⁹ Pray, Richard. 2017 National Construction Estimator. Carlsbad : Craftsman Book Company, 2017.

¹⁰ LADWP’s Small Commercial & Multi-Family Service (A-1) is approximately \$0.06 per kWh of electricity Southern California Edison (SCE). Rates & Pricing Choices: General Service/Industrial Rates. https://library.sce.com/content/dam/sce-doelclib/public/regulatory/historical/electric/2020/schedules/general-service-&-industrial-rates/ELECTRIC_SCHEDULES_GS-1_2020.pdf

Table 9: Project Construction Power Cost and Electricity Usage

Power Cost (per 1,000 square foot of building per month of construction)	Total Building Size (1,000 Square Foot) ¹	Construction Duration (months)	Total Project Construction Power Cost
\$2.32	176	24	\$9,773.42

Cost per kWh	Total Project Construction Electricity Usage (kWh)
\$0.06	177,699

*Assumes the project will be under the A-1 Small Commercial & Multi-Family Service rate under LADWP.
https://www.ladwp.com/ladwp/faces/ladwp/aboutus/a-financesandreports/a-fr-electricrates/a-fr-er-stcommindrates?_adf.ctrl-state=4uqberzct_4&_afLoop=958662023680086

Construction Equipment Fuel Estimates

Using the CalEEMod data input, the project's construction phase would consume electricity and fossil fuels as a single energy demand, that is, once construction is completed their use would cease. CARB's 2017 Emissions Factors Tables show that on average aggregate fuel consumption (gasoline and diesel fuel) would be approximately 18.5 hp-hr-gal.¹¹ As presented in Table 10 below, project construction activities would consume an estimated 37,796 gallons of diesel fuel.

Table 10: Construction Equipment Fuel Consumption Estimates

Phase	Number of Days	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor	HP hrs/day	Total Fuel Consumption (gal diesel fuel) ¹
Grading	9	Graders	1	8	187	0.41	613	298
	9	Rubber Tired Dozers	1	8	247	0.4	790	385
	9	Tractors/Loaders/Backhoes	2	7	97	0.37	502	244
Building Construction	446	Cranes	1	6	231	0.29	402	9,690
	446	Forklifts	1	6	89	0.2	107	2,575
	446	Generator Sets	1	8	78	0.37	231	5,566
	446	Tractors/Loaders/Backhoes	1	6	97	0.37	215	5,191
	446	Welders	3	8	46	0.45	497	11,977
Paving	22	Cement and Mortar Mixers	4	6	9	0.56	121	144
	22	Pavers	1	7	130	0.42	382	455
	22	Paving Equipment	1	8	132	0.36	380	452
	22	Rollers	1	7	80	0.38	213	253
	22	Tractors/Loaders/Backhoes	1	7	97	0.37	251	299
Architectural Coating	22	Air Compressors	1	6	78	0.48	225	267
CONSTRUCTION FUEL DEMAND (gallons of diesel fuel)								37,796

Notes:

¹Using Carl Moyer Guidelines Table D-21 Fuel consumption rate factors (bhp-hr/gal) for engines less than 750 hp.

(Source: https://www.arb.ca.gov/msprog/moyer/guidelines/2017gl/2017_gl_appendix_d.pdf)

¹¹ Aggregate fuel consumption rate for all equipment was estimated at 18.5 hp-hr/day (from CARB's 2017 Emissions Factors Tables and fuel consumption rate factors as shown in Table D-21 of the Moyer Guidelines: (https://www.arb.ca.gov/msprog/moyer/guidelines/2017gl/2017_gl_appendix_d.pdf)).

Construction Worker Fuel Estimates

It is assumed that all construction worker trips are from light duty autos (LDA) along area roadways. With respect to estimated VMT, the construction worker trips would generate an estimated 793,478 VMT. Vehicle fuel efficiencies for construction workers were estimated in the air quality and greenhouse gas analysis using information generated using CARB's EMFAC model (see Appendix C for details). Table 11 shows that an estimated 25,637 gallons of fuel would be consumed for construction worker trips.

Table 11: Construction Worker Fuel Consumption Estimates

Phase	Number of Days	Worker Trips/Day	Trip Length (miles)	Vehicle Miles Traveled	Average Vehicle Fuel Economy (mpg)	Estimated Fuel Consumption (gallons)
Grading	9	10	14.7	1,323	30.95	43
Building Construction	446	119	14.7	780,188	30.95	25,208
Paving	22	13	14.7	4,204	30.95	136
Architectural Coating	22	24	14.7	7,762	30.95	251
Total Construction Worker Fuel Consumption						25,637

Notes:

¹Assumptions for the worker trip length and vehicle miles traveled are consistent with CalEEMod 2020.4.0 defaults.

Construction Vendor/Hauling Fuel Estimates

Tables 12 and 13 show the estimated fuel consumption for vendor and hauling during building construction and architectural coating. With respect to estimated VMT, the vendor and hauling trips would generate an estimated 151,358 VMT. For the architectural coatings it is assumed that the contractors would be responsible for bringing coatings and equipment with them in their light duty vehicles.¹² Tables 12 and 13 show that an estimated 19,509 gallons of fuel would be consumed for vendor and hauling trips.

Table 12: Construction Vendor Fuel Consumption Estimates (MHD Trucks)¹

Phase	Number of Days	Vendor Trips/Day	Trip Length (miles)	Vehicle Miles Traveled	Average Vehicle Fuel Economy (mpg)	Estimated Fuel Consumption (gallons)
Grading	9	0	6.9	0	9.22	0
Building Construction	446	24	6.9	73,858	9.22	8,011
Paving	22	0	6.9	0	9.22	0
Architectural Coating	22	0	6.9	0	9.22	0
Total Vendor Fuel Consumption						8,011

Notes:

¹Assumptions for the vendor trip length and vehicle miles traveled are consistent with CalEEMod 2020.4.0 defaults.

¹² Vendors delivering construction material or hauling debris from the site during grading would use medium to heavy duty vehicles with an average fuel consumption of 9.22 mpg for medium heavy-duty trucks and 6.74 mpg for heavy heavy-duty trucks (see Appendix C for details).

Table 13: Construction Hauling Fuel Consumption Estimates (HHD Trucks)¹

Phase	Number of Days	Hauling Trips/Day	Trip Length (miles)	Vehicle Miles Traveled	Average Vehicle Fuel Economy (mpg)	Estimated Fuel Consumption (gallons)
Grading	9	430.6	20	77,500	6.74	11,499
Building Construction	446	0	20	0	6.74	0
Paving	22	0	20	0	6.74	0
Architectural Coating	22	0	20	0	6.74	0
Total Construction Hauling Fuel Consumption						11,499

Notes:

¹Assumptions for the hauling trip length and vehicle miles traveled are consistent with CalEEMod 2020.40 defaults.

Construction Energy Efficiency/Conservation Measures

Construction equipment used over the approximately 24-month construction phase would conform to CARB regulations and California emissions standards and is evidence of related fuel efficiencies. In addition, the CARB Airborne Toxic Control Measure limits idling times of construction vehicles to no more than five minutes, thereby minimizing unnecessary and wasteful consumption of fuel due to unproductive idling of construction equipment. Furthermore, the project has been designed in compliance with California's Energy Efficiency Standards and 2019 CALGreen Standards.

Construction of the proposed residential development would require the typical use of energy resources. There are no unusual project characteristics or construction processes that would require the use of equipment that would be more energy intensive than is used for comparable activities; or equipment that would not conform to current emissions standards (and related fuel efficiencies). Equipment employed in construction of the project would therefore not result in inefficient wasteful, or unnecessary consumption of fuel.

Operational Energy Demand

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

Transportation Fuel Consumption

The largest source of operational energy use would be vehicle operation of customers. The site is located in an urbanized area just in close proximity to downtown Los Angeles.

Using the defaults VMT estimates from CalEEMod, it is assumed that the average vehicle miles traveled was 6.69 miles for all vehicle categories. As the proposed project is a residential project, it was assumed that vehicles would operate 365 days per year. Table 8 shows the worst-case estimated annual fuel

consumption for all classes of vehicles from autos to heavy-heavy trucks.¹³ Table 14 shows that an estimated 53,784 gallons of fuel would be consumed per year for the operation of the proposed project.

Table 14: Estimated Vehicle Operations Fuel Consumption

Vehicle Type	Vehicle Mix	Number of Vehicles	Average Trip (miles) ¹	Daily VMT	Average Fuel Economy (mpg)	Total Gallons per Day	Total Annual Fuel Consumption (gallons)
Light Auto	Automobile	269	6.69	1,799	31.82	56.53	20,634
Light Truck	Automobile	29	6.69	194	27.16	7.14	2,604
Light Truck	Automobile	95	6.69	636	25.6	24.83	9,064
Medium Truck	Automobile	90	6.69	603	20.81	28.96	10,572
Light Heavy Truck	2-Axle Truck	19	6.69	128	13.81	9.27	3,385
Light Heavy Truck 10,000 lbs +	2-Axle Truck	5	6.69	32	14.18	2.26	826
Medium Heavy Truck	3-Axle Truck	6	6.69	39	9.58	4.12	1,503
Heavy Heavy Truck	4-Axle Truck	15	6.69	102	7.14	14.24	5,196
Total		528	--	3,532	--	147.35	--
Total Annual Fuel Consumption							53,784

Notes:

¹Based on the size of the site and relative location, trips were assumed to be local rather than regional.

Trip generation and VMT generated by the proposed project are consistent with other similar residential uses of similar scale and configuration. That is, the proposed project does not propose uses or operations that would inherently result in excessive and wasteful vehicle trips and VMT, nor associated excess and wasteful vehicle energy consumption. Therefore, project transportation energy consumption would not be considered inefficient, wasteful, or otherwise unnecessary.

Facility Energy Demands (Electricity and Natural Gas)

The annual natural gas and electricity demands were provided per the CalEEMod output and are provided in Table 15.

Table 15: Project Mitigated Annual Operational Energy Demand Summary¹

Natural Gas Demand	kBTU/year
Apartments High Rise	1,519,680
Total	1,519,680

Electricity Demand	kWh/year
Apartments High Rise	508,878
Enclosed Parking Structure	329,285
Total	838,163

Notes:

¹Taken from the CalEEMod 2020.4.0 annual output.

As shown in Table 15, the estimated electricity demand for the proposed project is approximately 838,163 kWh per year. In 2020, the residential sector of the County of Los Angeles consumed approximately 22,913 million kWh of electricity.¹⁴ In addition, the estimated natural gas consumption for the proposed

¹³ Average fuel economy based on aggregate mileage calculated in EMFAC 2017 for opening year (2023). See Appendix A for EMFAC output.

¹⁴ California Energy Commission, Electricity Consumption by County. <https://ecdms.energy.ca.gov/elecbycounty.aspx>

project is approximately 1,519,680 kBtu per year. In 2020, the residential sector of the County of Los Angeles consumed approximately 1,238 million therms of gas.¹⁵ Therefore, the increase in both electricity and natural gas demand from the proposed project is insignificant compared to the County's 2020 demand.

Renewable Energy and Energy Efficiency Plan Consistency

Regarding federal transportation regulations, the project site is located in an already developed area. Access to/from the project site is from existing roads. These roads are already in place so the project would not interfere with, nor otherwise obstruct intermodal transportation plans or projects that may be proposed pursuant to the ISTEA because SCAG is not planning for intermodal facilities in the project area.

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

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

6.0 Conclusions

Construction and operational project emissions were evaluated and compared to both regional and localized SCAQMD's thresholds of significance. In addition, project GHG emissions were evaluated and compared to SCAQMD's draft threshold of 3,000 MTCO₂e per year for all land uses. Project emissions are anticipated to be below SCAQMD's thresholds of significance with no mitigation. Therefore, the impact is less than significant.

Furthermore, neither construction nor operation of the project would result in wasteful, inefficient, or unnecessary consumption of energy, or wasteful use of energy resources. The proposed project does not include any unusual project characteristics or construction processes that would require the use of equipment that would be more energy intensive than is used for comparable activities and is a residential project that is not proposing any additional features that would require a larger energy demand than other residential projects of similar scale and configuration. The energy demands of the project are anticipated to be accommodated within the context of available resources and energy delivery systems. The project would therefore not cause or result in the need for additional energy producing or transmission facilities. The project would not engage in wasteful or inefficient uses of energy and aims to achieve energy conservation goals within the State of California. The Project has been designed in compliance with California's Energy Efficiency Standards and 2019 CALGreen Standards. The Project would not conflict with or obstruct a state or local plan for renewable energy or energy efficiency; therefore, impacts would be less than significant.

¹⁵ California Energy Commission, Gas Consumption by County. <http://ecdms.energy.ca.gov/gasbycounty.aspx>

MD is pleased to provide this focused Air Quality, Greenhouse Gas, and Energy Impact Evaluation. If you have any questions regarding this analysis, please don't hesitate to call us at (805) 426-4477.

Sincerely,
MD Acoustics, LLC

A handwritten signature in black ink, appearing to read 'Tyler Klassen', is positioned below the typed name.

Tyler Klassen, EIT
Air Quality Specialist

Appendix A

Glossary of Terms

AQMP	Air Quality Management Plan
CAAQS	California Ambient Air Quality Standards
CARB	California Air Resources Board
CEQA	California Environmental Quality Act
CFCs	Chlorofluorocarbons
CH ₄	Methane
CNG	Compressed natural gas
CO	Carbon monoxide
CO ₂	Carbon dioxide
CO ₂ e	Carbon dioxide equivalent
DPM	Diesel particulate matter
GHG	Greenhouse gas
HFCs	Hydrofluorocarbons
LST	Localized Significant Thresholds
MTCO ₂ e	Metric tons of carbon dioxide equivalent
MMTCO ₂ e	Million metric tons of carbon dioxide equivalent
NAAQS	National Ambient Air Quality Standards
NO _x	Nitrogen Oxides
NO ₂	Nitrogen dioxide
N ₂ O	Nitrous oxide
O ₃	Ozone
PFCs	Perfluorocarbons
PM	Particle matter
PM ₁₀	Particles that are less than 10 micrometers in diameter
PM _{2.5}	Particles that are less than 2.5 micrometers in diameter
PMI	Point of maximum impact
PPM	Parts per million
PPB	Parts per billion
RTIP	Regional Transportation Improvement Plan
RTP	Regional Transportation Plan
SCAB	South Coast Air Basin
SCAQMD	South Coast Air Quality Management District
SF ₆	Sulfur hexafluoride
SIP	State Implementation Plan
SO _x	Sulfur Oxides
SRA	Source/Receptor Area
TAC	Toxic air contaminants
VOC	Volatile organic compounds
WRCC	Western Regional Climate Center

Appendix B
Site Plan

Appendix C
CalEEMod Outputs & EMFAC2017 Data

4260 Arch Drive Multi-Family Project - Madera County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**4260 Arch Drive Multi-Family Project****Madera County, Summer****1.0 Project Characteristics****1.1 Land Usage**

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Enclosed Parking Structure	145.00	Space	0.00	62,721.00	0
Apartments High Rise	129.00	Dwelling Unit	1.03	114,004.40	369

1.2 Other Project Characteristics

Urbanization	Urban	Wind Speed (m/s)	2.9	Precipitation Freq (Days)	51
Climate Zone	3			Operational Year	2023
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	390.98	CH4 Intensity (lb/MWhr)	0.033	N2O Intensity (lb/MWhr)	0.004

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - 5-story 129-unit multifamily building on 44,866.8 SF (1.03 acre) lot with 145 parking spaces on two subterranean levels.

Construction Phase -

Demolition - Per Google Earth estimate

Architectural Coating - SCAQMD Rule 1113

Woodstoves - No woodstoves or fireplaces

Area Coating - SCAQMD Rule 1113

Construction Off-road Equipment Mitigation - SCAQMD Rule 403

Waste Mitigation - AB 341 requires each jurisdiction in CA to divert at least 75% of thier waste away from landfills by 2020.

Grading -

Vehicle Trips - Per transportation assessment from Overland Consultants, Inc., the project will generate 528 trips per day (4.093 trips per unit)

4260 Arch Drive Multi-Family Project - Madera County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	EF_Nonresidential_Exterior	150.00	50.00
tblArchitecturalCoating	EF_Nonresidential_Interior	150.00	50.00
tblArchitecturalCoating	EF_Parking	150.00	100.00
tblArchitecturalCoating	EF_Residential_Exterior	150.00	50.00
tblArchitecturalCoating	EF_Residential_Interior	150.00	50.00
tblAreaCoating	Area_EF_Nonresidential_Exterior	150	50
tblAreaCoating	Area_EF_Nonresidential_Interior	150	50
tblAreaCoating	Area_EF_Parking	150	100
tblAreaCoating	Area_EF_Residential_Exterior	150	50
tblAreaCoating	Area_EF_Residential_Interior	150	50
tblGrading	MaterialExported	0.00	17,000.00
tblLandUse	LandUseSquareFeet	58,000.00	62,721.00
tblLandUse	LandUseSquareFeet	129,000.00	114,004.40
tblLandUse	LotAcreage	1.30	0.00
tblLandUse	LotAcreage	2.08	1.03
tblWoodstoves	NumberCatalytic	1.03	0.00
tblWoodstoves	NumberNoncatalytic	1.03	0.00

2.0 Emissions Summary

4260 Arch Drive Multi-Family Project - Madera County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**2.1 Overall Construction (Maximum Daily Emission)****Unmitigated Construction**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2023	73.3663	77.1571	23.0558	0.3300	17.1692	1.2413	18.4104	6.1065	1.1653	7.2718	0.0000	34,759.67 72	34,759.67 72	0.7174	5.1397	36,309.23 61
Maximum	73.3663	77.1571	23.0558	0.3300	17.1692	1.2413	18.4104	6.1065	1.1653	7.2718	0.0000	34,759.67 72	34,759.67 72	0.7174	5.1397	36,309.23 61

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2023	73.3663	77.1571	23.0558	0.3300	12.4289	1.2413	13.6702	3.9538	1.1653	5.1191	0.0000	34,759.67 72	34,759.67 72	0.7174	5.1397	36,309.23 61
Maximum	73.3663	77.1571	23.0558	0.3300	12.4289	1.2413	13.6702	3.9538	1.1653	5.1191	0.0000	34,759.67 72	34,759.67 72	0.7174	5.1397	36,309.23 61

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	27.61	0.00	25.75	35.25	0.00	29.60	0.00	0.00	0.00	0.00	0.00	0.00

4260 Arch Drive Multi-Family Project - Madera County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**2.2 Overall Operational****Unmitigated Operational**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	3.1219	1.2998	11.1607	8.0800e-003		0.1541	0.1541		0.1541	0.1541	0.0000	1,521.6656	1,521.6656	0.0473	0.0276	1,531.0568
Energy	0.0449	0.3837	0.1633	2.4500e-003		0.0310	0.0310		0.0310	0.0310		489.8254	489.8254	9.3900e-003	8.9800e-003	492.7362
Mobile	2.3293	3.2296	19.1928	0.0410	3.5488	0.0392	3.5880	0.9487	0.0368	0.9855		4,218.6834	4,218.6834	0.2190	0.2235	4,290.7507
Total	5.4962	4.9131	30.5167	0.0516	3.5488	0.2243	3.7732	0.9487	0.2220	1.1707	0.0000	6,230.1743	6,230.1743	0.2757	0.2600	6,314.5436

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	3.1219	1.2998	11.1607	8.0800e-003		0.1541	0.1541		0.1541	0.1541	0.0000	1,521.6656	1,521.6656	0.0473	0.0276	1,531.0568
Energy	0.0449	0.3837	0.1633	2.4500e-003		0.0310	0.0310		0.0310	0.0310		489.8254	489.8254	9.3900e-003	8.9800e-003	492.7362
Mobile	2.3293	3.2296	19.1928	0.0410	3.5488	0.0392	3.5880	0.9487	0.0368	0.9855		4,218.6834	4,218.6834	0.2190	0.2235	4,290.7507
Total	5.4962	4.9131	30.5167	0.0516	3.5488	0.2243	3.7732	0.9487	0.2220	1.1707	0.0000	6,230.1743	6,230.1743	0.2757	0.2600	6,314.5436

4260 Arch Drive Multi-Family Project - Madera County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

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

3.0 Construction Detail**Construction Phase**

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	1/1/2023	1/27/2023	5	20	
2	Grading	Grading	1/28/2023	2/2/2023	5	4	
3	Building Construction	Building Construction	2/3/2023	11/9/2023	5	200	
4	Paving	Paving	11/10/2023	11/23/2023	5	10	
5	Architectural Coating	Architectural Coating	11/24/2023	12/7/2023	5	10	

Acres of Grading (Site Preparation Phase): 0**Acres of Grading (Grading Phase): 4****Acres of Paving: 0****Residential Indoor: 230,859; Residential Outdoor: 76,953; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 3,763 (Architectural Coating – sqft)****OffRoad Equipment**

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Demolition	Rubber Tired Dozers	1	8.00	247	0.40
Demolition	Tractors/Loaders/Backhoes	3	8.00	97	0.37
Grading	Graders	1	8.00	187	0.41
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Grading	Tractors/Loaders/Backhoes	2	7.00	97	0.37

4260 Arch Drive Multi-Family Project - Madera County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Building Construction	Cranes	1	6.00	231	0.29
Building Construction	Forklifts	1	6.00	89	0.20
Building Construction	Tractors/Loaders/Backhoes	1	6.00	97	0.37
Paving	Cement and Mortar Mixers	1	6.00	9	0.56
Paving	Pavers	1	6.00	130	0.42
Paving	Rollers	1	7.00	80	0.38
Paving	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Architectural Coating	Air Compressors	1	6.00	78	0.48
Building Construction	Generator Sets	1	8.00	84	0.74
Paving	Paving Equipment	1	8.00	132	0.36
Building Construction	Welders	3	8.00	46	0.45

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	5	13.00	0.00	273.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	4	10.00	0.00	2,125.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	7	119.00	24.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	5	13.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	24.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

4260 Arch Drive Multi-Family Project - Madera County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**3.2 Demolition - 2023****Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					3.0186	0.0000	3.0186	0.4571	0.0000	0.4571			0.0000			0.0000
Off-Road	1.4725	14.3184	13.4577	0.0241		0.6766	0.6766		0.6328	0.6328		2,324.3959	2,324.3959	0.5893		2,339.1278
Total	1.4725	14.3184	13.4577	0.0241	3.0186	0.6766	3.6953	0.4571	0.6328	1.0898		2,324.3959	2,324.3959	0.5893		2,339.1278

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	0.0299	1.6102	0.3605	7.9300e-003	0.2394	0.0164	0.2557	0.0657	0.0157	0.0813		839.7855	839.7855	1.7900e-003	0.1320	879.1681
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0515	0.0271	0.4188	1.0200e-003	0.1068	6.2000e-004	0.1074	0.0283	5.7000e-004	0.0289		104.1355	104.1355	3.0600e-003	2.6800e-003	105.0121
Total	0.0814	1.6373	0.7793	8.9500e-003	0.3462	0.0170	0.3631	0.0940	0.0162	0.1102		943.9210	943.9210	4.8500e-003	0.1347	984.1802

4260 Arch Drive Multi-Family Project - Madera County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**3.2 Demolition - 2023****Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					1.1773	0.0000	1.1773	0.1783	0.0000	0.1783			0.0000			0.0000
Off-Road	1.4725	14.3184	13.4577	0.0241		0.6766	0.6766		0.6328	0.6328	0.0000	2,324.395 9	2,324.395 9	0.5893		2,339.127 8
Total	1.4725	14.3184	13.4577	0.0241	1.1773	0.6766	1.8539	0.1783	0.6328	0.8110	0.0000	2,324.395 9	2,324.395 9	0.5893		2,339.127 8

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	0.0299	1.6102	0.3605	7.9300e-003	0.2394	0.0164	0.2557	0.0657	0.0157	0.0813		839.7855	839.7855	1.7900e-003	0.1320	879.1681
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0515	0.0271	0.4188	1.0200e-003	0.1068	6.2000e-004	0.1074	0.0283	5.7000e-004	0.0289		104.1355	104.1355	3.0600e-003	2.6800e-003	105.0121
Total	0.0814	1.6373	0.7793	8.9500e-003	0.3462	0.0170	0.3631	0.0940	0.0162	0.1102		943.9210	943.9210	4.8500e-003	0.1347	984.1802

4260 Arch Drive Multi-Family Project - Madera County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**3.3 Grading - 2023****Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					7.7709	0.0000	7.7709	3.5290	0.0000	3.5290			0.0000			0.0000
Off-Road	1.3330	14.4676	8.7038	0.0206		0.6044	0.6044		0.5560	0.5560		1,995.614 7	1,995.614 7	0.6454		2,011.750 3
Total	1.3330	14.4676	8.7038	0.0206	7.7709	0.6044	8.3752	3.5290	0.5560	4.0850		1,995.614 7	1,995.614 7	0.6454		2,011.750 3

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	1.1641	62.6687	14.0298	0.3087	9.3161	0.6364	9.9525	2.5557	0.6089	3.1646		32,683.95 82	32,683.95 82	0.0697	5.1376	34,216.70 72
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0396	0.0208	0.3222	7.8000e-004	0.0822	4.8000e-004	0.0826	0.0218	4.4000e-004	0.0222		80.1043	80.1043	2.3500e-003	2.0700e-003	80.7786
Total	1.2037	62.6895	14.3520	0.3094	9.3983	0.6369	10.0352	2.5775	0.6093	3.1868		32,764.06 25	32,764.06 25	0.0720	5.1397	34,297.48 58

4260 Arch Drive Multi-Family Project - Madera County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**3.3 Grading - 2023****Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					3.0307	0.0000	3.0307	1.3763	0.0000	1.3763			0.0000			0.0000
Off-Road	1.3330	14.4676	8.7038	0.0206		0.6044	0.6044		0.5560	0.5560	0.0000	1,995.614 7	1,995.614 7	0.6454		2,011.750 3
Total	1.3330	14.4676	8.7038	0.0206	3.0307	0.6044	3.6350	1.3763	0.5560	1.9323	0.0000	1,995.614 7	1,995.614 7	0.6454		2,011.750 3

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	1.1641	62.6687	14.0298	0.3087	9.3161	0.6364	9.9525	2.5557	0.6089	3.1646		32,683.95 82	32,683.95 82	0.0697	5.1376	34,216.70 72
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0396	0.0208	0.3222	7.8000e-004	0.0822	4.8000e-004	0.0826	0.0218	4.4000e-004	0.0222		80.1043	80.1043	2.3500e-003	2.0700e-003	80.7786
Total	1.2037	62.6895	14.3520	0.3094	9.3983	0.6369	10.0352	2.5775	0.6093	3.1868		32,764.06 25	32,764.06 25	0.0720	5.1397	34,297.48 58

4260 Arch Drive Multi-Family Project - Madera County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**3.4 Building Construction - 2023****Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.5233	11.7104	12.6111	0.0221		0.5145	0.5145		0.4968	0.4968		2,001.7877	2,001.7877	0.3399		2,010.2858
Total	1.5233	11.7104	12.6111	0.0221		0.5145	0.5145		0.4968	0.4968		2,001.7877	2,001.7877	0.3399		2,010.2858

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0297	1.0146	0.3523	4.9000e-003	0.1628	6.9100e-003	0.1697	0.0469	6.6100e-003	0.0535		517.1014	517.1014	1.8800e-003	0.0755	539.6525
Worker	0.4715	0.2477	3.8340	9.3100e-003	0.9776	5.7000e-003	0.9833	0.2593	5.2400e-003	0.2645		953.2406	953.2406	0.0280	0.0246	961.2648
Total	0.5012	1.2623	4.1863	0.0142	1.1403	0.0126	1.1529	0.3062	0.0119	0.3180		1,470.3420	1,470.3420	0.0299	0.1001	1,500.9173

4260 Arch Drive Multi-Family Project - Madera County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**3.4 Building Construction - 2023****Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.5233	11.7104	12.6111	0.0221		0.5145	0.5145		0.4968	0.4968	0.0000	2,001.7877	2,001.7877	0.3399		2,010.2858
Total	1.5233	11.7104	12.6111	0.0221		0.5145	0.5145		0.4968	0.4968	0.0000	2,001.7877	2,001.7877	0.3399		2,010.2858

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0297	1.0146	0.3523	4.9000e-003	0.1628	6.9100e-003	0.1697	0.0469	6.6100e-003	0.0535		517.1014	517.1014	1.8800e-003	0.0755	539.6525
Worker	0.4715	0.2477	3.8340	9.3100e-003	0.9776	5.7000e-003	0.9833	0.2593	5.2400e-003	0.2645		953.2406	953.2406	0.0280	0.0246	961.2648
Total	0.5012	1.2623	4.1863	0.0142	1.1403	0.0126	1.1529	0.3062	0.0119	0.3180		1,470.3420	1,470.3420	0.0299	0.1001	1,500.9173

4260 Arch Drive Multi-Family Project - Madera County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**3.5 Paving - 2023****Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.6446	6.2357	8.8024	0.0136		0.3084	0.3084		0.2846	0.2846		1,297.688 0	1,297.688 0	0.4114		1,307.972 5
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	0.6446	6.2357	8.8024	0.0136		0.3084	0.3084		0.2846	0.2846		1,297.688 0	1,297.688 0	0.4114		1,307.972 5

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0515	0.0271	0.4188	1.0200e-003	0.1068	6.2000e-004	0.1074	0.0283	5.7000e-004	0.0289		104.1355	104.1355	3.0600e-003	2.6800e-003	105.0121
Total	0.0515	0.0271	0.4188	1.0200e-003	0.1068	6.2000e-004	0.1074	0.0283	5.7000e-004	0.0289		104.1355	104.1355	3.0600e-003	2.6800e-003	105.0121

4260 Arch Drive Multi-Family Project - Madera County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**3.5 Paving - 2023****Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.6446	6.2357	8.8024	0.0136		0.3084	0.3084		0.2846	0.2846	0.0000	1,297.688 0	1,297.688 0	0.4114		1,307.972 5
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	0.6446	6.2357	8.8024	0.0136		0.3084	0.3084		0.2846	0.2846	0.0000	1,297.688 0	1,297.688 0	0.4114		1,307.972 5

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0515	0.0271	0.4188	1.0200e-003	0.1068	6.2000e-004	0.1074	0.0283	5.7000e-004	0.0289		104.1355	104.1355	3.0600e-003	2.6800e-003	105.0121
Total	0.0515	0.0271	0.4188	1.0200e-003	0.1068	6.2000e-004	0.1074	0.0283	5.7000e-004	0.0289		104.1355	104.1355	3.0600e-003	2.6800e-003	105.0121

4260 Arch Drive Multi-Family Project - Madera County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**3.6 Architectural Coating - 2023****Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	73.0796					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1917	1.3030	1.8111	2.9700e-003		0.0708	0.0708		0.0708	0.0708		281.4481	281.4481	0.0168		281.8690
Total	73.2712	1.3030	1.8111	2.9700e-003		0.0708	0.0708		0.0708	0.0708		281.4481	281.4481	0.0168		281.8690

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0951	0.0500	0.7733	1.8800e-003	0.1972	1.1500e-003	0.1983	0.0523	1.0600e-003	0.0534		192.2502	192.2502	5.6500e-003	4.9600e-003	193.8685
Total	0.0951	0.0500	0.7733	1.8800e-003	0.1972	1.1500e-003	0.1983	0.0523	1.0600e-003	0.0534		192.2502	192.2502	5.6500e-003	4.9600e-003	193.8685

4260 Arch Drive Multi-Family Project - Madera County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**3.6 Architectural Coating - 2023****Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	73.0796					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1917	1.3030	1.8111	2.9700e-003		0.0708	0.0708		0.0708	0.0708	0.0000	281.4481	281.4481	0.0168		281.8690
Total	73.2712	1.3030	1.8111	2.9700e-003		0.0708	0.0708		0.0708	0.0708	0.0000	281.4481	281.4481	0.0168		281.8690

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0951	0.0500	0.7733	1.8800e-003	0.1972	1.1500e-003	0.1983	0.0523	1.0600e-003	0.0534		192.2502	192.2502	5.6500e-003	4.9600e-003	193.8685
Total	0.0951	0.0500	0.7733	1.8800e-003	0.1972	1.1500e-003	0.1983	0.0523	1.0600e-003	0.0534		192.2502	192.2502	5.6500e-003	4.9600e-003	193.8685

4260 Arch Drive Multi-Family Project - Madera County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**4.0 Operational Detail - Mobile****4.1 Mitigation Measures Mobile**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	2.3293	3.2296	19.1928	0.0410	3.5488	0.0392	3.5880	0.9487	0.0368	0.9855		4,218.683 4	4,218.683 4	0.2190	0.2235	4,290.750 7
Unmitigated	2.3293	3.2296	19.1928	0.0410	3.5488	0.0392	3.5880	0.9487	0.0368	0.9855		4,218.683 4	4,218.683 4	0.2190	0.2235	4,290.750 7

4.2 Trip Summary Information

Land Use	Average Daily Trip Rate			Unmitigated	Mitigated
	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Apartments High Rise	574.05	584.37	463.11	1,601,931	1,601,931
Enclosed Parking Structure	0.00	0.00	0.00		
Total	574.05	584.37	463.11	1,601,931	1,601,931

4.3 Trip Type Information

Land Use	Miles			Trip %			Trip Purpose %		
	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Apartments High Rise	10.80	7.30	7.50	42.30	19.60	38.10	86	11	3
Enclosed Parking Structure	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0

4.4 Fleet Mix

4260 Arch Drive Multi-Family Project - Madera County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Apartments High Rise	0.491491	0.052949	0.173689	0.164683	0.034990	0.008766	0.010778	0.027771	0.000810	0.000210	0.026873	0.002020	0.004972
Enclosed Parking Structure	0.491491	0.052949	0.173689	0.164683	0.034990	0.008766	0.010778	0.027771	0.000810	0.000210	0.026873	0.002020	0.004972

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.0449	0.3837	0.1633	2.4500e-003		0.0310	0.0310		0.0310	0.0310		489.8254	489.8254	9.3900e-003	8.9800e-003	492.7362
NaturalGas Unmitigated	0.0449	0.3837	0.1633	2.4500e-003		0.0310	0.0310		0.0310	0.0310		489.8254	489.8254	9.3900e-003	8.9800e-003	492.7362

4260 Arch Drive Multi-Family Project - Madera County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**5.2 Energy by Land Use - NaturalGas****Unmitigated**

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Apartments High Rise	4163.52	0.0449	0.3837	0.1633	2.4500e-003		0.0310	0.0310		0.0310	0.0310		489.8254	489.8254	9.3900e-003	8.9800e-003	492.7362
Enclosed Parking Structure	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		0.0449	0.3837	0.1633	2.4500e-003		0.0310	0.0310		0.0310	0.0310		489.8254	489.8254	9.3900e-003	8.9800e-003	492.7362

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Apartments High Rise	4.16352	0.0449	0.3837	0.1633	2.4500e-003		0.0310	0.0310		0.0310	0.0310		489.8254	489.8254	9.3900e-003	8.9800e-003	492.7362
Enclosed Parking Structure	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		0.0449	0.3837	0.1633	2.4500e-003		0.0310	0.0310		0.0310	0.0310		489.8254	489.8254	9.3900e-003	8.9800e-003	492.7362

6.0 Area Detail

4260 Arch Drive Multi-Family Project - Madera County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**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	3.1219	1.2998	11.1607	8.0800e-003		0.1541	0.1541		0.1541	0.1541	0.0000	1,521.6656	1,521.6656	0.0473	0.0276	1,531.0568
Unmitigated	3.1219	1.2998	11.1607	8.0800e-003		0.1541	0.1541		0.1541	0.1541	0.0000	1,521.6656	1,521.6656	0.0473	0.0276	1,531.0568

4260 Arch Drive Multi-Family Project - Madera County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**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	0.2002					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	2.4619					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	0.1377	1.1769	0.5008	7.5100e-003		0.0952	0.0952		0.0952	0.0952	0.0000	1,502.4706	1,502.4706	0.0288	0.0276	1,511.3990
Landscaping	0.3221	0.1228	10.6598	5.6000e-004		0.0590	0.0590		0.0590	0.0590		19.1950	19.1950	0.0185		19.6578
Total	3.1219	1.2998	11.1607	8.0700e-003		0.1541	0.1541		0.1541	0.1541	0.0000	1,521.6656	1,521.6656	0.0473	0.0276	1,531.0568

4260 Arch Drive Multi-Family Project - Madera County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**6.2 Area by SubCategory****Mitigated**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.2002					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	2.4619					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	0.1377	1.1769	0.5008	7.5100e-003		0.0952	0.0952		0.0952	0.0952	0.0000	1,502.4706	1,502.4706	0.0288	0.0276	1,511.3990
Landscaping	0.3221	0.1228	10.6598	5.6000e-004		0.0590	0.0590		0.0590	0.0590		19.1950	19.1950	0.0185		19.6578
Total	3.1219	1.2998	11.1607	8.0700e-003		0.1541	0.1541		0.1541	0.1541	0.0000	1,521.6656	1,521.6656	0.0473	0.0276	1,531.0568

7.0 Water Detail**7.1 Mitigation Measures Water**

4260 Arch Drive Multi-Family Project - Madera County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**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

4260 Arch Drive Multi-Family Project - Madera County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**4260 Arch Drive Multi-Family Project****Madera County, Winter****1.0 Project Characteristics****1.1 Land Usage**

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Enclosed Parking Structure	145.00	Space	0.00	62,721.00	0
Apartment High Rise	129.00	Dwelling Unit	1.03	114,004.40	369

1.2 Other Project Characteristics

Urbanization	Urban	Wind Speed (m/s)	2.9	Precipitation Freq (Days)	51
Climate Zone	3			Operational Year	2023
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	390.98	CH4 Intensity (lb/MWhr)	0.033	N2O Intensity (lb/MWhr)	0.004

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - 5-story 129-unit multifamily building on 44,866.8 SF (1.03 acre) lot with 145 parking spaces on two subterranean levels.

Construction Phase -

Demolition - Per Google Earth estimate

Architectural Coating - SCAQMD Rule 1113

Woodstoves - No woodstoves or fireplaces

Area Coating - SCAQMD Rule 1113

Construction Off-road Equipment Mitigation - SCAQMD Rule 403

Waste Mitigation - AB 341 requires each jurisdiction in CA to divert at least 75% of thier waste away from landfills by 2020.

Grading -

Vehicle Trips - Per transportation assessment from Overland Consultants, Inc., the project will generate 528 trips per day (4.093 trips per unit)

4260 Arch Drive Multi-Family Project - Madera County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	EF_Nonresidential_Exterior	150.00	50.00
tblArchitecturalCoating	EF_Nonresidential_Interior	150.00	50.00
tblArchitecturalCoating	EF_Parking	150.00	100.00
tblArchitecturalCoating	EF_Residential_Exterior	150.00	50.00
tblArchitecturalCoating	EF_Residential_Interior	150.00	50.00
tblAreaCoating	Area_EF_Nonresidential_Exterior	150	50
tblAreaCoating	Area_EF_Nonresidential_Interior	150	50
tblAreaCoating	Area_EF_Parking	150	100
tblAreaCoating	Area_EF_Residential_Exterior	150	50
tblAreaCoating	Area_EF_Residential_Interior	150	50
tblGrading	MaterialExported	0.00	17,000.00
tblLandUse	LandUseSquareFeet	58,000.00	62,721.00
tblLandUse	LandUseSquareFeet	129,000.00	114,004.40
tblLandUse	LotAcreage	1.30	0.00
tblLandUse	LotAcreage	2.08	1.03
tblWoodstoves	NumberCatalytic	1.03	0.00
tblWoodstoves	NumberNoncatalytic	1.03	0.00

2.0 Emissions Summary

4260 Arch Drive Multi-Family Project - Madera County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**2.1 Overall Construction (Maximum Daily Emission)****Unmitigated Construction**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2023	73.3558	81.5294	23.2680	0.3304	17.1692	1.2420	18.4112	6.1065	1.1661	7.2725	0.0000	34,795.82 65	34,795.82 65	0.7136	5.1470	36,347.48 45
Maximum	73.3558	81.5294	23.2680	0.3304	17.1692	1.2420	18.4112	6.1065	1.1661	7.2725	0.0000	34,795.82 65	34,795.82 65	0.7136	5.1470	36,347.48 45

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2023	73.3558	81.5294	23.2680	0.3304	12.4289	1.2420	13.6709	3.9538	1.1661	5.1199	0.0000	34,795.82 65	34,795.82 65	0.7136	5.1470	36,347.48 45
Maximum	73.3558	81.5294	23.2680	0.3304	12.4289	1.2420	13.6709	3.9538	1.1661	5.1199	0.0000	34,795.82 65	34,795.82 65	0.7136	5.1470	36,347.48 45

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	27.61	0.00	25.75	35.25	0.00	29.60	0.00	0.00	0.00	0.00	0.00	0.00

4260 Arch Drive Multi-Family Project - Madera County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**2.2 Overall Operational****Unmitigated Operational**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	3.1219	1.2998	11.1607	8.0800e-003		0.1541	0.1541		0.1541	0.1541	0.0000	1,521.6656	1,521.6656	0.0473	0.0276	1,531.0568
Energy	0.0449	0.3837	0.1633	2.4500e-003		0.0310	0.0310		0.0310	0.0310		489.8254	489.8254	9.3900e-003	8.9800e-003	492.7362
Mobile	1.8774	3.6174	18.5067	0.0379	3.5488	0.0392	3.5881	0.9487	0.0369	0.9856		3,900.1087	3,900.1087	0.2455	0.2381	3,977.2009
Total	5.0442	5.3009	29.8307	0.0484	3.5488	0.2244	3.7732	0.9487	0.2220	1.1707	0.0000	5,911.5997	5,911.5997	0.3022	0.2746	6,000.9938

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	3.1219	1.2998	11.1607	8.0800e-003		0.1541	0.1541		0.1541	0.1541	0.0000	1,521.6656	1,521.6656	0.0473	0.0276	1,531.0568
Energy	0.0449	0.3837	0.1633	2.4500e-003		0.0310	0.0310		0.0310	0.0310		489.8254	489.8254	9.3900e-003	8.9800e-003	492.7362
Mobile	1.8774	3.6174	18.5067	0.0379	3.5488	0.0392	3.5881	0.9487	0.0369	0.9856		3,900.1087	3,900.1087	0.2455	0.2381	3,977.2009
Total	5.0442	5.3009	29.8307	0.0484	3.5488	0.2244	3.7732	0.9487	0.2220	1.1707	0.0000	5,911.5997	5,911.5997	0.3022	0.2746	6,000.9938

4260 Arch Drive Multi-Family Project - Madera County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

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

3.0 Construction Detail**Construction Phase**

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	1/1/2023	1/27/2023	5	20	
2	Grading	Grading	1/28/2023	2/2/2023	5	4	
3	Building Construction	Building Construction	2/3/2023	11/9/2023	5	200	
4	Paving	Paving	11/10/2023	11/23/2023	5	10	
5	Architectural Coating	Architectural Coating	11/24/2023	12/7/2023	5	10	

Acres of Grading (Site Preparation Phase): 0**Acres of Grading (Grading Phase): 4****Acres of Paving: 0****Residential Indoor: 230,859; Residential Outdoor: 76,953; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 3,763 (Architectural Coating – sqft)****OffRoad Equipment**

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Demolition	Rubber Tired Dozers	1	8.00	247	0.40
Demolition	Tractors/Loaders/Backhoes	3	8.00	97	0.37
Grading	Graders	1	8.00	187	0.41
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Grading	Tractors/Loaders/Backhoes	2	7.00	97	0.37

4260 Arch Drive Multi-Family Project - Madera County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Building Construction	Cranes	1	6.00	231	0.29
Building Construction	Forklifts	1	6.00	89	0.20
Building Construction	Tractors/Loaders/Backhoes	1	6.00	97	0.37
Paving	Cement and Mortar Mixers	1	6.00	9	0.56
Paving	Pavers	1	6.00	130	0.42
Paving	Rollers	1	7.00	80	0.38
Paving	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Architectural Coating	Air Compressors	1	6.00	78	0.48
Building Construction	Generator Sets	1	8.00	84	0.74
Paving	Paving Equipment	1	8.00	132	0.36
Building Construction	Welders	3	8.00	46	0.45

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	5	13.00	0.00	273.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	4	10.00	0.00	2,125.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	7	119.00	24.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	5	13.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	24.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

4260 Arch Drive Multi-Family Project - Madera County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**3.2 Demolition - 2023****Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					3.0186	0.0000	3.0186	0.4571	0.0000	0.4571			0.0000			0.0000
Off-Road	1.4725	14.3184	13.4577	0.0241		0.6766	0.6766		0.6328	0.6328		2,324.3959	2,324.3959	0.5893		2,339.1278
Total	1.4725	14.3184	13.4577	0.0241	3.0186	0.6766	3.6953	0.4571	0.6328	1.0898		2,324.3959	2,324.3959	0.5893		2,339.1278

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	0.0277	1.7225	0.3671	7.9400e-003	0.2394	0.0164	0.2557	0.0657	0.0157	0.0813		840.9347	840.9347	1.6800e-003	0.1322	880.3692
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0458	0.0322	0.3585	9.1000e-004	0.1068	6.2000e-004	0.1074	0.0283	5.7000e-004	0.0289		92.9829	92.9829	3.3900e-003	3.0200e-003	93.9670
Total	0.0735	1.7547	0.7256	8.8500e-003	0.3462	0.0170	0.3632	0.0940	0.0162	0.1102		933.9176	933.9176	5.0700e-003	0.1352	974.3362

4260 Arch Drive Multi-Family Project - Madera County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**3.2 Demolition - 2023****Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					1.1773	0.0000	1.1773	0.1783	0.0000	0.1783			0.0000			0.0000
Off-Road	1.4725	14.3184	13.4577	0.0241		0.6766	0.6766		0.6328	0.6328	0.0000	2,324.3959	2,324.3959	0.5893		2,339.1278
Total	1.4725	14.3184	13.4577	0.0241	1.1773	0.6766	1.8539	0.1783	0.6328	0.8110	0.0000	2,324.3959	2,324.3959	0.5893		2,339.1278

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	0.0277	1.7225	0.3671	7.9400e-003	0.2394	0.0164	0.2557	0.0657	0.0157	0.0813		840.9347	840.9347	1.6800e-003	0.1322	880.3692
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0458	0.0322	0.3585	9.1000e-004	0.1068	6.2000e-004	0.1074	0.0283	5.7000e-004	0.0289		92.9829	92.9829	3.3900e-003	3.0200e-003	93.9670
Total	0.0735	1.7547	0.7256	8.8500e-003	0.3462	0.0170	0.3632	0.0940	0.0162	0.1102		933.9176	933.9176	5.0700e-003	0.1352	974.3362

4260 Arch Drive Multi-Family Project - Madera County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**3.3 Grading - 2023****Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					7.7709	0.0000	7.7709	3.5290	0.0000	3.5290			0.0000			0.0000
Off-Road	1.3330	14.4676	8.7038	0.0206		0.6044	0.6044		0.5560	0.5560		1,995.614 7	1,995.614 7	0.6454		2,011.750 3
Total	1.3330	14.4676	8.7038	0.0206	7.7709	0.6044	8.3752	3.5290	0.5560	4.0850		1,995.614 7	1,995.614 7	0.6454		2,011.750 3

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	1.0776	67.0370	14.2885	0.3091	9.3161	0.6372	9.9533	2.5557	0.6096	3.1653		32,728.68 64	32,728.68 64	0.0656	5.1447	34,263.45 19
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0352	0.0248	0.2757	7.0000e-004	0.0822	4.8000e-004	0.0826	0.0218	4.4000e-004	0.0222		71.5253	71.5253	2.6100e-003	2.3200e-003	72.2823
Total	1.1128	67.0618	14.5643	0.3098	9.3983	0.6377	10.0359	2.5775	0.6101	3.1876		32,800.21 17	32,800.21 17	0.0682	5.1470	34,335.73 42

4260 Arch Drive Multi-Family Project - Madera County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**3.3 Grading - 2023****Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					3.0307	0.0000	3.0307	1.3763	0.0000	1.3763			0.0000			0.0000
Off-Road	1.3330	14.4676	8.7038	0.0206		0.6044	0.6044		0.5560	0.5560	0.0000	1,995.614 7	1,995.614 7	0.6454		2,011.750 3
Total	1.3330	14.4676	8.7038	0.0206	3.0307	0.6044	3.6350	1.3763	0.5560	1.9323	0.0000	1,995.614 7	1,995.614 7	0.6454		2,011.750 3

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	1.0776	67.0370	14.2885	0.3091	9.3161	0.6372	9.9533	2.5557	0.6096	3.1653		32,728.68 64	32,728.68 64	0.0656	5.1447	34,263.45 19
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0352	0.0248	0.2757	7.0000e-004	0.0822	4.8000e-004	0.0826	0.0218	4.4000e-004	0.0222		71.5253	71.5253	2.6100e-003	2.3200e-003	72.2823
Total	1.1128	67.0618	14.5643	0.3098	9.3983	0.6377	10.0359	2.5775	0.6101	3.1876		32,800.21 17	32,800.21 17	0.0682	5.1470	34,335.73 42

4260 Arch Drive Multi-Family Project - Madera County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**3.4 Building Construction - 2023****Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.5233	11.7104	12.6111	0.0221		0.5145	0.5145		0.4968	0.4968		2,001.7877	2,001.7877	0.3399		2,010.2858
Total	1.5233	11.7104	12.6111	0.0221		0.5145	0.5145		0.4968	0.4968		2,001.7877	2,001.7877	0.3399		2,010.2858

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0280	1.0857	0.3631	4.9100e-003	0.1628	6.9300e-003	0.1697	0.0469	6.6300e-003	0.0535		518.1213	518.1213	1.8000e-003	0.0758	540.7509
Worker	0.4193	0.2950	3.2812	8.3200e-003	0.9776	5.7000e-003	0.9833	0.2593	5.2400e-003	0.2645		851.1514	851.1514	0.0311	0.0276	860.1593
Total	0.4473	1.3807	3.6443	0.0132	1.1403	0.0126	1.1529	0.3062	0.0119	0.3180		1,369.2727	1,369.2727	0.0329	0.1034	1,400.9102

4260 Arch Drive Multi-Family Project - Madera County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**3.4 Building Construction - 2023****Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.5233	11.7104	12.6111	0.0221		0.5145	0.5145		0.4968	0.4968	0.0000	2,001.7877	2,001.7877	0.3399		2,010.2858
Total	1.5233	11.7104	12.6111	0.0221		0.5145	0.5145		0.4968	0.4968	0.0000	2,001.7877	2,001.7877	0.3399		2,010.2858

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0280	1.0857	0.3631	4.9100e-003	0.1628	6.9300e-003	0.1697	0.0469	6.6300e-003	0.0535		518.1213	518.1213	1.8000e-003	0.0758	540.7509
Worker	0.4193	0.2950	3.2812	8.3200e-003	0.9776	5.7000e-003	0.9833	0.2593	5.2400e-003	0.2645		851.1514	851.1514	0.0311	0.0276	860.1593
Total	0.4473	1.3807	3.6443	0.0132	1.1403	0.0126	1.1529	0.3062	0.0119	0.3180		1,369.2727	1,369.2727	0.0329	0.1034	1,400.9102

4260 Arch Drive Multi-Family Project - Madera County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**3.5 Paving - 2023****Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.6446	6.2357	8.8024	0.0136		0.3084	0.3084		0.2846	0.2846		1,297.688 0	1,297.688 0	0.4114		1,307.972 5
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	0.6446	6.2357	8.8024	0.0136		0.3084	0.3084		0.2846	0.2846		1,297.688 0	1,297.688 0	0.4114		1,307.972 5

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0458	0.0322	0.3585	9.1000e-004	0.1068	6.2000e-004	0.1074	0.0283	5.7000e-004	0.0289		92.9829	92.9829	3.3900e-003	3.0200e-003	93.9670
Total	0.0458	0.0322	0.3585	9.1000e-004	0.1068	6.2000e-004	0.1074	0.0283	5.7000e-004	0.0289		92.9829	92.9829	3.3900e-003	3.0200e-003	93.9670

4260 Arch Drive Multi-Family Project - Madera County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**3.5 Paving - 2023****Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.6446	6.2357	8.8024	0.0136		0.3084	0.3084		0.2846	0.2846	0.0000	1,297.688 0	1,297.688 0	0.4114		1,307.972 5
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	0.6446	6.2357	8.8024	0.0136		0.3084	0.3084		0.2846	0.2846	0.0000	1,297.688 0	1,297.688 0	0.4114		1,307.972 5

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0458	0.0322	0.3585	9.1000e-004	0.1068	6.2000e-004	0.1074	0.0283	5.7000e-004	0.0289		92.9829	92.9829	3.3900e-003	3.0200e-003	93.9670
Total	0.0458	0.0322	0.3585	9.1000e-004	0.1068	6.2000e-004	0.1074	0.0283	5.7000e-004	0.0289		92.9829	92.9829	3.3900e-003	3.0200e-003	93.9670

4260 Arch Drive Multi-Family Project - Madera County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**3.6 Architectural Coating - 2023****Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	73.0796					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1917	1.3030	1.8111	2.9700e-003		0.0708	0.0708		0.0708	0.0708		281.4481	281.4481	0.0168		281.8690
Total	73.2712	1.3030	1.8111	2.9700e-003		0.0708	0.0708		0.0708	0.0708		281.4481	281.4481	0.0168		281.8690

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0846	0.0595	0.6618	1.6800e-003	0.1972	1.1500e-003	0.1983	0.0523	1.0600e-003	0.0534		171.6608	171.6608	6.2600e-003	5.5700e-003	173.4775
Total	0.0846	0.0595	0.6618	1.6800e-003	0.1972	1.1500e-003	0.1983	0.0523	1.0600e-003	0.0534		171.6608	171.6608	6.2600e-003	5.5700e-003	173.4775

4260 Arch Drive Multi-Family Project - Madera County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**3.6 Architectural Coating - 2023****Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	73.0796					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1917	1.3030	1.8111	2.9700e-003		0.0708	0.0708		0.0708	0.0708	0.0000	281.4481	281.4481	0.0168		281.8690
Total	73.2712	1.3030	1.8111	2.9700e-003		0.0708	0.0708		0.0708	0.0708	0.0000	281.4481	281.4481	0.0168		281.8690

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0846	0.0595	0.6618	1.6800e-003	0.1972	1.1500e-003	0.1983	0.0523	1.0600e-003	0.0534		171.6608	171.6608	6.2600e-003	5.5700e-003	173.4775
Total	0.0846	0.0595	0.6618	1.6800e-003	0.1972	1.1500e-003	0.1983	0.0523	1.0600e-003	0.0534		171.6608	171.6608	6.2600e-003	5.5700e-003	173.4775

4260 Arch Drive Multi-Family Project - Madera County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**4.0 Operational Detail - Mobile****4.1 Mitigation Measures Mobile**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	1.8774	3.6174	18.5067	0.0379	3.5488	0.0392	3.5881	0.9487	0.0369	0.9856		3,900.108 7	3,900.108 7	0.2455	0.2381	3,977.200 9
Unmitigated	1.8774	3.6174	18.5067	0.0379	3.5488	0.0392	3.5881	0.9487	0.0369	0.9856		3,900.108 7	3,900.108 7	0.2455	0.2381	3,977.200 9

4.2 Trip Summary Information

Land Use	Average Daily Trip Rate			Unmitigated	Mitigated
	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Apartments High Rise	574.05	584.37	463.11	1,601,931	1,601,931
Enclosed Parking Structure	0.00	0.00	0.00		
Total	574.05	584.37	463.11	1,601,931	1,601,931

4.3 Trip Type Information

Land Use	Miles			Trip %			Trip Purpose %		
	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Apartments High Rise	10.80	7.30	7.50	42.30	19.60	38.10	86	11	3
Enclosed Parking Structure	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0

4.4 Fleet Mix

4260 Arch Drive Multi-Family Project - Madera County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Apartments High Rise	0.491491	0.052949	0.173689	0.164683	0.034990	0.008766	0.010778	0.027771	0.000810	0.000210	0.026873	0.002020	0.004972
Enclosed Parking Structure	0.491491	0.052949	0.173689	0.164683	0.034990	0.008766	0.010778	0.027771	0.000810	0.000210	0.026873	0.002020	0.004972

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.0449	0.3837	0.1633	2.4500e-003		0.0310	0.0310		0.0310	0.0310		489.8254	489.8254	9.3900e-003	8.9800e-003	492.7362
NaturalGas Unmitigated	0.0449	0.3837	0.1633	2.4500e-003		0.0310	0.0310		0.0310	0.0310		489.8254	489.8254	9.3900e-003	8.9800e-003	492.7362

4260 Arch Drive Multi-Family Project - Madera County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**5.2 Energy by Land Use - NaturalGas****Unmitigated**

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Apartments High Rise	4163.52	0.0449	0.3837	0.1633	2.4500e-003		0.0310	0.0310		0.0310	0.0310		489.8254	489.8254	9.3900e-003	8.9800e-003	492.7362
Enclosed Parking Structure	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		0.0449	0.3837	0.1633	2.4500e-003		0.0310	0.0310		0.0310	0.0310		489.8254	489.8254	9.3900e-003	8.9800e-003	492.7362

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Apartments High Rise	4.16352	0.0449	0.3837	0.1633	2.4500e-003		0.0310	0.0310		0.0310	0.0310		489.8254	489.8254	9.3900e-003	8.9800e-003	492.7362
Enclosed Parking Structure	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		0.0449	0.3837	0.1633	2.4500e-003		0.0310	0.0310		0.0310	0.0310		489.8254	489.8254	9.3900e-003	8.9800e-003	492.7362

6.0 Area Detail

4260 Arch Drive Multi-Family Project - Madera County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**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	3.1219	1.2998	11.1607	8.0800e-003		0.1541	0.1541		0.1541	0.1541	0.0000	1,521.6656	1,521.6656	0.0473	0.0276	1,531.0568
Unmitigated	3.1219	1.2998	11.1607	8.0800e-003		0.1541	0.1541		0.1541	0.1541	0.0000	1,521.6656	1,521.6656	0.0473	0.0276	1,531.0568

4260 Arch Drive Multi-Family Project - Madera County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**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	0.2002					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	2.4619					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	0.1377	1.1769	0.5008	7.5100e-003		0.0952	0.0952		0.0952	0.0952	0.0000	1,502.4706	1,502.4706	0.0288	0.0276	1,511.3990
Landscaping	0.3221	0.1228	10.6598	5.6000e-004		0.0590	0.0590		0.0590	0.0590		19.1950	19.1950	0.0185		19.6578
Total	3.1219	1.2998	11.1607	8.0700e-003		0.1541	0.1541		0.1541	0.1541	0.0000	1,521.6656	1,521.6656	0.0473	0.0276	1,531.0568

4260 Arch Drive Multi-Family Project - Madera County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**6.2 Area by SubCategory****Mitigated**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.2002					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	2.4619					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	0.1377	1.1769	0.5008	7.5100e-003		0.0952	0.0952		0.0952	0.0952	0.0000	1,502.4706	1,502.4706	0.0288	0.0276	1,511.3990
Landscaping	0.3221	0.1228	10.6598	5.6000e-004		0.0590	0.0590		0.0590	0.0590		19.1950	19.1950	0.0185		19.6578
Total	3.1219	1.2998	11.1607	8.0700e-003		0.1541	0.1541		0.1541	0.1541	0.0000	1,521.6656	1,521.6656	0.0473	0.0276	1,531.0568

7.0 Water Detail**7.1 Mitigation Measures Water**

4260 Arch Drive Multi-Family Project - Madera County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

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

4260 Arch Drive Multi-Family Project - Madera County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**4260 Arch Drive Multi-Family Project****Madera County, Annual****1.0 Project Characteristics****1.1 Land Usage**

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Enclosed Parking Structure	145.00	Space	0.00	62,721.00	0
Apartments High Rise	129.00	Dwelling Unit	1.03	114,004.40	369

1.2 Other Project Characteristics

Urbanization	Urban	Wind Speed (m/s)	2.9	Precipitation Freq (Days)	51
Climate Zone	3			Operational Year	2023
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	390.98	CH4 Intensity (lb/MWhr)	0.033	N2O Intensity (lb/MWhr)	0.004

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - 5-story 129-unit multifamily building on 44,866.8 SF (1.03 acre) lot with 145 parking spaces on two subterranean levels.

Construction Phase -

Demolition - Per Google Earth estimate

Architectural Coating - SCAQMD Rule 1113

Woodstoves - No woodstoves or fireplaces

Area Coating - SCAQMD Rule 1113

Construction Off-road Equipment Mitigation - SCAQMD Rule 403

Waste Mitigation - AB 341 requires each jurisdiction in CA to divert at least 75% of thier waste away from landfills by 2020.

Grading -

Vehicle Trips - Per transportation assessment from Overland Consultants, Inc., the project will generate 528 trips per day (4.093 trips per unit)

4260 Arch Drive Multi-Family Project - Madera County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	EF_Nonresidential_Exterior	150.00	50.00
tblArchitecturalCoating	EF_Nonresidential_Interior	150.00	50.00
tblArchitecturalCoating	EF_Parking	150.00	100.00
tblArchitecturalCoating	EF_Residential_Exterior	150.00	50.00
tblArchitecturalCoating	EF_Residential_Interior	150.00	50.00
tblAreaCoating	Area_EF_Nonresidential_Exterior	150	50
tblAreaCoating	Area_EF_Nonresidential_Interior	150	50
tblAreaCoating	Area_EF_Parking	150	100
tblAreaCoating	Area_EF_Residential_Exterior	150	50
tblAreaCoating	Area_EF_Residential_Interior	150	50
tblGrading	MaterialExported	0.00	17,000.00
tblLandUse	LandUseSquareFeet	58,000.00	62,721.00
tblLandUse	LandUseSquareFeet	129,000.00	114,004.40
tblLandUse	LotAcreage	1.30	0.00
tblLandUse	LotAcreage	2.08	1.03
tblWoodstoves	NumberCatalytic	1.03	0.00
tblWoodstoves	NumberNoncatalytic	1.03	0.00

2.0 Emissions Summary

4260 Arch Drive Multi-Family Project - Madera County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**2.1 Overall Construction****Unmitigated Construction**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2023	0.5867	1.6622	1.8754	4.6400e-003	0.1795	0.0640	0.2436	0.0478	0.0615	0.1092	0.0000	409.3743	409.3743	0.0423	0.0198	416.3324
Maximum	0.5867	1.6622	1.8754	4.6400e-003	0.1795	0.0640	0.2436	0.0478	0.0615	0.1092	0.0000	409.3743	409.3743	0.0423	0.0198	416.3324

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2023	0.5867	1.6622	1.8754	4.6400e-003	0.1516	0.0640	0.2157	0.0407	0.0615	0.1021	0.0000	409.3740	409.3740	0.0423	0.0198	416.3321
Maximum	0.5867	1.6622	1.8754	4.6400e-003	0.1516	0.0640	0.2157	0.0407	0.0615	0.1021	0.0000	409.3740	409.3740	0.0423	0.0198	416.3321

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	15.54	0.00	11.45	14.85	0.00	6.49	0.00	0.00	0.00	0.00	0.00	0.00

4260 Arch Drive Multi-Family Project - Madera County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
1	1-1-2023	3-31-2023	0.6565	0.6565
2	4-1-2023	6-30-2023	0.4874	0.4874
3	7-1-2023	9-30-2023	0.4928	0.4928
		Highest	0.6565	0.6565

2.2 Overall Operational**Unmitigated Operational**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.5205	0.0593	0.9799	3.6000e-004		9.2100e-003	9.2100e-003		9.2100e-003	9.2100e-003	0.0000	57.4510	57.4510	2.5800e-003	1.0200e-003	57.8208
Energy	8.1900e-003	0.0700	0.0298	4.5000e-004		5.6600e-003	5.6600e-003		5.6600e-003	5.6600e-003	0.0000	229.7406	229.7406	0.0141	3.0100e-003	230.9893
Mobile	0.3419	0.5989	3.1113	6.7500e-003	0.6001	6.8300e-003	0.6069	0.1608	6.4200e-003	0.1672	0.0000	629.5753	629.5753	0.0363	0.0364	641.3175
Waste						0.0000	0.0000		0.0000	0.0000	12.0455	0.0000	12.0455	0.7119	0.0000	29.8422
Water						0.0000	0.0000		0.0000	0.0000	2.6665	11.3544	14.0209	0.2748	6.5800e-003	22.8534
Total	0.8705	0.7282	4.1210	7.5600e-003	0.6001	0.0217	0.6218	0.1608	0.0213	0.1821	14.7120	928.1213	942.8333	1.0396	0.0470	982.8232

4260 Arch Drive Multi-Family Project - Madera County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**2.2 Overall Operational****Mitigated Operational**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.5205	0.0593	0.9799	3.6000e-004		9.2100e-003	9.2100e-003		9.2100e-003	9.2100e-003	0.0000	57.4510	57.4510	2.5800e-003	1.0200e-003	57.8208
Energy	8.1900e-003	0.0700	0.0298	4.5000e-004		5.6600e-003	5.6600e-003		5.6600e-003	5.6600e-003	0.0000	229.7406	229.7406	0.0141	3.0100e-003	230.9893
Mobile	0.3419	0.5989	3.1113	6.7500e-003	0.6001	6.8300e-003	0.6069	0.1608	6.4200e-003	0.1672	0.0000	629.5753	629.5753	0.0363	0.0364	641.3175
Waste						0.0000	0.0000		0.0000	0.0000	3.0114	0.0000	3.0114	0.1780	0.0000	7.4605
Water						0.0000	0.0000		0.0000	0.0000	2.6665	11.3544	14.0209	0.2748	6.5800e-003	22.8534
Total	0.8705	0.7282	4.1210	7.5600e-003	0.6001	0.0217	0.6218	0.1608	0.0213	0.1821	5.6779	928.1213	933.7992	0.5057	0.0470	960.4416

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	61.41	0.00	0.96	51.35	0.00	2.28

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	1/1/2023	1/27/2023	5	20	
2	Grading	Grading	1/28/2023	2/2/2023	5	4	
3	Building Construction	Building Construction	2/3/2023	11/9/2023	5	200	

4260 Arch Drive Multi-Family Project - Madera County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

4	Paving	Paving	11/10/2023	11/23/2023	5	10
5	Architectural Coating	Architectural Coating	11/24/2023	12/7/2023	5	10

Acres of Grading (Site Preparation Phase): 0**Acres of Grading (Grading Phase): 4****Acres of Paving: 0****Residential Indoor: 230,859; Residential Outdoor: 76,953; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 3,763 (Architectural Coating – sqft)****OffRoad Equipment**

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

4260 Arch Drive Multi-Family Project - Madera County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**Trips and VMT**

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	5	13.00	0.00	273.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	4	10.00	0.00	2,125.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	7	119.00	24.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	5	13.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	24.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

3.2 Demolition - 2023**Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0302	0.0000	0.0302	4.5700e-003	0.0000	4.5700e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0147	0.1432	0.1346	2.4000e-004		6.7700e-003	6.7700e-003		6.3300e-003	6.3300e-003	0.0000	21.0866	21.0866	5.3500e-003	0.0000	21.2202
Total	0.0147	0.1432	0.1346	2.4000e-004	0.0302	6.7700e-003	0.0370	4.5700e-003	6.3300e-003	0.0109	0.0000	21.0866	21.0866	5.3500e-003	0.0000	21.2202

4260 Arch Drive Multi-Family Project - Madera County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.2 Demolition - 2023

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	2.9000e-004	0.0168	3.6300e-003	8.0000e-005	2.3300e-003	1.6000e-004	2.4900e-003	6.4000e-004	1.6000e-004	8.0000e-004	0.0000	7.6228	7.6228	2.0000e-005	1.2000e-003	7.9803
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	4.5000e-004	2.9000e-004	3.6300e-003	1.0000e-005	1.0400e-003	1.0000e-005	1.0400e-003	2.8000e-004	1.0000e-005	2.8000e-004	0.0000	0.8713	0.8713	3.0000e-005	3.0000e-005	0.8796
Total	7.4000e-004	0.0171	7.2600e-003	9.0000e-005	3.3700e-003	1.7000e-004	3.5300e-003	9.2000e-004	1.7000e-004	1.0800e-003	0.0000	8.4940	8.4940	5.0000e-005	1.2300e-003	8.8599

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0118	0.0000	0.0118	1.7800e-003	0.0000	1.7800e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0147	0.1432	0.1346	2.4000e-004		6.7700e-003	6.7700e-003		6.3300e-003	6.3300e-003	0.0000	21.0865	21.0865	5.3500e-003	0.0000	21.2202
Total	0.0147	0.1432	0.1346	2.4000e-004	0.0118	6.7700e-003	0.0185	1.7800e-003	6.3300e-003	8.1100e-003	0.0000	21.0865	21.0865	5.3500e-003	0.0000	21.2202

4260 Arch Drive Multi-Family Project - Madera County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.2 Demolition - 2023

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	2.9000e-004	0.0168	3.6300e-003	8.0000e-005	2.3300e-003	1.6000e-004	2.4900e-003	6.4000e-004	1.6000e-004	8.0000e-004	0.0000	7.6228	7.6228	2.0000e-005	1.2000e-003	7.9803
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	4.5000e-004	2.9000e-004	3.6300e-003	1.0000e-005	1.0400e-003	1.0000e-005	1.0400e-003	2.8000e-004	1.0000e-005	2.8000e-004	0.0000	0.8713	0.8713	3.0000e-005	3.0000e-005	0.8796
Total	7.4000e-004	0.0171	7.2600e-003	9.0000e-005	3.3700e-003	1.7000e-004	3.5300e-003	9.2000e-004	1.7000e-004	1.0800e-003	0.0000	8.4940	8.4940	5.0000e-005	1.2300e-003	8.8599

3.3 Grading - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0155	0.0000	0.0155	7.0600e-003	0.0000	7.0600e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	2.6700e-003	0.0289	0.0174	4.0000e-005		1.2100e-003	1.2100e-003		1.1100e-003	1.1100e-003	0.0000	3.6208	3.6208	1.1700e-003	0.0000	3.6501
Total	2.6700e-003	0.0289	0.0174	4.0000e-005	0.0155	1.2100e-003	0.0168	7.0600e-003	1.1100e-003	8.1700e-003	0.0000	3.6208	3.6208	1.1700e-003	0.0000	3.6501

4260 Arch Drive Multi-Family Project - Madera County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**3.3 Grading - 2023****Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	2.2600e-003	0.1311	0.0283	6.2000e-004	0.0181	1.2700e-003	0.0194	4.9900e-003	1.2200e-003	6.2100e-003	0.0000	59.3349	59.3349	1.2000e-004	9.3300e-003	62.1174
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	7.0000e-005	4.0000e-005	5.6000e-004	0.0000	1.6000e-004	0.0000	1.6000e-004	4.0000e-005	0.0000	4.0000e-005	0.0000	0.1340	0.1340	0.0000	0.0000	0.1353
Total	2.3300e-003	0.1311	0.0288	6.2000e-004	0.0183	1.2700e-003	0.0196	5.0300e-003	1.2200e-003	6.2500e-003	0.0000	59.4689	59.4689	1.2000e-004	9.3300e-003	62.2527

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					6.0600e-003	0.0000	6.0600e-003	2.7500e-003	0.0000	2.7500e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	2.6700e-003	0.0289	0.0174	4.0000e-005		1.2100e-003	1.2100e-003		1.1100e-003	1.1100e-003	0.0000	3.6208	3.6208	1.1700e-003	0.0000	3.6501
Total	2.6700e-003	0.0289	0.0174	4.0000e-005	6.0600e-003	1.2100e-003	7.2700e-003	2.7500e-003	1.1100e-003	3.8600e-003	0.0000	3.6208	3.6208	1.1700e-003	0.0000	3.6501

4260 Arch Drive Multi-Family Project - Madera County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**3.3 Grading - 2023****Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	2.2600e-003	0.1311	0.0283	6.2000e-004	0.0181	1.2700e-003	0.0194	4.9900e-003	1.2200e-003	6.2100e-003	0.0000	59.3349	59.3349	1.2000e-004	9.3300e-003	62.1174
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	7.0000e-005	4.0000e-005	5.6000e-004	0.0000	1.6000e-004	0.0000	1.6000e-004	4.0000e-005	0.0000	4.0000e-005	0.0000	0.1340	0.1340	0.0000	0.0000	0.1353
Total	2.3300e-003	0.1311	0.0288	6.2000e-004	0.0183	1.2700e-003	0.0196	5.0300e-003	1.2200e-003	6.2500e-003	0.0000	59.4689	59.4689	1.2000e-004	9.3300e-003	62.2527

3.4 Building Construction - 2023**Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1523	1.1710	1.2611	2.2100e-003		0.0515	0.0515		0.0497	0.0497	0.0000	181.5991	181.5991	0.0308	0.0000	182.3701
Total	0.1523	1.1710	1.2611	2.2100e-003		0.0515	0.0515		0.0497	0.0497	0.0000	181.5991	181.5991	0.0308	0.0000	182.3701

4260 Arch Drive Multi-Family Project - Madera County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**3.4 Building Construction - 2023****Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	2.8700e-003	0.1059	0.0357	4.9000e-004	0.0159	6.9000e-004	0.0166	4.5900e-003	6.6000e-004	5.2500e-003	0.0000	46.9494	46.9494	1.7000e-004	6.8600e-003	48.9986
Worker	0.0408	0.0268	0.3323	8.6000e-004	0.0948	5.7000e-004	0.0954	0.0252	5.2000e-004	0.0257	0.0000	79.7528	79.7528	2.6300e-003	2.3500e-003	80.5177
Total	0.0437	0.1327	0.3680	1.3500e-003	0.1107	1.2600e-003	0.1119	0.0298	1.1800e-003	0.0310	0.0000	126.7022	126.7022	2.8000e-003	9.2100e-003	129.5163

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1523	1.1710	1.2611	2.2100e-003		0.0515	0.0515		0.0497	0.0497	0.0000	181.5989	181.5989	0.0308	0.0000	182.3698
Total	0.1523	1.1710	1.2611	2.2100e-003		0.0515	0.0515		0.0497	0.0497	0.0000	181.5989	181.5989	0.0308	0.0000	182.3698

4260 Arch Drive Multi-Family Project - Madera County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**3.4 Building Construction - 2023****Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	2.8700e-003	0.1059	0.0357	4.9000e-004	0.0159	6.9000e-004	0.0166	4.5900e-003	6.6000e-004	5.2500e-003	0.0000	46.9494	46.9494	1.7000e-004	6.8600e-003	48.9986
Worker	0.0408	0.0268	0.3323	8.6000e-004	0.0948	5.7000e-004	0.0954	0.0252	5.2000e-004	0.0257	0.0000	79.7528	79.7528	2.6300e-003	2.3500e-003	80.5177
Total	0.0437	0.1327	0.3680	1.3500e-003	0.1107	1.2600e-003	0.1119	0.0298	1.1800e-003	0.0310	0.0000	126.7022	126.7022	2.8000e-003	9.2100e-003	129.5163

3.5 Paving - 2023**Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	3.2200e-003	0.0312	0.0440	7.0000e-005		1.5400e-003	1.5400e-003		1.4200e-003	1.4200e-003	0.0000	5.8862	5.8862	1.8700e-003	0.0000	5.9329
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	3.2200e-003	0.0312	0.0440	7.0000e-005		1.5400e-003	1.5400e-003		1.4200e-003	1.4200e-003	0.0000	5.8862	5.8862	1.8700e-003	0.0000	5.9329

4260 Arch Drive Multi-Family Project - Madera County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**3.5 Paving - 2023****Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.2000e-004	1.5000e-004	1.8100e-003	0.0000	5.2000e-004	0.0000	5.2000e-004	1.4000e-004	0.0000	1.4000e-004	0.0000	0.4356	0.4356	1.0000e-005	1.0000e-005	0.4398
Total	2.2000e-004	1.5000e-004	1.8100e-003	0.0000	5.2000e-004	0.0000	5.2000e-004	1.4000e-004	0.0000	1.4000e-004	0.0000	0.4356	0.4356	1.0000e-005	1.0000e-005	0.4398

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	3.2200e-003	0.0312	0.0440	7.0000e-005		1.5400e-003	1.5400e-003		1.4200e-003	1.4200e-003	0.0000	5.8862	5.8862	1.8700e-003	0.0000	5.9329
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	3.2200e-003	0.0312	0.0440	7.0000e-005		1.5400e-003	1.5400e-003		1.4200e-003	1.4200e-003	0.0000	5.8862	5.8862	1.8700e-003	0.0000	5.9329

4260 Arch Drive Multi-Family Project - Madera County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**3.5 Paving - 2023****Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.2000e-004	1.5000e-004	1.8100e-003	0.0000	5.2000e-004	0.0000	5.2000e-004	1.4000e-004	0.0000	1.4000e-004	0.0000	0.4356	0.4356	1.0000e-005	1.0000e-005	0.4398
Total	2.2000e-004	1.5000e-004	1.8100e-003	0.0000	5.2000e-004	0.0000	5.2000e-004	1.4000e-004	0.0000	1.4000e-004	0.0000	0.4356	0.4356	1.0000e-005	1.0000e-005	0.4398

3.6 Architectural Coating - 2023**Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.3654					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	9.6000e-004	6.5100e-003	9.0600e-003	1.0000e-005		3.5000e-004	3.5000e-004		3.5000e-004	3.5000e-004	0.0000	1.2766	1.2766	8.0000e-005	0.0000	1.2785
Total	0.3664	6.5100e-003	9.0600e-003	1.0000e-005		3.5000e-004	3.5000e-004		3.5000e-004	3.5000e-004	0.0000	1.2766	1.2766	8.0000e-005	0.0000	1.2785

4260 Arch Drive Multi-Family Project - Madera County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**3.6 Architectural Coating - 2023****Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	4.1000e-004	2.7000e-004	3.3500e-003	1.0000e-005	9.6000e-004	1.0000e-005	9.6000e-004	2.5000e-004	1.0000e-005	2.6000e-004	0.0000	0.8042	0.8042	3.0000e-005	2.0000e-005	0.8119
Total	4.1000e-004	2.7000e-004	3.3500e-003	1.0000e-005	9.6000e-004	1.0000e-005	9.6000e-004	2.5000e-004	1.0000e-005	2.6000e-004	0.0000	0.8042	0.8042	3.0000e-005	2.0000e-005	0.8119

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.3654					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	9.6000e-004	6.5100e-003	9.0600e-003	1.0000e-005		3.5000e-004	3.5000e-004		3.5000e-004	3.5000e-004	0.0000	1.2766	1.2766	8.0000e-005	0.0000	1.2785
Total	0.3664	6.5100e-003	9.0600e-003	1.0000e-005		3.5000e-004	3.5000e-004		3.5000e-004	3.5000e-004	0.0000	1.2766	1.2766	8.0000e-005	0.0000	1.2785

4260 Arch Drive Multi-Family Project - Madera County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**3.6 Architectural Coating - 2023****Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	4.1000e-004	2.7000e-004	3.3500e-003	1.0000e-005	9.6000e-004	1.0000e-005	9.6000e-004	2.5000e-004	1.0000e-005	2.6000e-004	0.0000	0.8042	0.8042	3.0000e-005	2.0000e-005	0.8119
Total	4.1000e-004	2.7000e-004	3.3500e-003	1.0000e-005	9.6000e-004	1.0000e-005	9.6000e-004	2.5000e-004	1.0000e-005	2.6000e-004	0.0000	0.8042	0.8042	3.0000e-005	2.0000e-005	0.8119

4.0 Operational Detail - Mobile**4.1 Mitigation Measures Mobile**

4260 Arch Drive Multi-Family Project - Madera County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.3419	0.5989	3.1113	6.7500e-003	0.6001	6.8300e-003	0.6069	0.1608	6.4200e-003	0.1672	0.0000	629.5753	629.5753	0.0363	0.0364	641.3175
Unmitigated	0.3419	0.5989	3.1113	6.7500e-003	0.6001	6.8300e-003	0.6069	0.1608	6.4200e-003	0.1672	0.0000	629.5753	629.5753	0.0363	0.0364	641.3175

4.2 Trip Summary Information

Land Use	Average Daily Trip Rate			Unmitigated	Mitigated
	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Apartments High Rise	574.05	584.37	463.11	1,601,931	1,601,931
Enclosed Parking Structure	0.00	0.00	0.00		
Total	574.05	584.37	463.11	1,601,931	1,601,931

4.3 Trip Type Information

Land Use	Miles			Trip %			Trip Purpose %		
	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Apartments High Rise	10.80	7.30	7.50	42.30	19.60	38.10	86	11	3
Enclosed Parking Structure	9.50	7.30	7.30	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
Apartments High Rise	0.491491	0.052949	0.173689	0.164683	0.034990	0.008766	0.010778	0.027771	0.000810	0.000210	0.026873	0.002020	0.004972
Enclosed Parking Structure	0.491491	0.052949	0.173689	0.164683	0.034990	0.008766	0.010778	0.027771	0.000810	0.000210	0.026873	0.002020	0.004972

5.0 Energy Detail

4260 Arch Drive Multi-Family Project - Madera County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	148.6445	148.6445	0.0126	1.5200e-003	149.4113
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	148.6445	148.6445	0.0126	1.5200e-003	149.4113
NaturalGas Mitigated	8.1900e-003	0.0700	0.0298	4.5000e-004		5.6600e-003	5.6600e-003		5.6600e-003	5.6600e-003	0.0000	81.0961	81.0961	1.5500e-003	1.4900e-003	81.5780
NaturalGas Unmitigated	8.1900e-003	0.0700	0.0298	4.5000e-004		5.6600e-003	5.6600e-003		5.6600e-003	5.6600e-003	0.0000	81.0961	81.0961	1.5500e-003	1.4900e-003	81.5780

4260 Arch Drive Multi-Family Project - Madera County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**5.2 Energy by Land Use - NaturalGas****Unmitigated**

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Apartments High Rise	1.51968e+006	8.1900e-003	0.0700	0.0298	4.5000e-004		5.6600e-003	5.6600e-003		5.6600e-003	5.6600e-003	0.0000	81.0961	81.0961	1.5500e-003	1.4900e-003	81.5780
Enclosed Parking Structure	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		8.1900e-003	0.0700	0.0298	4.5000e-004		5.6600e-003	5.6600e-003		5.6600e-003	5.6600e-003	0.0000	81.0961	81.0961	1.5500e-003	1.4900e-003	81.5780

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Apartments High Rise	1.51968e+006	8.1900e-003	0.0700	0.0298	4.5000e-004		5.6600e-003	5.6600e-003		5.6600e-003	5.6600e-003	0.0000	81.0961	81.0961	1.5500e-003	1.4900e-003	81.5780
Enclosed Parking Structure	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		8.1900e-003	0.0700	0.0298	4.5000e-004		5.6600e-003	5.6600e-003		5.6600e-003	5.6600e-003	0.0000	81.0961	81.0961	1.5500e-003	1.4900e-003	81.5780

4260 Arch Drive Multi-Family Project - Madera County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**5.3 Energy by Land Use - Electricity****Unmitigated**

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Apartments High Rise	508878	90.2472	7.6200e-003	9.2000e-004	90.7128
Enclosed Parking Structure	329285	58.3973	4.9300e-003	6.0000e-004	58.6985
Total		148.6445	0.0126	1.5200e-003	149.4113

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Apartments High Rise	508878	90.2472	7.6200e-003	9.2000e-004	90.7128
Enclosed Parking Structure	329285	58.3973	4.9300e-003	6.0000e-004	58.6985
Total		148.6445	0.0126	1.5200e-003	149.4113

6.0 Area Detail

4260 Arch Drive Multi-Family Project - Madera County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**6.1 Mitigation Measures Area**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.5205	0.0593	0.9799	3.6000e-004		9.2100e-003	9.2100e-003		9.2100e-003	9.2100e-003	0.0000	57.4510	57.4510	2.5800e-003	1.0200e-003	57.8208
Unmitigated	0.5205	0.0593	0.9799	3.6000e-004		9.2100e-003	9.2100e-003		9.2100e-003	9.2100e-003	0.0000	57.4510	57.4510	2.5800e-003	1.0200e-003	57.8208

4260 Arch Drive Multi-Family Project - Madera County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**6.2 Area by SubCategory****Unmitigated**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0365					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.4493					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	5.6500e-003	0.0483	0.0205	3.1000e-004		3.9000e-003	3.9000e-003		3.9000e-003	3.9000e-003	0.0000	55.8838	55.8838	1.0700e-003	1.0200e-003	56.2158
Landscaping	0.0290	0.0111	0.9594	5.0000e-005		5.3100e-003	5.3100e-003		5.3100e-003	5.3100e-003	0.0000	1.5672	1.5672	1.5100e-003	0.0000	1.6050
Total	0.5205	0.0593	0.9799	3.6000e-004		9.2100e-003	9.2100e-003		9.2100e-003	9.2100e-003	0.0000	57.4510	57.4510	2.5800e-003	1.0200e-003	57.8208

4260 Arch Drive Multi-Family Project - Madera County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**6.2 Area by SubCategory****Mitigated**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0365					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.4493					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	5.6500e-003	0.0483	0.0205	3.1000e-004		3.9000e-003	3.9000e-003		3.9000e-003	3.9000e-003	0.0000	55.8838	55.8838	1.0700e-003	1.0200e-003	56.2158
Landscaping	0.0290	0.0111	0.9594	5.0000e-005		5.3100e-003	5.3100e-003		5.3100e-003	5.3100e-003	0.0000	1.5672	1.5672	1.5100e-003	0.0000	1.6050
Total	0.5205	0.0593	0.9799	3.6000e-004		9.2100e-003	9.2100e-003		9.2100e-003	9.2100e-003	0.0000	57.4510	57.4510	2.5800e-003	1.0200e-003	57.8208

7.0 Water Detail**7.1 Mitigation Measures Water**

4260 Arch Drive Multi-Family Project - Madera County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	14.0209	0.2748	6.5800e-003	22.8534
Unmitigated	14.0209	0.2748	6.5800e-003	22.8534

7.2 Water by Land Use**Unmitigated**

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Apartments High Rise	8.40487 / 5.29872	14.0209	0.2748	6.5800e-003	22.8534
Enclosed Parking Structure	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		14.0209	0.2748	6.5800e-003	22.8534

4260 Arch Drive Multi-Family Project - Madera County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**7.2 Water by Land Use****Mitigated**

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Apartments High Rise	8.40487 / 5.29872	14.0209	0.2748	6.5800e-003	22.8534
Enclosed Parking Structure	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		14.0209	0.2748	6.5800e-003	22.8534

8.0 Waste Detail**8.1 Mitigation Measures Waste**

Institute Recycling and Composting Services

4260 Arch Drive Multi-Family Project - Madera County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**Category/Year**

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	3.0114	0.1780	0.0000	7.4605
Unmitigated	12.0455	0.7119	0.0000	29.8422

8.2 Waste by Land Use**Unmitigated**

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Apartments High Rise	59.34	12.0455	0.7119	0.0000	29.8422
Enclosed Parking Structure	0	0.0000	0.0000	0.0000	0.0000
Total		12.0455	0.7119	0.0000	29.8422

4260 Arch Drive Multi-Family Project - Madera County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**8.2 Waste by Land Use****Mitigated**

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Apartments High Rise	14.835	3.0114	0.1780	0.0000	7.4605
Enclosed Parking Structure	0	0.0000	0.0000	0.0000	0.0000
Total		3.0114	0.1780	0.0000	7.4605

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

4260 Arch Drive Multi-Family Project - Madera County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Source: EMFAC2017 (v1.0.3) Emissions Inventory

Region Type: Air District

Region: South Coast AQMD

Calendar Year: 2023

Season: Annual

Vehicle Classification: EMFAC2007 Categories

Units: miles/day for VMT, trips/day for Trips, tons/day for Emissions, 1000 gallons/day for Fuel Consumption

Region	Calendar Yr	Vehicle Category	Model Year	Speed	Fuel	Population	VMT	Trips	Fuel Consumption	Fuel Consumption	Total Fuel Consumption	VMT	Total VMT	Miles Per Gallon	Vehicle Class
South Coast	2023	HHDT	Aggregate	Aggregate	Gasoline	75.10442936	8265.097	1502.689	1.936286145	1936.286145		1913466.474	8265.097	13656273.03	7.14 HHDT
South Coast	2023	HHDT	Aggregate	Aggregate	Diesel	109818.6753	13648008	1133618	1911.530188	1911530.188			13648008		
South Coast	2023	LDA	Aggregate	Aggregate	Gasoline	6635002.295	2.53E+08	31352477	7971.24403	7971244.03		8020635.698	2.53E+08	255180358.3	31.82 LDA
South Coast	2023	LDA	Aggregate	Aggregate	Diesel	62492.97958	2469816	297086.6	49.3916685	49391.6685			2469816		
South Coast	2023	LDA	Aggregate	Aggregate	Electricity	150700.3971	6237106	751566	0	0			6237106		
South Coast	2023	LDT1	Aggregate	Aggregate	Gasoline	758467.6481	27812996	3504563	1023.913006	1023913.006		1024279.466	27812996	27821405.09	27.16 LDT1
South Coast	2023	LDT1	Aggregate	Aggregate	Diesel	360.7799144	8408.618	1256.88	0.366459477	366.4594769			8408.618		
South Coast	2023	LDT1	Aggregate	Aggregate	Electricity	7122.93373	303507.5	35798.19	0	0			303507.5		
South Coast	2023	LDT2	Aggregate	Aggregate	Gasoline	2285150.139	85272416	10723315	3338.798312	3338798.312		3356536.438	85272416	85922778.34	25.60 LDT2
South Coast	2023	LDT2	Aggregate	Aggregate	Diesel	15594.68309	650362.8	76635.83	17.73812611	17738.12611			650362.8		
South Coast	2023	LDT2	Aggregate	Aggregate	Electricity	28809.63735	917592.8	145405.4	0	0			917592.8		
South Coast	2023	LHDT1	Aggregate	Aggregate	Gasoline	174910.3847	6216643	2605904	583.3851736	583385.1736		811563.1022	6216643	11211395.79	13.81 LHDT1
South Coast	2023	LHDT1	Aggregate	Aggregate	Diesel	125545.0822	4994753	1579199	228.1779285	228177.9285			4994753		
South Coast	2023	LHDT2	Aggregate	Aggregate	Gasoline	30102.75324	1034569	448486.2	111.5753864	111575.3864		209423.5025	1034569	2969599.008	14.18 LHDT2
South Coast	2023	LHDT2	Aggregate	Aggregate	Diesel	50003.13116	1935030	628976.5	97.84811618	97848.11618			1935030		
South Coast	2023	MCY	Aggregate	Aggregate	Gasoline	305044.5141	2104624	610089	57.849018	57849.018		57849.018	2104624	2104623.657	36.38 MCY
South Coast	2023	MDV	Aggregate	Aggregate	Gasoline	1589862.703	55684188	7354860	2693.883526	2693883.526		2744536.341	55684188	57109879.73	20.81 MDV
South Coast	2023	MDV	Aggregate	Aggregate	Diesel	36128.1019	1425691	176566.9	50.65281491	50652.81491			1425691		
South Coast	2023	MDV	Aggregate	Aggregate	Electricity	16376.67653	537591.7	83475.95	0	0			537591.7		
South Coast	2023	MH	Aggregate	Aggregate	Gasoline	34679.50542	330042.9	3469.338	63.26295123	63262.95123		74893.26955	330042.9	454344.9436	6.07 MH
South Coast	2023	MH	Aggregate	Aggregate	Diesel	13122.69387	124302	1312.269	11.63031832	11630.31832			124302		
South Coast	2023	MHDT	Aggregate	Aggregate	Gasoline	25624.3151	1363694	512691.3	265.2060557	265206.0557		989975.6425	1363694	9484317.768	9.58 MHDT
South Coast	2023	MHDT	Aggregate	Aggregate	Diesel	122124.488	8120623	1221858	724.7695868	724769.5868			8120623		
South Coast	2023	OBUS	Aggregate	Aggregate	Gasoline	5955.291639	245774	119153.5	48.07750689	48077.50689		86265.88761	245774	579743.8353	6.72 OBUS
South Coast	2023	OBUS	Aggregate	Aggregate	Diesel	4286.940093	333969.8	41558.29	38.18838072	38188.38072			333969.8		
South Coast	2023	SBUS	Aggregate	Aggregate	Gasoline	2783.643068	112189.6	11134.57	12.19474692	12194.74692		39638.85935	112189.6	323043.5203	8.15 SBUS
South Coast	2023	SBUS	Aggregate	Aggregate	Diesel	6671.825716	210853.9	76991.94	27.44411242	27444.11242			210853.9		
South Coast	2023	UBUS	Aggregate	Aggregate	Gasoline	957.7686184	89782.63	3831.074	17.62416327	17624.16327		17863.66378	89782.63	91199.2533	5.11 UBUS
South Coast	2023	UBUS	Aggregate	Aggregate	Diesel	13.00046095	1416.622	52.00184	0.239500509	239.5005093			1416.622		
South Coast	2023	UBUS	Aggregate	Aggregate	Electricity	16.11693886	1320.163	64.46776	0				1320.163		