CITY OF DUARTE
REGULAR MEETING AGENDA
PLANNING AND ECONOMIC DEVELOPMENT COMMISSION

Duarte Community Center
1600 Huntington Drive
Duarte, CA 91010
Monday, November 17, 2025
7:00 PM

Commissioners
Yesenia Paez, Chair
Wally Wolff, Vice-Chair
Daniel Becker
David Rodriguez
Brian Quandt

MISSION STATEMENT

With integrity and transparency, the City of Duarte provides exemplary public services in a caring and fiscally responsible manner with a commitment to our community's future.

ADA ACCESSIBILITY NOTICE:
In compliance with the Americans with Disabilities Act, if you need assistance participating in this meeting, contact the Community Development Department at (626) 357-7931 Ext.230 or 235. Notification no later than 1:00 p.m. on the day preceding the meeting will enable the City to make reasonable arrangements to assist your accessibility to this meeting.

Notice:
Planning and Economic Development meetings are audio-recorded for later broadcast. Attendance at the meeting constitutes consent by members of the public to the City's and any third party's use in any media, without compensation or further notice, of audio, and/or pictures of meeting attendees.

1. CALL TO ORDER AND NOTATION OF ANY ABSENCES
2. PLEDGE OF ALLEGIANCE
3. APPROVAL OF MINUTES
   A. **9-15-25 Minutes**
4. ORAL COMMUNICATIONS - CONSENT CALENDAR
5. PUBLIC HEARINGS
   A. Proposal to construct eleven, two-story attached residential townhomes ranging in size from 1,341 to 1,594 square feet at 1404-1414 Royal Oaks Drive. This project includes:

General Plan Amendment 24-03 - Changing the General Plan designation from Low Density Residential to Medium Density Residential;
Zone Change 24-03 – Changing the zoning from R-1 Single-Family Residential to R-3 Multiple Family Residential Medium Density;
Tentative Tract Map 84375 (TTM 24-02) – To subdivide the property into a condominium lot consisting of 11 residential units and a common lot;
Site Plan and Design Review SPDR 24-45 – Design review application for a proposed 11 unit townhome project;
and a **Mitigated Negative Declaration** for the project.

RESOLUTION NO. PC 25-14
A RESOLUTION OF THE PLANNING AND ECONOMIC DEVELOPMENT COMMISSION OF THE CITY OF DUARTE RECOMMENDING THAT THE DUARTE CITY COUNCIL CERTIFY THE INITIAL STUDY MITIGATED NEGATIVE DECLARATION TO REDUCE THE IDENTIFIED "POTENTIALLY SIGNIFICANT" IMPACTS TO A LEVEL OF "LESS THAN SIGNIFICANT" FOR AN 11-UNIT, OWNER-OCCUPIED, TWO-STORY TOWNHOME DEVELOPMENT LOCATED AT 1404 AND 1414 ROYAL OAKS DRIVE

RESOLUTION NO. PC 25-15
A RESOLUTION OF THE PLANNING AND ECONOMIC DEVELOPMENT COMMISSION OF THE CITY OF DUARTE RECOMMENDING APPROVAL OF GENERAL PLAN AMENDMENT 24-03 FROM LOW DENSITY RESIDENTIAL TO MEDIUM DENSITY RESIDENTIAL FOR TWO PARCELS OF LAND LOCATED AT 1404 AND 1414 ROYAL OAKS DRIVE

RESOLUTION NO. PC 25-16
A RESOLUTION OF THE PLANNING AND ECONOMIC DEVELOPMENT COMMISSION OF THE CITY OF DUARTE RECOMMENDING APPROVAL OF A ZONE CHANGE 24-03 TO MODIFY THE CITY OF DUARTE ZONING MAP FROM R-1 SINGLE-FAMILY RESIDENTIAL TO R-3 MULTIPLE-FAMILY RESIDENTIAL MEDIUM DENSITY FOR TWO PARCELS OF LAND LOCATED AT 1404 AND 1414 ROYAL OAKS DRIVE, AND TO AMEND THE OFFICIAL ZONING MAP

RESOLUTION PC 25-17
A RESOLUTION OF THE PLANNING AND ECONOMIC DEVELOPMENT COMMISSION OF THE CITY OF DUARTE RECOMMENDING APPROVAL OF TENTATIVE TRACT MAP 84375 FOR CONDOMINIUM PURPOSES TO ALLOW A 11-UNIT, TWO-STORY TOWNHOME DEVELOPMENT LOCATED AT 1404 AND 1414 ROYAL OAKS DRIVE

RESOLUTION PC 25-18
A RESOLUTION OF THE PLANNING AND ECONOMIC DEVELOPMENT COMMISSION OF THE CITY OF DUARTE RECOMMENDING APPROVAL OF SITE PLAN AND DESIGN REVIEW CASE 24-45 TO THE CITY COUNCIL, FOR AN 11-UNIT TWO-STORY TOWNHOME DEVELOPMENT AND ASSOCIATED SITE IMPROVEMENTS, LOCATED AT 1404 AND 1414 ROYAL OAKS DRIVE

6. BUSINESS ITEMS

7. ITEMS FROM DIRECTOR

8. ITEMS FROM COMMISSIONERS

9. ADJOURNMENT

MINUTES
CITY OF DUARTE
PLANNING AND ECONOMIC
DEVELOPMENT COMMISSION

September 15, 2025

Commissioners
Yesenia Paez, Chair
Wally Wolff, Vice-Chair
Daniel Becker
Brian Quandt
David Rodriguez

1. CALL TO ORDER AND NOTATION OF ANY ABSENCES:

Chair Paez called the meeting to order at 7:01 p.m. The following were in attendance:

PRESENT:	Paez, Wolff, Quandt
ABSENT:	Becker, Rodriguez
STAFF:	Hensley, Golding, Abdul-Ahad, Nash, Grigorian

2. PLEDGE OF ALLEGIANCE:

Commissioner Quandt led the pledge.

3. APPROVAL OF MINUTES:

Vice-Chair Wolff motioned to approve the August 18, 2025 minutes. Seconded by Commissioner Quandt. The motion carried 3-0-0-2.
(**Yes**: Paez, Wolff, Quandt; **No**: None; **Abstain**: None; **Absent**: Becker, Rodriguez).

4. ORAL COMMUNICATIONS - ITEMS NOT ON THE AGENDA:

None.

5. PUBLIC HEARINGS:

A. Conditional Use Permit 25-04: A proposed acupressure and hypnotherapy business located at 1740 Huntington Drive, #102.

RESOLUTION PC 25-07:

A RESOLUTION OF THE PLANNING AND ECONOMIC DEVELOPMENT COMMISSION OF THE CITY OF DUARTE APPROVING CONDITIONAL USE PERMIT 25-04 TO ALLOW THE OPERATION OF A ACCUPRESSURE AND HYPNOTHERAPY BUSINESS LOCATED AT 1740 HUNTINGTON DRIVE, UNIT 102.

Associate Planner Abdul-Ahad presented staff's report which discussed the proposed acupressure and hypnotherapy business, TCM Hypnotherapy Healing Center, at 1740 Huntington Drive. The proposed operations would include creating personalized holistic health remedies through the practice of acupressure, hypnotherapy, and herbal medicine recommendations, as well as cupping therapy, gua sha, and tui na. The tenant space is located in a shopping center at the southwest corner of Highland Avenue and Huntington Drive and is zoned Town Center Specific Plan – Mixed Use Corridor (MUC). The shopping center has 19 tenant spaces within three (3) separate buildings with commercial, service and retail uses. Surrounding land uses include commercial and retail shops to north and east and multi-family residential to the south and west. No improvements to the exterior or parking lot area are proposed except for a new wall sign. Abdul-Ahad explained how there is currently one (1) massage establishment operating with a City business license in Duarte, located about 160 feet east of the subject property. Staff's analysis of TMC Hypnotherapy Healing Center's proposal deemed the locational and development standards related to massage businesses were met, as was lighting and parking requirements. Abdul-Ahad stated that staff recommends that the Planning Commission adopt Resolution 25-07 approving CUP 25-04.

The applicant, Wenjuan "Sunnie" Xu, introduced herself to the Commission and provided her background and experience working in this field. Miss Xu expressed gratitude and excitement to have the opportunity to open the business in Duarte.

Commissioner Quandt moved to approve Resolution PC 25-07 including CUP 25-04. Vice-Chair Wolff seconded the motion; motion passed 3-0-0-2 (**Yes**: Paez, Wolff, Quandt; **No:** None; **Abstain**: None; **Absent**: Becker, Rodriguez).

6. BUSINESS ITEMS:

A. 2025 Local Hazard Mitigation Plan Update

Planning Manager Jason Golding provided an update on the 2025 Local Hazard Mitigation Plan. Golding explained that the first draft of the plan is available for public viewing and that the public comment period will be open until September 28, 2025. This draft will then be submitted to California OES and FEMA for formal review and approval. The formal review will take place between October and December of 2025, and once approved, will be up for adoption by the City Council with the target date being January 2026.

7. ITEMS FROM DIRECTOR:

Director Hensley provided an update on the hotel project that had been in progress, stating that the project permits have expired.

Chair Paez asked for updates on a different business located at 2666 Huntington Drive. Associate Planner Abdul-Ahad provided insight into the progress being made, stating that the tenants have remodeled the inside of the building and that Planning is currently waiting for the approved landscaping to be installed.

8. ITEMS FROM COMMISSIONERS:

None.

9. ADJOURNMENT:

Chair Paez motioned to adjourn the meeting at 7:22 p.m. The next meeting is scheduled for October 20, 2025.

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Craig Hensley, Secretary

PLANNING AND ECONOMIC DEVELOPMENT COMMISSION STAFF REPORT

Date: November 17, 2025

Subject: General Plan Amendment GPA 24-03; Zone Change ZC 24-03; Tentative Tract Map 84375 TTM 24-02; Site Plan and Design Review SPDR 24-45; Mitigated Negative Declaration: to construct eleven, two-story attached residential townhomes ranging in size from 1,341 to 1,594 square feet

Location: 1404-1414 Royal Oaks Drive

Applicant: Feng Xiao Architect, Inc.

SUMMARY

The project applicant, Feng Xiao Architect, Inc., is proposing to construct eleven two-story attached townhomes in five buildings. Each building will contain two to three units ranging in size from 1,341 to 1,594 square feet. Each townhome includes an attached garage and private outdoor patio yard.

As part of the project approval process, the Planning Commission will need to recommend City Council approval of the following: General Plan Amendment, Zone Change, Tentative Tract Map, Site Plan and Design Review, and a Mitigated Negative Declaration. Final approval will be required from the City Council for all entitlements.

Staff recommends that Planning Commission adopt PC Resolutions 25-14 through 25-18, recommending approval of project and entitlements to the City Council for consideration.

BACKGROUND

The property is currently two large single-family properties developed with single family homes each with a driveway with access to Royal Oaks Drive. Combining the two properties, the site is rectangular and roughly 40,540 square feet. The property is bounded on the west and south by multi-family developments that are zoned R-3 (medium density multi-family). Directly east of the Project site is a single-family residential use, followed by multi-family residential uses and a church. North of the project is Royal Oaks Drive and the Donald and Bernice Watson Recreation Trail (aka Duarte Bike Trail), north of this bike

trail is A-1 Agricultural Residential within the City of Bradbury. The property is only accessible from Royal Oaks Drive.

While the project site is currently zoned R-1 single-family residential, the site is primarily surrounded by multi-family residential developments to both the east and south and laid-out to create the appearance of a lower density residential from the view of Royal Oaks Drive. Therefore, the proposed townhomes make a for a good transition between the single family home to the east and multi-family to the west and south.

The entitlements will require a recommendation from the Planning Commission and final approval from the City Council. On September 22, 2025 the Site Plan and Design Review (SPDR 24-45) application was reviewed by the Architectural Review Board (ARB) and the ARB provided a recommendation of approval for the Planning Commission's consideration. The Planning Commission will serve as the recommending body to the City Council for each component of the project.

A public hearing notice for the Planning Commission meeting was mailed to all property owners within a 600-foot radius of the project site on October 28, 2025.

PROJECT DESCRIPTION

Demolition and site clearance

The existing single-family and accessory structures will be demolished and the site will be cleared of all vegetation with the exception of two of the three mature Coast Live Oak trees which will be protected in place.

New Construction

A total of 11 townhomes will be constructed on the property using the R-3 zone development standards. The townhomes will be two-stories with direct-access two-car garages on the ground floor and one floor of living area above. The project will consist of five structures total each containing two to three dwelling units. Of these units, there are six (6) plan types each of which consist of three bedrooms and range in size from 1,341 to 1,594 square feet. The buildings will be a maximum height of 31 feet, seven inches to the top of the roof.

Site Plan and Improvements

In addition to the townhome structures, the property will be improved with new vehicle and pedestrian access, new landscape throughout the property, and new fences and walls. This includes:

- Similar to existing conditions, vehicular access to the project site will be provided from Royal Oaks Drive via a driveway along the northern property line. The existing northeastern driveway will be reconstructed to a 26-foot-wide driveway approach and a new 24- to 26-foot-wide interior driveway system will provide access to the individual townhome units. The existing driveway along the northwestern portion of the site will be closed and new curbs and sidewalk will be constructed.

- Pedestrian access to the Project site will be provided from Royal Oaks Drive. The Project proposes an interior pedestrian walkway system that will provide access to each townhome unit.

- The Project proposes attached two car garages for each of the 11 townhome units, for a total of 22 enclosed spaces. An additional six parking spaces, including one accessible space, will be provided within the central, eastern, and southern portions of the site for guests.

- An extensive landscape palette will be incorporated throughout the property. The palette will include a variety of drought tolerant shrubs, ground cover, and a variety of tree species. The landscape and hardscape plan will require separate review and approval to ensure compliance with the landscape guidelines of the Duarte Development Code.

- Fence/railing (42-inches) will be provided around private patio yards with landscape plantings in front. Retaining walls with private patio railing fence on top and hedges in front will be located along the units within the southern portion of the property. A low retaining wall with railing on top and spilling vines will be located at the parking spaces within the southern portion of the property.

ANALYSIS

To allow the consideration and processing of the proposed residential project, the following entitlements are required.

- ***Site Plan and Design Review (SPDR 24-45).*** The SPDR addresses the architectural design and compatibility of the project, and the improvements to the property. The overall style and aesthetics of the residential structures, and other site improvements are analyzed to ensure the project meets the vision of the city and the guidelines of the Duarte Development Code.

- ***General Plan Amendment (GPA 24-03).*** The GPA is necessary to amend the current land use designation from Low Density Residential to Medium Density Residential.

- ***Zone Change (ZC 24-03).*** The ZC is necessary to modify the current zoning designation from R-1 Single-Family Residential to R-3 Multiple Family Residential Medium Density.

- ***Tentative Tract Map No. 084375 (TTM 24-02).*** The TTM is necessary to subdivide the property into a condominium lot consisting of 11 residential units and a common lot.

- ***Environmental Review - Mitigated Negative Declaration (MND).*** An environmental review, in compliance with the California Environmental Quality Act, is necessary to analyze and address any environmental impacts that may occur as a result of the GPA and ZC. This involves performing an Initial Study to identify potential direct, indirect, and cumulative environmental effects of the project, and outline the measures required to reduce environmental impacts to less than significant levels.

These entitlements have been processed concurrently and are further analyzed below. Collectively, all the entitlements must receive a recommended approval from Planning Commission and a final approval from City Council.

Architectural Design

The townhomes are designed using a Spanish architectural style, similar to that which was seen on a previous project near Third St. and Oak Ave. Overall, each building is well designed and incorporates a variety of details that improve the property and creates visual appeal along Royal Oaks Drive. Some of the details include the following:

- A color and material palette that includes sand finished Monterey White stucco applied throughout most of the exterior with complementary brown shades as accents colors.

- A variety of architectural features are used such as stucco vents and recesses, ceramic tile door trim, wrought iron window covers and French balconies, painted wood window shutters, exposed rafters, and decorative Spanish-style light fixtures.
- All of the windows will include a recessed design at different depths depending on the window type and style.
- Various pop-out features, arched covered entries, juliet balconies, and roof extensions help break up the building plane and create good horizontal movement.
- Vertical massing is controlled with a low-profile gable roof using a 3:12 pitch. The roof is finished with a concrete Spanish tile to complement the architectural style.
- The site is designed with only a few of the units fronting Royal Oaks Drive, and a 30 foot front setback, creating the appearance of a lower-density development.
- The orientation and location of the structures helps minimize the visibility of the garages doors. However, despite the minimized visibility, each door will still contain a decorative design and finished in a complementary color.
- Common open space and private open space will be provided. Approximately 6,306 square feet of open space is proposed, including 3,494 square feet within private patio yards and 2,811 square feet within common open space areas.
- Three common open space lawn areas, sunken from the street, will be provided within the northern portion of the site. A native oak garden with decomposed granite and/or river cobble will be provided around both existing oak trees. A lawn area and seating will also be provided around the existing oak tree within the northern-central portion of the Project site. A barbeque area and shade pergola are proposed within the southern portion of the site.
- Each townhome will include a small private yard area between 224 to 570 square feet for a total of 3,494 square feet of total private open space. This amount meets and exceeds the private open space requirements of DDC 19.10.060.

General Plan Amendment

The proposed General Plan amendment will change the designation of the project site (both parcels) from Low Density Residential (LDR) to Medium Density Residential (MDR). The MDR designation allows a slightly higher density that is suitable for multi-family residential developments. These higher density developments typically include attached-unit projects such as apartments, townhomes, or condominiums. MDR is the middle residential density allowed in the city with a maximum of 21 dwelling units per acre. Since this project is proposing only about 11 units per acre, a higher density allowed by HDR is not needed.

The MDR land use designation is consistent with the current designation of the neighboring properties to the south and west. The MDR designation is also consistent with

the R-3 zone that is being processed through the Zone Change application as part of the overall project. Approval of the General Plan Amendment to the MDR designation will support the proposed residential development and allow the project to move forward. The MDR designation will safeguard the character and compatibility of the surrounding areas, and remain consistent with the land use goals and policies of the General Plan. The goals and policies of the General Plan will continue to be met with by providing a range and mix of housing within the city.

Zone Change

The proposed Zone Change will modify the current zoning designation of the project site (both parcels) from R-1 Single-Family Residential to R-3 Multiple Family Residential Medium Density. The zone change has a direct correlation with the proposed General Plan Amendment. As with the MDR land use designation, the R-3 zoning also allows a medium residential density in the City with a maximum of 21 dwelling units per acre. With this direct correlation, it is necessary to process the Zone Change along with the General Plan Amendment to ensure they remain consistent.

Another factor associated with the Zone Change is the compatibility with surrounding uses. This includes not only the zoning designation but also the uses allowed by the zone. Using the R-3 standards, the proposed residential development will include the construction of 11 townhomes. This produces a project density of roughly 11 dwelling units per acre, which is less than the R-3 maximum of 21. The zone and the proposed development is compatible with the residential uses surrounding the site. The properties adjacent to the west and south contains the same R-3 zoning designation and are developed with multi-family residential projects. The property to the east will continue to be zoned R-1 Single Family. However, modern density laws such as state ADU laws and SB9 allow this single-family property to construct a density very similar to what it would be capable of if it was zoned as R-3 multi-family. For this reason, staff feels this does not constitute as spot zoning.

Like the General Plan Amendment, approval of the R-3 designation will also support the proposed residential development and allow the project to move forward. The R-3 zone is established to accommodate medium-density, multi-story residential developments. This zoning classification and others, provide the development standards that help define each zone and shape the character of the development they serve. Requirements, such as density, setbacks, parking, open space and landscape, among others, help ensure new and existing developments are compatible with other nearby developments. The proposed 11-unit townhome project is consistent with the surrounding uses and meets all requirements of the R-3 zone. The project will improve an underutilized site with additional housing opportunities and improve the mix of development along Royal Oaks Drive.

Tentative Tract Map 84375

The Tentative Tract Map (TTM) proposes to merge and subdivide the two existing parcels, for condominium purposes, to establish a new subdivision for the residential development.

It is designed to meet the requirements of the Fire Department, Sanitation District, among other utility companies and agencies. The primary drive aisle meets the City requirements for circulation and the Fire Department's requirements for emergency access. As part of the TTM approval, the applicant will be required to construct a new driveway approach at Royal Oaks Drive and replace the sidewalk, curb, gutter, and plant new street trees on Royal Oaks Drive along the frontage of the project site.

The property will be separated by common area ownership and private ownership. Everything outside of the boundaries of the unit and adjoining private yard is considered common area and will be owned and maintained by a Homeowners Association (HOA). These areas include the common open space and landscape areas, the drive aisles and surface parking areas, the pedestrian walkways, among others. The private ownership will include the residential unit and the adjoining private yard.

The TTM will require the establishment of Covenants, Conditions and Restrictions (CC&Rs). The CC&R's will describe the rules and limitations of the development for the residents. These rules will include private yard use and storage, parking requirements, common area use, and resident trash requirements, among others. The private yard areas will include limitations on improvements, outdoor furniture, use and activities, and a prohibition of outdoor storage. Parking requirements will be included to ensure resident garages are maintained free of storage and clutter and are regularly used for vehicle parking. The surface parking areas are available for guests and overflow only and not intended to be used primarily by the residents. The applicant will be required to provide a parking management plan to the City for approval, which will also be incorporated into the CC&R's. The management plan is intended to regulate the amount of resident vehicles to help minimize the amount of on street or spillover parking.

The purpose of the CC&R's is to protect and preserve the property. The CC&R's will be recorded and will be managed and enforced by the HOA. This will ensure the property is well managed at all times and does not become detrimental to the surrounding community. The TTM is critical component to the overall project by facilitating the private property ownership, the HOA maintenance responsibilities, and the CC&R's. The TTM will also ensure the necessary off-site improvements are completed and adequate for the development.

ENVIRONMENTAL

An Initial Study and Mitigated Negative Declaration (MND) have been prepared pursuant to CEQA to analyze the possible environmental impacts from the project. Several technical reports and studies were completed prior to the completion of the Initial Study, including an air quality analysis, greenhouse gas analysis, cultural resource assessment, geotechnical evaluation, hydrology report, environmental assessments, noise studies, and traffic analysis. The environmental factors identified by the Initial Study that would be potentially affected by this project include: Tribal Cultural Resources, Geology and Soils, Cultural Resources, and Biological Resources. The result of the Initial Study indicated the project will not have any significant environmental impacts with adopted mitigations. The

Initial Study recommends the adoption of mitigation measures to reduce these potential impacts to a level of less than significant. These mitigations are then implemented as part of the project and monitored through a mitigation monitoring program as required by the MND. The mitigation measures are provided in the Mitigated Negative Declaration (MND).

RECOMMENDATION

The proposed project provides for the redevelopment of two large single-family properties into a high-quality residential development along Royal Oaks Drive. With the General Plan Amendment and Zone Change, the project will be consistent with the goals and policies of the Duarte General Plan and the overall intent of the R-3 zone. The project meets all standards of the R-3 zone and the dwelling unit density is 11 units per acre which is significantly less than the allowed maximum density, and allows for improved circulation, parking, and open space. The high density residential land use designation is consistent with the neighboring properties to the west and south and provides a smooth transition to the single-family property to the east. Overall, this project provides an improvement to the quality of life to the City and surrounding community. The architectural design of the project provides an enhanced visual appeal along Royal Oaks Drive and keeps the scale and massing in proportion to the property and surrounding developments.

Conditions of approval have been proposed for the Tract Map and Site Plan and Design Review approvals. Adherence to these conditions, in addition to implementing the required mitigation measures included in the MND, will reduce impacts to the surrounding neighborhood and environment.

Staff recommends that the Planning Commission review and recommend approval to the City Council the following project entitlements:

1. PC Resolution 25-14 - Certifying the Project's Mitigated Negative Declaration (MND)
2. PC Resolution 25-15 - General Plan Amendment 24-03;
3. PC Resolution 25-16 - Zone Change 24-03;
4. PC Resolution 25-17 - Tentative Tract Map 84375;
5. PC Resolution 25-18 - Site Plan and Design Review 24-45; and

Respectfully Submitted,

Scott Nash
Associate Planner

Attachments

1. Project Plans
2. PC Resolution 25-14
   A. Mitigated Negative Declaration
3. PC Resolution 25-15
4. PC Resolution 25-16
5. PC Resolution 25-17
6. PC Resolution 25-18
7. Agency Comment Letter

ROYAL OAKS

1404 & 1414 ROYAL OAKS DR,
DUARTE, CA 91010

FENG XIAO ARCHITECT, INC.

OWNER:
SHUORUNG PROPERTIES LLC
2157 E MOUNTAIN ST
PASADENA, CA 91104

ARCHITECT:
FENG XIAO ARCHITECT, INC.
2540 HUNTINGTON DR., # 207
SAN MARINO, CA 91108
PHONE: 626.380.7098
EMAIL: FENG@FXARCHITECT.COM

CIVIL ENGINEER:
LAND DESIGN CONSULTANTS INC.
800 ROYAL OAKS DRIVE, SUITE 104
MONROVIA, CA 91016
PHONE: 626.578.7000
FAX: 626.578.7373

LANDSCAPE ARCHITECT:
FONG HART SCHNEIDER+PARTNERS
312 BROADWAY ST. SUITE 208
LAGUNA BEACH, CA 92651
PHONE: 949.645.9444
EMAIL: D.SCHNEIDER@FHSP.NET

LIVABLE AREA	
UNIT	AREA
UNIT 1	1,576 SF
UNIT 2	1,449 SF
UNIT 3	1,469 SF
UNIT 4	1,563 SF
UNIT 5	1,594 SF
UNIT 6	1,341 SF
UNIT 7	1,469 SF
UNIT 8	1,344 SF
UNIT 9	1,469 SF
UNIT 10	1,469 SF
UNIT 11	1,341 SF
TOTAL FAR	16,082 SF

OPEN SPACE	
AREA TYPE	AREA
COMMON OPEN	2,811 SF
PRIVATE OPEN	3,494 SF
TOTAL	6,306 SF

PARKING SCHEDULE	
DESCRIPTION	COUNT
GARAGE SPACE	22
SURFACE	5
H.C.VAN	1
TOTAL PARKING	28

AREA SCHEDULE - UNITS	
UNIT TYPE	AREA
UNIT 1	
LEVEL 1	520 SF
LEVEL 2	1,056 SF
LIVABLE	1,576 SF
GARAGE	459 SF
NON LIVABLE	459 SF
	2,035 SF
UNIT 2	
LEVEL 1	467 SF
LEVEL 2	982 SF
LIVABLE	1,449 SF
GARAGE	455 SF
NON LIVABLE	455 SF
	1,904 SF
UNIT 3	
LEVEL 1	466 SF
LEVEL 2	1,003 SF
LIVABLE	1,469 SF
GARAGE	459 SF
NON LIVABLE	459 SF
	1,927 SF
UNIT 4	
LEVEL 1	513 SF
LEVEL 2	1,049 SF
LIVABLE	1,563 SF
GARAGE	459 SF
NON LIVABLE	459 SF
	2,021 SF
UNIT 5	
LEVEL 1	612 SF
LEVEL 2	982 SF
LIVABLE	1,594 SF
GARAGE	459 SF
NON LIVABLE	459 SF
	2,053 SF
UNIT 6	
LEVEL 1	468 SF
LEVEL 2	872 SF
LIVABLE	1,341 SF
GARAGE	459 SF
NON LIVABLE	459 SF

AREA SCHEDULE - UNITS	
UNIT TYPE	AREA
	1,800 SF
UNIT 7	
LEVEL 1	466 SF
LEVEL 2	1,003 SF
LIVABLE	1,469 SF
GARAGE	459 SF
NON LIVABLE	459 SF
	1,927 SF
UNIT 8	
LEVEL 1	471 SF
LEVEL 2	874 SF
LIVABLE	1,344 SF
GARAGE	459 SF
NON LIVABLE	459 SF
	1,804 SF
UNIT 9	
LEVEL 1	466 SF
LEVEL 2	1,003 SF
LIVABLE	1,469 SF
GARAGE	459 SF
NON LIVABLE	459 SF
	1,927 SF
UNIT 10	
LEVEL 1	466 SF
LEVEL 2	1,003 SF
LIVABLE	1,469 SF
GARAGE	459 SF
NON LIVABLE	459 SF
	1,927 SF
UNIT 11	
LEVEL 1	468 SF
LEVEL 2	872 SF
LIVABLE	1,341 SF
GARAGE	459 SF
NON LIVABLE	459 SF
	1,800 SF
TOTAL FLOOR AREA	21,128 SF

PROJECT SUMMARY

PROJECT DESCRIPTION:
NEW FIFTEEN UNITS RESIDENTIAL DEVELOPMENT INCLUDING 11 TWO-STORY TOWNHOUSE WITH ATTACHED GARAGE AND 1 TWO- STORY SINGLE FAMILY UNIT WITH ATTACHED GARAGE.

ADDRESS: 1404 & 1414 ROYAL OAKS DRIVE, DUARTE, CA 91010

APN: 8530-004-059 & 8530-004-060

LOT AREA: 40,540.79 SF

ZONE:
EXISTING: R1
PROPOSED REZONE: R3 (MEDIUM DENSITY)

DENSITY: R3, 21 UNITS/AC
MAX ALLOWED: 17 UNITS
PROPOSED: 11 UNITS

SETBACK:
FRONT: 30' MIN;
SIDE: INTERIOR - 5';
REAR: 20'MIN

LOT COVERAGE: 50%(MAX ALLOWED)
BUILDING HEIGHT: 2 STORIES

FAR: 16,082 SF
AVERAGE UNIT AREA: 1,462 SF/UNIT

HEIGHT: 40'-0" / 3 STORIES
PROPOSED: 31'-7", 2 STORIES

PARKING:
IN HOME 2 SPACES/UNIT: 22 SPACES
OVERFLOW AND GUEST PARKING PROVIDED: 5+1 = 6 SPACES
TOTAL PARKING: 28 SPACES

OPEN SPACE (SEE G003)
PRIVATE
REQUIRED: 2,200 SF MIN, 200 SF/UNIT
PROPOSED: 2,811 SF

COMMON OPEN
REQUIRED: 2,200 SF MIN, 200 SF/UNIT
PROPOSED: 3,494 SF

LANDSCAPE AREA:
REQUIRED: 20% MIN. = 40,541 X 20% = 8,108 SF
PROPOSED: 9,526 SF

PROJECT TEAM

OWNER:
SHUORUNG PROPERTIES LLC
2157 E MOUNTAIN ST
PASADENA, CA 91104

ARCHITECT:
FENG XIAO ARCHITECT, INC.
2540 HUNTINGTON DR., # 207
SAN MARINO, CA 91108
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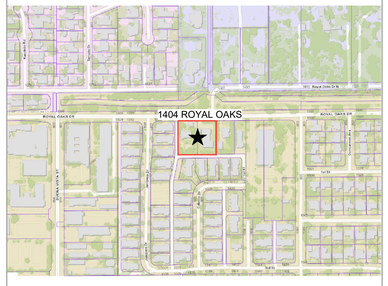
EMAIL: FENG@FXARCHITECT.COM

CIVIL ENGINEER:
LAND DESIGN CONSULTANTS INC.
800 ROYAL OAKS DRIVE, SUITE 104
MONROVIA, CA 91016
PHONE: 626.578.7000
FAX: 626.578.7373

LANDSCAPE ARCHITECT:
FONG HART SCHNEIDER+PARTNERS
312 BROADWAY ST. SUITE 208
LAGUNA BEACH, CA 92651
PHONE: 949.645.9444
EMAIL: D.SCHNEIDER@FHSP.NET

VICINITY MAP



SHEET LIST	
NUMBER	NAME
G001	COVER SHEET
G003	OPEN SPACE DIAGRAM
G004	ARB APPROVAL
C-1	TENTATIVE TRACT
C-2	TENTATIVE TRACT
C-3	TENTATIVE TRACT
C-4	TENTATIVE TRACT
L001	LANDSCAPE PLAN
L002	LANDSCAPE EDGE STUDY
L003	PLANT IMAGES/LIST
A001	SITE PLAN
A101	FLOOR PLAN - LEVEL 2
A102	ROOF PLAN
A111	UNIT PLAN - A1&A2
A112	UNIT PLAN - A3&A4
A113	UNIT PLAN - A5&A6
A201	BUILDING ELEVATION
A202	BUILDING ELEVATION
A203	BUILDING ELEVATION
A204	BUILDING ELEVATION
A501	DETAILS
A901	3D VIEW
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A903	3D VIEW
A904	3D VIEW

25

FXA
FENG XIAO ARCHITECT, INC.

LICENSED ARCHITECT
FENG XIAO
No. C-31198
Oct. 31, 2025
STATE OF CALIFORNIA

PLANNING SUBMISSION 09/30/2025

NO.	DESCRIPTION	DATE

ROYAL OAKS

1404 & 1414 ROYAL OAKS DR,
DUARTE, CA 91010

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COVER SHEET

Drawing No. G001

Project number:	Date: 09/30/2025
22013	Scale:

9/30/2025 3:01:05 PM

OPEN SPACE DIAGRAM
3/32" = 1'-0"

LEGENDS

- PRIVATE OPEN SPACE
- COMMON OPEN SPACE
- LANDSCAPE AREA

OPEN SPACE

PRIVATE
REQUIRED: 2,200 SF MIN, 200 SF/UNIT
PROPOSED: 2,811 SF

COMMON OPEN
REQUIRED: 2,200 SF MIN, 200 SF/UNIT
PROPOSED: 3,494 SF

LANDSCAPE AREA:
REQUIRED: 20% MIN. = 40,541 X 20% = 8,108 SF
PROPOSED: 9,526 SF

OPEN SPACE	
AREA TYPE	AREA
COMMON OPEN	2,811 SF
PRIVATE OPEN	3,494 SF
TOTAL	6,306 SF

FXA
FENG XIAO ARCHITECT, INC.

OWNER:
SHUORUNG PROPERTIES LLC
2157 E MOUNTAIN ST
PASADENA, CA 91104

ARCHITECT:
FENG XIAO ARCHITECT, INC.
2540 HUNTINGTON DR., # 207
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LICENSED ARCHITECT
FENG XIAO
No. C-31198
Oct. 31, 2025
STATE OF CALIFORNIA

PLANNING SUBMISSION 09/30/2025

NO.	DESCRIPTION	DATE

ROYAL OAKS

1404 & 1414 ROYAL OAKS DR,
DUARTE, CA 91010

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OPEN SPACE DIAGRAM

Drawing No. G003

Project number:	Date:	09/30/2025
22013	Scale:	As indicated

9/30/2025 9:46:03 AM

City of Duarte

1600 Huntington Drive, Duarte, CA 91010 | Tel (626) 357-7931 | Fax (626) 358-0018 | accessduarte.com

September 29, 2025

Feng Xiao Architect, Inc.
Attn: Feng Xiao
2540 Huntington Dr., Suite 207
San Marino, CA 91108

SUBJECT: **ARCHITECTURAL REVIEW BOARD RECOMMENDATION OF SITE PLAN & DESIGN REVIEW (SPDR) CASE 24-45 FOR THE CONSTRUCTION OF ELEVEN RESIDENTIAL TOWNHOMES AT 1404-1414 ROYAL OAKS DRIVE**

Dear Ms. Xiao,

On September 22nd 2025, the Architectural Review Board (ARB) recommended approval of Site Plan and Design Review (SPDR) 24-45, with conditions, to the Planning Commission for consideration. The SPDR applications are associated with the entitlements listed below and will be considered by the Planning Commission at an upcoming meeting:

- General Plan Amendment 24-03 (PC Resolution 25-15)
- Zone Change 24-03 (PC Resolution 25-16)
- Tentative Tract Map No. 084375 (PC Resolution 25-17)
- Certifying a Mitigated Negative Declaration in Compliance with CEQA (PC Resolution 25-14)

If you are dissatisfied with the action, you may appeal to the Planning Commission within fifteen (15) days of the date of the Architectural Review Board's decision. The appeal shall be filed with the City Clerk and shall contain a written statement regarding the grounds for the appeal and include the required appeal fee. If you have any questions or concerns, please do not hesitate to contact me at snash@cityofduarte.ca.gov or at (626) 357-7931, ext. 239 Monday through Thursday, between the hours of 7:30 a.m. to 6:00 p.m.

Sincerely,

Scott Nash
Associate Planner

Attachment: Site Plan Design Review 24-45 Proposed Conditions of Approval

ARB CONDITIONS OF APPROVAL
1404-1414 Royal Oaks Drive
Site Plan and Design Review 24-45

1. This approval recommendation is for the construction of 11 two-story, attached townhomes, located at 1404-1414 Royal Oaks Drive, as depicted on the approved plans on file with the Planning Division.

2. Complete project approval is contingent upon City Council approval of: General Plan Amendment #24-03, Zone Change #24-03, Tentative Tract Map #084375 (Subdivision 24-02), Site Plan and Design Review Case #24-45, and the associated Mitigated Negative Declaration. Any associated conditions, related to the approval of the aforementioned entitlements, shall be integrated into the project plans or development.

3. The elevations of each building (townhome cluster) shall be reviewed and approved by the Planning Division prior to submitting to Building and Safety plan check. Final review shall include approval of the color palette, placement of colors, and all finished building materials/elements. All finished materials/elements incorporated into the building design shall be of high quality and high durability, and shall take into consideration locations that may be more vulnerable to damage or potential maintenance concerns.

4. All windows and doors shall require final approval from the Planning Division prior to permit issuance. A separate window and door plan with an accurate window and door schedule shall be provided to the Planning Division for review prior to submitting to Building and Safety plan check. The schedule shall list the window and door types and their locations. The plan shall include all necessary details on the type, color, and material of all proposed windows and doors; sections/detail drawings depicting the use of trims, moldings, mullions, etc.

5. All garage doors shall be of high quality design that is complementary to the architectural style of the building. Final approval from the Planning Division is required prior to issuance of building permits.

6. All exterior materials shall be designed and installed to match the architectural style provided in the submitted plans. Exterior colors and materials for the proposed 11-units and perimeter walls shall be applied as reviewed and approved by Architectural Review Board (ARB).

7. Any revisions to the site plan, floor plan, elevations, colors, and materials in addition to those listed as conditions of approval, shall be reviewed and approved by the Planning Division prior to installation. Such changes may require further review and approval from the ARB.

8. Grading, drainage, civil, and related engineering plans and all required plan check fees shall be submitted to the Public Works/Engineering Division for plan check prior to construction. Approval from Public Works/Engineering Division shall be obtained prior to the issuance of permits.

9. Prior to the issuance of a certificate of occupancy, a Public Works right-of-way permit for the proposed driveway modifications shall be obtained, and the work completed. The right-of-way permit must be issued to a licensed concrete contractor.

10. Follow the list of Best Management Practices (BMP's) of the National Pollution Discharge Elimination System (NPDES), including recommendations from the City grading inspector. During grading, watering shall be established to adequately reduce on and off site dust. Grading is prohibited during high wind conditions.

11. The Developer/applicant shall prepare Covenants, Codes, & Restrictions (CC&R's) in a form acceptable to the City Attorney. The CC&R's shall provide regulations that include but are not limited to: onsite parking management, guest parking, use of resident garages for parking, outdoor storage, common area maintenance, trash service, among others. The CC&R's shall include requirements for the establishment of a Homeowners Association that will implement and ensure compliance with the CC&R's. In addition to being a requirement of this approval, the CC&R's shall also be a requirement of the approved subdivision tract map associated with this project; any requirements associated with the tract map or other entitlements as part of the overall project approval shall be incorporated with this approval by reference. The CC&R's shall be recorded with the County Recorder's Office and proof of recordation shall be provided to the City of Duarte prior to issuance of Certificate of Occupancy. The CC&R's shall not be modified without prior approval from the City.

12. The CC&R's for the property shall include that private patio areas are not to be used for outdoor storage, curtains, window coverings, etc. In the event a private patio is used for outdoor storage, the HOA shall pursue enforcement to have violating items removed.

13. Resident garages shall be used for vehicle parking only. Excessive storage or any reduction of vehicle parking space within the garage shall be prohibited. Garages shall maintain a minimum clearance of 20 feet wide and 20 feet deep for vehicle parking. Language to this effect, as determined by the City Attorney, shall be included in the CC&R's.

14. Uncovered off-street parking within the property shall be designated for guest and overflow only and not for the exclusive use of residents. Language to this effect, as determined by the City Attorney, shall be included in the CC&R's.

15. The Developer and/or Homeowners Association shall establish a Residential Parking Management Plan that regulates onsite parking to reduce any potential overflow parking onto the street and within adjacent properties. The parking management plan shall be incorporated into the recorded CC&R's and implemented/monitored by the established Homeowners Association. The management plan shall be provided to the Planning Division for review and approval prior to permit issuance. Language to this effect, as determined by the City Attorney, shall be included in the CC&R's.

16. Final design/location of all fences, walls, and gates shall require approval from the Planning Division. A detailed fence, wall, and gate plan shall be submitted to the Planning Divisions for review and approval prior to permit issuance, and shall include all finish color and material details, block wall cap details, among others.

17. The applicant and contractors shall follow all requirements of mitigation measure BIO-3 of the Mitigated Negative Declaration, as well as all recommendations of the arborist report on file with the Planning Division, to ensure the two existing oaks trees survive. Additionally, the applicant shall obtain a Tree Removal Permit for the tree being removed. In the event either of the two oak trees do not survive, replacements will be required pursuant to DMC 13.12.

18. A complete landscape, hardscape, and irrigation plan, prepared by a licensed landscape architect, shall be submitted to the Planning Division for review and approval prior to permit issuance. All landscape areas shall be permanently landscaped and irrigated with a variety of drought-tolerant plants, shrubs, ground cover, large and/or small canopy trees. A variety of hardscape areas shall also be included with the landscape plans. All pedestrian walkways and garage approaches shall be constructed out of concrete; decorative/enhanced paving material shall be incorporated in the drive aisle at the back of the approach. All landscaping and irrigation shall comply with Chapter 19.40 (Landscaping) of the Duarte Development Code. Separate review fees shall apply.

19. The developer/applicant shall contact the City's waste disposal company, Burrtec Waste, to create a sufficient disposal schedule that will ensure waste generated by the residents is hauled off site in a timely manner. An approval letter from Burrtec must be provided to the City prior to the issuance of building permits.

20. All exterior lighting shall require final approval from the Planning Division prior to installation and/or issuance of permits. Lighting fixtures shall be of high quality and decorative form and shall be designed to prevent offsite glare. A lighting plan shall be provided to the Planning Division for review and shall include cut-section drawings, manufacture brochure, illumination levels/lighting distribution, operational features, and any additional information as needed for all proposed wall-mounted lights, street lights, pedestrian lights, and common area lighting. Separate review fees for the lighting plan review may apply.

21. A maintenance plan that provides continued and regular maintenance throughout the property shall be submitted to the Community Development Department for review and approval prior to permit issuance. The maintenance plan shall be incorporated in the CC&R's and implemented by the established Homeowners Association. All requirements of the approved maintenance plan shall be incorporated by reference as a condition of approval.

22. The Developer shall provide mailboxes per designs and placement approved by the local postmaster and Community Development Department. Any multi-unit or "cluster box", that serves multiple residents, shall be designed to match or compliment the architectural style of the project. Multi-unit mailboxes shall require review and approval from the Planning Division prior to permit issuance.

23. The storage of bikes, equipment, clothing, or other types of miscellaneous storage within the private courtyards visible to the public is prohibited. Restrictions on storage shall be incorporated in the approved CC&R's and regulated by the established Homeowner's Association for the property.

24. The Developer shall comply with all requirements of the Los Angeles County Fire Department, including inspections, unit address identification, among others, prior to the issuance of a certificate of occupancy.

25. The Developer shall install both building and curb address numbers per City and Los Angeles County Fire Department standards, prior to the issuance of a certificate of occupancy.

26. The project shall comply with all regulations of the Duarte Municipal Code and the Duarte Development Code, including the intent and purpose, permitted uses, development standards, and any other applicable sections.

27. Any revisions to the site plan, elevations, colors, and materials in addition to those listed as conditions of approval, shall be reviewed and approved by the Planning Division prior to installation; substantial changes may require review and approval from the Architectural Review Board and/or Planning Commission.

28. Mechanical equipment and related ducts, vents and other apparatus, including HVAC, shall be screened from public view and must be located inside the structure, attic, or ground mounted. Vents, pipes, caps, hoods, and other roof penetrations that must be installed on the roof shall be painted or finished to match the roof color. Ground mounted equipment shall be shielded from public view by landscaping and/or enclosed in integrated utility closet, subject to approval from the Planning Division.

29. All utilities for direct service to the project shall be installed underground and concealed from view, as approved by the Planning Division, except for transformers, which shall be allowed above ground with adequate screening.

30. This project is subject to the requirements of Chapter 6.10 of the Duarte Municipal Code, Diversion and Demolition Waste. Prior to the issuance of any permits, the applicant shall submit a Construction and Demolition Diversion Plan and required security deposit. Contact the Planning Division for more information.

31. A final inspection shall be made by the Planning Division prior to final of any building permits to ensure that all conditions have been met.

32. Plans and all required plan check fees shall be submitted to the Community Development Department for Building & Safety plan check prior to construction. Approval from Building & Safety shall be obtained prior to the issuance of permits. Construction drawings, including the site plan, elevations, and colors shall be consistent and in substantial compliance with the conceptual approval and any required conditions of the Planning Commission.

33. Any and all correction notice(s) generated through the plan check and/or inspection process is/are hereby incorporated by reference as conditions of approval and shall be fully complied with by the owner, applicant, and all agents thereof.

34. Building permits for this project must be issued within one-year from the date of approval from the Planning Commission or the application and approval shall expire.

35. Prior to issuing permits, any required school fees shall be paid directly to Duarte Unified School District and proof of payment provided to the City. Contact Duarte Unified School District for more information.

36. The Developer shall comply with applicable City noise ordinances. Construction activities, deliveries and haul-off will only be permitted from 7:00 a.m. to 7:00 p.m., Monday through Saturday. No construction related idling of engines or other disturbances shall occur outside of noted work hours.

37. Prior to the issuance of a Certificate of Occupancy, landscaping and irrigation shall be installed and functional. All landscaping shall be automatically irrigated. Landscaping shall be continuously maintained and permanently irrigated. All existing plant material shall be alive and healthy and in a disease and pest free condition at all times.

38. The decision of the Architectural Review Board may be appealed to the City Council within 15 days from the date of approval. Said appeal must be in writing and filed with the City Clerk's office (DDC 19.144). The written appeal shall include reasons for the appeal.

39. That by acceptance of the approval of the project by the City, the applicant shall defend, indemnify and hold harmless the City of Duarte and its agents, officers and employees from any claim, action or proceeding against the City or its agents, officers and employees to challenge, set aside, void or annul the approval of the project or from any other action pertaining to this application or the granting of approval which may be brought within the time period provided for such actions or challenges under applicable law.

FXA
FENG XIAO ARCHITECT, INC.

OWNER:
SHUORUNG PROPERTIES LLC
2157 E MOUNTAIN ST
PASADENA, CA 91104

ARCHITECT:
FENG XIAO ARCHITECT, INC.
2540 HUNTINGTON DR., # 207
SAN MARINO, CA 91108
PHONE: 626.380.7098
EMAIL: FENG@FXARCHITECT.COM

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LAGUNA BEACH, CA 92651
PHONE: 949.645.9444
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LICENSED ARCHITECT
FENG XIAO
No. C-31198
Oct. 31, 2025
STATE OF CALIFORNIA

PLANNING SUBMISSION 09/30/2025

NO.	DESCRIPTION	DATE

ROYAL OAKS

1404 & 1414 ROYAL OAKS DR,
DUARTE, CA 91010

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ARB APPROVAL

Drawing No. G004

Project number:	Date: 09/30/2025
22013	Scale:

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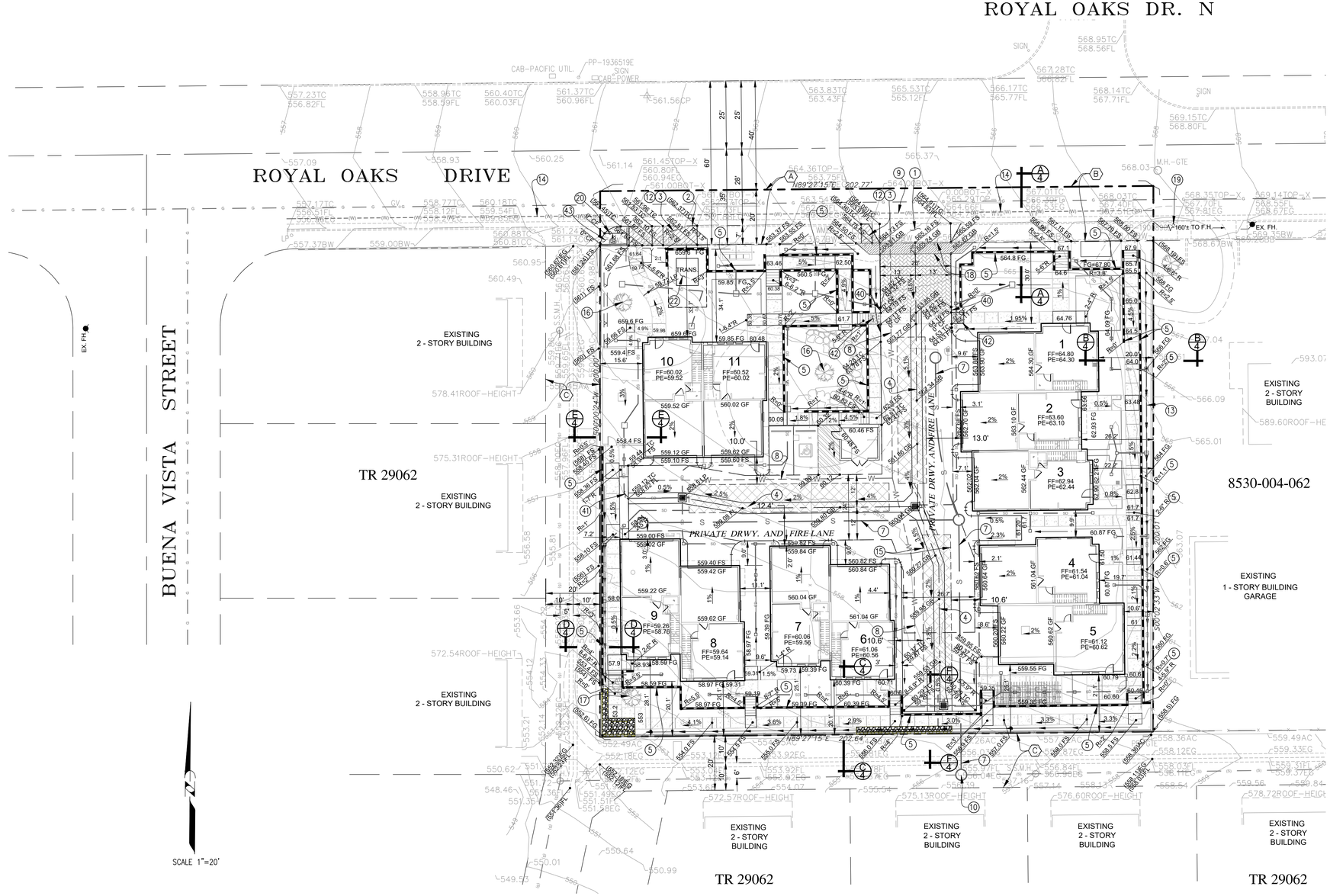

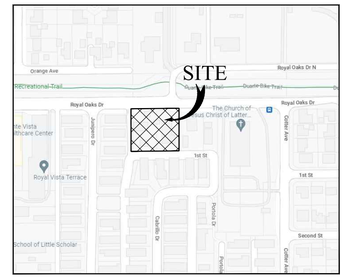

VICINITY MAP
NOT TO SCALE

GENERAL NOTES:

1. EXISTING GENERAL PLAN DESIGNATION ____ LDR LOW DENSITY RESIDENTIAL
2. PROPOSED GENERAL PLAN DESIGNATION_MDR MEDIUM DENSITY RESIDENTIAL
3. EXISTING ZONING ____ R-1 SINGLE FAMILY RESIDENTIAL
4. PROPOSED ZONING ___ R-3 MULTIPLE FAMILY RESIDENTIAL MEDIUM DENSITY
5. AREA _____ 40,541 SF.± (0.93 AC) GROSS, 36,486 SF. 0.84 AC.± NET
6. GROSS DENSITY ____ 11.8 D.U./AC.
7. NET DENSITY ____ 13.1 D.U./AC.
8. EXISTING LAND USE ____ SINGLE FAMILY RESIDENTIAL
9. PROPOSED LAND USE ____ MULTY FAMILY TOWNHOME RESIDENTIAL
10. TOTAL NUMBER OF LOTS____ 1
11. TOTAL NUMBER OF RESIDENTIAL UNITS____ 11
12. BOUNDARY LINE DIMENSIONS ARE TAKEN FROM RECORD DATA.
13. SUBDIVIDER RESERVES THE RIGHT TO FILE MULTIPLE FINAL MAPS PER SECTION 66456.1 OF THE GOVERNMENT CODE.
14. THE APPLICANT IS REQUESTING THE RIGHT TO ADJUST STREET AND BUILDING PAD ELEVATIONS UP TO 1 FEET ON THE FINAL GRADING PLAN.
15. TOPS AND TOES OF SLOPES ARE SUBJECT TO CHANGE IN FINAL ENGINEERING.
16. MAXIMUM SLOPE GRADE IS 2:1.
17. PRELIMINARY EARTHWORK QUANTITIES
    CUT: 960 C.Y., FILL: 760 C.Y.
18. NUMBER OF PARKING TOTAL: (6 STANDARD-5, DISABLED-1)

LEGAL DESCRIPTION:

THE LAND REFERRED TO HEREIN BELOW IS SITUATED IN THE CITY OF DUARTE, COUNTY OF LOS ANGELES, STATE OF CALIFORNIA, AND IS DESCRIBED AS FOLLOWS:

PARCEL 1:

THE NORTH 215 FEET OF THE EAST HALF OF LOT 12 IN SECTION 30 OF THE SUBDIVISION OF THE RANCHO AZUSA DE DUARTE, IN THE CITY OF DUARTE, COUNTY OF LOS ANGELES, STATE OF CALIFORNIA, AS PER MAP RECORDED IN BOOK 6, PAGES 80 TO 82, INCLUSIVE, OF MISCELLANEOUS RECORDS, IN THE OFFICE OF THE COUNTY RECORDER OF LOS ANGELES COUNTY.

EXCEPT THE EAST 560 FEET THEREOF;

ALSO EXCEPT THE NORTH 15 FEET OF SAID LAND, AS CONVEYED TO THE COUNTY OF LOS ANGELES, BY DEED RECORDED IN BOOK 4593, PAGE 18 OF DEEDS.

APN: 8530-004-059

PARCEL 2:

THE NORTH 215 FEET OF THE WEST 100 FEET OF THE EAST 560 FEET OF LOT 12 IN SECTION 30 OF THE SUBDIVISION OF THE RANCHO AZUSA DE DUARTE, IN THE CITY OF DUARTE, COUNTY OF LOS ANGELES, STATE OF CALIFORNIA, AS PER MAP RECORDED IN BOOK 6, PAGES 80 TO 82, INCLUSIVE, OF MISCELLANEOUS RECORDS, IN THE OFFICE OF THE COUNTY RECORDER OF LOS ANGELES COUNTY.

EXCEPT THE NORTH 15 FEET THEREOF AS CONVEYED TO THE COUNTY OF LOS ANGELES, BY DEED RECORDED IN BOOK 4593, PAGE 18 OF DEEDS.

APN: 8530-004-060

BASIS OF BEARINGS

THE BEARING OF NORTH 89°27'15" EAST OF THE CENTERLINE OF ROYAL OAKS DRIVE AS SHOWN ON TRACT NO. 29062, M.B. 809/30-36, WAS USED AS THE BASIS OF BEARINGS FOR THIS SURVEY.

UTILITIES AND SERVICES:

1. WATER.....CALIFORNIA AMERICAN WATER
2. SEWER.....L.A. COUNTY SANITATION DISTRICT
3. GAS.....GAS COMPANY
4. ELECTRIC.....S.C.E.
5. CABLE TV.....SPECTRUM
6. SCHOOL.....DUARTE UNIFIED SCHOOL DISTRICT

NOTES:

(1) PROPOSED 26' WIDE DRIVEWAY APPROACH PER S.P.P.W.C. STD 110-2, TYPE A
(2) PROPOSED 8" CURB AND GUTTER PER S.P.P.W.C. STD 120-3, TYPE A2-8
(3) PROPOSED SIDEWALK PER S.P.P.W.C. STD. PLAN 113-2
(4) PROPOSED 4' WIDE LONGITUDINAL GUTTER
(5) PROPOSED RETAINING WALL
(6) PROPOSED 4' WIDE WALKWAY
(7) PROPOSED 8" VCP SEWER
(8) PROPOSED 8" PVC WATER
(9) JOIN EXISTING 8" WATER MAIN (CALIFORNIA AMERICAN WATER)
(10) JOIN EXISTING 8" VCP SEWER MAIN WITH MANHOLE (TR 29062 PRVT. CONTRACT NO. 71-1)
(11) PROPOSED 36"x36" CATCH BASIN PER BROOKS PRODUCT #3636
(12) EXISTING DRWY./GATE TO BE REMOVED
(13) RAISED PLANTERS PER LANDSCAPE PLANS
(14) EXISTING 8" WATER MAIN PER CALIFORNIA AMERICAN WATER
(15) PROPOSED STORM WATER INFILTRATION CHAMBER (STORMTECH MC-7200) SEE DET. ON SHT. 3
(16) EXISTING OAK TREE TO REMAIN AND PROTECTED IN PLACE
(17) EXISTING OAK TREE TO BE REMOVED
(18) PROPOSED 4' WIDE SIDEWALK EASEMENT
(19) EXISTING POWER POLE TO REMAIN AND PROTECT IN PLACE (PP-1900890E)
(20) EXISTING POWER POLE / GUY WIRE TO BE REMOVED (PP-190859E)
(21) PROPOSED CURB RAMP PER S.P.P.W.C. STD. PLAN 111-5 WITH TRUNCATED DOME
(22) PROPOSED 10'x8' TRANSFORMER PAD
(40) CURB TRANSITION FROM 6" CF TO 0" CF.
(41) PROPOSED LANDSCAPE AREA
(42) PROPOSED TRUNCATED DOME PER S.P.P.W.C. STD. PLAN 111-5
(43) ADA PATH OF TRAVEL PER S.P.P.W.C. STD. PLAN 130-3

EASEMENTS

A. AN EASEMENT FOR PUBLIC STREET PURPOSES AND ALL USES APPURTENANT THERETO. PER FINAL ORDER AND JUDGEMENT IN CONDEMNATION, RECORDED FEBRUARY 14, 1974 AS INSTRUMENT #2852 IN OFFICIAL RECORDS OF LOS ANGELES COUNTY.

B. AN EASEMENT FOR PUBLIC STREET PURPOSES AND ALL USES APPURTENANT THERETO. PER FINAL ORDER AND JUDGEMENT IN CONDEMNATION, RECORDED FEBRUARY 14, 1974 AS INSTRUMENT #2853 IN OFFICIAL RECORDS OF LOS ANGELES COUNTY.

C. AN EASEMENT FOR SANITARY SEWER PURPOSES SO DESIGNATED ON SAID MAP AND ALL USES INCIDENT THERETO, INCLUDING THE RIGHT TO MAKE CONNECTIONS THEREWITH FROM ANY ADJOINING PROPRTIES RECORDED JULY 9, 1971 TR 29062

SHEET INDEX

SHEET	DESCRIPTION
1	TTM TR 084375, NOTES
2	EXISTING IMPROVEMENTS, NOTES
3	TENTATIVE DRAINAGE PLAN AND DETAILS
4	SECTIONS

BENCH MARK

L.A.C.D.P.W. B.M. 4G2346 ELEV. 512.493 FEET

CSBM MON 3.3FT C/O S CF 8.2FT E/O BCR @ SE COR BUENA VISTA ST & HUNTINGTON DR 65FT E/O & 44FT S/O C/L INT MKD (BM 11-14A 1956)

OWNER/DEVELOPER:
SHUORUNG PROPERTIES LLC
2157 E. Mountain St.
Pasadena, California 91104

LDC
LAND DESIGN CONSULTANTS INC.
Land Planning, Civil Engineering, Surveying & Environmental Services
800 Royal Oaks Drive, Suite 104
Monrovia, California 91016
PH (626) 578-7000 FAX (626) 578-7373

TENTATIVE TRACT MAP NO. 084375
FOR CONDOMINIUM PURPOSES

1404 & 1414 Royal Oaks Drive. City of Duarte, Ca 91710
APN. 8530-004-059, 8530-004-060

DESIGNED BY:	DATE:	SCALE:	REVIEWED BY:	22013-001
LDC	6/12/2025	AS-SHOWN	S. HUNTER	SHEET 1 OF 4

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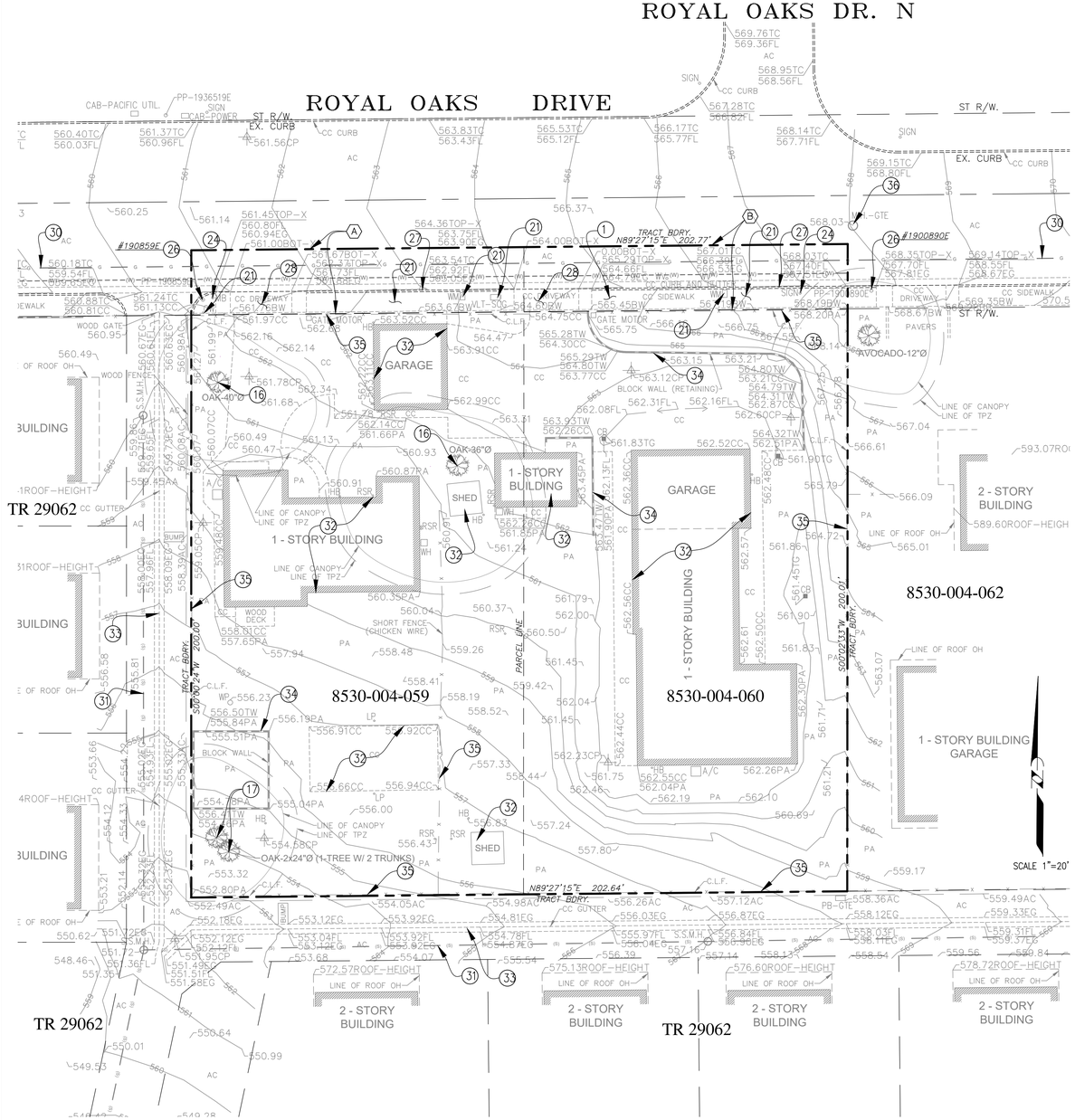


LEGEND & ABBREVIATIONS:

C.B.	– CATCH BASIN	(S)	– EXISTING SEWER LINE
℄	– CENTER LINE	(W)	– EXISTING WATER LINE
D.G.	– DECOMPOSED GRANITE	S	– PROPOSED SEWER LINE
DWY	– DRIVEWAY	W	– PROPOSED WATER LINE
EL/ELEV	– ELEVATION	SD	– PROPOSED STORM DRAIN
EX./EXIST.	– EXISTING		– PROP. RETAINING WALL
FL	– FLOW LINE		– 6' HIGH WROUGHT IRON
FS	– FINISH SURFACE		– TRACT BOUNDARY
GB	– GRADE BREAK	1390	– PROPOSED CONTOURS
HP	– HIGH POINT	1400	– EXISTING CONTOURS
MIN.	– MINIMUM		– STREET & DRIVEWAY CENTERLINE
MH	– MANHOLE	2:1	– PROPOSED SLOPE AS INDICATED
O.S.	– OPEN SPACE		– DIRECTION OF FLOW
PE	– PAD ELEVATION	R=2'	– HEIGHT OF RETAINING
PL	– PROPERTY LINE	3–4" R	– NUMBER OF STEPS / HEIGHT OF RISER
STD.	– STANDARD		
TW	– TOP OF WALL		
PP	– POWER POLE		
	– TREE		
5	– EASEMENT NOTES		
	– FIRE HYDRANT		

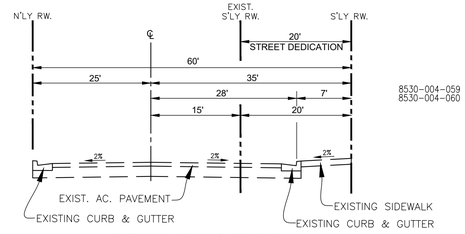
NOTES:

1. PROPOSED 26' WIDE DRIVEWAY APPROACH PER S.P.P.W.C. STD 110–2, TYPE A
16. EXISTING OAK TREE TO REMAIN END PROTECTED IN PLACE
17. EXISTING OAK TREE TO TO BE REMOVED
21. EXISTING SIDEWALK TO REMAIN
22. EXISTING WATER METER TO BE REMOVED OR RELOCATED
23. EXISTING GAS METER TO BE REMOVED OR RELOCATED
24. EXISTING STREET SIGN TO REMAIN
25. EXISTING MAIL BOX TO BE REMOVED
26. EXISTING POWER POLE TO REMAIN
27. EXISTING CURB AND GUTTER TO REMAIN
28. EXISTING DRWY./GATE TO BE REMOVED
29. EXISTING 8" WATER PER CALIFORNIA AMERICAN WATER
30. EXISTING 2" GAS MAIN PER SC GAS CO.
31. EXISTING 8" VCP PRIVATE SEWER PER TR 29062 PRVT. CONTRACT NO. 71–1
32. EXISTING STRUCTURE TO BE REMOVED
33. EXISTING LONGITUDINAL GUTTER
34. EXISTING RETAINING WALL TO BE REMOVED
35. EXISTING CHAIN LINK FENCE TO BE REMOVED
36. EXISTING GTE MANHOLE TO REMAIN

EASEMENTS

A. AN EASEMENT FOR PUBLIC STREET PURPOSES AND ALL USES APPURTENANT THERETO. PER FINAL ORDER AND JUDGEMENT IN CONDEMNATION, RECORDED FEBRUARY 14, 1974 AS INSTRUMENT #2852 IN OFFICIAL RECORDS OF LOS ANGELES COUNTY.

B. AN EASEMENT FOR PUBLIC STREET PURPOSES AND ALL USES APPURTENANT THERETO. PER FINAL ORDER AND JUDGEMENT IN CONDEMNATION, RECORDED FEBRUARY 14, 1974 AS INSTRUMENT #2853 IN OFFICIAL RECORDS OF LOS ANGELES COUNTY.



ROYAL OAKS DRIVE
TYPICAL SECTION
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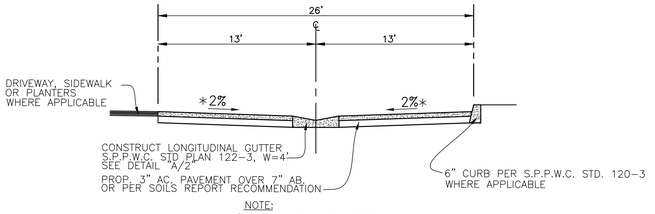
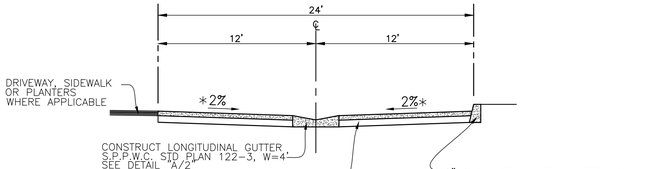


NOTE:
*OR AS SHOWN ON PLAN

26' WIDE PRIVATE DRIVEWAY AND FIRE LANE
NOT TO SCALE



NOTE:
*OR AS SHOWN ON PLAN

24' WIDE PRIVATE DRIVEWAY AND FIRE LANE
NOT TO SCALE

OWNER/DEVELOPER:
SHUORUNG PROPERTIES LLC
2157 E. Mountain St.
Pasadena, California 91104

LDC
LAND DESIGN CONSULTANTS INC.
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Monrovia, California 91016
PH (626) 578-7000 FAX (626) 578-7373

TENTATIVE
TRACT MAP NO. 084375
FOR CONDOMINIUM PURPOSES
1404 & 1414 Royal Oaks Drive. City of Duarte, Ca 91710
APN. 8530-004-059, 8530-004-060

DESIGNED BY:	DATE:	SCALE:	REVIEWED BY:	22013–001
LDC	6/12/2025	AS–SHOWN	S. HUNTER	SHEET 2 OF 4

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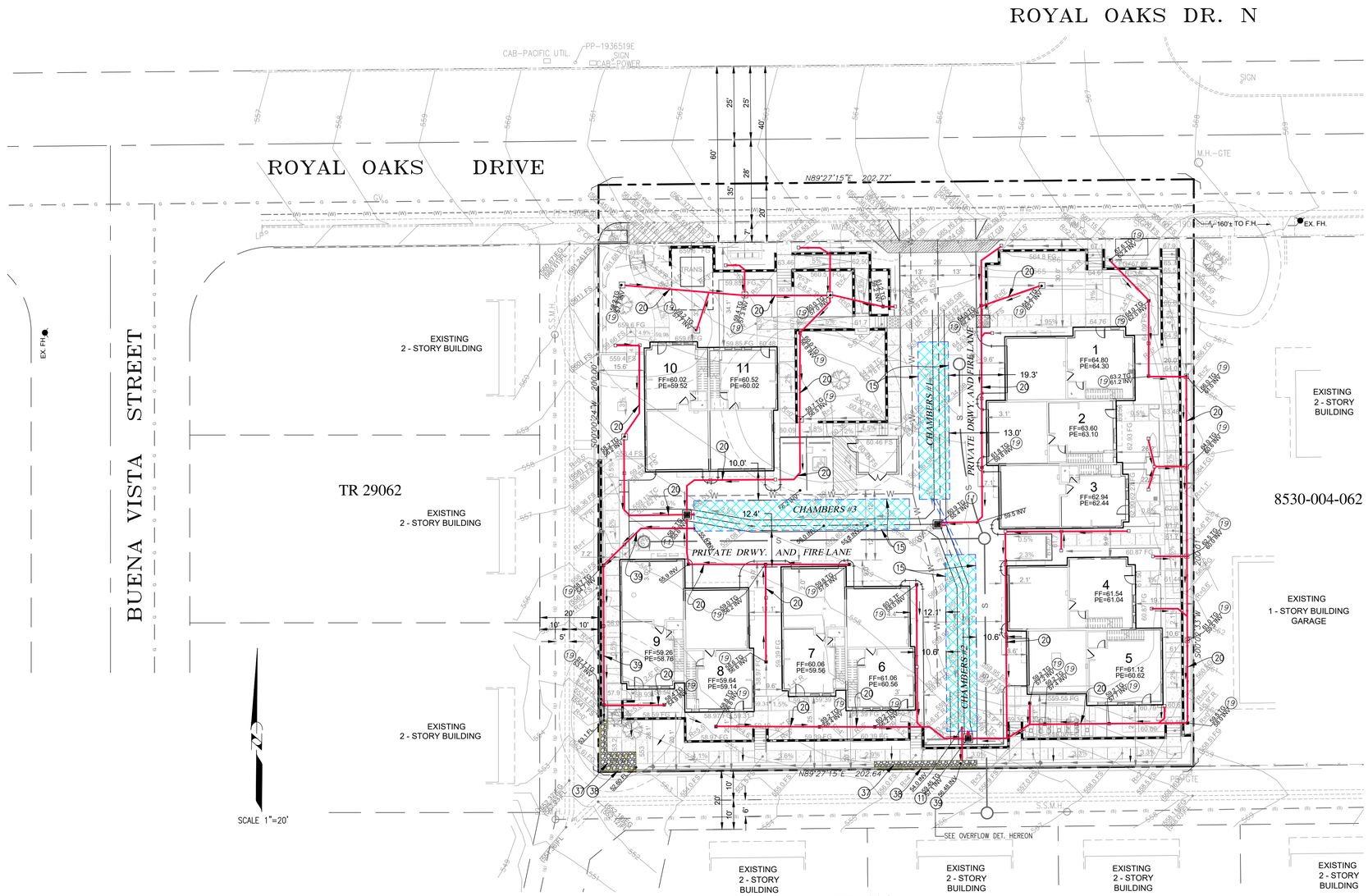
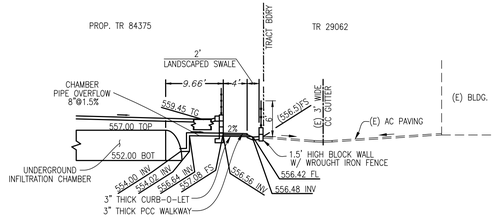


NOTES:

(11) PROPOSED 36"x36" CATCH BASIN PER BROOKS PRODUCT #3636
(15) PROPOSED STORM WATER INFILTRATION CHAMBER (STORMTECH MC-7200) SEE DET. HEREON
(19) PROPOSED AREA DRAIN
(20) PROPOSED STORM DRAIN LINE
(37) CHAMBER OVERFLOW ENERGY DISSIPATER, 3" MAX. ANGULAR ROCK SIZE 6" THICK ROCK PAD
(38) MAINTAIN 16" CLEAR OPENINGS AT EVERY OTHER BOTTOM BLOCK TO ALLOW RUNOFF DISCHARGES TO THE SOUTH
(39) PROPOSED 6" CHAMBER OVERFLOW

UTILITIES AND SERVICES:

1. WATER.....CALIFORNIA AMERICAN WATER
2. SEWER.....L.A. COUNTY SANITATION DISTRICT
3. GAS.....GAS COMPANY
4. ELECTRIC.....S.C.E.
5. CABLE TV.....SPECTRUM
6. SCHOOL.....DUARTE UNIFIED SCHOOL DISTRICT



CHAMBER OVERFLOW OUTLET DETAIL
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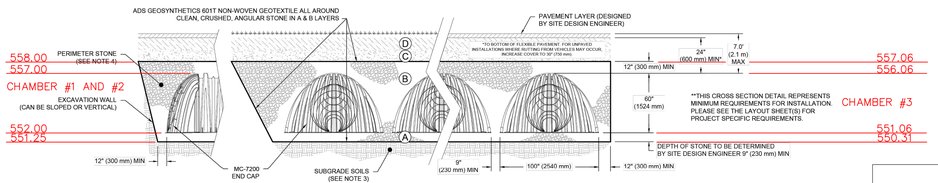

NOTES:

1. CHAMBERS SHALL MEET THE REQUIREMENTS OF ASTM F2418, "STANDARD SPECIFICATION FOR POLYPROPYLENE (PP) CORRUGATED WALL STORMWATER COLLECTION CHAMBERS" CHAMBER CLASSIFICATION 60x101
2. MC-7200 CHAMBERS SHALL BE DESIGNED IN ACCORDANCE WITH ASTM F2787 "STANDARD PRACTICE FOR STRUCTURAL DESIGN OF THERMOPLASTIC CORRUGATED WALL STORMWATER COLLECTION CHAMBERS".
3. THE SITE DESIGN ENGINEER IS RESPONSIBLE FOR ASSESSING THE BEARING RESISTANCE (ALLOWABLE BEARING CAPACITY) OF THE SUBGRADE SOILS AND THE DEPTH OF FOUNDATION STONE WITH CONSIDERATION FOR THE RANGE OF EXPECTED SOIL MOISTURE CONDITIONS.
4. PERIMETER STONE MUST BE EXTENDED HORIZONTALLY TO THE EXCAVATION WALL FOR BOTH VERTICAL AND SLOPED EXCAVATION WALLS.
5. REQUIREMENTS FOR HANDLING AND INSTALLATION:
   - TO MAINTAIN THE WIDTH OF CHAMBERS DURING SHIPPING AND HANDLING, CHAMBERS SHALL HAVE INTEGRAL, INTERLOCKING STACKING LUGS.
   - TO ENSURE A SECURE JOINT DURING INSTALLATION AND BACKFILL, THE HEIGHT OF THE CHAMBER JOINT SHALL NOT BE LESS THAN 3".
   - TO ENSURE THE INTEGRITY OF THE ARCH SHAPE DURING INSTALLATION, a) THE ARCH STIFFNESS CONSTANT AS DEFINED IN SECTION 6.2.8 OF ASTM F2418 SHALL BE GREATER THAN OR EQUAL TO 500 LBS/FT/%. AND b) TO RESIST CHAMBER DEFORMATION DURING INSTALLATION AT ELEVATED TEMPERATURES (ABOVE 73° F / 23° C), CHAMBERS SHALL BE PRODUCED FROM REFLECTIVE GOLD OR YELLOW COLORS.

1 MC-7200 CROSS SECTION DETAIL

ACCEPTABLE FILL MATERIALS: STORMTECH MC-7200 CHAMBER SYSTEMS

	MATERIAL LOCATION	DESCRIPTION	AASHTO MATERIAL CLASSIFICATIONS	COMPACTION / DENSITY REQUIREMENT
D	**FINAL FILL:** FILL MATERIAL FOR LAYER 'D' STARTS FROM THE TOP OF THE 'C' LAYER TO THE BOTTOM OF FLEXIBLE PAVEMENT OR UNPAVED FINISHED GRADE ABOVE. NOTE THAT PAVEMENT SUBBASE MAY BE PART OF THE 'D' LAYER	ANY SOIL/ROCK MATERIALS, NATIVE SOILS, OR PER ENGINEER'S PLANS. CHECK PLANS FOR PAVEMENT SUBGRADE REQUIREMENTS.	N/A	PREPARE PER SITE DESIGN ENGINEER'S PLANS. PAVED INSTALLATIONS MAY HAVE STRINGENT MATERIAL AND PREPARATION REQUIREMENTS.
C	**INITIAL FILL:** FILL MATERIAL FOR LAYER 'C' STARTS FROM THE TOP OF THE EMBEDMENT STONE ('B' LAYER) TO 24" (600 mm) ABOVE THE TOP OF THE CHAMBER. NOTE THAT PAVEMENT SUBBASE MAY BE A PART OF THE 'C' LAYER.	GRANULAR WELL-GRADED SOIL/AGGREGATE MIXTURES, <35% FINES OR PROCESSED AGGREGATE. MOST PAVEMENT SUBBASE MATERIALS CAN BE USED IN LIEU OF THIS LAYER.	AASHTO M145[1] A-1, A-2-4, A-3 OR AASHTO M43[1] 3, 357, 4, 467, 5, 56, 57, 6, 67, 68, 7, 78, 8, 89, 9, 10	BEGIN COMPACTIONS AFTER 24" (600 mm) OF MATERIAL OVER THE CHAMBERS IS REACHED. COMPACT ADDITIONAL LAYERS IN 12" (300 mm) MAX LIFTS TO A MIN. 95% PROCTOR DENSITY FOR WELL GRADED MATERIAL AND 95% RELATIVE DENISITY FOR PROCESSED AGGREGATE MATERIALS.
B	**EMBEDMENT STONE:** FILL SURROUNDING THE CHAMBERS FROM THE FOUNDATION STONE ('A' LAYER) TO THE 'C' LAYER ABOVE.	CLEAN, CRUSHED, ANGULAR STONE OR RECYCLED CONCRETE[5]	AASHTO M43[1] 3, 357, 4, 467, 5, 56, 57	NO COMPACTION REQUIRED.
A	**FOUNDATION STONE:** FILL BELOW CHAMBERS FROM THE SUBGRADE UP TO THE FOOT (BOTTOM) OF THE CHAMBER.	CLEAN, CRUSHED, ANGULAR STONE OR RECYCLED CONCRETE[5]	AASHTO M43[1] 3, 357, 4, 467, 5, 56, 57	PLATE COMPACT OR ROLL TO ACHIEVE A FLAT SURFACE.[2,3]

PLEASE NOTE:
1. THE LISTED AASHTO DESIGNATIONS ARE FOR GRADATIONS ONLY. THE STONE MUST ALSO BE CLEAN, CRUSHED, ANGULAR. FOR EXAMPLE, A SPECIFICATION FOR #4 STONE WOULD STATE: "CLEAN, CRUSHED, ANGULAR NO. 4 (AASHTO M43) STONE".
2. STORMTECH COMPACTION REQUIREMENTS ARE MET FOR 'A' LOCATION MATERIALS WHEN PLACED AND COMPACTED IN 9" (230 mm) (MAX) LIFTS USING TWO FULL COVERAGES WITH A VIBRATORY COMPACTOR.
3. WHERE INFILTRATION SURFACES MAY BE COMPROMISED BY COMPACTION, FOR STANDARD DESIGN LOAD CONDITIONS, A FLAT SURFACE MAY BE ACHIEVED BY RAKING OR DRAGGING WITHOUT COMPACTION EQUIPMENT. FOR SPECIAL LOAD DESIGNS, CONTACT STORMTECH FOR COMPACTION REQUIREMENTS.
4. ONCE LAYER 'C' IS PLACED, ANY SOIL/MATERIAL CAN BE PLACED IN LAYER 'D' UP TO THE FINISHED GRADE. MOST PAVEMENT SUBBASE SOILS CAN BE USED TO REPLACE THE MATERIAL REQUIREMENTS OF LAYER 'C' OR 'D' AT THE SITE DESIGN ENGINEER'S DISCRETION.
5. WHERE RECYCLED CONCRETE AGGREGATE IS USED IN LAYERS 'A' OR 'B' THE MATERIAL SHOULD ALSO MEET THE ACCEPTABILITY CRITERIA OUTLINED IN TECHNICAL NOTE 6.20 "RECYCLED CONCRETE STRUCTURAL BACKFILL".

DRAINAGE DETAILS

OWNER/DEVELOPER:
SHUORUNG PROPERTIES LLC
2157 E. Mountain St,
Pasadena, California 91104

LDC
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Monrovia, California 91016
PH (626) 578-7000 FAX (626) 578-7373

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TRACT MAP NO. 084375
FOR CONDOMINIUM PURPOSES
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DESIGNED BY:	DATE:	SCALE:	REVIEWED BY:	22013-001
LDC	6/12/2025	AS-SHOWN	S. HUNTER	SHEET 3 OF 4

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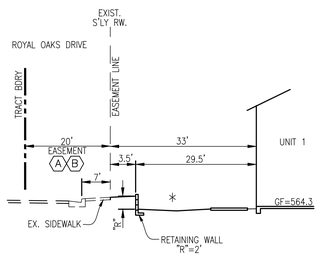

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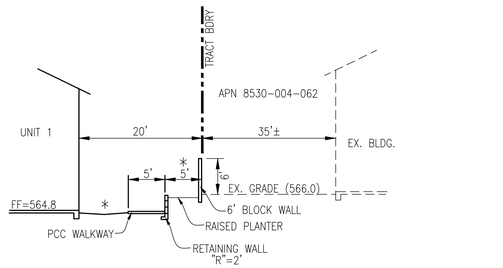

SECTION B-B
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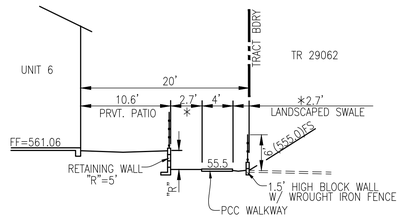
∗ LANDSCAPING PER
LANDSCAPE ARCHITECT PLANS



SECTION C-C
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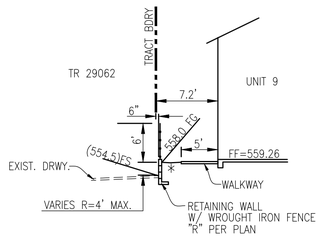

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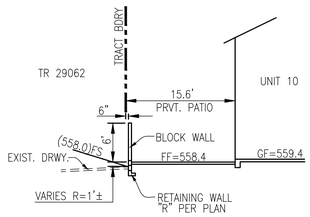

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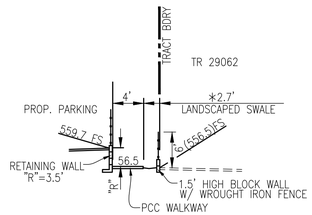

SECTION F-F
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OWNER/DEVELOPER:
SHUORUNG PROPERTIES LLC
2157 E. Mountain St.
Pasadena, California 91104

LDC

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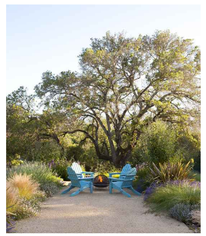
ROYAL OAKS

(18) PRECEDENT IMAGE FOR SEATING AREAS UNDER OAKS



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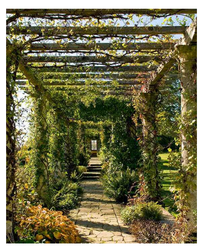
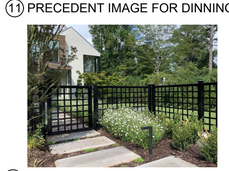


(11) PRECEDENT IMAGE FOR PERGOLA

(11) PRECEDENT IMAGE FOR DINNING AREA



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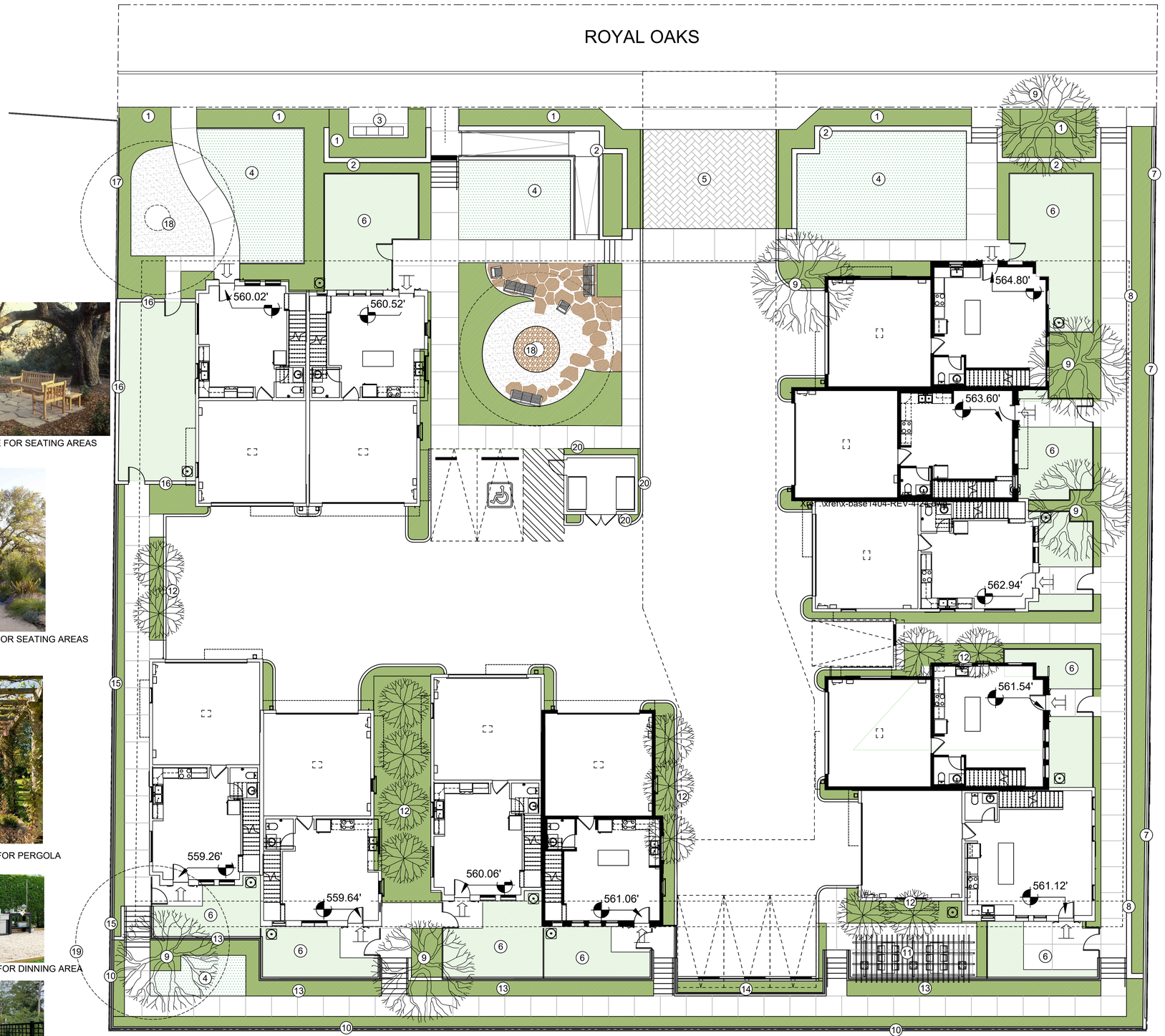

LEGEND

(1) CARPET ROSES ALONG STREET FRONTAGE TO MATCH ADJACENT NEIGHBORS

(2) SLOPE OR SMALL RETAINING WALL ALONG STREET EDGE

(3) COMMON MAIL BOX AREA TO BE REVIEWED BY USPS

(4) COMMON OPEN SPACE LAWN AREA, SUNKEN FROM STREET

(5) DECORATIVE PAVERS AT ENTRY

(6) LOW 42" FENCE/RAILING AROUND PRIVATE PATIO YARDS, WITH LANDSCAPE PLANTING IN FRONT OF FENCE/RAILING

(7) 6FT HIGH STANDARD PERIMETER PROPERTY LINE WALL, HEDGE OR VINES TO GROW IN FRONT OR ON WALL, SEE GRADING PLAN SECTION A-A'

(8) LOW RETAINING WALL WITH SPILLING PLANTS, SEE GRADING PLAN SECTION A-A'

(9) SMALL ACCENT FLOWERING TREES

(10) SOUTH PERIMETER EDGE, LOW WALL WITH RAILING FENCE ON TOP. HEDGE OR VINES TO BE PLANTED IN FRONT OF SOUTHERN FENCE ON PROPERTY. VINES OR HEDGE CAN BE ACCESSED FOR MAINTENANCE FROM PROPERTY, SEE GRADING PLAN SECTION B-B'

(11) BBQ AREA AND SHADE PERGOLA

(12) VERTICAL TREES

(13) RETAINING WALL WITH PRIVATE PATIO YARD RAILING FENCE ON TOP. HEDGE IN FRONT OF RETAINING WALL. SEE GRADING PLAN SECTION B-B'

(14) LOW RETAINING WALL WITH RAILING ON TOP WITH SPILLING VINES AT PARKING SPACES

(15) PERIMETER RETAINING WALL WITH +/-5FT HIGH RAILING OR FENCE ON TOP OF WALL. PLANT WITH VINES OR HEDGES ON PROPERTY LINE SIDE. SEE GRADING PLAN SECTION C-C'

(16) CMU BLOCK WALL FOR PATIO YARD PRIVACY AT UNIT 10 SEE GRADING PLAN SECTION D-D'

(17) PICKET OR WOOD FENCE FROM CMU WALL TO PROPERTY LINE FOR OAK TREE ROOT PROTECTION.

(18) EXISTING OAK TREE TO REMAIN. NATIVE OAK GARDEN BELOW, DECOMPOSED GRANITE, RIVER COBBLE, OR COMBINATION

(19) OAK TREE TO BE REMOVED

(20) SELF-CLINGING VINES OR LANDSCAPING ON TRASH ENCLOSURE

0 10' 20' 30'

Graphic Scale In Feet

North

FXA
FENG XIAO ARCHITECT, INC.

OWNER:
SHUORUNG PROPERTIES LLC
2157 E MOUNTAIN ST
PASADENA, CA 91104

ARCHITECT:
FENG XIAO ARCHITECT, INC.
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312 BROADWAY ST, SUITE 208
LAGUNA BEACH, CA 92651
PHONE: 949.645.9444
EMAIL: D.SCHNEIDER@FHSP.NET

PLANNING SUBMISSION 05/17/2024

NO.	DESCRIPTION	DATE

ROYAL OAKS

1404 & 1414 ROYAL OAKS DR,
DUARTE, CA 91010

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1404 ROYAL OAKS
LANDSCAPE STUDY

Drawing No.
L 001

Project number:	Date:	11/13/23
22013	Scale:	AS SHOWN

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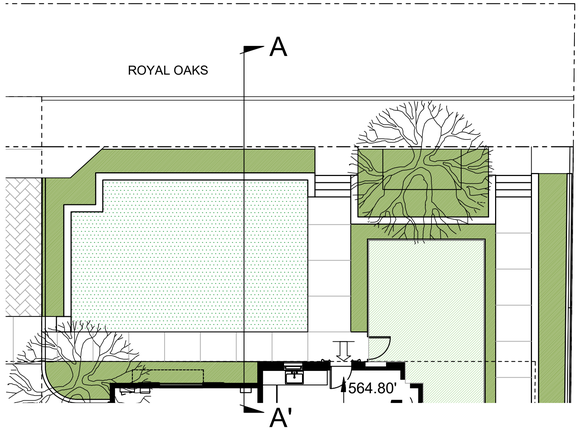
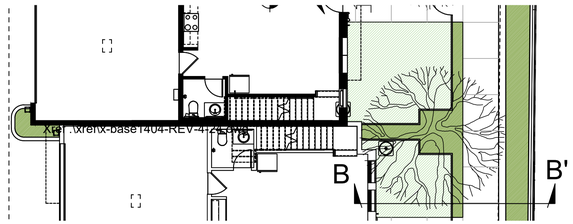


PLAN @ROYAL OAKS

0 10' 20' 30'

Graphic Scale In Feet

North

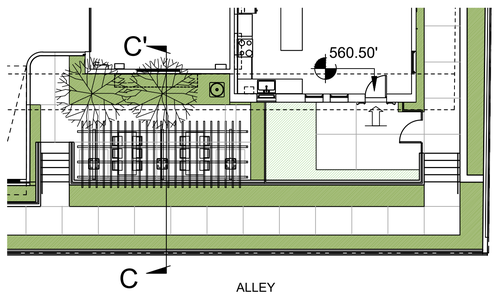


PLAN @EAST PROPERTY LINE

0 10' 20' 30'

Graphic Scale In Feet

North

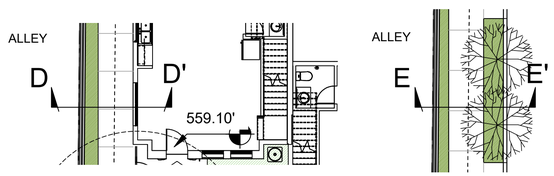


PLAN @ SOUTH PROPERTY LINE

0 10' 20' 30'

Graphic Scale In Feet

North

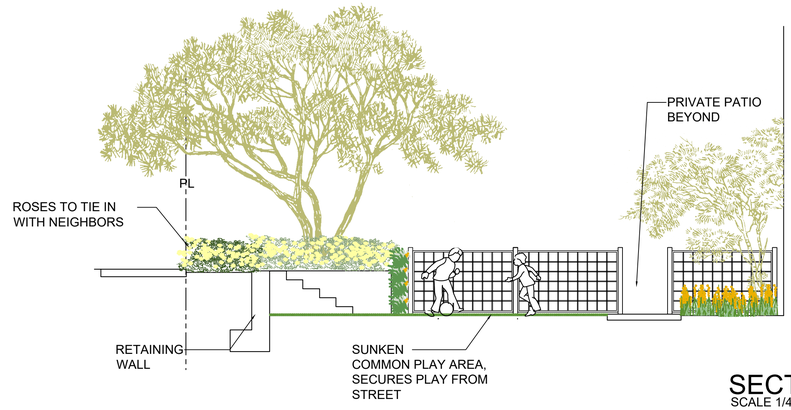


PLANS @ WEST PROPERTY LINE

0 10' 20' 30'

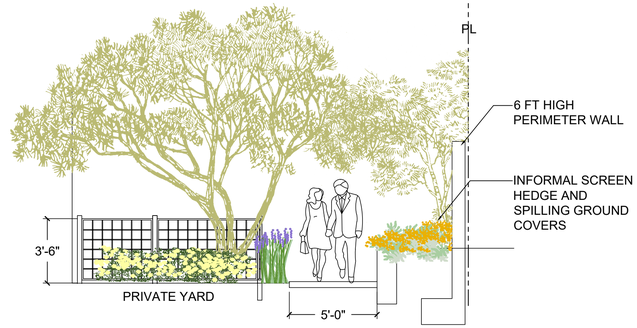
Graphic Scale In Feet

North



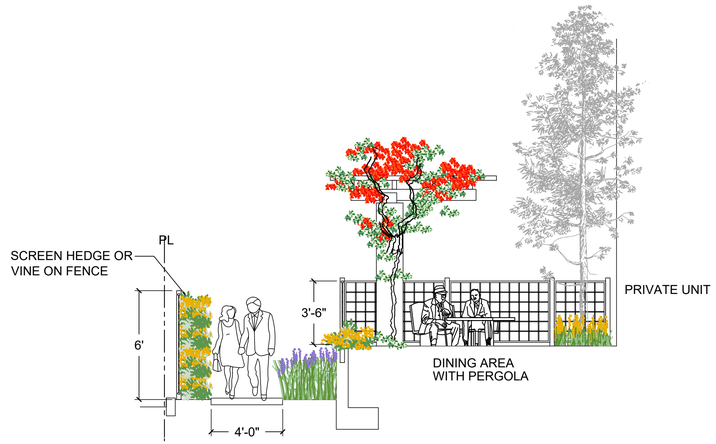
SECTION A-A'

SCALE 1/4"=1'-0"



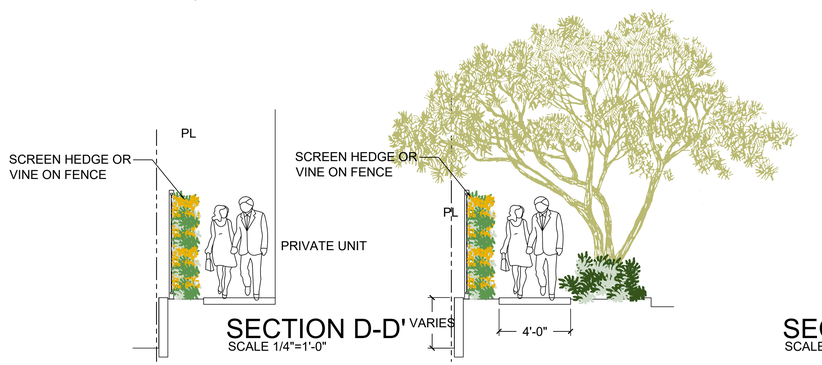
SECTION B-B'

SCALE 1/4"=1'-0"



SECTION C-C'

SCALE 1/4"=1'-0"



SECTION D-D'

SCALE 1/4"=1'-0"

SECTION E-E'

SCALE 1/4"=1'-0"

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PLANNING SUBMISSION 05/17/2024

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ROYAL OAKS

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1404 ROYAL OAKS
LANDSCAPE
SECTIONS

Drawing No.
L 002

Project number:	Date:	11/13/23
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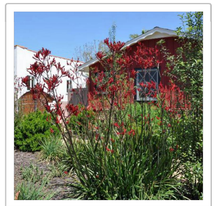
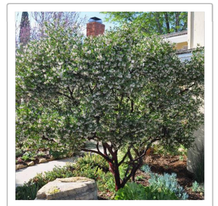
SHRUBS



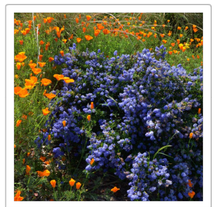
Anigozanthos 'Big Red'
Big Red Kangaroo Paws

Arctostaphylos 'Emerald Carpet'
Manzanita Emerald Carpet



Arctostaphylos densiflora 'Howard McMinn'
Howard McMinn Manzanita

Bougainvillea 'Jamaica White'
Jamaica White Bougainvillea



Ceanothus 'Wheeler Canyon'
Wheeler Canyon Ceanothus

Cistus salviifolius
Sageleaf Rockrose

Dietes grandiflora 'Gray Ghost'
Gray Striped Fortnight Lily

Heteromeles arbutifolia
Toyon

Kniphofia 'Ember Glow'
Ember Glow Hot Poker

Laurus nobilis 'Saratoga'
Saratoga Sweet Bay

Lavandula angustifolia 'French Perfume'
French Perfume Lavender

Ribes viburnifolium
Catalina Evergreen Currant

Romneya coulteri
Matilija Poppy

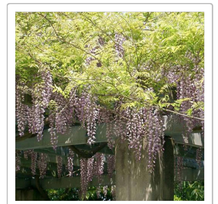
Rosmarinus 'Collingwood Ingram'
Collingwood Ingram Rosemary

Rosmarinus officinalis 'Irene'
Irene Rosemary

Salvia clevelandii 'Allen Chickering'
Blue Bush Sage

Salvia spathacea
Hummingbird Sage

Santolina rosmarinifolia
Green Lavender Cotton



Wisteria floribunda
Japanese Wisteria

TREES

Arbutus 'Marina'
Marina Strawberry Tree

Ficus carica
Edible Fig

Lyonothamnus floribundus asplenifolius
Fernleaf Catalina Ironwood

Olea europaea
Olive

GROUND COVERS

Achillea millefolium
Common Yarrow

Cistus 'Mickie'
Rockrose

Heuchera maxima
Island Alum Root

Rosa 'Icy Drift'
Icy Drift Rose

Sisyrinchium striatum
Yellow Blue-Eyed Grass

PLANT LIST

BOTANICAL	COMMON	PLANT TYPE	CALIFORNIA NATIVE	WUCOLS RATING
TREES				
Arbutus 'Marina'	Marina Strawberry Tree	Tree		Med/.5
Ficus carica	Edible Fig	Tree		Med/.5
Lyonothamnus floribundus asplenifolius	Fernleaf Catalina Ironwood	Tree	Yes	Low/.2
Olea europaea	Olive	Tree		Low/.2
SHRUBS				
Anigozanthos 'Big Red'	Big Red Kangaroo Paws	Shrub		Low/.2
Arctostaphylos 'Emerald Carpet'	Manzanita Emerald Carpet	Shrub	Yes	Low/.2
Arctostaphylos densiflora 'Howard McMinn'	Howard McMinn Manzanita	Shrub	Yes	Low/.2
Bougainvillea 'Jamaica White'	Jamaica White Bougainvillea	Shrub		Low/.2
Ceanothus 'Wheeler Canyon'	Wheeler Canyon Ceanothus	Shrub	Yes	Low/.2
Cistus salviifolius	Sageleaf Rockrose	Shrub		Low/.2
Dietes grandiflora 'Gray Ghost'	Gray Striped Fortnight Lily	Shrub		Med/.5
Heteromeles arbutifolia	Toyon	Shrub	Yes	Low/.2
Kniphofia 'Ember Glow'	Ember Glow Hot Poker	Shrub		Low/.2
Laurus nobilis 'Saratoga'	Saratoga Sweet Bay	Shrub		Low/.2
Lavandula angustifolia 'French Perfume'	French Perfume Lavender	Shrub		Low/.2
Ribes viburnifolium	Catalina Evergreen Currant	Shrub	Yes	Low/.2
Romneya coulteri	Matilija Poppy	Shrub		Low/.2
Rosmarinus 'Collingwood Ingram'	Collingwood Ingram Rosemary	Shrub		Low/.2
Rosmarinus officinalis 'Irene'	Irene Rosemary	Shrub		Low/.2
Salvia clevelandii 'Allen Chickering'	Blue Bush Sage	Shrub	Yes	Low/.2
Salvia spathacea	Hummingbird Sage	Shrub	Yes	Low/.2
Santolina rosmarinifolia	Green Lavender Cotton	Shrub		Low/.2
Wisteria floribunda	Japanese Wisteria	Shrub		Med/.5
GROUND COVERS				
Achillea millefolium	Common Yarrow	Ground cover	Yes	Low/.2
Cistus 'Mickie'	Rockrose	Ground cover		Low/.2
Heuchera maxima	Island Alum Root	Ground cover	Yes	Med/.5
Rosa 'Icy Drift'	Icy Drift Rose	Ground cover		Med/.5
Sisyrinchium striatum	Yellow Blue-Eyed Grass	Ground cover	Yes	Med/.5

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PLANNING SUBMISSION 05/17/2024

NO.	DESCRIPTION	DATE

ROYAL OAKS

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1404 ROYAL OAKS
PLANT IMAGES/LIST

Drawing No.
L 003

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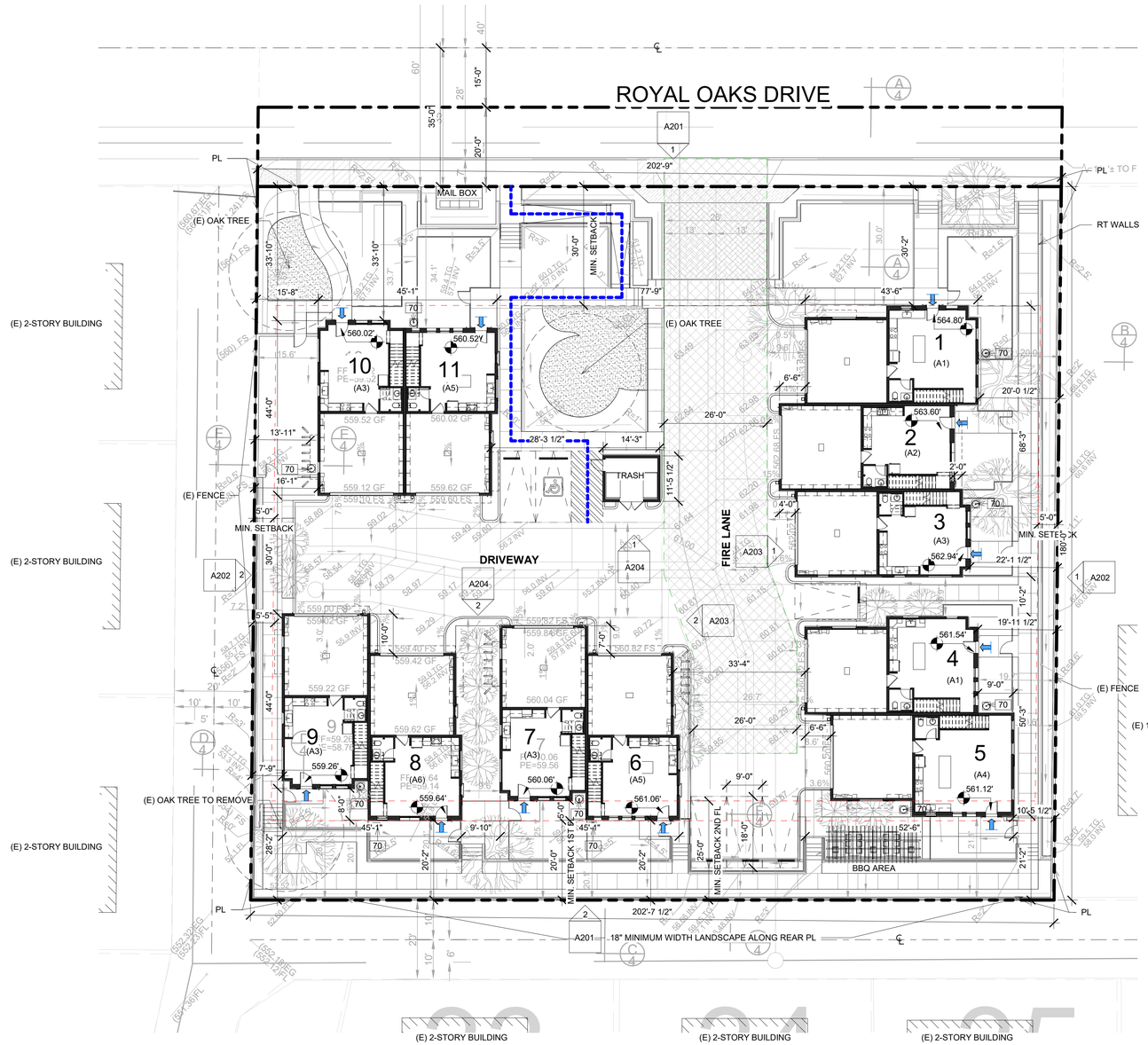

NOTE:
STORAGE AREA OF NOT LESS THAN 250 CUBIC FEET IS PROVIDE FOR EACH UNIT.
(DDC 19.10.060(F)

LEGENDS

- FIRE LANE
- ACCESSIBLE PATH
- MINIMUM SETBACK
- UNIT MAIN ENTRY
- EXISTING OAK TREES AND PROTECTION DISTANCE (R 15'-0")

KEYNOTE LEGEND	
Key Value	Keynote Text
70	A/C UNIT

UNIT SCHEDULE	
UNIT #	UNIT TYPE
UNIT 1	A1
UNIT 2	A2
UNIT 3	A3
UNIT 4	A1
UNIT 5	A4
UNIT 6	A5
UNIT 7	A3
UNIT 8	A6
UNIT 9	A3
UNIT 10	A3
UNIT 11	A5

TOTAL UNITS: 11

NOTE:
1. DIMENSIONS FOR WALLS INDICATED IN PROJECT SUMMARY AND ON PLANS ARE TO FACE OF STUDS, FROM FACE OF STUDS, AND/OR EDGE OF STUDS.
2. AREA INDICATED IN PROJECT SUMMARY AND ON PLANS ARE TO EXTERIOR FACE OF WALLS.

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LICENSED ARCHITECT
FENG XIAO
No. C-31198
Oct. 31, 2025
STATE OF CALIFORNIA

PLANNING SUBMISSION 09/30/2025

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ROYAL OAKS

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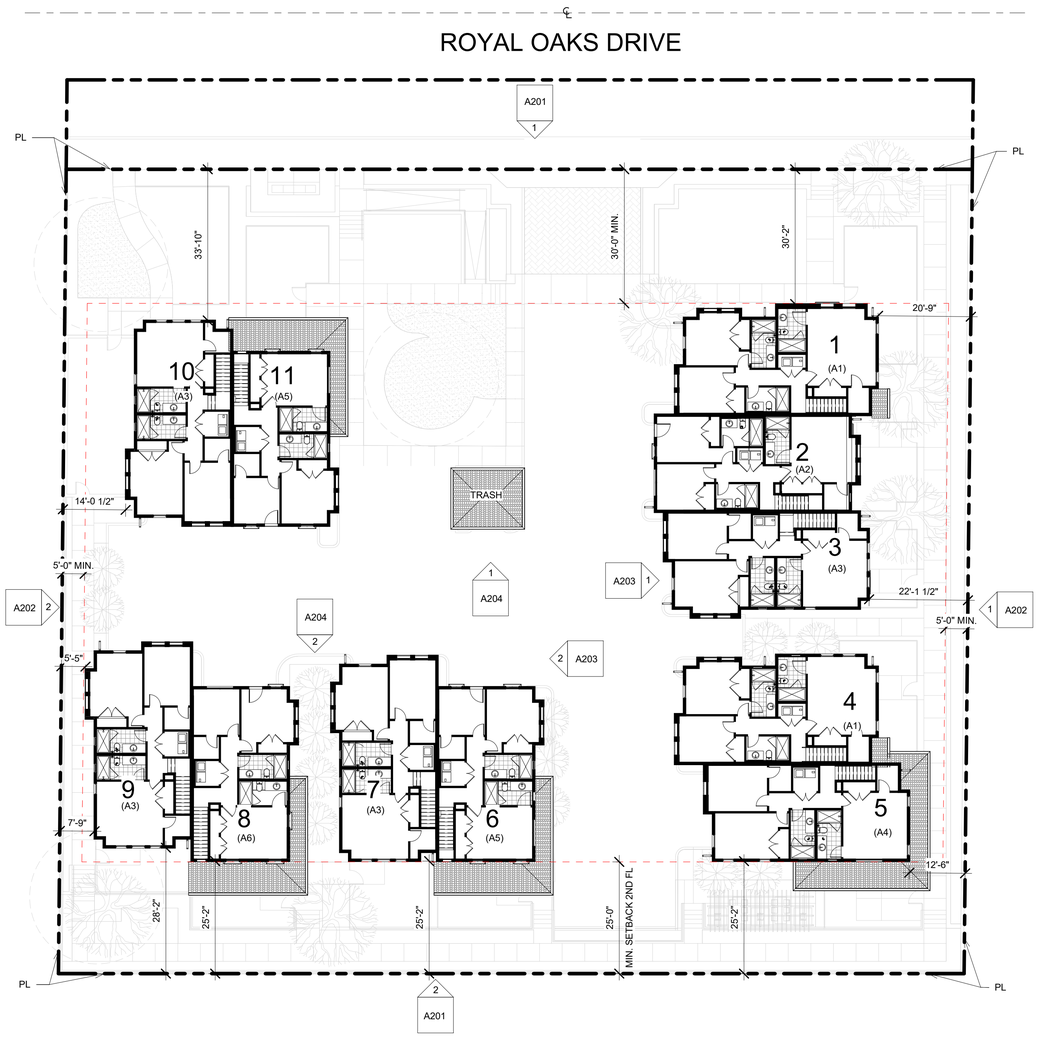
SITE PLAN

Drawing No. A001

Project number:	Date: 09/30/2025
22013	Scale: 1/16" = 1'-0"

9/30/2025 9:50:02 AM



1 SITE PLAN - LEVEL 2
1/16" = 1'-0"

NOTE:
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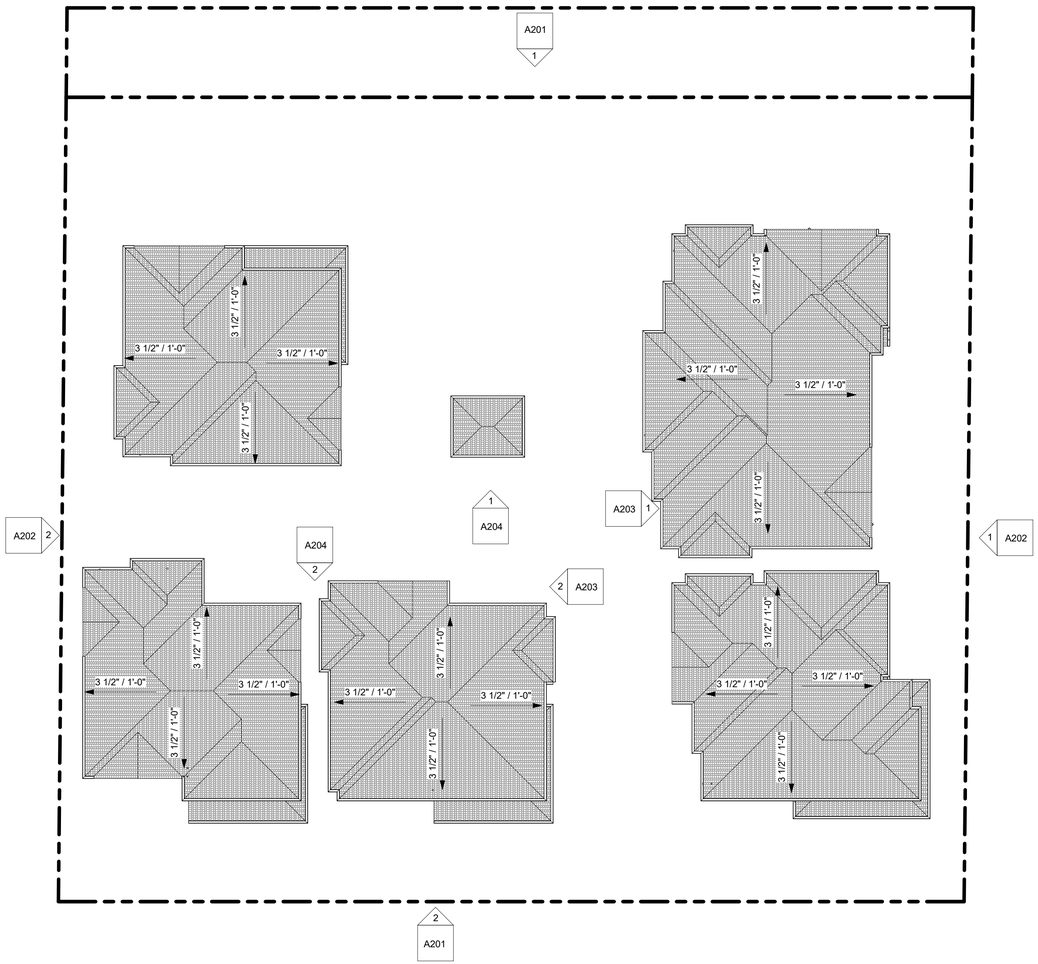
FLOOR PLAN - LEVEL 2

Drawing No. A101

Project number:	Date:	09/30/2025
22013	Scale:	1/16" = 1'-0"

9/30/2025 9:39:29 AM



1 ROOF PLAN
1/16" = 1'-0"

NOTE:
1. DIMENSIONS FOR WALLS INDICATED IN PROJECT SUMMARY AND ON PLANS ARE TO FACE OF STUDS, FROM FACE OF STUDS, AND/OR EDGE OF STUDS.
2. AREA INDICATED IN PROJECT SUMMARY AND ON PLANS ARE TO EXTERIOR FACE OF WALLS.

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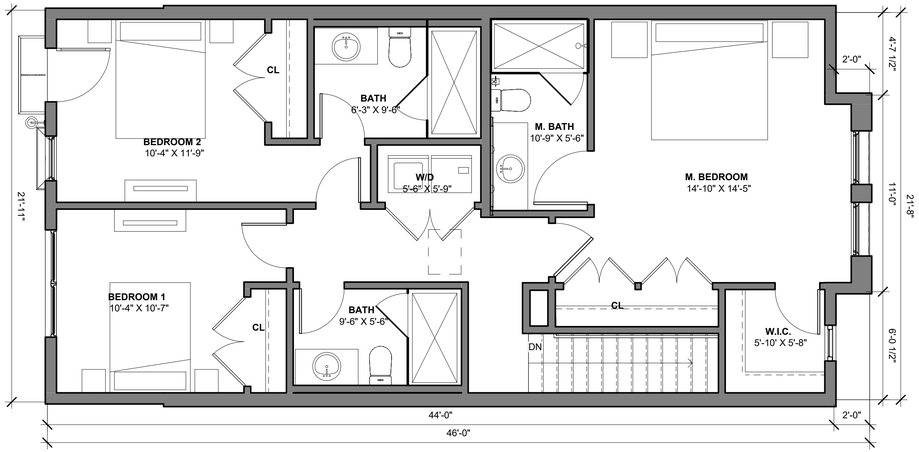
ROOF PLAN

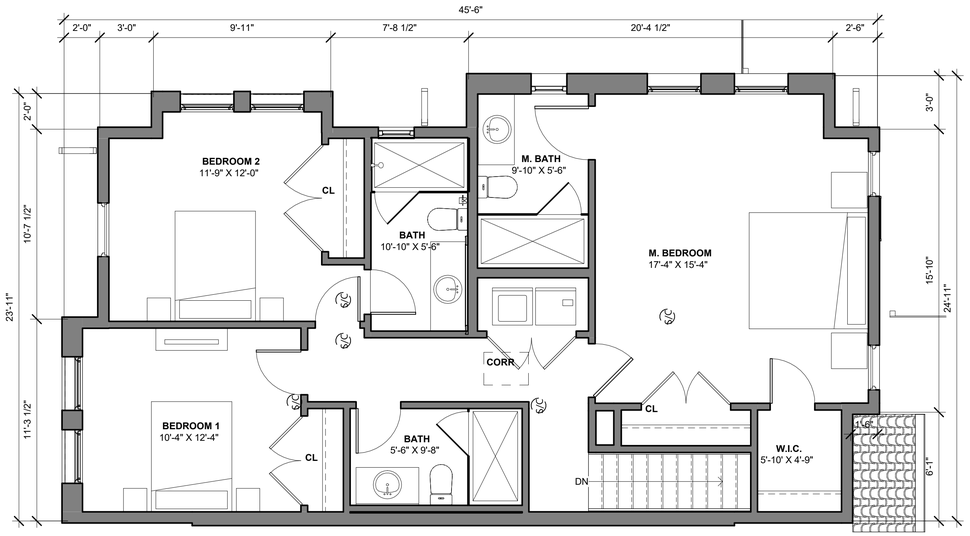
Drawing No. A102

Project number:	Date:	09/30/2025
22013	Scale:	1/16" = 1'-0"

9/30/2025 9:39:57 AM



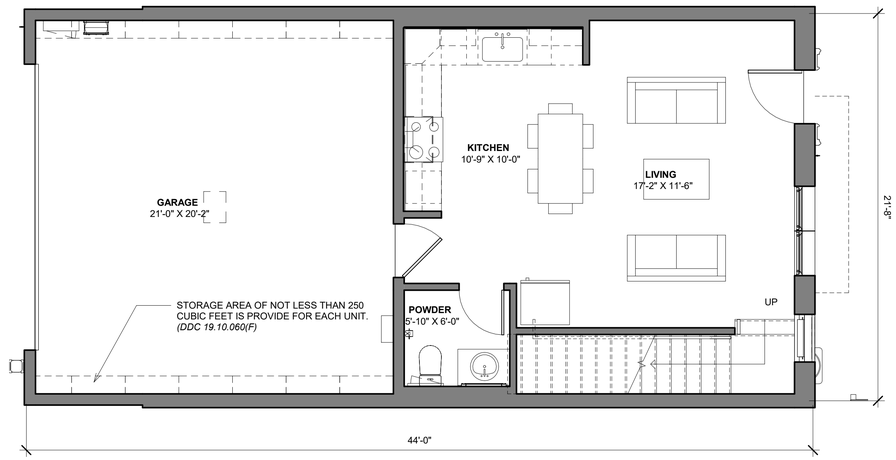
4 UNIT FLOOR PLAN A2 LV2
1/4" = 1'-0"



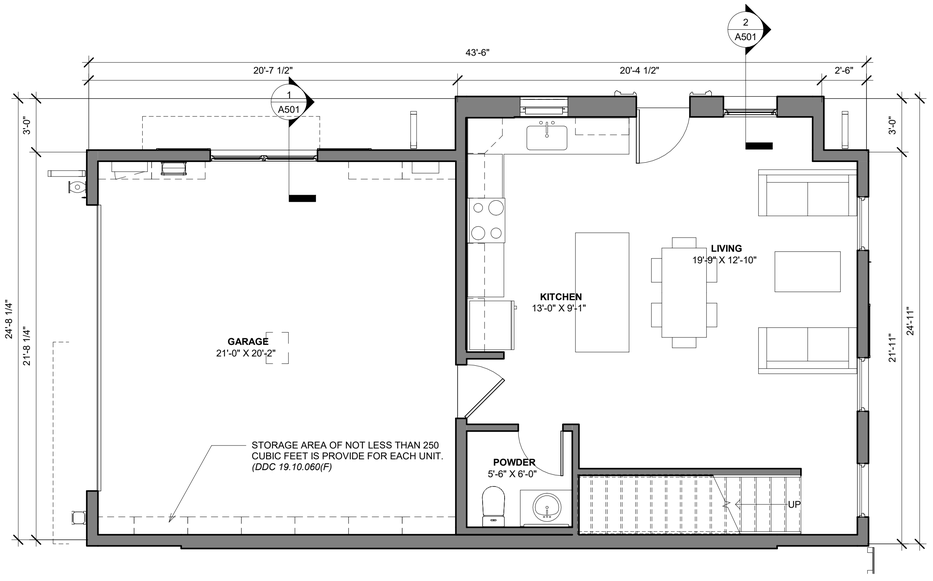
2 UNIT FLOOR PLAN A1 LV2
1/4" = 1'-0"

AREA SCHEDULE - TYPE A1	
NAME	AREA
LEVEL 1	520 SF
LEVEL 2	1,056 SF
LIVABLE	1,576 SF
GARAGE	459 SF
NON LIVABLE	459 SF
TOTAL AREA	2,035 SF

AREA SCHEDULE - TYPE A2	
NAME	AREA
LEVEL 1	467 SF
LEVEL 2	982 SF
LIVABLE	1,449 SF
GARAGE	455 SF
NON LIVABLE	455 SF
TOTAL AREA	1,904 SF



3 UNIT FLOOR PLAN A2 LV1
1/4" = 1'-0"



1 UNIT FLOOR PLAN A1 LV1
1/4" = 1'-0"

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UNIT PLAN - A1&A2

Drawing No. A111

Project number:	Date:	09/30/2025
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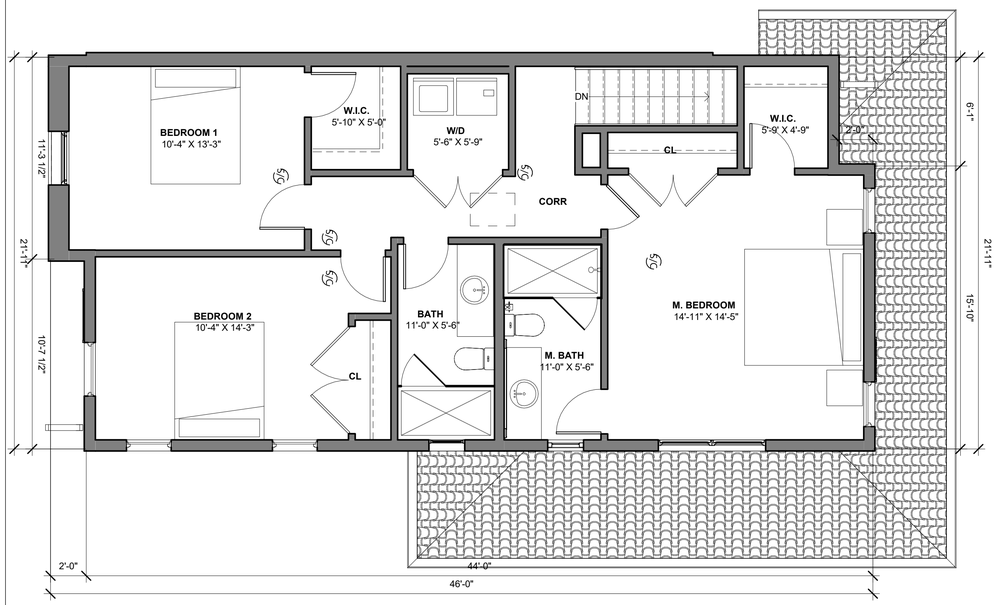
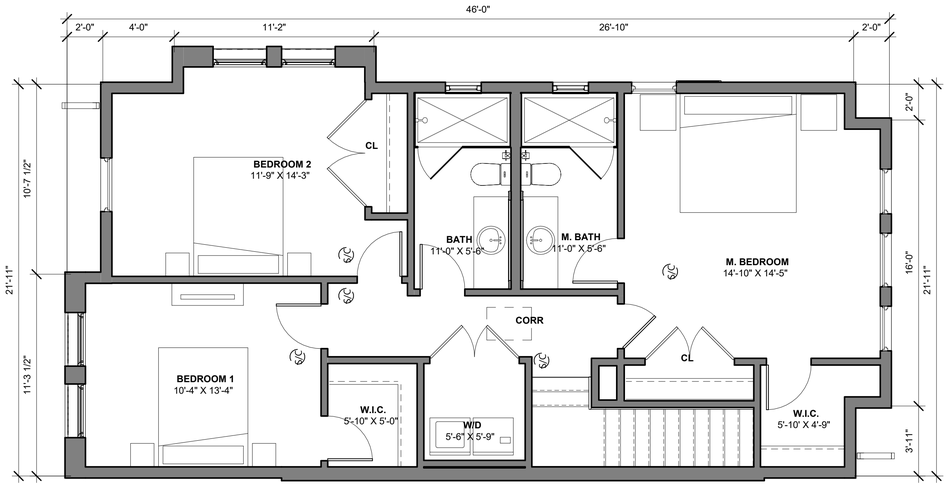
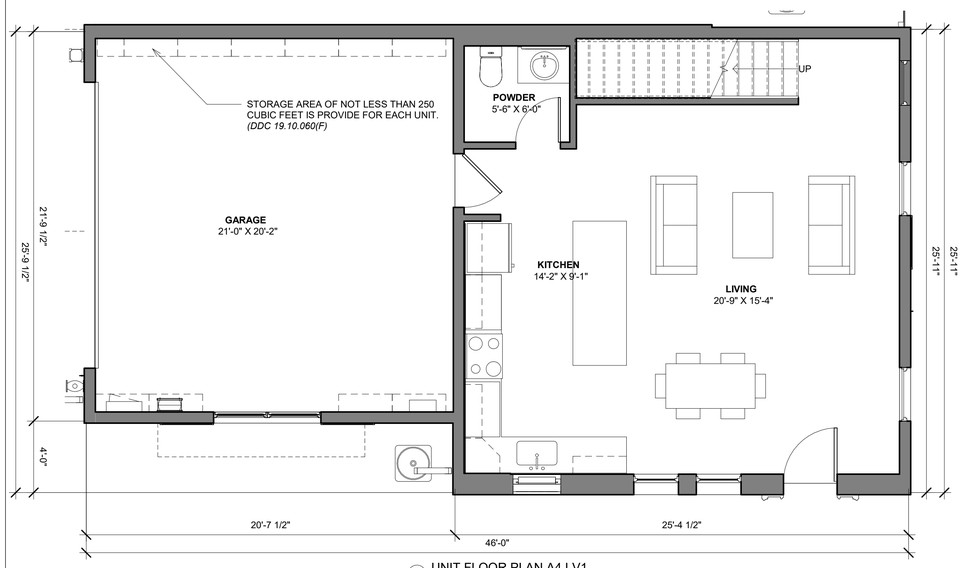


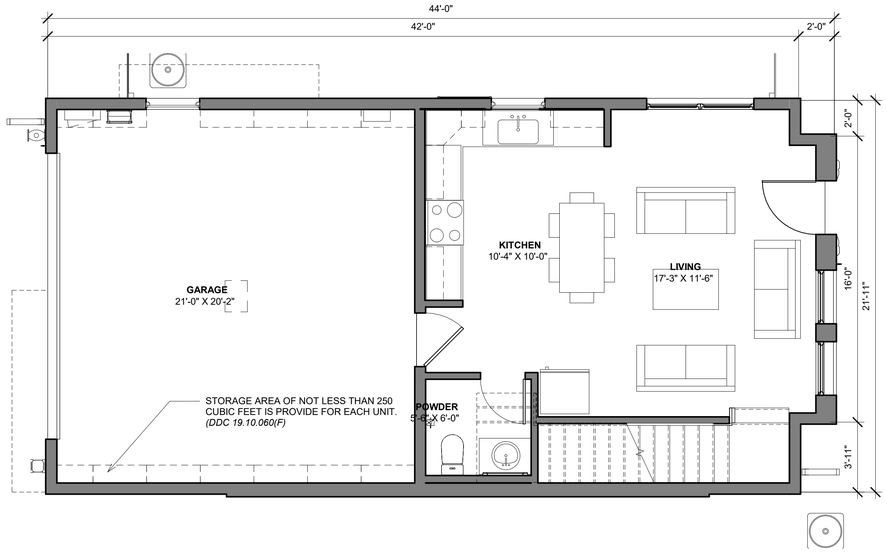
4 UNIT FLOOR PLAN A4 LV2
1/4" = 1'-0"



2 UNIT FLOOR PLAN A3 LV2
1/4" = 1'-0"



3 UNIT FLOOR PLAN A4 LV1
1/4" = 1'-0"



1 UNIT FLOOR PLAN A3 LV1
1/4" = 1'-0"

AREA SCHEDULE - TYPE A3	
NAME	AREA
LEVEL 1	466 SF
LEVEL 2	1,003 SF
LIVABLE	1,469 SF
GARAGE	459 SF
NON LIVABLE	459 SF
TOTAL AREA	1,927 SF

AREA SCHEDULE - TYPE A4	
NAME	AREA
LEVEL 1	612 SF
LEVEL 2	982 SF
LIVABLE	1,594 SF
GARAGE	459 SF
NON LIVABLE	459 SF
TOTAL AREA	2,053 SF

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No. C-31198
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UNIT PLAN - A3&A4

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Project number:	Date:	09/30/2025
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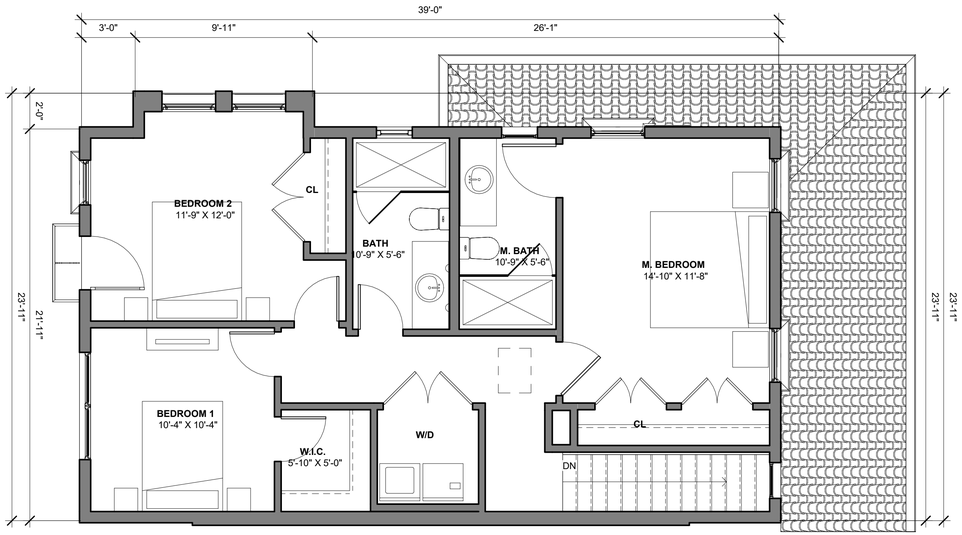
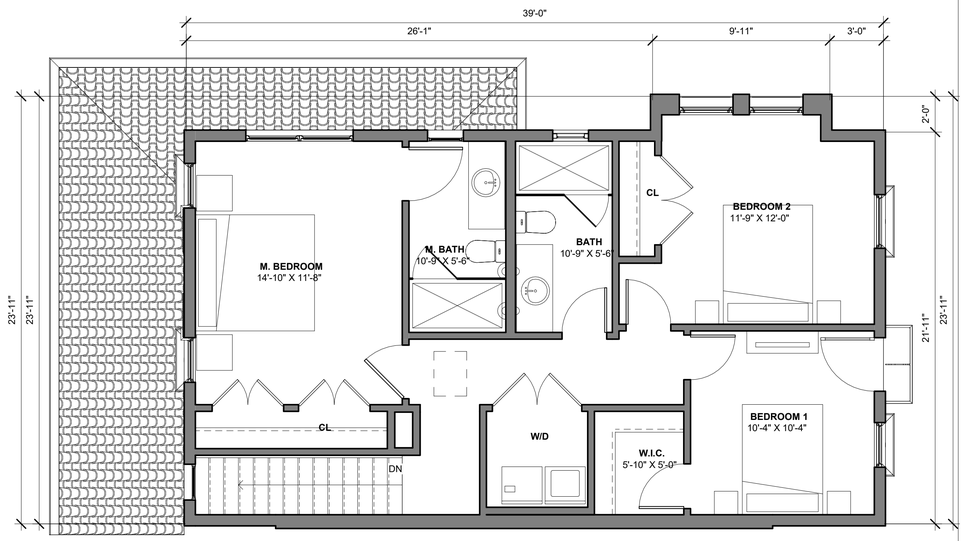
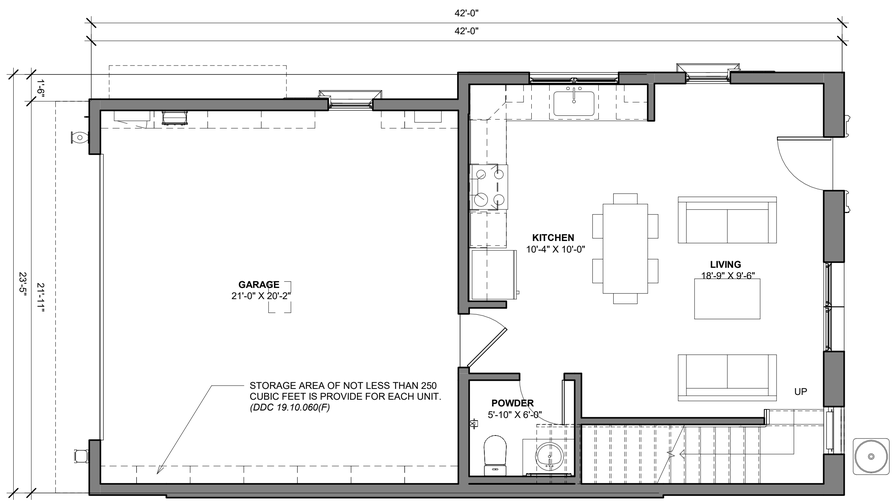


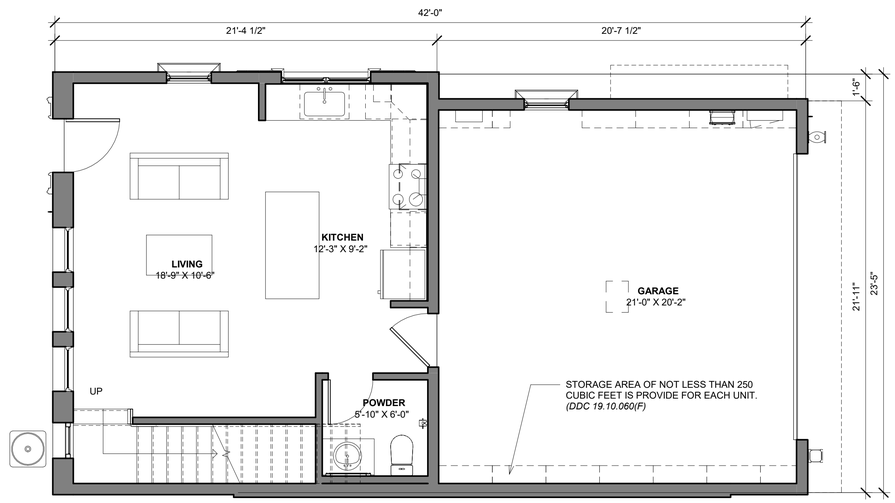
4 UNIT FLOOR PLAN A6 LV2
1/4" = 1'-0"



3 UNIT FLOOR PLAN A5 LV2
1/4" = 1'-0"



2 UNIT FLOOR PLAN A6 LV1
1/4" = 1'-0"



1 UNIT FLOOR PLAN A5 LV1
1/4" = 1'-0"

AREA SCHEDULE - TYPE A5	
NAME	AREA
LEVEL 1	468 SF
LEVEL 2	872 SF
LIVABLE	1,341 SF
GARAGE	459 SF
NON LIVABLE	459 SF
TOTAL AREA	1,800 SF

AREA SCHEDULE - TYPE A6	
NAME	AREA
LEVEL 1	471 SF
LEVEL 2	874 SF
LIVABLE	1,344 SF
GARAGE	459 SF
NON LIVABLE	459 SF
TOTAL AREA	1,804 SF

FXA
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LICENSED ARCHITECT
FENG XIAO
No. C-31198
Oct. 31, 2025
STATE OF CALIFORNIA

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ROYAL OAKS

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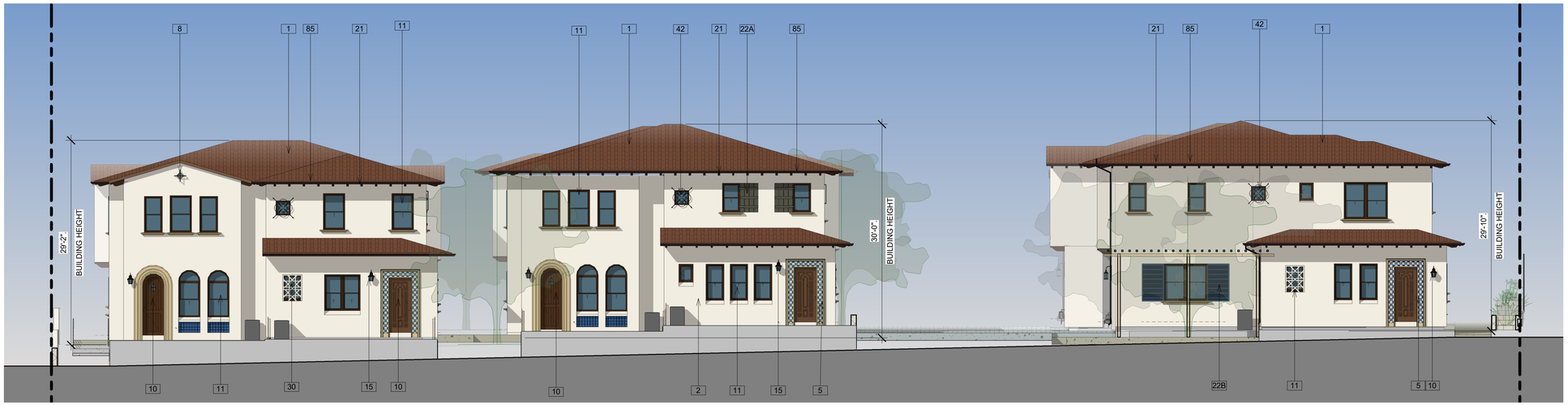
UNIT PLAN - A5&A6

Drawing No. A113

Project number:	Date: 09/30/2025
22013	Scale: 1/4" = 1'-0"

9/30/2025 9:40:06 AM

KEYNOTE LEGEND	
Key Value	Keynote Text
1	CONCRETE ROOF TILE, EAGLE ROOFING, CAPISTRANO BLENDS OF BLENDS, SMC 8820 50%/ SCC 8830 50% (ICC-ES ESR-1900), STANDARD TILES, APROX. INSTALLED WEIGHT 9 LB/SF.
2	STUCCO OMEGA SAND FINISH 20/30, BENJAMIN HC-27 MONTEREY WHITE
5	CERAMIC TILE DOOR TRIM
7	STUCCO RECESS
8	STUCCO VENT
10	PAINTED WOOD ENTRY DOOR
11	VINYL WINDOW AND FRENCH DOORS, MILGARD WINDOWS V300 TRINSIC SERIES, EXTERIOR COLOR BRONZE
15	MAIN ENTRY LIGHT FIXTURE, HINKLEY LIGHTING BROMLEY 2364MB
20	PAINTED STUCCO BRACKET, BENJAMIN MOORE, MIDDLEBURY BROWN, COLOR HC-68
21	PAINTED WOOD RAFTER TAIL
22A	PAINTED WOOD WINDOW SHUTTER, BENJAMIN MOORE MEDITERRANEAN OLIVE
22B	PAINTED WOOD WINDOW SHUTTER, BENJAMIN MOORE COLOR PREVIEW COLLECTION DEEP ROYAL 2061-10
30	STUCCO COVER GFRC GRILLS-4 SIDED FRAME, PACIFIC REGISTER COMPANY
42	WROUGHT IRON WINDOW COVER
85	DARK BRONZE PAINTED ALUMINUM GUTTER, BENJAMIN MOORE WILLIAMSBURG COLOR COLLECTION TARPLEY BROWN CW 170
86	3" DIAMETER DOWNSPOUT WITH LEADER HEAD



2 SOUTH ELEVATION - #5, 6, 7, 8, 9
1/8" = 1'-0"

1 NORTH ELEVATION - #1,10, 11
1/8" = 1'-0"

FENG XIAO ARCHITECT, INC.

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LICENSED ARCHITECT
FENG XIAO
No. C-31198
Oct. 31, 2025
STATE OF CALIFORNIA

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BUILDING ELEVATION

Drawing No. A201

Project number:	Date: 09/30/2025
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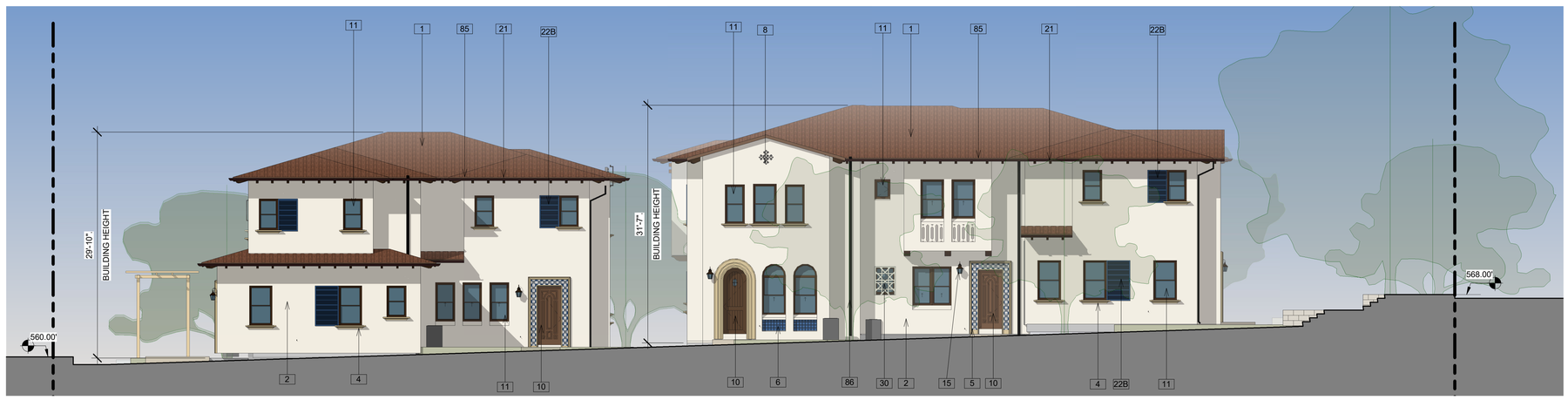
KEYNOTE LEGEND	
Key Value	Keynote Text
1	CONCRETE ROOF TILE, EAGLE ROOFING, CAPISTRANO BLENDS OF BLENDS, SMC 8820 50%/ SCC 8830 50% (ICC-ES ESR-1900), STANDARD TILES, APROX. INSTALLED WEIGHT 9 LB/SF.
2	STUCCO OMEGA SAND FINISH 20/30, BENJAMIN HC-27 MONTEREY WHITE
4	STUCCO DOOR TRIM, WINDOW SILL, BENJAMIN HC-27 MONTEREY WHITE
5	CERAMIC TILE DOOR TRIM
6	CERAMIC TILE RECESS
7	STUCCO RECESS
8	STUCCO VENT
10	PAINTED WOOD ENTRY DOOR
11	VINYL WINDOW AND FRENCH DOORS, MILGARD WINDOWS V300 TRINSIC SERIES, EXTERIOR COLOR BRONZE
15	MAIN ENTRY LIGHT FIXTURE, HINKLEY LIGHTING BROMLEY 2364MB
20	PAINTED STUCCO BRACKET, BENJAMIN MOORE, MIDDLEBURY BROWN, COLOR HC-68
21	PAINTED WOOD RAFTER TAIL
22B	PAINTED WOOD WINDOW SHUTTER, BENJAMIN MOORE COLOR PREVIEW COLLECTION DEEP ROYAL 2061-10
30	STUCCO COVER GFRC GRILLS-4 SIDED FRAME, PACIFIC REGISTER COMPANY
85	DARK BRONZE PAINTED ALUMINUM GUTTER, BENJAMIN MOORE WILLIAMSBURG COLOR COLLECTION TARPLEY BROWN CW 170
86	3" DIAMETER DOWNSPOUT WITH LEADER HEAD

2 WEST ELEVATION - #9-10
1/8" = 1'-0"



1 EAST ELEVATION - #1-6
1/8" = 1'-0"

FXA
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LICENSED ARCHITECT
FENG XIAO
No. C-31198
Oct. 31, 2025
STATE OF CALIFORNIA

PLANNING SUBMISSION 09/30/2025

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BUILDING ELEVATION

Drawing No. A202

Project number:	Date: 09/30/2025
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KEYNOTE LEGEND	
Key Value	Keynote Text
1	CONCRETE ROOF TILE, EAGLE ROOFING, CAPISTRANO BLENDS OF BLENDS, SMC 8820 50%/ SCC 8830 50% (ICC-ES ESR-1900), STANDARD TILES, APROX. INSTALLED WEIGHT 9 LB/SF.
2	STUCCO OMEGA SAND FINISH 20/30, BENJAMIN HC-27 MONTEREY WHITE
4	STUCCO DOOR TRIM, WINDOW SILL, BENJAMIN HC-27 MONTEREY WHITE
7	STUCCO RECESS
8	STUCCO VENT
11	VINYL WINDOW AND FRENCH DOORS, MILGARD WINDOWS V300 TRINSIC SERIES, EXTERIOR COLOR BRONZE
12	WOODGRAIN STEEL GARAGE DOOR, AMARR OAK SUMMIT, WALNUT FINISH BEAD BOARD DESIGN WITH DECORATIVE METALBLUE RIDGE 11" HANDLES AND 16" STRAP HINGE
20	PAINTED STUCCO BRACKET, BENJAMIN MOORE, MIDDLEBURY BROWN, COLOR HC-68
21	PAINTED WOOD RAFTER TAIL
22A	PAINTED WOOD WINDOW SHUTTER, BENJAMIN MOORE MEDITERRANEAN OLIVE
40	WROUGHT IRON FRENCH BALCONY
42	WROUGHT IRON WINDOW COVER
85	DARK BRONZE PAINTED ALUMINUM GUTTER, BENJAMIN MOORE WILLIAMSBURG COLOR COLLECTION TARPLEY BROWN CW 170
86	3" DIAMETER DOWNSPOUT WITH LEADER HEAD

2 EAST ELEVATION - #6 & 10
1/8" = 1'-0"

1 WEST ELEVATION - #1-6
1/8" = 1'-0"

FXA
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LICENSED ARCHITECT
FENG XIAO
No. C-31198
Oct. 31, 2025
STATE OF CALIFORNIA

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BUILDING ELEVATION

Drawing No. A203

Project number:	Date: 09/30/2025
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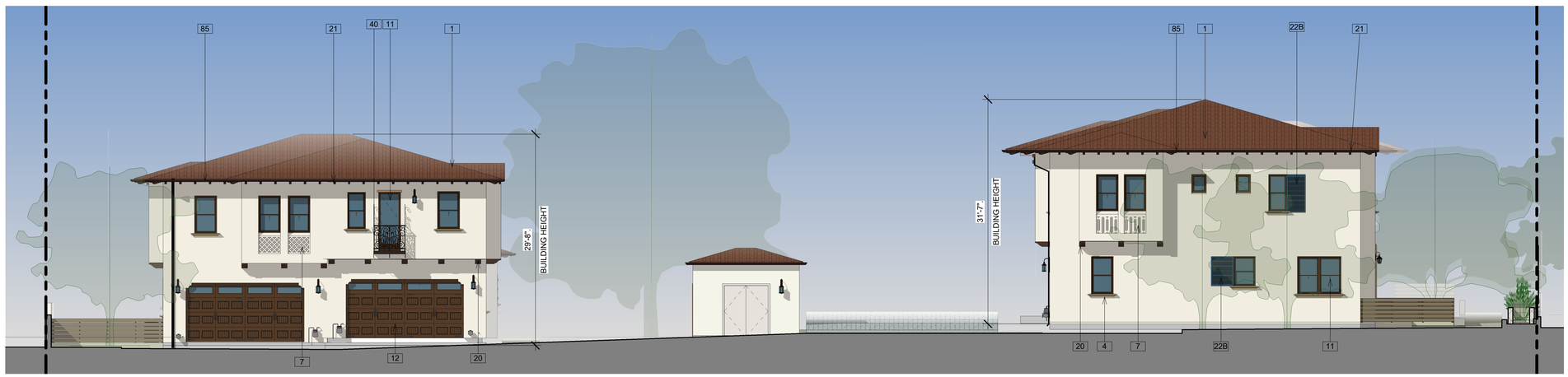
9/30/2025 9:41:27 AM

KEYNOTE LEGEND	
Key Value	Keynote Text
1	CONCRETE ROOF TILE, EAGLE ROOFING, CAPISTRANO BLENDS OF BLENDS, SMC 8820 50%/ SCC 8830 50% (ICC-ES ESR-1900), STANDARD TILES, APROX. INSTALLED WEIGHT 9 LB/SF.
2	STUCCO OMEGA SAND FINISH 20/30, BENJAMIN HC-27 MONTEREY WHITE
4	STUCCO DOOR TRIM, WINDOW SILL, BENJAMIN HC-27 MONTEREY WHITE
7	STUCCO RECESS
8	STUCCO VENT
11	VINYL WINDOW AND FRENCH DOORS, MILGARD WINDOWS V300 TRINSIC SERIES, EXTERIOR COLOR BRONZE
12	WOODGRAIN STEEL GARAGE DOOR, AMARR OAK SUMMIT, WALNUT FINISH BEAD BOARD DESIGN WITH DECORATIVE METALBLUE RIDGE 11" HANDLES AND 16" STRAP HINGE
20	PAINTED STUCCO BRACKET, BENJAMIN MOORE, MIDDLEBURY BROWN, COLOR HC-68
21	PAINTED WOOD RAFTER TAIL
22B	PAINTED WOOD WINDOW SHUTTER, BENJAMIN MOORE COLOR PREVIEW COLLECTION DEEP ROYAL 2061-10
40	WROUGHT IRON FRENCH BALCONY
85	DARK BRONZE PAINTED ALUMINUM GUTTER, BENJAMIN MOORE WILLIAMSBURG COLOR COLLECTION TARPLEY BROWN CW 170
86	3" DIAMETER DOWNSPOUT WITH LEADER HEAD

2 NORTH ELEVATION - #4, & #6-9
1/8" = 1'-0"



1 SOUTH ELEVATION - #3, &10-11
1/8" = 1'-0"

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LICENSED ARCHITECT
FENG XIAO
No. C-31198
Oct. 31, 2025
STATE OF CALIFORNIA

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BUILDING ELEVATION

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Project number:	Date:	09/30/2025
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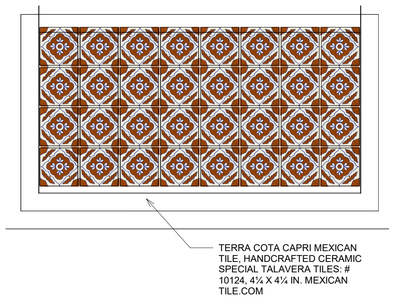
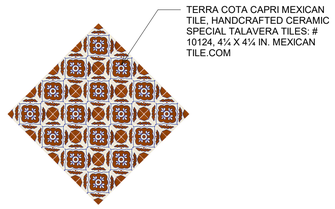
9/30/2025 9:41:51 AM

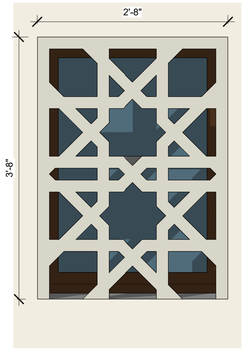
3 MAIN ENTRY DOOR 2 TRIM TILE
1 1/2" = 1'-0"



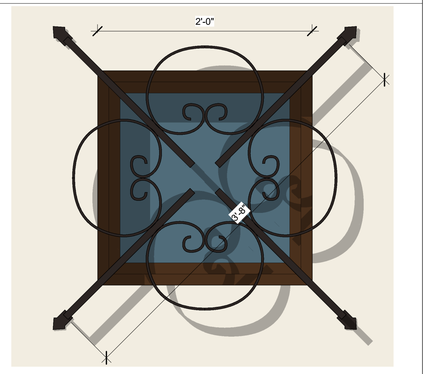
4 WINDOW RECESS TILE PATTERN
1 1/2" = 1'-0"



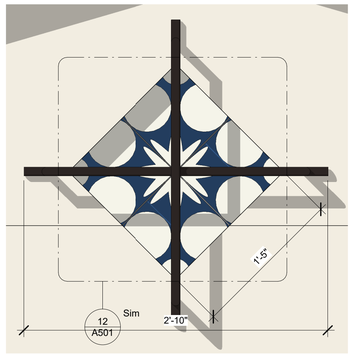
12 VENT TILE PATTERN
1 1/2" = 1'-0"



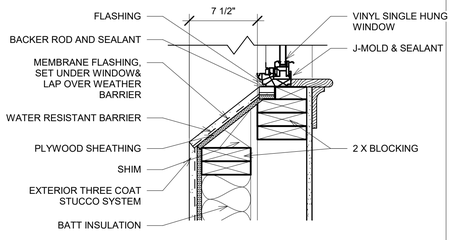
6 WINDOW COVER 1
1" = 1'-0"



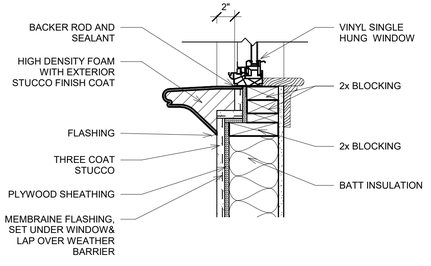
5 WROUGHT IRON WINDOW COVER
1 1/2" = 1'-0"



7 VENT WITH TILE AND WHROUGHT IRON
1 1/2" = 1'-0"



2 WINDOW SILL DETAIL @ DOUBLE WALL
1 1/2" = 1'-0"



1 WINDOW SILL DETAIL @ SINGLE WALL
1 1/2" = 1'-0"

FXA
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LICENSED ARCHITECT
FENG XIAO
No. C-31198
Oct. 31, 2025
STATE OF CALIFORNIA

PLANNING SUBMISSION 09/30/2025

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ROYAL OAKS

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DETAILS

Drawing No. A501

Project number:	Date: 09/30/2025
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1 3D View 1

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LICENSED ARCHITECT
FENG XIAO
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STATE OF CALIFORNIA

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3D VIEW

Drawing No. A901

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1 3D View 6

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FENG XIAO ARCHITECT, INC.

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LICENSED ARCHITECT
FENG XIAO
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3D VIEW

Drawing No. A902

Project number:	Date: 09/30/2025
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1 3D View 5

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LICENSED ARCHITECT
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3D VIEW

Drawing No. A903

Project number:	Date: 09/30/2025
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1 3D View 8

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FENG XIAO ARCHITECT, INC.

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No. C-31198
Oct. 31, 2025
STATE OF CALIFORNIA

PLANNING SUBMISSION 09/30/2025

NO.	DESCRIPTION	DATE

ROYAL OAKS

1404 & 1414 ROYAL OAKS DR,
DUARTE, CA 91010

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3D VIEW

Drawing No. A904

Project number:	Date: 09/30/2025
22013	Scale:

9/30/2025 9:45:31 AM

RESOLUTION NO. PC 25-14

A RESOLUTION OF THE PLANNING AND ECONOMIC DEVELOPMENT COMMISSION OF THE CITY OF DUARTE RECOMMENDING THAT THE DUARTE CITY COUNCIL CERTIFY THE INITIAL STUDY MITIGATED NEGATIVE DECLARATION TO REDUCE THE IDENTIFIED "POTENTIALLY SIGNIFICANT" IMPACTS TO A LEVEL OF "LESS THAN SIGNIFICANT" FOR AN 11-UNIT, OWNER-OCCUPIED, TWO-STORY TOWNHOME DEVELOPMENT LOCATED AT 1404 AND 1414 ROYAL OAKS DRIVE

WHEREAS, the Planning and Economic Development Commission of the City of Duarte has considered the Initial Study and Mitigated Negative Declaration ("MND") and Mitigation and Monitoring Program ("MMP") for the development of 11-unit owner-occupied, two-story townhome development on two parcels (APN 8530-004-059 and 8530-004-060) located at 1404 and 1414 Royal Oaks Drive; and

WHEREAS, the MND provides an assessment of the environmental impacts and mitigation measures associated with the project, provided in "Exhibit F-1", attached to this Resolution, and has been prepared in accordance with the California Environmental Quality Act, Public Resources Code Section 21000 *et seq.* (CEQA), and State regulations in Title 14 of the California Code of Regulations, Section 15000 *et seq.* (CEQA Guidelines); and

WHEREAS, the Planning and Economic Development Commission has considered the analysis and recommendation provided in the staff report, and all information, evidence and public testimony received at the public meeting held on November 17, 2025 at 7:00 p.m. in the City Council Chambers;

WHEREAS, notice of public hearing before the Planning and Economic Development Commission concerning the adequacy and completeness of the MND was given in accordance with the laws and policies of the City of Duarte; and

WHEREAS, the MND have been independently reviewed by the Planning and Economic Development Commission and reflects the independent judgment of the Planning and Economic Development Commission; and

WHEREAS, the Planning and Economic Development Commission has reviewed all documentation comprising the MND and has found that the MND addresses all environmental effects of the proposed project, with mitigation measures, and that the MND fully comply with all requirements of CEQA and the CEQA Guidelines relating thereto.

NOW, THEREFORE, the Planning and Economic Development Commission of the City of Duarte hereby resolves as follows:

SECTION 1. **RECITALS**

The facts, findings, determinations, and directions set forth in the Recitals of this Resolution are true and correct and incorporated herein by this reference.

SECTION 2: **FINDING OF COMPLIANCE**

The Planning and Economic Development Commission finds that the MND fully complies with the requirements of CEQA and the CEQA Guidelines relating thereto,

SECTION 3. **FINDING SUPPORTING APPROVAL OF INITIAL STUDY AND MITIGATED DECLARATION, AND ADOPTION OF THE MITIGATION AND MONITORING PROGRAM**

The Planning and Economic Development Commission has considered the potential environmental effects of the project as shown in the MND and, on the basis of the whole record, finds that there is no substantial evidence that the project will have a significant effect on the environment, with the implementation of the MMP. The foregoing determination, which reflects the independent analysis and independent judgment of the Planning and Economic Development Commission, is based on the information in the record.

SECTION 4. **RECOMMENDATION**

The Planning and Economic Development Commission recommends to the City Council of the City of Duarte that the MND be approved and adopted, in accordance with "Exhibit A" attached hereto and made a part of this Resolution; and that the MND be certified by the City, as lead agency for the proposed project.

APPROVED, AND ADOPTED by the Planning and Economic Development Commission of the City of Duarte at a regular meeting held on the 17th day of November, 2025.

_____

Yesenia Paez, Chairperson
City of Duarte Planning and Economic Development Commission

ATTEST:

_____

Craig Hensley, Community Development Director

STATE OF CALIFORNIA
COUNTY OF LOS ANGELES } ss.
CITY OF DUARTE

I, Craig Hensley, Community Development Director of the City of Duarte, do hereby certify that the foregoing Resolution was adopted at a regular meeting of the Planning and Economic Development Commission of the City of Duarte held on November 17, 2025, by the following vote:

AYES:
NOES:
ABSTAIN:
ABSENT:

_____
Craig Hensley, Community Development Director

Exhibit A

Mitigated Negative Declaration and Mitigation Monitoring Program attached hereto

1404 Royal Oaks Project

Public Review Draft
Initial Study/Mitigated Negative Declaration
September 2025

Prepared for:

City of Duarte
1600 Huntington Drive
Duarte, CA 91010

Prepared by:

De Novo Planning Group
180 E. Main Street, Suite 108
Tustin, CA 92780

De Novo Planning Group

A Land Use Planning, Design, and Environmental Firm

1404 ROYAL OAKS PROJECT

Public Review Draft

Initial Study/Mitigated Negative Declaration

LEAD AGENCY: CITY OF DUARTE
1600 Huntington Drive
Duarte, CA 91010
Contact: Scott Nash, Associate Planner
snash@cityofduarte.ca.gov

PREPARED BY: DE NOVO PLANNING GROUP
180 E. Main Street, Suite 108
Tustin, California 92780

September 2025

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1.0 INTRODUCTION

1.1 Statutory Authority and Requirements

This Initial Study has been prepared in accordance with the California Environmental Quality Act (CEQA) (California Public Resources Code [PRC] Sections 21000, et seq.) and the State CEQA Guidelines (14 California Code of Regulations Title 14 Sections 15000, et seq.). This Initial Study is an informational document intended to be used as a decision-making tool for the Lead Agency and responsible agencies in considering and acting on the proposed Project.

Pursuant to CEQA Guidelines Section 15063, the City, as Lead Agency, has prepared this Initial Study to determine if the proposed 1404 Royal Oaks Project (Project) would have a significant effect on the environment. If, as a result of findings in the Initial Study, the Lead Agency finds that there is evidence that mitigation cannot reduce the impact to a less than significant level for any aspect of the proposed Project, then the Lead Agency must prepare an Environmental Impact Report (EIR) to analyze project-related and cumulative environmental impacts. Alternatively, if the Lead Agency finds that there is no evidence that the Project as proposed may cause a significant effect on the environment, the Lead Agency may prepare a Negative Declaration (ND). If the Lead Agency finds that there is evidence of a significant impact, but the impact can be reduced through mitigation, the Lead Agency may prepare a Mitigated Negative Declaration (MND). Such a determination can be made only if "there is no substantial evidence in light of the whole record before the Lead Agency" that such significant environmental impacts may occur (PRC Section 21080(c)).

Pursuant to CEQA Guidelines Section 15063(c), the purposes of an Initial Study are to:

1. Provide the Lead Agency with information to use as the basis for deciding whether to prepare an EIR, MND or an ND;
2. Enable an applicant or Lead Agency to modify a project, mitigating adverse impacts before an EIR is prepared, thereby enabling the project to qualify for an MND or ND;
3. Assist in the preparation of an EIR, if one is required, by;
    a. Focusing the EIR on the effects determined to be significant,
    b. Identifying the effects determined not to be significant,
    c. Explaining the reasons for determining that potentially significant effects would not be significant, and
    d. Identifying whether a program EIR, tiering, or another appropriate process can be used for analysis of the project's environment effects.
4. Facilitate environmental assessment early in the design of a project;
5. Provide documentation of the factual basis for the finding in an MND or ND that a project will not have a significant effect on the environment;
6. Eliminate unnecessary EIRs; and
7. Determine whether a previously prepared EIR could be used with the project.

The environmental documentation, which is ultimately selected by the City in accordance with CEQA, is intended as an informational document undertaken to provide an environmental basis for subsequent discretionary actions for the proposed Project. The resulting environmental documentation is not, however, a policy document and its approval and/or certification neither presupposes nor mandates any actions on the part of those agencies from which permits, and other discretionary approvals, would be required.

1.2 Summary of Findings

Pursuant to State CEQA Guidelines Section 15367, the City of Duarte (City), as the Lead Agency, has the authority for environmental review and adoption of the environmental documentation, in accordance with CEQA. As set forth in State CEQA Guidelines Section 15070, an Initial Study leading to a Negative Declaration (IS/ND), or Mitigated Negative Declaration (IS/MND) can be prepared when:

- The Initial Study shows that there is no substantial evidence, in light of the whole record before the agency, that the project may have a significant effect on the environment (resulting in a Negative Declaration), or

- The Initial Study identifies potentially significant effects, but:
    - Revisions in the project plans or proposals made by, or agreed to by the applicant before a proposed mitigated negative declaration and initial study are released for public review would avoid the effects or mitigate the effects to a point where clearly no significant effects would occur, and
    - There is no substantial evidence, in light of the whole record before the agency, that the project as revised may have a significant effect on the environment (resulting in a Mitigated Negative Declaration).

Based on the Environmental Checklist Form and supporting environmental analysis provided in Section 4.0, *Environmental Analysis*, the proposed Project would have no impact or a less than significant impact concerning all environmental issue areas, except the following, for which the Project would have a less than significant impact with mitigation incorporated:

- Biological Resources
- Cultural Resources
- Geology and Soils
- Tribal Cultural Resources

1.3 Public Review Process

The Notice of Intent (NOI) to Adopt a Mitigated Negative Declaration has been provided to the Clerk of the County of Los Angeles and mailed to responsible agencies and trustee agencies concerned with the Project and other public agencies with jurisdiction by law over resources affected by the Project. A 30-day public review period has been established for the IS/MND in accordance with State CEQA Guidelines Section 15073. During the public review period, the IS/MND, including the technical appendices, was made available for review at the following location:

- City of Duarte, Community Development Department, 1600 Huntington Drive, Duarte, CA 91010
- City of Duarte Website: https://www.accessduarte.com/government/departments/community-development/development-projects-plans

In reviewing the IS/MND, affected public agencies and interested members of the public should focus on the document's adequacy in identifying and analyzing the potential environmental impacts and the ways in which the Project's potentially significant effects can be avoided or mitigated.

Written comments on this IS/MND may be sent to:

Scott Nash
Associate Planner
City of Duarte, Community Development Department
1600 Huntington Drive
Duarte, CA 91010
Email: snash@cityofduarte.ca.gov

Following receipt and evaluation of comments from agencies, organizations, and/or individuals, the City will determine whether any substantial new environmental issues have been raised, and if further documentation may be required. If no new environmental issues have been raised or if the issues raised do not provide substantial evidence that the Project would have a significant effect on the environment, the IS/MND will be considered for adoption and the Project for approval.

1.4 Incorporation by Reference

Pursuant to State CEQA Guidelines Section 15150, a MND may incorporate by reference all or portions of another document which is a matter of public record or is generally available to the public. Where all or part of another document is incorporated by reference, the incorporated language shall be considered to be set forth in full as part of the MND's text.

The references outlined below were utilized during preparation of this Initial Study. Copies of these documents are available for review on the City's website (https://www.accessduarte.com/home/) unless otherwise noted.

City of Duarte Comprehensive General Plan, adopted August 14, 2007. The City adopted the *City of Duarte Comprehensive General Plan* (General Plan) in August 2007. Subsequently, the Land Use Element was updated in March 2018, and the Safety Element was updated August 2021. In January 2022, the City also updated a number of policies in the Safety Element, Open Space and Conservation, Noise, Land Use, Housing, Economic Development, and Circulation Elements to address Environmental Justice. The 2021-2029 Housing Element was adopted in January 2022 and found to be in compliance by the Department of Housing and Community Development in February 2022. The Duarte General Plan is comprised of the following Elements and Plans:

- Safety Element
- Open Space and Conservation Element
- Noise Element
- Land Use Element
- Housing Element
- Historic Preservation Element
- Economic Development Element
- Circulation Element

The General Plan constitutes the City's overall plans, goals, and objectives for land use within the City's jurisdiction. It evaluates the existing conditions and provides long-term goals and policies necessary to

guide growth and development in the direction that the community desires. Through its goals, objectives, and policies, the General Plan serves as a decision-making tool to guide future growth and development decisions.

City of Duarte General Plan Update Final Environmental Impact Report, SCH No. 2007031064, August 2007. The *City of Duarte General Plan Update Final Environmental Impact Report* (General Plan EIR) analyzed the potential environmental impacts that would result from implementation of the Duarte General Plan. The General Plan EIR analyzed environmental impacts resulting from a forecasted 7,702 dwelling units, 9,887,731 square feet of nonresidential land uses, 11,945 jobs, and a resulting population of 25,418 persons by 2020.[1]

Since certification of the General Plan EIR, the SCAG RHNA Allocation Plan sixth cycle, which was adopted in 2022, indicates that between 2021 and 2029, the City will need to accommodate development of 888 dwelling units. The 2021-2029 Housing Element concluded adequate development capacity remained for the City to meet the RHNA allocation for the 2021-2029 planning period. On January 11, 2022, the City Council adopted the 2021-2029 Housing Element and the supporting IS/ND.

Duarte Municipal Code. The Duarte Municipal Code regulates municipal affairs within the City's jurisdiction including, without limitation, zoning regulations (codified in Duarte Municipal Code Title 19, *Development Code*). The Municipal Code is the primary method used for implementing the General Plan's goals, objectives, and policies. The Duarte Development Code (Title 19, *Development Code*) specifies the rules and regulations for construction, alteration, and building of structures within the City.

1.5 Report Organization

This document is organized into the following sections:

Section 1.0, *Introduction*, provides the CEQA Statute and Guidelines applicable to the Initial Study, summarizes the findings of the Initial Study, describes the public review process, and identifies documents incorporated by reference as part of the Initial Study.

Section 2.0, *Project Description*, provides a detailed description of the proposed Project, including Project location, environmental setting, Project characteristics, construction program and phasing, and requested entitlement, permits and approvals.

Section 3.0, *Environmental Checklist Form*, provides Project background information and a summary of environmental factors potentially affected by the proposed Project and the Lead Agency Determination based on the analysis and impact determinations provided in Section 4.0. The impact evaluation criteria utilized in Section 4.0 is also provided.

Section 4.0, *Environmental Analysis*, provides a detailed analysis of the environmental impacts identified in the environmental checklist, and identifies mitigation measures, if necessary.

Section 5.0, *References*, identifies the information sources utilized in preparation of the IS to support the environmental analysis.

[1] RBF Consulting, *City of Duarte General Plan Update Final Environmental Impact Report,* August 2007. Table 3-2.

2.0 PROJECT DESCRIPTION

2.1 Project Location

The 1404 Royal Oaks Project (Project) site is located in the City of Duarte within the County of Los Angeles; refer to Exhibit 2-1, *Regional Vicinity*. The Project site consists of two parcels (APNs 8530-004-059 and -060) totaling approximately 0.84-acre, located at 1404 and 1414 Royal Oaks Drive; refer to Exhibit 2-2, *Project Location*.

Regional access to the site is provided via Interstate 210 (I-210), located south of the Project site. Local access to the Project site is provided from Royal Oaks Drive.

2.2 Existing Setting

On-Site Land Uses

The Project site consists of a relatively flat rectangular shaped property with elevation ranging from approximately 550 to 560 feet above mean sea level. The Project site is currently developed with two single-family residences totaling approximately 4,400 square feet and two detached structures totaling approximately 1,000 feet. Landscaping, consisting of grass, trees, and bushes adorn the interior of the site. Three mature Coast Live Oaks (*Quercus agrifolia*) are located within the northwestern, northern-central, and southwestern portions of the Project site. A wooden pergola is located within the southwestern portion of the site. A concrete pad is located just east of the pergola. A chain-link fence encloses the site on all sides. The Project site is accessed from two driveways on Royal Oaks Drive. Both driveways are secured with a chain-link sliding gate. A sidewalk is located along the northern site frontage on Royal Oaks Drive. Two wooden electrical utility poles are located in the northwestern and northeastern corners of the site, along the northern site frontage.

General Plan and Zoning

The Project site has a General Plan land use designation of Low Density Residential. This designation allows a maximum density of six units per net acre. Because of the size of the parcels and development standards, the anticipated density for properties in this designation is six detached single-family units per acre depending on the zoning district in which the property is located.

The Project site is located in the R-1 Single Family Residential (R-1) zone, which has a 6,500 square foot minimum lot size.[2] The R-1 zones are established to provide areas for the development and preservation of residential subdivisions consisting of detached residences and accessory uses compatible with the residential use of the zone.

Surrounding Uses

Uses surrounding the Project site include:

- North: The Project site is bounded on the north by Royal Oaks Drive. North of Royal Oaks Drive is a landscaped parkway, and the Donald and Bernice Watson Recreation Trail (aka Duarte Bike Trail)

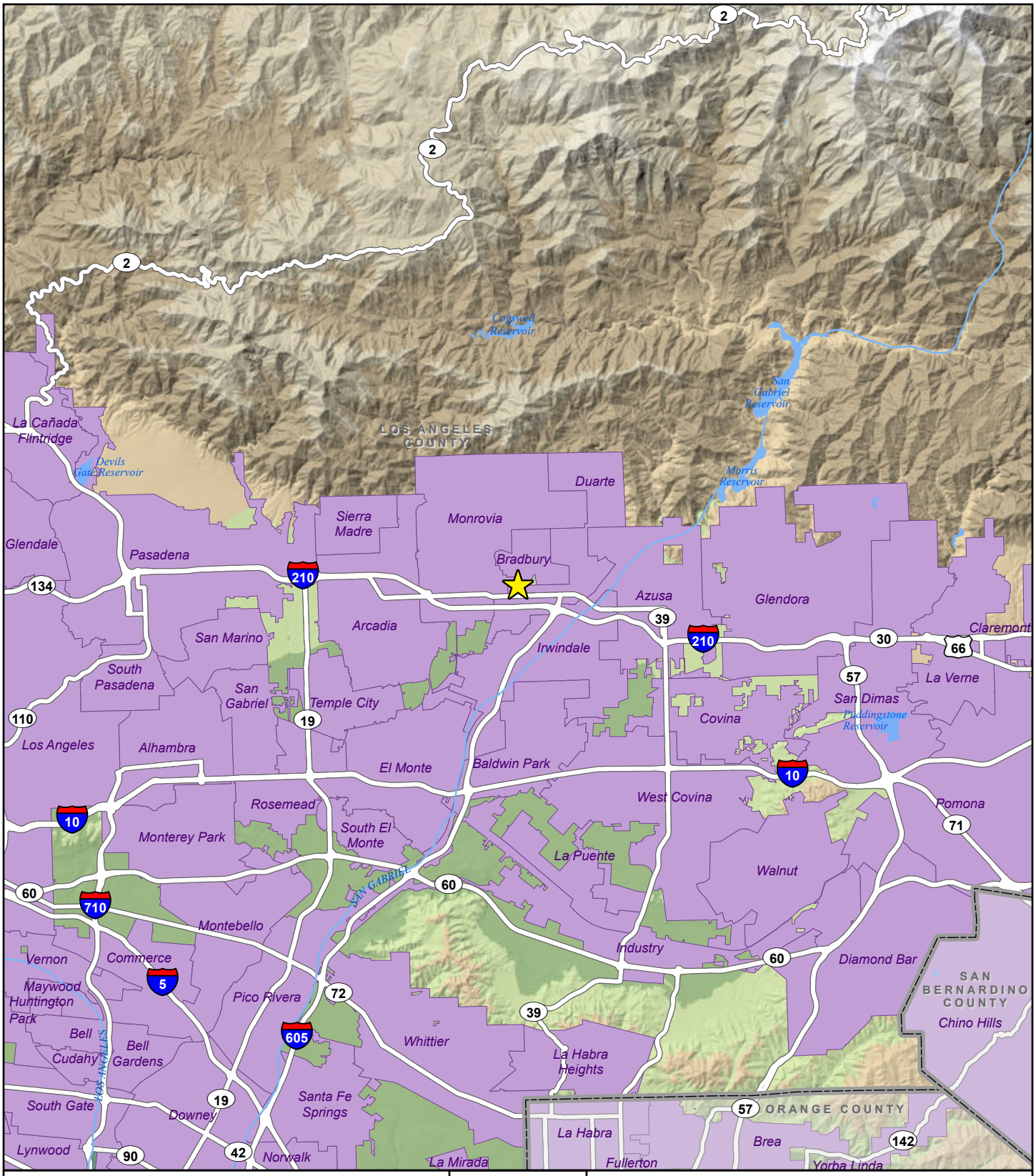
[2] There are six single-family (R-1) residential zones that provide a variety of living environments based upon the required minimum net lot size.

located in the City of Duarte, followed by single-family residential uses located in the City of Bradbury. The landscaped parkway and bike trail is zoned Open Space (O) by the City of Duarte and the residential uses are zoned A-1 Agriculture Residential Estate by the City of Bradbury.

- East: Directly east of the Project site is a single-family residential use, followed by (from west to east) multi-family residential uses, a church (The Church of Jesus Christ of Latter-day Saints), Cotter Avenue, and single-family residential uses. The single-family residential uses and church are zoned R-1, and the multi-family residential uses are zoned R-3 Multiple Family Residential Medium Density (R-3).

- South: South of the Project site are multi-family residential uses, followed by mixed-use commercial and multi-family residential uses and Huntington Drive. The multi-family residential uses are zoned R-3, and the mixed-use commercial and multi-family residential uses are zoned Specific Plan (SP).

- West: Directly west of the Project site are multi-family residential uses and Junipero Drive, followed by a health care facility (Monte Vista Healthcare Center). The multi-family residential uses are zoned (from east to west) R-3 and R-4 Multiple Family Residential High Density (R-4) and the health care facility is zoned Hospital (H).



LEGEND

- Project Location
- Incorporated Area
- County Boundary

N

0 1 2

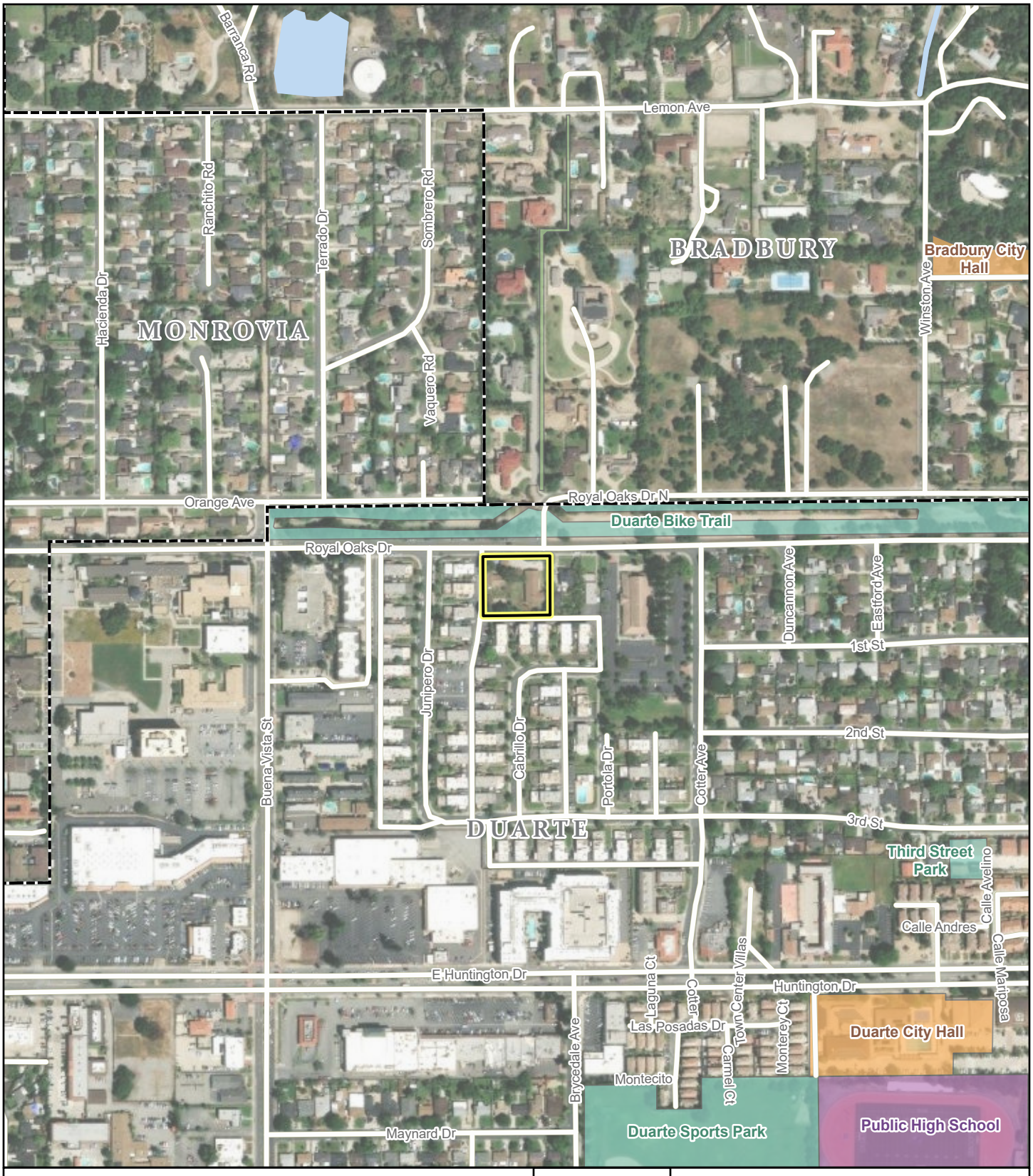
Miles

Sources: Los Angeles County GIS; California State Geoportal. Map date: February 18, 2025.

1404 ROYAL OAKS PROJECT

Exhibit 2-1. Regional Vicinity

De Novo Planning Group
A Land Use Planning, Design, and Environmental Firm



LEGEND

- Project Site
- City Boundaries
- City Halls
- Public High Schools
- Natural Areas & Wildlife Sanctuaries
- Regional Parks & Gardens

N

0 100 200

US Feet

Sources: ArcGIS Map Service; Los Angeles County GIS. Map date: February 18, 2025.

1404 ROYAL OAKS PROJECT

Exhibit 2-2. Project Location

De Novo Planning Group
A Land Use Planning, Design, and Environmental Firm

2.3 Project Characteristics

The Project Applicant requests approval of the proposed 1404 Royal Oaks Project. The Project would require approval of a General Plan Amendment, Zone Change, Tract Map, Site Plan and Design Review to allow development of 11 residential townhome units, as further described below.

Proposed Residential Development

The Project proposes to remove existing on-site improvements, with the exception of two of the three mature Coast Live Oak trees which would be protected in place, and construct 11 two-story attached townhomes in five buildings; refer to Exhibit 2-3, *Proposed Site Plan*.

Each building would contain two to three dwelling units and have a maximum height of 31 feet, seven inches. Each townhome would consist of three bedrooms and range in size from 1,341 to 1,594 square feet. Each townhome includes an attached garage and private outdoor patio yard.

The Project proposes a six-foot high wall along the eastern perimeter of the site and a low wall with railing fence on top along the southern perimeter of the site that would extend north along the southern portion of the site's western perimeter. A retaining wall with an approximately five-foot high railing or fence on top of the wall would extend along the central-to-southern portion of the site's western perimeter. A concrete masonry unit (CMU) block wall would then extend along the patio yard of the northwestern-most unit. A picket or wood fence would extend from the CMU wall to the northern property line adjacent to the existing oak tree to remain onsite. Slope or small retaining walls would be located within the northern portion of the site along the street edge; refer to Exhibit 2-3.

Site Access and Parking

Similar to existing conditions, vehicular access to the Project site would be provided from Royal Oaks Drive via a driveway along the northern property line. The existing northeastern driveway would be reconstructed to a 26-foot-wide driveway approach and a new 24- to 26-foot-wide interior driveway system would provide access to the individual townhome units; refer to Exhibit 2-3. The existing driveway along the northwestern portion of the site would be closed and new curbs and sidewalk would be constructed.

Pedestrian access to the Project site would be provided from Royal Oaks Drive. The Project proposes an interior pedestrian walkway system that would provide access to each townhome unit.

The Project proposes attached two car garages for each of the 11 townhome units, for a total of 22 enclosed spaces. An additional six parking spaces, including one accessible space, would be provided within the central, eastern, and southern portions of the site.

Architecture, Landscaping, and Amenities

The Project proposes 11 two-story attached townhomes, with six floor plans across five buildings. The buildings would have a maximum building height of 31 feet, seven inches to the top of the roof; refer to Exhibit 2-4a to Exhibit 2-4d, *Exterior Elevations*. The buildings would primarily be stucco with concrete tile roofing, vinyl windows, steel garage doors, and decorative elements such as stucco vents and recesses, ceramic tile door trim, wrought iron window covers and French balconies, and painted wood window shutters. The Project proposes a cohesive architectural design with slightly different, but complimentary decorative elements for each building to provide visual interest and reduce monotony.

Landscaping would be provided throughout the site; refer to Exhibit 2-5, *Conceptual Landscape Plan*. A variety of trees, shrubs, and ground cover would be provided along the perimeter of the site, adjacent to and between the residential buildings, and along the proposed interior walkways. Two of the three existing mature Coast Live Oaks, located within the northwestern and northern-central portions of the Project site, would be protected in place. The existing Coast Live Oak located within the southwestern portion of the site would be removed. Decorative pavers would be provided at the site's primary entry.

Approximately 6,306 square feet of open space is proposed, including 3,494 square feet within private patio yards and 2,811 square feet within common open space areas. Fence/railing (42-inches) would be provided around private patio yards with landscape plantings in front. Retaining walls with private patio railing fence on top and hedges in front would be located along the units within the southern portion of the property. A low retaining wall with railing on top and spilling vines would be located at the parking spaces within the southern portion of the property.

Three common open space lawn areas, sunken from the street, would be provided within the northern portion of the site. A native oak garden with decomposed granite and/or river cobble would be provided around both existing oak trees. A lawn area and seating would also be provided around the existing oak tree within the northern-central portion of the Project site. A barbeque area and shade pergola are proposed within the southern portion of the site. A trash enclosure area would be provided in the central portion of the site, and a common mailbox area would be provided within the western portion of the site along the northern property line.

Infrastructure and Public Services

Water

The Project proposes to install a new 8-inch water main within the Project site that would connect to the existing 8-inch water main within Royal Oaks Drive.

Wastewater

The Project proposes to install a new 8-inch sewer main within the Project site that would connect to the existing 8-inch sewer main just south of the Project site.

Stormwater

The Project proposes to install an on-site storm drain and underground infiltration chambers system for stormwater capture/retention. A series of area drains and catch basins would collect and convey on-site stormwater to three underground infiltration chambers. The chamber systems would provide an overflow pipe to allow stormwater discharges, in the event of subsoil saturation, to the downstream existing alley concrete gutter system, eventually discharging into the public storm drain system located south of the Project site. Refer to Section 4.10, *Hydrology and Water Quality*, for additional information regarding operation of the proposed stormwater system.

Dry Utilities

Dry utilities, including electricity, natural gas, and cable lines currently serve uses within the surrounding area. As part of the Project, necessary infrastructure would be installed on-site to serve the proposed development, which would connect to existing infrastructure for service.

Project Construction and Phasing

The proposed residential development would include on-site grading of approximately 960 cubic-yards of cut and 760 cubic-yards of fill. Construction is anticipated to occur in one phase. The estimated start date of construction is autumn of 2025, and it is estimated to take 24 months. Construction activities would include site preparation, grading, building construction, and paving, architectural coating, and landscaping.

Requested Entitlements

The Project requests approval of the following entitlements:

- General Plan Amendment to change the General Plan land use designation of the site to Medium Density Residential;
- Zone Change to change the zoning of the site to R-3 Multiple Family Residential Medium Density;
- Tentative Tract Map (Tract Map No. 084375) to create a subdivision for condominium purposes; and
- Site Plan and Design Review to approve the proposed Site Plan.

2.4 Permits and Approvals

The City of Duarte, as the Lead Agency, has discretionary authority over the proposed Project. Other agencies in addition to the City of Duarte are expected to use this IS/MND in their decision-making process. To implement the proposed Project, at a minimum, the following discretionary permits/approvals must be granted by the City and others:

- General Plan Amendment (GPA);
- Zone Change (ZC);
- Tentative Tract Map (TTM);
- Site Plan and Design Review; and
- Los Angeles Regional Water Quality Control Board – National Pollutant Discharge Elimination System (NPDES) Compliance/Low Impact Development (LID) approvals.

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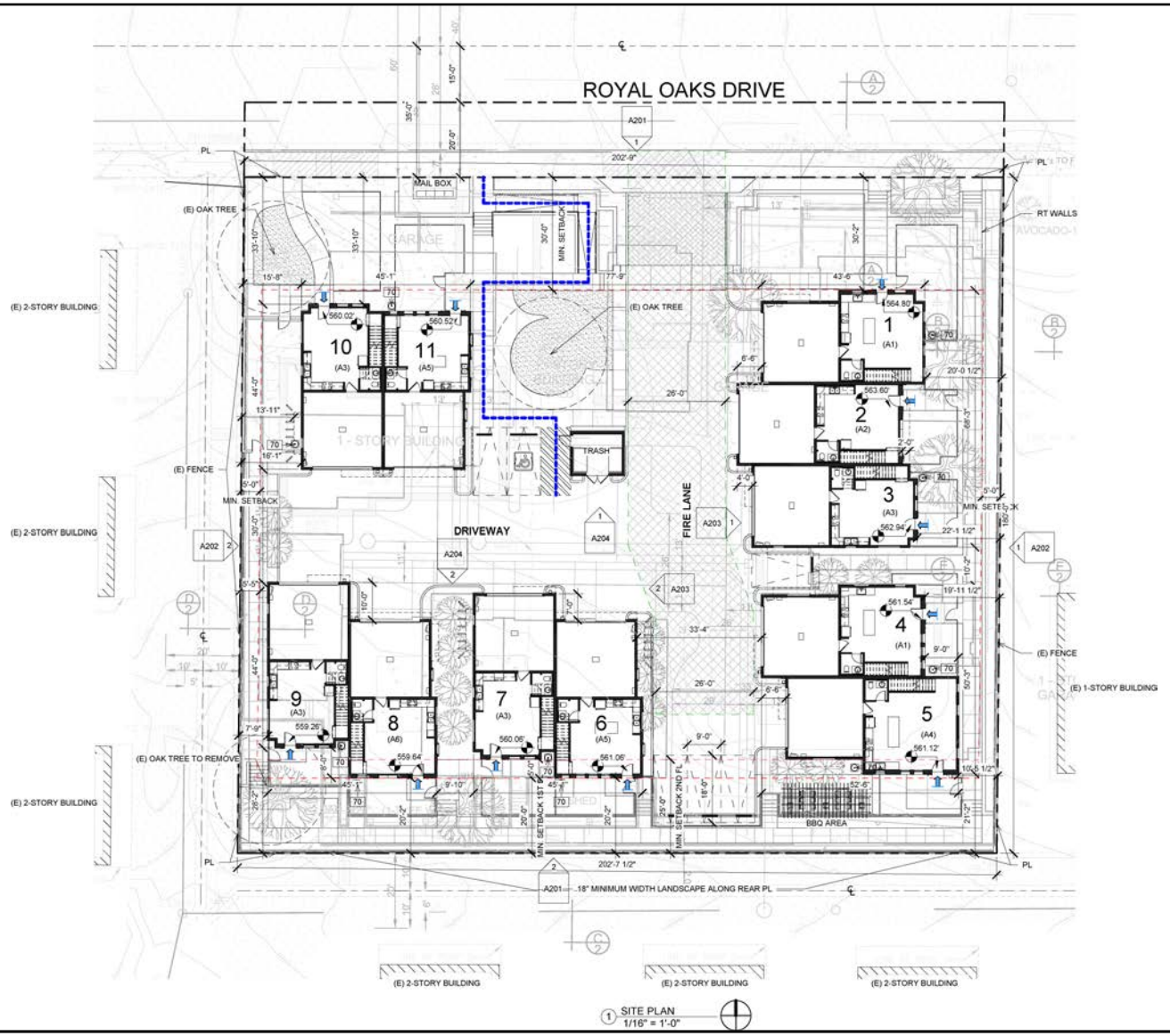


1 SITE PLAN
1/16" = 1'-0"

LEGENDS

FIRE LANE

ACCESSIBLE PATH

MINIMUM SETBACK

UNIT MAIN ENTRY

R 15'-0"

EXISTING OAK TREES AND PROTECTION DISTANCE

KEYNOTE LEGEND	
Key Value	Keynote Text
70	A/C UNIT

1404 ROYAL OAKS PROJECT

Exhibit 2-3. Proposed Site Plan

Sources: Feng Xiao Architect, Inc. Map date: February 18, 2025.

De Novo Planning Group
A Land Use Planning, Design, and Environmental Firm

② SOUTH ELEVATION - #5, 6, 7, 8, 9
1/8" = 1'-0"

① NORTH ELEVATION - #1,10, 11
1/8" = 1'-0"

KEYNOTE LEGEND	
Key Value	Keynote Text
1	CONCRETE ROOF TILE, EAGLE ROOFING, CAPISTRANO BLENDS OF BLENDS, SMC 8820 50%/ SCC 8830 50% (ICC-ES ESR-1900), STANDARD TILES, APROX. INSTALLED WEIGHT 9 LB/SF.
2	STUCCO OMEGA SAND FINISH 20/30, BENJAMIN HC-27 MONTEREY WHITE
5	CERAMIC TILE DOOR TRIM
7	STUCCO RECESS
8	STUCCO VENT
10	PAINTED WOOD ENTRY DOOR
11	VINYL WINDOW AND FRENCH DOORS, MILGARD WINDOWS V300 TRINSIC SERIES, EXTERIOR COLOR BRONZE
15	MAIN ENTRY LIGHT FIXTURE, HINKLEY LIGHTING BROMLEY 2364MB
20	PAINTED STUCCO BRACKET, BENJAMIN MOORE, MIDDLEBURY BROWN, COLOR HC-68
21	PAINTED WOOD RAFTER TAIL
22A	PAINTED WOOD WINDOW SHUTTER, BENJAMIN MOORE MEDITERRANEAN OLIVE
22B	PAINTED WOOD WINDOW SHUTTER, BENJAMIN MOORE COLOR PREVIEW COLLECTION DEEP ROYAL 2061-10
30	STUCCO COVER GFRC GRILLS-4 SIDED FRAME, PACIFIC REGISTER COMPANY
42	WROUGHT IRON WINDOW COVER
85	DARK BRONZE PAINTED ALUMINUM GUTTER, BENJAMIN MOORE WILLIAMSBURG COLOR COLLECTION TARPLEY BROWN CW 170
86	3" DIAMETER DOWNSPOUT WITH LEADER HEAD

1404 ROYAL OAKS PROJECT

Exhibit 2-4a. Exterior Elevations

Sources: Feng Xiao Architect, Inc. Map date: February 18, 2025.

De Novo Planning Group
A Land Use Planning, Design, and Environmental Firm

② WEST ELEVATION - #9-10
1/8" = 1'-0"

① EAST ELEVATION - #1-6
1/8" = 1'-0"

KEYNOTE LEGEND	
Key Value	Keynote Text
1	CONCRETE ROOF TILE, EAGLE ROOFING, CAPISTRANO BLENDS OF BLENDS, SMC 8820 50%/ SCC 8830 50% (ICC-ES ESR-1900), STANDARD TILES, APROX. INSTALLED WEIGHT 9 LB/SF.
2	STUCCO OMEGA SAND FINISH 20/30, BENJAMIN HC-27 MONTEREY WHITE
4	STUCCO DOOR TRIM, WINDOW SILL, BENJAMIN HC-27 MONTEREY WHITE
5	CERAMIC TILE DOOR TRIM
6	CERAMIC TILE RECESS
7	STUCCO RECESS
8	STUCCO VENT
10	PAINTED WOOD ENTRY DOOR
11	VINYL WINDOW AND FRENCH DOORS, MILGARD WINDOWS V300 TRINSIC SERIES, EXTERIOR COLOR BRONZE
15	MAIN ENTRY LIGHT FIXTURE, HINKLEY LIGHTING BROMLEY 2364MB
20	PAINTED STUCCO BRACKET, BENJAMIN MOORE, MIDDLEBURY BROWN, COLOR HC-68
21	PAINTED WOOD RAFTER TAIL
22B	PAINTED WOOD WINDOW SHUTTER, BENJAMIN MOORE COLOR PREVIEW COLLECTION DEEP ROYAL 2061-10
30	STUCCO COVER GFRC GRILLS-4 SIDED FRAME, PACIFIC REGISTER COMPANY
85	DARK BRONZE PAINTED ALUMINUM GUTTER, BENJAMIN MOORE WILLIAMSBURG COLOR COLLECTION TARPLEY BROWN CW 170
86	3" DIAMETER DOWNSPOUT WITH LEADER HEAD

Sources: Feng Xiao Architect, Inc. Map date: February 18, 2025.

1404 ROYAL OAKS PROJECT

Exhibit 2-4b. Exterior Elevations

De Novo Planning Group
A Land Use Planning, Design, and Environmental Firm

② EAST ELEVATION - #6 & 10
1/8" = 1'-0"

① WEST ELEVATION - #1-6
1/8" = 1'-0"

KEYNOTE LEGEND	
Key Value	Keynote Text
1	CONCRETE ROOF TILE, EAGLE ROOFING, CAPISTRANO BLENDS OF BLENDS, SMC 8820 50%/ SCC 8830 50% (ICC-ES ESR-1900), STANDARD TILES, APROX. INSTALLED WEIGHT 9 LB/SF.
2	STUCCO OMEGA SAND FINISH 20/30, BENJAMIN HC-27 MONTEREY WHITE
4	STUCCO DOOR TRIM, WINDOW SILL, BENJAMIN HC-27 MONTEREY WHITE
7	STUCCO RECESS
8	STUCCO VENT
11	VINYL WINDOW AND FRENCH DOORS, MILGARD WINDOWS V300 TRINSIC SERIES, EXTERIOR COLOR BRONZE
12	WOODGRAIN STEEL GARAGE DOOR, AMARR OAK SUMMIT, WALNUT FINISH BEAD BOARD DESIGN WITH DECORATIVE METALBLUE RIDGE 11" HANDLES AND 16" STRAP HINGE
20	PAINTED STUCCO BRACKET, BENJAMIN MOORE, MIDDLEBURY BROWN, COLOR HC-68
21	PAINTED WOOD RAFTER TAIL
22A	PAINTED WOOD WINDOW SHUTTER, BENJAMIN MOORE MEDITERRANEAN OLIVE
40	WROUGHT IRON FRENCH BALCONY
42	WROUGHT IRON WINDOW COVER
85	DARK BRONZE PAINTED ALUMINUM GUTTER, BENJAMIN MOORE WILLIAMSBURG COLOR COLLECTION TARPLEY BROWN CW 170
86	3" DIAMETER DOWNSPOUT WITH LEADER HEAD

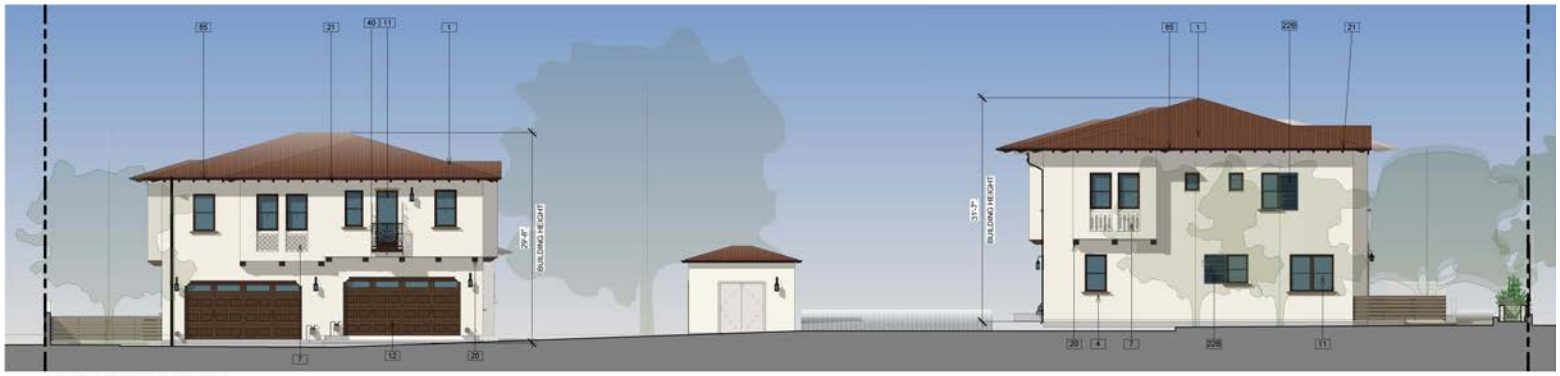
1404 ROYAL OAKS PROJECT

Exhibit 2-4c. Exterior Elevations

Sources: Feng Xiao Architect, Inc. Map date: February 18, 2025.

De Novo Planning Group
A Land Use Planning, Design, and Environmental Firm

② NORTH ELEVATION - #4, & #6-9
1/8" = 1'-0"



① SOUTH ELEVATION - #3, &10-11
1/8" = 1'-0"

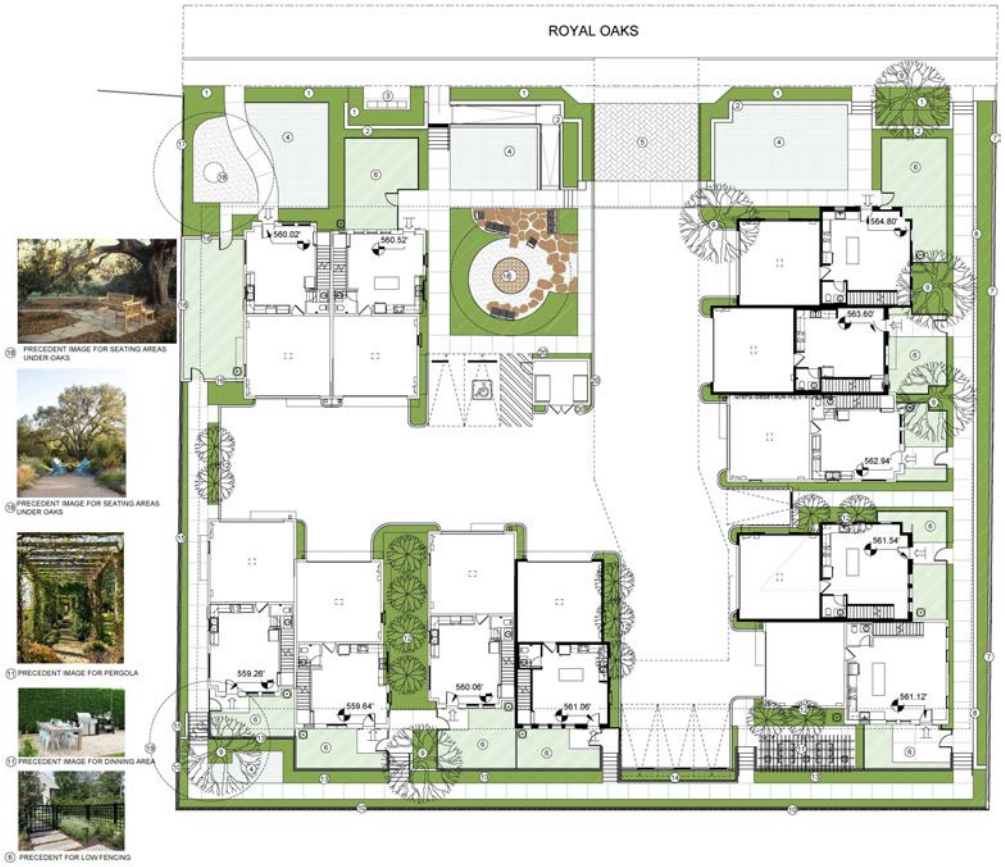
KEYNOTE LEGEND	
Key Value	Keynote Text
1	CONCRETE ROOF TILE, EAGLE ROOFING, CAPISTRANO BLENDS OF BLENDS, SMC 8820 50%/ SCC 8830 50% (ICC-ES ESR-1900), STANDARD TILES, APROX. INSTALLED WEIGHT 9 LB/SF.
2	STUCCO OMEGA SAND FINISH 20/30, BENJAMIN HC-27 MONTEREY WHITE
4	STUCCO DOOR TRIM, WINDOW SILL, BENJAMIN HC-27 MONTEREY WHITE
7	STUCCO RECESS
8	STUCCO VENT
11	VINYL WINDOW AND FRENCH DOORS, MILGARD WINDOWS V300 TRINSIC SERIES, EXTERIOR COLOR BRONZE
12	WOODGRAIN STEEL GARAGE DOOR, AMARR OAK SUMMIT, WALNUT FINISH BEAD BOARD DESIGN WITH DECORATIVE METALBLUE RIDGE 11" HANDLES AND 16" STRAP HINGE
20	PAINTED STUCCO BRACKET, BENJAMIN MOORE, MIDDLEBURY BROWN, COLOR HC-68
21	PAINTED WOOD RAFTER TAIL
22B	PAINTED WOOD WINDOW SHUTTER, BENJAMIN MOORE COLOR PREVIEW COLLECTION DEEP ROYAL 2061-10
40	WROUGHT IRON FRENCH BALCONY
85	DARK BRONZE PAINTED ALUMINUM GUTTER, BENJAMIN MOORE WILLIAMSBURG COLOR COLLECTION TARPLEY BROWN CW 170
86	3" DIAMETER DOWNSPOUT WITH LEADER HEAD

Sources: Feng Xiao Architect, Inc. Map date: February 18, 2025.

1404 ROYAL OAKS PROJECT

Exhibit 2-4d. Exterior Elevations

De Novo Planning Group
A Land Use Planning, Design, and Environmental Firm



PRECEDENT IMAGE FOR SEATING AREAS UNDER OAKS

PRECEDENT IMAGE FOR SEATING AREAS UNDER OAKS

PRECEDENT IMAGE FOR PERGOLA

PRECEDENT IMAGE FOR DINNING AREA

PRECEDENT FOR LOW FENCING

LEGEND

1. CARPET ROSES ALONG STREET FRONTAGE TO MATCH ADJACENT NEIGHBORS
2. SLOPE OR SMALL RETAINING WALL ALONG STREET EDGE
3. COMMON MAIL BOX AREA TO BE REVIEWED BY USPS
4. COMMON OPEN SPACE LAWN AREA, SUNKEN FROM STREET
5. DECORATIVE PAVERS AT ENTRY
6. LOW 42" FENCE/RAILING AROUND PRIVATE PATIO YARDS, WITH LANDSCAPE PLANTING IN FRONT OF FENCE/RAILING
7. 6FT HIGH STANDARD PERIMETER PROPERTY LINE WALL, HEDGE OR VINES TO GROW IN FRONT OR ON WALL, SEE GRADING PLAN SECTION A-A'
8. LOW RETAINING WALL WITH SPILLING PLANTS, SEE GRADING PLAN SECTION A-A'
9. SMALL ACCENT FLOWERING TREES
10. SOUTH PERIMETER EDGE, LOW WALL WITH RAILING FENCE ON TOP. HEDGE OR VINES TO BE PLANTED IN FRONT OF SOUTHERN FENCE ON PROPERTY. VINES OR HEDGE CAN BE ACCESSED FOR MAINTENANCE FROM PROPERTY, SEE GRADING PLAN SECTION B-B'
11. BBQ AREA AND SHADE PERGOLA
12. VERTICAL TREES
13. RETAINING WALL WITH PRIVATE PATIO YARD RAILING FENCE ON TOP. HEDGE IN FRONT OF RETAINING WALL. SEE GRADING PLAN SECTION B-B'
14. LOW RETAINING WALL WITH RAILING ON TOP WITH SPILLING VINES AT PARKING SPACES
15. PERIMETER RETAINING WALL WITH +/-5FT HIGH RAILING OR FENCE ON TOP OF WALL. PLANT WITH VINES OR HEDGES ON PROPERTY LINE SIDE. SEE GRADING PLAN SECTION C-C'
16. CMU BLOCK WALL FOR PATIO YARD PRIVACY AT UNIT 10 SEE GRADING PLAN SECTION D-D'
17. PICKET OR WOOD FENCE FROM CMU WALL TO PROPERTY LINE FOR OAK TREE ROOT PROTECTION.
18. EXISTING OAK TREE TO REMAIN. NATIVE OAK GARDEN BELOW, DECOMPOSED GRANITE, RIVER COBBLE, OR COMBINATION
19. OAK TREE TO BE REMOVED
20. SELF-CLINGING VINES OR LANDSCAPING ON TRASH ENCLOSURE

Sources: Feng Xiao Architect, Inc. Map date: February 18, 2025.

1404 ROYAL OAKS PROJECT

Exhibit 2-5. Conceptual Landscape Plan

De Novo Planning Group
A Land Use Planning, Design, and Environmental Firm

3.0 ENVIRONMENTAL CHECKLIST FORM

Background

1. Project Title: 1404 Royal Oaks
1. Lead Agency Name and Address: City of Duarte Community Development Department 1600 Huntington Drive Duarte, CA 91010
2. Contact Person and Address: Scott Nash Associate Planner City of Duarte, Community Development Department 1600 Huntington Drive Duarte, CA 91010 Email: snash@cityofduarte.ca.gov
4. Project Location: 1404 and 1414 Royal Oaks Drive, Duarte, California
5. Project Sponsor's Name and Address: Feng Xia Architect, Inc. 2540 Huntington Drive, #207 San Marino, CA 91108
6. General Plan Designation: Single Family Residential
7. Zoning: Single Family Residential (R-1)
8. Description of the Proposed Project: See Section 2.3.
9. Surrounding Land Uses and Setting: See Section 2.2.
10. Other public agencies whose approval is required: Los Angeles County Sanitation District; Los Angeles County Regional Water Quality Control Board; Los Angeles County Fire Department.
11. Have California Native American tribes traditionally and culturally affiliated with the project area requested consultation pursuant to Public Resources Code Section 21080.3.1? If so, is there a plan for consultation that includes, for example, the determination of significance of impacts to tribal cultural resources, procedures regarding confidentiality, etc.? On February 24, 2025, the City mailed certified letters to the Native American tribes requesting notification pursuant to AB 52 and to the Native American tribes identified on the Native American Contact List provided by the Native American Heritage Commission (NAHC) pursuant to SB 18. The letters informed the tribes of the proposed Project, as well as the results of the Sacred Lands File (SLF) search, and the City's initiation of the AB 52 and SB 18 processes. The Gabrieleno Band of Mission Indians – Kizh Nation requested consultation under AB 52; refer to Response 4.18.

Environmental Factors Potentially Affected

The environmental factors checked below would be potentially affected by this Project, involving at least one impact that is a "Potentially Significant Impact" or "Less Than Significant With Mitigation Incorporated" as indicated by the checklist on the following pages.

	Aesthetics		Agriculture and Forestry Resources		Air Quality
X	Biological Resources	X	Cultural Resources		Energy
X	Geology and Soils		Greenhouse Gases		Hazards and Hazardous Materials
	Hydrology and Water Quality		Land Use and Planning		Mineral Resources
	Noise		Population and Housing		Public Services
	Recreation		Transportation	X	Tribal Cultural Resources
	Utilities and Service Systems		Wildfire	X	Mandatory Findings of Significance

Determination

On the basis of this initial evaluation:

	I find that the proposed Project COULD NOT have a significant effect on the environment, and a NEGATIVE DECLARATION will be prepared.
X	I find that although the proposed Project could have a significant effect on the environment, there will not be a significant effect in this case because revisions in the Project have been made by or agreed to by the Project proponent. A MITIGATED NEGATIVE DECLARATION will be prepared.
	I find that the proposed Project MAY have a significant effect on the environment, and an ENVIRONMENTAL IMPACT REPORT is required.
	I find that the proposed Project MAY have a "potentially significant impact" or "potentially significant unless mitigated" impact on the environment, but at least one effect 1) has been adequately analyzed in an earlier document pursuant to applicable legal standards, and 2) has been addressed by mitigation measures based on the earlier analysis as described on attached sheets. An ENVIRONMENTAL IMPACT REPORT is required, but it must analyze only the effects that remain to be addressed.
	I find that although the proposed Project could have a significant effect on the environment, because all potentially significant effects (a) have been analyzed adequately in an earlier EIR or NEGATIVE DECLARATION pursuant to applicable standards, and (b) have been avoided or mitigated pursuant to that earlier EIR or NEGATIVE DECLARATION, including revisions or mitigation measures that are imposed upon the proposed Project, nothing further is required.

CITY OF DUARTE

Craig Hensley, AICP
Community Development Director

9/10/25
Date

Evaluation of Environmental Impacts

The environmental analysis in this section is patterned after CEQA Guidelines Appendix G. An explanation is provided for all responses with the exception of “No Impact” responses, which are supported by the cited information sources. The responses consider the whole action involved, including on- and off-site project level and cumulative, indirect and direct, and short-term construction and long-term operational impacts. The evaluation of potential impacts also identifies the significance criteria or threshold, if any, used to evaluate each impact question. If applicable, mitigation measures are identified to avoid or reduce the impact to less than significant. There are four possible responses to each question:

- Potentially Significant Impact. This response is appropriate when there is substantial evidence that an effect is significant. If there are one or more "Potentially Significant Impact" entries, upon completion of the Initial Study, an EIR is required.

- Less than Significant With Mitigation Incorporated. This response applies when the incorporation of mitigation measures has reduced an effect from "Potentially Significant Impact" to a "Less Than Significant Impact". The Lead Agency must describe the mitigation measures and briefly explain how they reduce the effect to a less than significant level.

- Less than Significant Impact. A less than significant impact is one which is deemed to have little or no adverse effect on the environment. Mitigation measures are, therefore, not necessary, although they may be recommended to further reduce a minor impact.

- No Impact. These issues were either identified as having no impact on the environment, or they are not relevant to the project.

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4.0 ENVIRONMENTAL ANALYSIS

4.1 Aesthetics

Except as provided in Public Resources Code Section 21099, would the project:	**Potentially Significant Impact**	**Less Than Significant with Mitigation Incorporated**	**Less Than Significant Impact**	**No Impact**
a. Have a substantial adverse effect on a scenic vista?			X	
b. Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?				X
c. In non-urbanized areas, substantially degrade the existing visual character or quality of public views of the site and its surroundings? (Public views are those that are experienced from publicly accessible vantage point). If the project is in an urbanized area, would the project conflict with applicable zoning and other regulations governing scenic quality?			X	
d. Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?			X	

a) Have a substantial adverse effect on a scenic vista?

Less Than Significant Impact. The Duarte General Plan does not designate any scenic vistas within the City. However, the General Plan Open Space and Conservation Element identifies open space as being valuable for, in part, preserving scenic views and other aesthetic considerations. In particular, the steep slopes and valleys making up the Angeles National Forest on the western slopes of San Gabriel Mountains are identified as enhancing the community's viewshed and providing an aesthetic resource. Objective 1.1 of the General Plan Open Space and Conservation Element directs the City to preserve Duarte's natural hillsides which provide significant wildlife habitat, open space, aesthetic and a visual backdrop to the community.

The Project site is currently developed with two single-family residences and associated improvements. The site is located within an established residential neighborhood, with two-story townhouse buildings primarily comprising the area to the west and south of the site. To the north of the Project site is a landscaped parkway and the Duarte Bike Trail zoned Open Space (O). Views from the Project site include short- to middle-range views of landscaping and existing residential development and middle- to long-range views of the San Gabriel Mountains, located north of the site. The Project site itself is not identified as a scenic vista and does not contain any unique or distinguishing features that would qualify the site for designation as a scenic vista.

The Project proposes to remove the existing on-site structures and construct 11 two-story attached townhomes in five buildings. Public views within the vicinity of the Project site would be similar to existing conditions. Although the proposed townhomes would be larger in scale than the existing single-family residences and detached structures, the Project would maintain the existing visual quality of the landscape through consistency with applicable zoning standards and guidelines. Public views of the San Gabriel Mountains from Royal Oaks Drive would remain unchanged, as the Project site is located south of Royal Oaks Drive. Public views of the San Gabriel Mountains from roadways south of the Project site would also remain largely unchanged due to the relatively low height of the proposed residences (31 feet, seven inches), surrounding topography, and intervening development and landscaping. Thus, the proposed Project would not have a substantial adverse effect on a scenic vista and impacts would be less than significant.

Mitigation Measures: No mitigation measures are required.

b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?

No Impact. There are no officially designated State Scenic Highways that traverse Duarte.[3] The nearest officially designated State Scenic Highway is State Route 2, located approximately 9.5 miles north of the Project site. The nearest eligible State Route Scenic Highway is State Route 39, located approximately 4.8 miles northeast of the Planning Area. These officially designated and eligible State Scenic Highways do not provide views of the Project site. In addition, the proposed Project would not damage scenic resources, including trees, rock outcroppings, and historic buildings, as these scenic resources do not exist within the Project site. Thus, the Project would not substantially damage scenic resources within a State Scenic Highway.

Mitigation Measures: No mitigation measures are required.

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

Less Than Significant Impact. Public Resources Code Section 21071 defines an "Urbanized area" as:

(a) An incorporated city that meets either of the following criteria:

(1) Has a population of at least 100,000 persons.

(2) Has a population of less than 100,000 persons if the population of that city and not more than two contiguous incorporated cities combined equals at least 100,000 persons.

According to the California Department of Finance, the City of Duarte has a population of 23,656 persons and the neighboring cities of Azusa and Monrovia have a population of 49,420 persons and 38,087

[3] California Department of Transportation (Caltrans), *California State Scenic Highway System Map*, https://caltrans.maps.arcgis.com/apps/webappviewer/index.html?id=465dfd3d807c46cc8e8057116f1aacaa, accessed February 7, 2025.

persons, respectively;[4] thus, the City qualifies as being within an "Urbanized Area." Therefore, a significant impact would occur if the Project conflicts with applicable zoning and other regulations governing scenic quality.

The Project site is located within an established residential neighborhood and is currently developed with two single-family residences and associated improvements. The Project proposes to remove the existing on-site structures and construct 11 two-story attached townhomes in five buildings. The Project includes a General Plan Amendment (GPA), Zone Change (ZC), Tentative Tract Map (TTM), and Site Plan and Design Review to allow development of the residential community.

The Project would be subject to the requirements of Duarte Development Code Chapter 19.10, *Residential Zones (R-1, R-1A, R-1B, R-1D, R-1E, R-1F, R-2, R-3, R-4, R-MH)*, which addresses development within the proposed R-3 Multiple Family Residential Medium Density (R-3) zone. Section 19.10.030, *Development Standards*, establishes development standards, including density, building height, setbacks, lot coverage, and open space, within the R-3 zone. Section 19.10.060, *R-3 and R-4 zones: Additional Standards*, provides additional standards related to open space, balconies, storage areas, and trash and recycling facilities. Additionally, the Project would be required to comply with applicable development standards set forth in other chapters of the Development Code, including, but not limited to: Chapter 19.32, *Site Planning and General Development Standards*; Chapter 19.36, *Fences, Walls, and Hedges*; Chapter 19.38, *Off-Street Parking Regulations and Design*; Chapter 19.40, *Landscaping*; Chapter 19.42, *Signs*; Chapter 19.44, *Architectural and Design Standards*; Chapter 19.48, *Property Maintenance*; and Chapter 19.50, *Performance Standards*.

As part of the City's Site Plan and Design Review process required under Development Code Chapter 19.122, *Site Plan and Design Review*, the Project site plan would be reviewed and only approved after finding that the design, location, site plan configuration, and the effect of the proposed development on surrounding development, is consistent with the City's development standards, regulations, and applicable design guidelines/policies. In approving or conditionally approving the Site Plan and Design Review application, the reviewing authority is required to make findings that the proposed development is:

1. Consistent with the General Plan and is in compliance with all applicable provisions of the Development Code and all other City ordinances and regulations;
2. To be constructed on a parcel that is adequate in shape, size, topography, and other circumstances to accommodate the proposed development;
3. In compliance with the applicable criteria specified in Subsection 19.122.040(D), *Application Filing, Processing, and Review*, and the site is suitable for the proposed development; and
4. Designed and arranged to provide adequate consideration to ensure the public health, safety, and general welfare, and to prevent adverse effects on neighboring property.

Subsection 19.122.040(D) of the Development Code includes criteria that shall be considered as part of the review, including: compatibility with surrounding development, architectural design and detail, landscaping, lighting, parking, signs, and other design details.

[4] State of California, Department of Finance, *E-5 Population Estimates for Cities, Counties, and the State, 2020-2024*, Sacramento, California, May 2024.

The proposed Project is subject to discretionary approval and would be contingent upon approval of the GPA, ZC, TTM, and Site Plan and Design Review. As such, the Project would not conflict with existing zoning, General Plan policies, the Duarte Development Code, or other regulations that govern scenic quality; impacts would be less than significant in this regard.

Mitigation Measures: No mitigation measures are required.

d) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?

Less Than Significant Impact. The surrounding area of the Project site is developed primarily with residential uses and currently experiences lighting and glare typical of a residential neighborhood (building interior and landscape lighting, street lighting, automobile headlights, glare from glass surfaces, etc.). The proposed Project would include low reflective glass, interior and exterior building lighting, and landscape lighting, similar to existing conditions. The Project proposes to replace two existing single-family residential units and associated improvements with 11 residential townhomes; as such, the Project would not introduce new sources of lighting and reflective materials to an area where none previously existed. However, the Project would include a greater number of external light sources and would introduce new sources of light, such as walkway and common area lighting, when compared to existing conditions.

The proposed Project is subject to discretionary approval and contingent upon approval of the GPA, ZC, TTM, and Site Plan and Design Review. The Project would be required to comply with the City's development and design standards, including Development Code Section 19.50.070, *Outdoor Lighting*, which regulates lighting to ensure that light trespass (spill light), light pollution, and glare have a negligible impact on surrounding properties, particularly residential uses. The Project does not propose the use of highly reflective materials or significant expanses of glass that could result in adverse impacts associated with daytime glare; refer to Exhibits 2-4a to 2-4d. Thus, the Project would not create a new source of substantial light or glare which would adversely affect day or nighttime views in the area. Impacts would be less than significant.

Mitigation Measures: No mitigation measures are required.

4.2 Agriculture and Forestry Resources

Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a. Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?				X
b. Conflict with existing zoning for agricultural use, or a Williamson Act contract?				X
c. Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 1222(g)) or timberland (as defined in Public Resources Code section 4526)?				X
d. Result in the loss of forest land or conversion of forest land to non-forest use?				X
e Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use or conversion of forest land to non-forest use?				X

a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?

b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?

No Impact. According to the California Department of Conservation, the Project site and surrounding area are considered Urban and Built-Up Land; therefore, development on the Project site would not convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance.[5] Further, the Project site is zoned R-1 and is not zoned for agricultural use, nor is the site under a Williamson Act contract. Thus, the Project would not involve the conversion of farmland to non-agricultural use or conflict with existing zoning for agricultural use or a Williamson Act contract. No impact would occur.

[5] California Department of Conservation, *California Important Farmland Finder*, https://maps.conservation.ca.gov/DLRP/CIFF/, accessed January 30, 2025.

Mitigation Measures: No mitigation measures are required.

c) Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g)), timberland (as defined by Public Resources Code section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104(g))?

d) Result in the loss of forest land or conversion of forest land to non-forest use?

No Impact. The Project site is zoned R-1 and does not contain forest land (as defined in PRC Section 12220(g)), timberland (as defined in PRC Section 4526), or timberland zoned Timberland Production (as defined by Government Code Section 51104(g)). The Project site is currently developed with two single-family residences and two detached structures and does not contain forest land. Thus, the proposed Project would not conflict with existing zoning for, or cause rezoning of, forest land, timberland, or timberland zoned Timberland Production, and would not result in the loss of forest land or conversion of forest land to non-forest use. No impact would occur.

Mitigation Measures: No mitigation measures are required.

e) Involve other changes in the existing environment, which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use or conversion of forest land to non-forest use?

No Impact. Refer to Responses 4.2(a) through 4.2(d), above.

Mitigation Measures: No mitigation measures are required.

4.3 Air Quality

Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a. Conflict with or obstruct implementation of the applicable air quality plan?			X	
b. Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard?			X	
c. Expose sensitive receptors to substantial pollutant concentrations?			X	
d. Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?			X	

South Coast Air Quality Management District (SCAQMD) Thresholds

Mass Emissions Thresholds

The South Coast Air Quality Management District's (SCAQMD) significance criteria is relied upon to assess the potential for significant impacts to air quality. According to the SCAQMD, an air quality impact is considered significant if a proposed project would violate any ambient air quality standard, contribute substantially to an existing or projected air quality violation, or expose sensitive receptors to substantial pollutant concentrations. The SCAQMD has established thresholds of significance for air quality during project construction and operations, as shown in Table 4.3-1, *South Coast Air Quality Management District Emissions Thresholds*.

Table 4.3-1
South Coast Air Quality Management District Emissions Thresholds

Criteria Air Pollutants and Precursors (Regional)	Construction-Related	Operational-Related
	Average Daily Emissions (pounds/day)	Average Daily Emissions (pounds/day)
Reactive Organic Gases (ROG)	75	55
Carbon Monoxide (CO)	550	550
Nitrogen Oxides (NO_x)	100	55
Sulfur Oxides (SO_x)	150	150
Coarse Particulates (PM_{10})	150	150
Fine Particulates ($PM_{2.5}$)	55	55

Source: South Coast Air Quality Management District, *CEQA Air Quality Handbook*, 1993 ($PM_{2.5}$ threshold adopted June 1, 2007).

Localized Carbon Monoxide

In addition to the daily thresholds listed above, the proposed Project would be subject to the ambient air quality standards. These are addressed through an analysis of localized Carbon Monoxide (CO) impacts. The California 1-hour and 8-hour CO standards are:

- 1-hour = 20 parts per million (ppm)
- 8-hour = 9 ppm

The significance of localized impacts depends on whether ambient CO levels near a project site exceed State and federal CO standards. The South Coast Air Basin (SCAB) has been designated as attainment under the 1-hour and 8-hour standards.

Localized Significance Thresholds

In addition to the CO hotspot analysis, the SCAQMD developed Local Significance Thresholds ("LSTs") for emissions of Nitrogen Oxide (NOx), CO, Coarse Particulate Matter (PM_{10}), and Fine Particulate Matter ($PM_{2.5}$) generated at new development sites (off-site mobile source emissions are not included in the LST analysis). LSTs represent the maximum emissions that can be generated at a project site without expecting to cause or substantially contribute to an exceedance of the most stringent national or State ambient air quality standards. LSTs are based on the ambient concentrations of that pollutant within the project source receptor area (SRA), as demarcated by the SCAQMD, and the distance to the nearest sensitive receptor. The nearest sensitive receptor to the Project site are the residences surrounding the Project site to the east, south and west.

LST analysis for construction is applicable for projects that disturb five acres or less on a single day, such as the proposed Project, which is approximately 0.84 acres. The Project site is located within SCAQMD SRA 9 (East San Gabriel Valley). Table 4.3-2, *Local Significance Thresholds (Construction/Operations)*, shows the LSTs for a project site in SRA 9 with sensitive receptors located within 25 meters of the Project site.

Table 4.3-2
Local Significance Thresholds (Construction/Operations)

Project Size	Nitrogen Oxide (NOx) – lbs/day	Carbon Monoxide (CO) – lbs/day	Coarse Particulates (PM_{10}) – lbs/day	Fine Particulates ($PM_{2.5}$) – lbs/day
1.0 acres	89/89	623/623	5/2	3/1
2.0 acres	128/128	953/953	7/2	5/2
5.0 acres	203/203	1,733/1,733	14/4	8/2

Source: South Coast Air Quality Management District, *Localized Significance Threshold Methodology – Appendix C*, revised October 21, 2009.

a) Conflict with or obstruct implementation of the applicable air quality plan?

Less Than Significant Impact. As part of its enforcement responsibilities, the United States Environmental Protection Agency (USEPA) requires that each state with nonattainment areas prepare and submit a State Implementation Plan (SIP) that demonstrates the means to attain the federal standards. The SIP must integrate federal, state, and local plan components and regulations to identify specific measures to reduce

pollution in nonattainment areas, using a combination of performance standards and market-based programs. Similarly, under State law, the California Clean Air Act (CCAA) requires an air quality attainment plan to be prepared for areas designated as nonattainment regarding the federal and State ambient air quality standards. Air quality attainment plans outline emissions limits and control measures to achieve and maintain these standards by the earliest practical date.

The Project site is located within SCAB, which is under SCAQMD's jurisdiction. The SCAQMD is required, pursuant to the Federal Clean Air Act (FCAA), to reduce emissions of criteria pollutants for which SCAB is in non-attainment. To reduce such emissions, the SCAQMD drafted the 2022 Air Quality Management Plan (AQMP). The 2022 AQMP establishes a program of rules and regulations directed at reducing air pollutant emissions and achieving State (California) and national air quality standards. The 2022 AQMP is a regional and multi-agency effort including the SCAQMD, the California Air Resources Board (CARB), the Southern California Association of Governments (SCAG), and the USEPA. The AQMP's pollutant control strategies are based on the latest scientific and technical information and planning assumptions, including SCAG's Connect SoCal (2020-2045 RTP/SCS)[6], updated emission inventory methodologies for various source categories, and SCAG's latest growth forecasts. SCAG's latest growth forecasts were defined in consultation with local governments and with reference to local general plans. The proposed Project is subject to the SCAQMD's AQMP.

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

- **Consistency Criterion No. 1**: A proposed project would not result in an increase in the frequency or severity of existing air quality violations, or cause or contribute to new violations, or delay the timely attainment of the AQMP's air quality standards or the interim emissions reductions.
- **Consistency Criterion No. 2**: A proposed project would not exceed the AQMP's assumptions or increments based on the years of the project build-out phase.

Consistency Criterion No. 1 refers to the California Ambient Air Quality Standards (CAAQS) and National Ambient Air Quality Standards (NAAQS). As shown in Table 4-3 and Table 4-4, the proposed Project construction and operational emissions would be below SCAQMD's thresholds. As the Project would not generate localized construction or regional construction or operational emissions that would exceed SCAQMD thresholds of significance, the Project would not violate any air quality standards. Thus, no impact is expected, and the Project would be consistent with the first criterion.

Consistency Criterion No. 2 refers to SCAG's growth forecasts and associated assumptions included in the AQMP. The future air quality levels projected in the AQMP are based on SCAG's growth projections, which are based, in part, on the general plans of cities located within the SCAG region. Therefore, projects that are consistent with the applicable assumptions used in the development of the AQMP would not

[6] Since initiation of the analysis presented in this Environmental Compliance Checklist, SCAG adopted Connect SoCal 2024 (2024–2050 RTP/SCS). While SCAG has adopted the 2024-2050 RTP/SCS, CARB has not yet certified it. However, the 2022 AQMP utilizes growth forecasts and measures from Connect SoCal 2020 (2020-2045 RTP/SCS). Therefore, for purposes of this document and the air quality analysis, Connect SoCal 2020 is relevant and appliable to consistency with the 2022 AQMP. It is noted that the Project is also consistent with SCAG's 2024-2050 RTP/SCS land use for the site and within the population projections for the City.

jeopardize attainment of the air quality levels identified in the AQMP, even if they exceed the SCAQMD's recommended daily emissions thresholds.

With respect to determining consistency with Consistency Criterion No. 2, it is important to recognize that air quality planning within the air basin focuses on attainment of ambient air quality standards at the earliest feasible date. Projections for achieving air quality goals are based on assumptions regarding population, housing, and growth trends. Thus, the SCAQMD's second criterion for determining project consistency focuses on whether or not the proposed project exceeds the assumptions utilized in preparing the forecasts presented in the 2022 AQMP. Determining whether or not a project exceeds the assumptions reflected in the 2022 AQMP involves the evaluation of the three criteria outlined below. The following discussion provides an analysis of each of these criteria.

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

Growth projections included in the 2022 AQMP form the basis for the projections of air pollutant emissions and are based on the General Plan land use designations. As discussed in Section 4.14, *Population and Housing*, the Project involves the development of 11 townhomes, which would induce direct population growth in the City. As of January 2024, the City of Duarte has a population of 23,656 persons.[7] Based on the 2024 California Department of Finance estimated household size of 2.78 persons per household, and accounting for the two existing single-family residential units located on the Project site, the Project's forecast population growth is approximately 26 persons.[8] The Project's forecast population would increase the City's existing population by less than one percent (approximately 0.11 percent) to 23,682 persons. The Duarte General Plan anticipates a population of 25,418 persons at buildout.[9] Thus, the Project would be within the population projections anticipated and planned for by the City's General Plan. Therefore, the Project would not increase the growth beyond the AQMP's projections.

2. *Would the project implement all feasible air quality mitigation measures?*

The proposed Project would result in less than significant air quality impacts. Compliance with all feasible emission reduction measures identified by the SCAQMD would be required as identified in Responses (b) and (c). As such, the proposed Project meets this 2022 AQMP consistency criterion.

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

The determination of 2022 AQMP consistency is primarily concerned with the long-term influence of a project on air quality in the air basin. The proposed Project would not result in a long-term impact on the region's ability to meet State and federal air quality standards. Further, the proposed Project's long-term influence on air quality in the air basin would also be consistent with the SCAQMD and SCAG's goals and

[7] State of California, Department of Finance, *E-5 Population and Housing Estimates for Cities, Counties, and the State, 2020-2024*, Sacramento, California, May 2024.
[8] Based upon an average household size of 2.78 persons per household per the State of California, Department of Finance, *E-5 Population and Housing Estimates for Cities, Counties, and the State, 2020-2024*, Sacramento, California, May 2024.
[9] City of Duarte, *Duarte General Plan 2005 – 2020*, August 2007 (revised March 2018). Table LU-4.

policies and is considered consistent with the 2022 AQMP. Therefore, the Project would be consistent with the above criteria and impacts would be less than significant.

In conclusion, the determination of 2022 AQMP consistency is primarily concerned with the long-term influence of a project on air quality in the air basin. The proposed Project would not result in a long-term impact on the region's ability to meet State and federal air quality standards. Further, the proposed Project's long-term influence on air quality in the air basin would also be consistent with the SCAQMD and SCAG's goals and policies and is considered consistent with the 2022 AQMP. Therefore, the Project would be consistent with the above criteria and impacts would be less than significant.

Mitigation Measures: No mitigation measures are required.

b) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard?

Less Than Significant Impact.

Construction Emissions

Project construction activities would generate short-term emissions of criteria air pollutants. The criteria pollutants of primary concern within the Project site include ozone-precursor pollutants (i.e., Reactive Organic Gases [ROG] and NOx) and PM_{10} and $PM_{2.5}$. Construction-generated emissions are short term and temporary, lasting only while construction activities occur, but would be considered a significant air quality impact if the volume of pollutants generated exceeds the SCAQMD's thresholds of significance.

Construction results in the temporary generation of emissions resulting from site grading, road paving, motor vehicle exhaust associated with construction equipment and worker trips, and the movement of construction equipment, especially on unpaved surfaces. Emissions of airborne particulate matter are largely dependent on the amount of ground disturbance associated with site preparation activities, as well as weather conditions and the appropriate application of water.

For purposes of this analysis, the duration of the proposed Project's construction activities was estimated to last approximately 24 months. The Project's construction-related emissions were calculated using the CARB-approved CalEEMod computer program, which is designed to model emissions for land use development projects, based on typical construction requirements. Proposed Project demolition, grading, and building construction are anticipated to begin in 2025. Paving and architectural coatings phases are anticipated to begin in 2027. The early 2025 construction start date used in the modeling results in a conservative analysis because CalEEMod uses cleaner emissions factors in future years due to improved emissions controls and fleet turnover; refer to Appendix A, *Air Quality/Energy/Greenhouse Gas Emissions Data*, for additional information regarding the construction assumptions used in this analysis.

The Project's predicted maximum daily construction-related emissions are summarized in Table 4.3-3, *Construction-Related Emissions (Maximum Pounds Per Day)*.

Table 4.3-3
Construction-Related Emissions (Maximum Pounds Per Day)

Construction Year	Reactive Organic Gases (ROG)	Nitrogen Oxides (NOx)	Carbon Monoxide (CO)	Sulfur Oxides (SOx)	Coarse Particulates (PM10)	Fine Particulates (PM2.5)
2025	1.7	15.5	18.0	0.1	2.3	1.4
2026	0.5	4.9	7.4	0.0	0.3	0.2
2027	4.6	9.7	14.7	0.0	0.7	0.4
SCAQMD Threshold	**75**	**100**	**550**	**150**	**55**	**150**
Exceed Threshold?	**No**	**No**	**No**	**No**	**No**	**No**

Source: CalEEMod version 2022.1

Notes: SCAQMD Rule 403 Fugitive Dust applied. The Rule 403 reduction/credits include the following: properly maintain mobile and other construction equipment; replace ground cover in disturbed areas quickly; water exposed surfaces three times daily; cover stockpiles with tarps; water all haul roads twice daily; and limit speeds on unpaved roads to 15 miles per hour. Reductions percentages from the SCAQMD CEQA Handbook (Tables XI-A through XI-E) were applied. No mitigation was applied to construction equipment; refer to Appendix A for model outputs.

As shown in Table 4.3-3, all criteria pollutant emissions would remain below their respective thresholds. While impacts would be considered less than significant, the proposed Project would be subject to compliance with SCAQMD Rules 402, 403, and 1113, which would further reduce specific construction-related emissions. As the proposed Project emissions would not worsen ambient air quality, create additional violations of federal and state standards, or delay SCAB's goal for meeting attainment standards, impacts associated with Project construction emissions would be less than significant.

Operational Emissions

The Project's operational emissions would be associated with motor vehicle use and area sources. Area sources include natural gas for space and water heating, gasoline-powered landscaping and maintenance equipment, and consumer products (such as household cleaners). Mobile sources emissions are generated from vehicle operations associated with Project operations. Typically, area sources are small sources that contribute very minor emissions individually, but when combined may generate substantial amounts of pollutants. Area specific defaults in CalEEMod were used to calculate area source emissions.

CalEEMod was also used to calculate pollutants emissions from vehicular trips generated from the proposed Project. The vehicle trip rate for the Project was obtained based on the Project land use from Institute of Transportation Engineers (ITE) trip generations rates (i.e. "Condo/Townhouse" land use) via CalEEMod; refer to Appendix A.[10] CalEEMod default inputs for vehicle mix and trip distances were unaltered for this analysis. CalEEMod estimated emissions from Project operations are summarized in Table 4.3-4, *Operational-Related Emissions (Maximum Pounds Per Day)*. Note that emissions rates differ from summer to winter because weather factors are dependent on the season and these factors affect pollutant mixing, dispersion, ozone formation, and other factors.

[10] This is a conservative analysis and does not account for the offset associated with trips that currently occur at the site.

As shown in Table 4.3-4, emission calculations generated from CalEEMod demonstrate that Project operations would not exceed the SCAQMD thresholds for any criteria air pollutants. Therefore, Project operational impacts would be less than significant.

Table 4.3-4
Operational-Related Emissions (Maximum Pounds Per Day)

Source	Reactive Organic Gases (ROG)	Nitrogen Oxides (NOx)	Carbon Monoxide (CO)	Sulfur Oxides (SOx)	Coarse Particulates (PM10)	Fine Particulates (PM2.5)
Summer Emissions						
Mobile	0.3	0.2	2.4	0.0	0.6	0.1
Area	0.3	<0.1	0.6	<0.1	<0.1	<0.1
Energy	<0.1	0.1	<0.1	<0.1	<0.1	<0.1
Total	**0.6**	**0.3**	**3.1**	**<0.0**	**0.6**	**0.1**
SCAQMD Threshold	**55**	**55**	**550**	**150**	**150**	**55**
Exceeds Threshold?	**No**	**No**	**No**	**No**	**No**	**No**
Winter Emissions						
Mobile	0.3	0.2	2.2	<0.1	0.6	0.1
Area	0.3	<0.1	<0.1	<0.1	<0.1	<0.1
Energy	<0.1	0.1	<0.1	<0.1	<0.1	<0.1
Total	**0.6**	**0.3**	**2.3**	**<0.1**	**0.6**	**0.1**
SCAQMD Threshold	**55**	**55**	**550**	**150**	**150**	**55**
Exceeds Threshold?	**No**	**No**	**No**	**No**	**No**	**No**
Source: CalEEMod Version 2022.1; refer to Appendix A for model outputs.						

Area Source Emissions

Area source emissions would be generated due to consumer products, architectural coating, and landscaping. As shown in Table 4.3-4, the Project's unmitigated area source emissions would not exceed SCAQMD thresholds for either the winter or summer seasons. Therefore, impacts would be less than significant and mitigation measures are not required.

Energy Source Emissions

Energy source emissions would be generated due to the Project's electricity and natural gas usage. The Project's primary uses of electricity and natural gas would be for space heating and cooling, water heating, ventilation, lighting, appliances, and electronics. As shown in Table 4.3-4, the Project's unmitigated energy source emissions would not exceed SCAQMD thresholds for criteria pollutants. As such, the Project would not violate any air quality standards or contribute substantially to an existing or projected air quality violation. Therefore, the Project's operational air quality impacts would be less than significant.

Mobile Source

Mobile sources are emissions from motor vehicles, including tailpipe and evaporative emissions. Depending upon the pollutant being discussed, the potential air quality impact may be of either regional

or local concern. For example, ROG, NOx, PM_{10}, and $PM_{2.5}$ are all pollutants of regional concern. NOx and ROG react with sunlight to form O_3, known as photochemical smog. Additionally, wind currents readily transport PM_{10} and $PM_{2.5}$. However, CO tends to be a localized pollutant, dispersing rapidly at the source.

Project-generated vehicle emissions have been estimated using CalEEMod, as recommended by the SCAQMD. The vehicle trip rate for the Project was obtained based on the Project land use from Institute of Transportation Engineers (ITE) trip generations rates (i.e. "Condo/Townhouse" land use) via CalEEMod. Based on the ITE trip generation rate of 7.29 trips per unit, the proposed Project would generate 29,264 trips per year, or approximately 80 trips per day. As shown in Table 4.3-4, mobile source emissions would not exceed SCAQMD thresholds for criteria pollutants. Therefore, the Project's air quality impacts associated with mobile source emissions would be less than significant.

Cumulative Short-Term Emissions

SCAB is designated nonattainment for O_3, PM_{10}, and $PM_{2.5}$ for State standards and nonattainment for O_3 and $PM_{2.5}$ for Federal standards. As discussed above, the Project's construction-related emissions by themselves would not exceed the SCAQMD significance thresholds for criteria pollutants.

Since these thresholds indicate whether individual Project emissions have the potential to affect cumulative regional air quality, it can be expected that the Project-related construction emissions would not be cumulatively considerable. The SCAQMD has developed strategies to reduce criteria pollutant emissions outlined in the AQMP pursuant to the federal Clean Air Act mandates. The analysis assumed that fugitive dust controls would be utilized during construction, including frequent water applications. SCAQMD rules, mandates, and compliance with adopted AQMP emissions control measures would also be imposed on construction projects throughout the SCAB, which would include related cumulative projects. As concluded above, the Project's construction-related impacts would be less than significant. Compliance with SCAQMD rules and regulations would further minimize the proposed Project's construction-related emissions. Therefore, Project-related construction emissions, in combination with those from other projects in the area, would not substantially deteriorate the local air quality. The Project's construction-related emissions would not result in a cumulatively considerable contribution to significant cumulative air quality impacts.

Cumulative Long-Term Impacts

SCAB is designated nonattainment for O_3, PM_{10}, and $PM_{2.5}$ for State standards and nonattainment for O_3 and $PM_{2.5}$ for Federal standards. As discussed above, the Project's construction-related emissions by themselves would not exceed the SCAQMD significance thresholds for criteria pollutants.

The SCAQMD has not established separate significance thresholds for cumulative operational emissions. The nature of air emissions is largely a cumulative impact. As a result, no single project is sufficient in size to, by itself, result in nonattainment of ambient air quality standards. Instead, individual project emissions contribute to existing cumulatively significant adverse air quality impacts. The SCAQMD developed the operational thresholds of significance based on the level above which individual project emissions would result in a cumulatively considerable contribution to SCAB's existing air quality conditions. Therefore, a project that exceeds the SCAQMD operational thresholds would also be a cumulatively considerable contribution to a significant cumulative impact.

As shown in Table 4.3-4, the Project's operational emissions would not exceed SCAQMD thresholds. As a result, the Project's operational emissions would not result in a cumulatively considerable contribution to

significant cumulative air quality impacts. Additionally, adherence to SCAQMD rules and regulations would alleviate potential impacts related to cumulative conditions on a project-by-project basis. Project operations would not contribute a cumulatively considerable net increase of any nonattainment criteria pollutant and impacts would be less than significant.

Mitigation Measures: No mitigation measures are required.

c) Expose sensitive receptors to substantial pollutant concentrations?

Less Than Significant Impact.

Localized Construction Significance Analysis

The nearest sensitive receptors to the Project site are the residences located immediately east, west, and south of the Project site. To identify impacts to sensitive receptors, the SCAQMD recommends addressing LSTs for construction. LSTs apply to CO, NOx, PM_{10}, and $PM_{2.5}$. LSTs were developed in response to SCAQMD Governing Boards' Environmental Justice Enhancement Initiative (I-4). The SCAQMD provided the Final Localized Significance Threshold Methodology (dated June 2003 [revised 2008]) for guidance. The LST methodology assists lead agencies in analyzing localized impacts associated with Project-specific emissions. The SCAQMD's methodology states that "off-site mobile emissions from the Project should not be included in the emissions compared to LSTs". Therefore, for purposes of the construction LST analysis, only emissions included in the CalEEMod "on-site" emissions outputs were considered.

LST thresholds are provided by SRA for distances to sensitive receptors of 25, 50, 100, 200, and 500 meters and for sites that disturb up to 1.0, 2.0 or 5.0 acres. The Project site is 0.84-acre, and the closest sensitive receptor is located within 25 meters. Therefore, as recommended by the SCAQMD, LSTs for receptors located at 25 meters and for a project that would disturb up to 1.0 acre were utilized in this analysis. Table 4.3-5, *Localized Significance of Construction Emissions (Maximum Pounds per Day)*, presents the results of localized emissions during proposed Project construction.

As shown in Table 4.3-5, the emissions of these pollutants on the peak day of Project construction would not result in significant concentrations of pollutants at nearby sensitive receptors. Further, the Project would be subject to compliance with SCAQMD Rules 402, 403, and 1113, which would further reduce specific construction-related emissions. Therefore, the proposed Project would result in a less than significant impact concerning LSTs during construction activities.

Table 4.3-5
Localized Significance of Construction Emissions (Maximum Pounds per Day)[1]

Construction Activity	Nitrogen Oxides (NOx)	Carbon Monoxide (CO)	Coarse Particulates (PM_{10})	Fine Particulates ($PM_{2.5}$)
Demolition (2025)	4.3	5.6	1.2	0.3
Grading (2025)	10.1	10.0	1.9	1.1
Building Construction (2025)	5.1	6.9	0.2	0.2
Building Construction (2026)	4.8	6.9	0.2	0.2
Building Construction (2027)	4.6	6.9	0.2	0.2
Paving (2027)	4.2	5.3	0.2	0.2
Architectural Coatings (2027)	0.8	1.1	<0.1	<0.1
SCAQMD Localized Screening Thresholds (1.0 acre at 25 meters)	89	623	5	3
Exceed SCAQMD Threshold?	**No**	**No**	**No**	**No**
Source: CalEEMod Version 2022.1 refer to Appendix A for model outputs.				
Notes: 1. Emissions reflect on-site construction emissions only, per SCAQMD guidance.				

Localized Operational Significance Analysis

The on-site operational emissions are compared to the LST thresholds in Table 4.3-6, *Localized Significance of Operational Emissions (Maximum Pounds per Day)*. Table 4.3-6 shows that the maximum daily emissions of these pollutants during Project operations would not result in significant concentrations of pollutants at nearby sensitive receptors. Therefore, the proposed Project would result in a less than significant impact concerning LSTs during operational activities.

Table 4.3-6
Localized Significance of Operational Emissions (Maximum Pounds per Day)

Emission Sources	Nitrogen Oxides (NOx)	Carbon Monoxide (CO)	Coarse Particulates (PM_{10})	Fine Particulates ($PM_{2.5}$)
On-Site Emissions (Area Sources)	<0.1	0.6	<0.1	<0.1
SCAQMD Localized Screening Threshold (1.0 acre at 25 meters)	89	623	2	1
Exceed SCAQMD Threshold?	**No**	**No**	**No**	**No**
Source: CalEEMod version 2022.1; refer to Appendix A for model outputs.				

The Project would not involve the use, storage, or processing of carcinogenic or non-carcinogenic toxic air contaminants, and no significant toxic airborne emissions would result from operation of the proposed Project. Construction activities are subject to the regulations and laws relating to toxic air pollutants at the regional, State, and federal level that would protect sensitive receptors from substantial

concentrations of these emissions. Therefore, impacts associated with the release of toxic air contaminants would be less than significant.

Criteria Pollutant Health Impacts

On December 24, 2018, the California Supreme Court issued an opinion identifying the need to provide sufficient information connecting a project's air emissions to health impacts or explain why such information could not be ascertained (Sierra Club v. County of Fresno [Friant Ranch, L.P.] [2018] 6 Cal.5th 502). The SCAQMD has set its CEQA significance thresholds based on the FCAA, which defines a major stationary source (in extreme ozone nonattainment areas such as the SCAB) as emitting 10 tons per year. The thresholds correlate with the trigger levels for the federal New Source Review (NSR) Program and SCAQMD Rule 1303 for new or modified sources. The NSR Program was created by the FCAA to ensure that stationary sources of air pollution are constructed or modified in a manner that is consistent with attainment of health-based federal ambient air quality standards. The federal ambient air quality standards establish the levels of air quality necessary, with an adequate margin of safety, to protect the public health. Therefore, projects that do not exceed the SCAQMD's mass emissions thresholds would not violate any air quality standards or contribute substantially to an existing or projected air quality violation and no criteria pollutant health impacts would occur.

NOx and ROG are precursor emissions that form ozone in the atmosphere in the presence of sunlight where the pollutants undergo complex chemical reactions. It takes time and the influence of meteorological conditions for these reactions to occur, so ozone may be formed at a distance downwind from the sources. Breathing ground-level ozone can result in health effects that include reduced lung function, inflammation of airways, throat irritation, pain, burning, or discomfort in the chest when taking a deep breath, chest tightness, wheezing, or shortness of breath. In addition to these effects, evidence from observational studies strongly indicates that higher daily ozone concentrations are associated with increased asthma attacks, increased hospital admissions, increased daily mortality, and other markers of morbidity. The consistency and coherence of the evidence for effects upon asthmatics suggests that ozone can make asthma symptoms worse and can increase sensitivity to asthma triggers.

The SCAQMD's air quality modeling demonstrates that NOx reductions prove to be much more effective in reducing ozone levels and will also lead to a significant decrease in $PM_{2.5}$ concentrations. NOx-emitting stationary sources regulated by the SCAQMD include Regional Clean Air Incentives Market (RECLAIM) facilities (e.g., refineries, power plants, etc.), natural gas combustion equipment (e.g., boilers, heaters, engines, burners, flares) and other combustion sources that burn wood or propane. The 2022 AQMP identifies robust NOx reductions from new regulations on RECLAIM facilities, non-refinery flares, commercial cooking, and residential and commercial appliances. Such combustion sources are already heavily regulated with the lowest NOx emissions levels achievable but there are opportunities to require and accelerate replacement with cleaner zero-emission alternatives, such as residential and commercial furnaces, pool heaters, and backup power equipment. The AQMP plans to achieve such replacements through a combination of regulations and incentives. Technology-forcing regulations can drive development and commercialization of clean technologies, with future year requirements for new or existing equipment. Incentives can then accelerate deployment and enhance public acceptability of new technologies.

As previously discussed, Project emissions would be less than significant and would not exceed SCAQMD thresholds; refer to Table 4.3-3 and Table 4.3-4. Localized effects of on-site Project emissions on nearby receptors were also found to be less than significant; refer to Table 4.3-5 and Table 4.3-6. The LSTs

represent the maximum emissions from a Project that are not expected to cause or contribute to an exceedance of the most stringent applicable NAAQS or CAAQS. The LSTs were developed by the SCAQMD based on the ambient concentrations of that pollutant for each SRA and distance to the nearest sensitive receptor. The ambient air quality standards establish the levels of air quality necessary, with an adequate margin of safety, to protect public health, including protecting the health of sensitive populations such as asthmatics, children, and the elderly. As shown above, Project-related emissions would not exceed the regional thresholds or the LSTs and therefore would not exceed the ambient air quality standards or cause an increase in the frequency or severity of existing violations of air quality standards. Therefore, sensitive receptors would not be exposed to criteria pollutant levels more than the health-based ambient air quality standards and impacts would be less than significant.

Carbon Monoxide Hotspots

An analysis of CO "hot spots" is needed to determine whether the change in the level of service of an intersection resulting from the proposed Project would have the potential to result in exceedances of the CAAQS or NAAQS. It has long been recognized that CO exceedances are caused by vehicular emissions, primarily when vehicles are idling at intersections. Vehicle emissions standards have become increasingly stringent in the last 20 years. Currently, the CO standard in California is a maximum of 3.4 grams per mile for passenger cars (requirements for certain vehicles are more stringent). With the turnover of older vehicles, introduction of cleaner fuels, and implementation of control technology on industrial facilities, CO concentrations have steadily declined.

Accordingly, with the steadily decreasing CO emissions from vehicles, even very busy intersections do not result in exceedances of the CO standard. The 2022 AQMP is the most recent version that addresses CO concentrations. As part of the SCAQMD CO Hotspot Analysis, the Wilshire Boulevard/Veteran Avenue intersection, one of the most congested intersections in Southern California with approximately 100,000 average daily traffic (ADT), was modeled for CO concentrations. This modeling effort identified a CO concentration high of 4.6 ppm, which is well below the 35-ppm Federal standard. The proposed Project would not produce the volume of traffic required to generate a CO hot spot in the context of SCAQMD's CO Hotspot Analysis. Since CO hotspots were not experienced at the Wilshire Boulevard/Veteran Avenue intersection even though it accommodates 100,000 ADT, it can be reasonably inferred that CO hotspots would not be experienced at any Project area intersections from the approximately 80 ADT (Average Daily Trips) attributable to the proposed Project. Therefore, impacts would be less than significant.

Construction-Related Diesel Particulate Matter

Project construction would generate diesel particulate matter (DPM) emissions from the use of off-road diesel equipment required. The amount to which the receptors are exposed (a function of concentration and duration of exposure) is the primary factor used to determine health risk (i.e., potential exposure to toxic air contaminants (TAC) emission levels that exceed applicable standards). Health-related risks associated with diesel-exhaust emissions are primarily linked to long-term exposure and the associated risk of contracting cancer.

The closest sensitive receptors to the Project site are the residences located to the east, south, and west. The use of diesel-powered construction equipment would be temporary and episodic and occur throughout the Project site. The duration of exposure would be short and exhaust from construction equipment would dissipate rapidly. Current models and methodologies for conducting health risk

assessments are associated with longer-term exposure periods of 9, 30, and 70 years, which do not correlate well with the temporary and highly variable nature of construction activities.

California Office of Environmental Health Hazard Assessment has not identified short-term health effects from diesel particulate matter (DPM). Construction is temporary and would be transient throughout the site (i.e., move from location to location) and would not generate emissions in a fixed location for extended periods of time. Construction activities would be subject to and would comply with California regulations limiting the idling of heavy-duty construction equipment to no more than five minutes to further reduce nearby sensitive receptors' exposure to temporary and variable DPM emissions. For these reasons, DPM generated by Project construction activities, in and of itself, would not expose sensitive receptors to substantial amounts of air toxins and the proposed Project would result in a less than significant impact.

Mitigation Measures: No mitigation measures are required.

d) Result in other emissions (such as those leading to odors adversely affecting a substantial number of people?

Less Than Significant Impact.

Construction

Odors that could be generated by construction activities are required to follow SCAQMD Rule 402 to prevent odor nuisances on sensitive land uses. SCAQMD Rule 402, Nuisance, states:

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

During construction, emissions from construction equipment, such as diesel exhaust, and volatile organic compounds from architectural coatings and paving activities may generate odors. However, these odors would be temporary, are not expected to affect a substantial number of people and would disperse rapidly. Therefore, impacts related to odors associated with the Project's construction-related activities would be less than significant.

Operational

The SCAQMD CEQA Air Quality Handbook identifies certain land uses as sources of odors. These land uses include agriculture (farming and livestock), wastewater treatment plants, food processing plants, chemical plants, composting facilities, refineries, landfills, dairies, and fiberglass molding. The Project proposes development of residential uses, which would not involve the types of uses that would emit objectionable odors affecting substantial numbers of people. The Project would not include any of the land uses that have been identified by the SCAQMD as odor sources. Therefore, the proposed Project would not create objectionable odors and impacts would be less than significant.

Mitigation Measures: No mitigation measures are required.

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4.4 Biological Resources

Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a. Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?		X		
b. Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?			X	
c. Have a substantial adverse effect on state or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?			X	
d. Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?		X		
e. Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?		X		
f. Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?				X

This section is based in part on the *Protected Tree Report for the compliance of the City of Duarte Tree Protection Ordinance, 1404 & 1414 Royal Oaks Drive Duarte, CA 91010* (Arborist Report), prepared by Arbor Care, Inc., dated July 2025, and included in its entirety as Appendix B, *Arborist Report*.

a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?

Less Than Significant With Mitigation Incorporated. The Project site is located within an urbanized area and is currently developed with two single-family residences and two detached structures. Ornamental landscaping, including grass, trees, and bushes, adorn the interior of the site. Three mature Coast Live Oaks (*Quercus agrifolia*) are located within the northwestern, northern-central, and southwestern portions of the Project site. The surrounding area is an established residential neighborhood and is developed primarily with residential uses. Single- and multi-family residential uses are located to the east, south, and west of the Project site. The site is bounded on the north by Royal Oaks Drive, followed by a landscaped parkway and the Duarte Bike Trail, zoned Open Space (O), followed by single-family residential uses. As discussed in the Duarte General Plan EIR, the southern portion of the City, which includes the Project site, is urbanized and almost completely built out and, therefore, does not contain habitat that would support endangered, threatened, or rare species. Based on review of the existing and surrounding conditions, no candidate, sensitive, or special status plant or wildlife species occur on the Project site or adjacent properties.

The Project proposes to remove existing on-site improvements, including one of the three mature Coast Live Oak trees, to provide for construction of 11 attached townhomes. Project implementation could result in direct or indirect impacts to nesting birds if vegetation clearing and ground-disturbing activities would occur during the nesting season (generally between February 1 and August 31). Mitigation Measure BIO-1 would ensure compliance with the federal Migratory Bird Treaty Act (MBTA) and California Fish and Game Code by scheduling construction activities outside of nesting season (between September and February), if feasible. If avoidance of construction during bird nesting season is not feasible, then a pre-construction nesting bird survey would be conducted by a qualified biologist to ensure birds are not engaged in active nesting within or adjacent to the Project's construction limits. If nesting birds are discovered during preconstruction surveys, a no-disturbance buffer, to be determined by a qualified biologist, would be delineated, flagged, and avoided until the biologist determines that the nesting cycle is complete.

With implementation of Mitigation Measure BIO-1, and compliance with the MBTA and California Fish and Game Code, impacts to candidate, sensitive, or special status species would be reduced to a level that is less than significant.

Mitigation Measures:

BIO-1: To the extent possible, construction activities (i.e., earthwork, clearing, and grubbing) shall occur outside of the general bird nesting season for migratory birds (February 1 to August 31). If construction activities (i.e., earthwork, clearing, and grubbing) occur during the general bird nesting season for migratory birds (February 1 to August 31), a qualified biologist shall be retained to perform a pre-construction survey of potential nesting habitat to confirm the absence of active nests belonging to migratory birds and raptors afforded protection under the Migratory Bird Treaty Act and California Fish and Game Code. The pre-construction survey shall be performed no more than three days prior to the commencement of construction activities. The results of the pre-construction survey shall be documented by a qualified biologist and provided to the City of

Duarte Director of Community Development, or designee, along with the qualified biologist's credentials at least one business day prior to the commencement of construction.

If the qualified biologist determines that no active migratory bird or raptor nests occur, the biologist shall document a negative survey and construction activities shall be allowed to proceed without any further requirements. If the qualified biologist determines that an active migratory bird or raptor nest is present, the biologist shall establish a no-disturbance buffer. A biological monitor shall be present to delineate the boundaries of the buffer area and to monitor the active nest to ensure that nesting behavior is not adversely affected by the construction activity. No impacts within the no-disturbance buffer shall occur until the young have fledged the nest, and the nest is confirmed to no longer be active, or as determined by the qualified biologist. The biological monitor may modify the buffer as applicable for the specific bird species and type of work or propose other recommendations to avoid indirect impacts to nesting birds.

b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?

c) Have a substantial adverse effect on state or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?

Less Than Significant Impact. The Project site is located within an urbanized area and is currently developed with two single-family residences and two detached structures. Ornamental landscaping, including grass, trees, and bushes, adorn the interior of the site. The surrounding area is an established residential neighborhood As discussed in the Duarte General Plan EIR, the southern urbanized area of the City, which includes the Project site, consists of ruderal/landscaped vegetation and no available data indicate that regionally sensitive plant communities exist in this area.

The U.S. Fish and Wildlife Service (USFWS) National Wetlands Inventory does not identify any mapped water features within the Project site.[11] There are no riparian habitat or wetlands within the Project site and surrounding area. Therefore, the proposed Project would not have a substantial adverse effect on any riparian habitat or other sensitive natural community, or on any State or federally protected wetlands. Impacts would be less than significant.

Mitigation Measures: No mitigation measures are required.

d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?

Less Than Significant With Mitigation Incorporated. The Project site is located within an urbanized area and is currently developed with two single-family residences and two detached structures enclosed by perimeter fencing. Ornamental landscaping, including grass, trees, and bushes, adorn the interior of the

[11] U.S. Fish and Wildlife Service, *National Wetlands Inventory*, https://fwsprimary.wim.usgs.gov/wetlands/apps/wetlands-mapper/, accessed February 3, 2025.

site. Three mature Coast Live Oaks (*Quercus agrifolia*) are located within the northwestern, northern-central, and southwestern portions of the Project site. The surrounding area is an established residential neighborhood and is developed primarily with residential uses. The site is bounded on the north by Royal Oaks Drive, followed by a landscaped parkway and the Duarte Bike Trail, zoned Open Space (O), followed by single-family residential uses. As discussed in the Duarte General Plan EIR, the southern portion of the City, which includes the Project site, is highly urbanized and therefore, no migratory wildlife species are known to exist within this portion of the City due to the lack of sufficient habitat. Existing development adjacent to the Project site, as well as nearby roadway infrastructure, precludes wildlife movement opportunities through the Project site and immediately surrounding area. As such, the proposed Project is not expected to interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors or impede the use of native wildlife nursery sites. During construction activities, the Project applicant/contractor would be required to implement Mitigation Measures BIO-1 and comply with the MBTA and the California Fish and Game Code, which would reduce potential impacts to nesting birds. Therefore, impacts would be less than significant with incorporation of mitigation.

Mitigation Measures: Refer to Mitigation Measure BIO-1.

e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?

Less Than Significant Impact With Mitigation Incorporated. Duarte Municipal Code Chapter 13.12, *Tree Protection and Preservation*, contains regulations to preserve and maintain native and specimen trees. Per Section 13.12.040, *Permits*, a tree permit is required for removal or alteration of any native or specimen tree. The Project would involve the removal of one mature Coast Live Oak (*Quercus agrifolia*) tree located in the southwestern portion of the Project site and minor pruning (anticipated to be less than 10 percent of the total live canopy) of the two other mature Coast Live Oak trees.

A Protected Tree Report was prepared to assess potential impacts to the three protected oak trees located on the Project site. All three trees were determined to be in good condition. As stated, one tree would be removed to accommodate the proposed Project. The Project applicant would be required to obtain a tree removal/alteration permit from the City and meet the tree replacement and alteration requirements pursuant to Duarte Municipal Code Section 13.12.040, in compliance with Mitigation Measure BIO-2. This includes the replacement for the mature Coast Live Oak (*Quercus agrifolia*) tree pursuant to Municipal Code Section 13.12.080 at the landscape phase unless otherwise directed by the City. Implementation of Mitigation Measure BIO-2 would ensure compliance with the City's Municipal Code regarding removal of a protected tree and impacts would be less than significant.

The remaining two trees (Tree #1 and Tree #2) would be protected in place. Tree #1 is located in the northwest corner of the Project site and Tree #2 is located in the northern/central portion of the Project site; refer to Appendix B. An analysis of the potential rootzone impacts for the two trees proposed to be protected in place was determined based on the type of impact (e.g., soil compaction, grading, fill) that would occur. The severity of these encroachments was determined by the number of sides which potential impacts would occur as well as the distance from the trunk. Beyond the root plate (area containing structural roots responsible for keeping the tree upright), a Tree Protection Zone (TPZ) is defined by a multiple of the trunk's diameter which is determined by factoring the trees relative age and species tolerance to root zone disruptions.

Encroachments that do not impact the stability of a tree may sever relatively smaller roots that are usually two inches in diameter or smaller and make up the root mass responsible for water and nutrient uptake. Coast Live Oak is listed as having good tolerance to developmental impacts. An estimation was made of the percentage of total root mass that would be removed from each tree's TPZ. The estimate considers any additional light grading of six inches or less that would be required for typical improvements such as hardscape construction and landscape renovations.

Construction activities associated with the proposed residential structure would encroach into the southeast portion of the dripline and excavation for the building foundation would occur as close as 12 feet from the trunk of Tree #1. Approximately 20 percent of the TPZ would be encroached and all excavation and compaction within the TPZ would occur within the footprint of the existing concrete driveway. Pruning would be required to accommodate the proposed structure's second story roofline and exterior wall. The pruning would be industry standard branch reduction. Less than 10 percent of the total live canopy would be removed, which is less than the industry standard 25 percent maximum live crown removal in any single pruning.

Construction activities associated with the proposed residential structure, trash enclosure, parking spaces, and a driveway/fire lane would encroach into the TPZ of Tree #2. More specifically, excavation for the building foundation would occur as close as 15 feet from the trunk; more than half of the excavation and compaction would occur within the footprint of the existing residence. The trash enclosure and driveway on the south would be constructed as close as 20 feet from the trunk; approximately half of the required grading would occur in the footprint of the existing residence. The driveway/fire lane on the east would be constructed as close as 20 feet from the trunk; just over one-third of the grading occurring in the TPZ would occur in the footprint of the existing residence. Pruning would be required to accommodate the proposed structure's second story roofline and exterior wall. The pruning would be industry standard branch reduction and accomplished with standard reduction or removal cuts. Less than 10 percent of the total live canopy would be removed.

To prevent unnecessary root zone disturbances, Mitigation Measure BIO-3 requires protective fences be installed around Trees #1 and #2 that would encompass as much of the TPZ areas as possible. The fences would be required to remain in place during the demolition phase and throughout the construction of the Project, including the residential structures and infrastructure and would be approved by an Arborist, subject to the approval of the Community Development Department. The objective for fencing the TPZ is to enclose an adequate amount of space underneath the trees so that heavy equipment required for demolition and grading would be routed away from root zones; prevent any soil disruptions or mechanical damage to the trunks and branches; and signify to all workers that the trees are Protected. The recommended fence placements are different for the demolition and construction phases and would be placed in compliance with the Site Plan identified in the Protected Tree Report; refer to Appendix B. Additionally, the portion of the existing concrete driveway within the TPZ would be required to remain in place until the new driveway is installed in order to serve as soil and root protection material. Additional monitoring by the Arborist would occur for any repositioning of the fences for excavation and grading phases, as well as monthly monitoring visits to properly manage soil moisture and tree health. With implementation of Mitigation Measures BIO-2 and BIO-3, potential impacts to the on-site trees proposed to be protected in place would be reduced to less than significant.

Upon approval of the Project, removal and/or alteration of the trees, as proposed, would be allowed pursuant to the City's Tree Protection and Preservation Ordinance. The Project would be responsible for providing replacement tree(s) consistent with Municipal Code Section 13.12.080, *Replacement Required*, and any conditions of approval specified by the City. In addition, the Project would provide new landscaping and trees along the perimeter of the site, adjacent to and between the residential buildings, and along the proposed interior walkways. Implementation of Mitigation Measures BIO-2 and BIO-3, and compliance with the Duarte Municipal Code would ensure that the Project would not conflict with any local policies or ordinances protecting biological resources. Impacts would be less than significant.

Mitigation Measures:

BIO-2: Prior to any removal or alteration of the three Coast Live Oak trees, the applicant is required to obtain a tree removal/alteration permit pursuant to Duarte Municipal Code Section 13.12.040 and implement required replacement per Duarte Municipal Code Section 13.12.080, including planting timing (at the landscape phase unless otherwise directed), species, size, location, and maintenance consistent with City conditions of approval.

BIO-3: Prior to issuance of demolition permits, protective fences shall be installed around Trees #1 and #2 that encompass as much of the Tree Protection Zone areas as possible with the objective to enclose an adequate amount of space underneath the trees so that the heavy equipment required for demolition and grading can be routed away from root zones; prevent any soil disruptions or mechanical damage to the trunks and branches; and signify to all workers that the trees are Protected. Initial placement of the fences shall be approved and monitored by a qualified Arborist. The Arborists credentials shall be provided to the City of Duarte Director of Community Development, or designee. The fenced Tree Protection Zones shall be constructed with chain link on metal tube frames, at least five feet tall and set on stands. The fence panels shall be secured together with couplers or clamps and leave a 24 inch wide access gap between two panels for monitoring, mulching, irrigating, and other preservation activities. The fences shall be required during the demolition phase and throughout the construction of all residential structures and infrastructure. Any movement/relocation of the protective fences necessary for the construction phases shall be approved by the Project's Arborist of record and documentation provided to the City of Duarte Director of Community Development, or designee.

The fenced areas shall be covered with a three-inch layer of clean chipped bark mulch. The area shall be fitted with a soaker hose set on the surface of the mulch and anchored with landscape staples. The length of the soaker hose shall be adequate to offer an even amount of water throughout the fenced area. Irrigation shall be provided only during the months of January through May in the absence of normal rainfall. No supplemental water is required or advised in the summer or fall seasons.

Root pruning shall be done by exposing encountered roots by hand with a shovel and cutting with a clean hand saw at the point where roots are entire and undamaged. The required live crown pruning shall occur during the framing phase so the reduction pruning can be done with precision and kept to a minimum. A licensed tree service, to be approved by the Director of Community Development, shall be hired to do the work, and the work can be done at any time of the year.

Other monitoring visits by the approved Arborist of record shall occur for the repositioning of fences for the excavation and grading phase and during excavation and grading that encroaches

into the Tree Protection Zones. Monthly monitoring visits shall be scheduled for the Arborist to properly manage the soil moisture and tree health. Confirmation of the visits shall be provided to the Community Development Department.

The existing concrete driveway pavement located within the TPZ shall remain in place throughout construction activities to serve as soil and root protection. The concrete may be removed at the time the new driveway is installed.

The main haul route, and material storage and staging area throughout the Project site shall be in the planned driveway and fire lane areas after demolition and grading occurs and located outside of the Tree Protection Zones.

f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?

No Impact. The Project site is not located within the boundaries of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or State habitat conservation plan. Thus, the Project would not conflict with any of these plans and no impact would occur.

Mitigation Measures: No mitigation measures are required.

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4.5 Cultural Resources

Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a. Cause a substantial adverse change in the significance of a historical resource pursuant to § 15064.5?			X	
b. Cause a substantial adverse change in the significance of an archaeological resource pursuant to § 15064.5?		X		
c. Disturb any human remains, including those interred outside of dedicated cemeteries?			X	

This section is based on the *Cultural Resources Technical Report, 1404 Royal Oaks Project, City of Duarte, Los Angeles County, California* (Cultural Resources Report), prepared by South Environmental, dated March 2025 and included in its entirety as Appendix C, *Cultural Resources Report*.

a) Cause a substantial adverse change in the significance of a historical resource pursuant to § 15064.5?

Less Than Significant Impact. According to CEQA Guidelines Section 15064.5, a historical resource is a resource listed in, or determined to be eligible for listing in, the California Register of Historical Resources (CRHR); a resource included in a local register of historical resources; or any object, building, structure, site, area, place, record, or manuscript that a lead agency determines to be historically significant.

A records search of the California Historic Resources Information System (CHRIS) was performed at the South Central Coastal Information Center (SCCIC) that includes the Project site and a one-half-mile radius. Results of the records search indicate that no previous cultural resources studies overlap the Project site. However, six studies were previously conducted outside of the Project site but within one-half-mile radius. The records search indicates that no previously recorded cultural resources were recorded within the Project site. Three previously recorded historic built environmental resources were identified within a one-half-mile search radius of the Project site; all three were found ineligible for listing in the National Register of Historic Places (NRHP), California Register of Historic Places (CRHP), or local designation through survey evaluation. None of these previously recorded resources are within or adjacent to the Project site.

In addition to the SCCIC records search, additional sources were consulted, including the City of Duarte Building Permit Records, Sanborn Fire Insurance Maps, historical aerial photographs, and the Built Environment Resource Directory (BERD). No resources within or adjacent to the Project site are listed in the BERD for Los Angeles County.

A pedestrian field survey of the Project site was conducted on February 12, 2025. The Project site contains two separate properties: 1404 Royal Oaks Drive (APN 8530-004-059), constructed in 1953; and 1414 Royal Oaks Drive (APN 8530-004-060), constructed in 1999. As the single-family residence at 1404 Royal Oaks

Drive is a built environment resource over 45 years old, the residence was recorded and evaluated for historical significance in consideration of CRHR designation criteria and integrity requirements. According to the Cultural Resources Report, the Project site is not associated with events that have made a significant contribution to the broad patterns of California's history and cultural heritage; is not associated with the lives of persons significant in our past; does not embody the distinctive characteristics of a type, period, or method of construction, or represents the work of an important creative individual, or possesses high artistic values; and has not yielded, nor is likely to yield, information important in prehistory or history. Thus, the Project site and remaining structures are not recommended eligible for the CRHR, as they do not meet the criteria for listing, and are therefore not recommended as a "historic resource" under CEQA.

As no historic or potentially historic built environment resources are located within the site, the Project would not cause a substantial adverse change in the significance of a historical resource pursuant to § 15064.5; impacts are less than significant in this regard.

Mitigation Measures*:* No mitigation measures are required.

b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to § 15064.5?

Less Than Significant Impact with Mitigation Incorporated. As stated above, results of the records search indicate that six previous studies had been completed within one-half mile of the Project site, none of which included the Project site. No previously recorded cultural resources are located within the Project site or within the one-half-mile search radius.

According to CEQA Guidelines Section 15064.5, if an archaeological resource (as defined by Section 21083.2 of the Public Resources Code) is found, the Project site shall be treated in accordance with the provisions of Section 21083.2. If it can be demonstrated that a project will cause damage to a unique archaeological resource, the lead agency may require reasonable efforts to be made to permit any or all these resources to be preserved in place or left in an undisturbed state.

The Project site has been previously disturbed by the previous construction of buildings and subsurface infrastructure. An intensive pedestrian survey for archaeological resources was conducted on February 12, 2025. No archaeological resources were identified within the Project site during the survey. For these reasons, the Cultural Resources Report concluded that the Project site is unlikely to contain intact buried archaeological deposits. However, there is the potential for unknown or undiscovered resources to be uncovered through construction activities. As such, mitigation measures have been identified to address the potential for inadvertent discovery of archaeological resources. Should Project excavation encounter archaeological resources, Mitigation Measure CUL-1 would require construction work to halt until a qualified archaeologist can evaluate the find. With implementation of CUL-1, the Project would not cause a substantial adverse change in the significance of an archaeological resource pursuant to CEQA Guidelines Section 15064.5 and impacts would be less than significant.

Mitigation Measures:

CUL-1: If previously unidentified cultural resources are encountered during ground-disturbing activities, work within 50 feet of the find shall cease and the Director of Community Development shall be notified and a qualified archaeologist, defined as an archaeologist who meets the Secretary of the Interior's Professional Qualification Standards for archaeology, shall be contacted immediately to evaluate the find. If necessary, the evaluation may require preparation of a treatment plan and

archaeological testing for the California Register of Historical Resources (CRHR) or National Register of Historic Places (NRHP) eligibility. If the discovery proves to be significant under CEQA and cannot be avoided by the Project, additional work such as data recovery excavation may be warranted to mitigate any significant impacts. In the event an identified cultural resource is Native American in origin, the qualified archaeologist shall consult with the Project owner and the Director of Community Development, or designee, to implement Native American consultation procedures. Construction shall not resume in the area until appropriate protection and preservation measures are in place and have been approved by the Director of Community Development, or designee, and the qualified archaeologist states in writing that the proposed construction activities would not significantly damage any archaeological resources.

c) Disturb any human remains, including those interred outside of dedicated cemeteries?

Less Than Significant Impact. There are no dedicated cemeteries within the Project site or surrounding area and there is no information to suggest that the site has any undiscovered human remains. Most Native American human remains are found in association with prehistoric archaeological sites. As discussed above, there are no known archaeological resources within the Project site and the site is unlikely to contain intact buried archaeological deposits. However, there is the potential for previously unknown human remains to be discovered/disturbed during the Project's ground disturbing activities, resulting in a potentially significant impact.

If human remains are found, the remains would require proper treatment in accordance with applicable laws. These include California Health and Safety Code (HSC) Section 7050.5, Public Resources Code (PRC) Section 5097.98, and State CEQA Guidelines Section 15064.5(e), which mandate procedures of conduct following the discovery of human remains on non-federal lands. According to the provisions of CEQA, should human remains be encountered, all work in the immediate vicinity of the burial would be required to cease, and any necessary steps to ensure the integrity of the immediate area must be taken. The Los Angeles County Coroner would be immediately notified and must then determine whether the remains are Native American in origin. If the Los Angeles County Coroner determines the remains are Native American, the Coroner has 24 hours to notify the Native American Heritage Commission (NAHC), who will in turn, notify the person they identify as the Most-Likely-Descendent of any human remains. Following compliance with the established regulatory framework (HSC Section 7050.5, PRC Section 5097.98, and State CEQA Guidelines Section 15064.5(e)), which details the appropriate actions required in the event human remains are encountered, the Project's potential impacts concerning human remains would be less than significant.

Mitigation Measures: No mitigation measures are required.

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4.6 Energy

Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a. Result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation?			X	
b. Conflict with or obstruct a state or local plan for renewable energy or energy efficiency?			X	

REGULATORY FRAMEWORK

Federal and State agencies regulate energy use and consumption through various means and programs. On the federal level, the U.S. Department of Transportation (DOT), the U.S. Department of Energy, and the U.S. EPA are three federal agencies with substantial influence over energy policies and programs. On the State level, the California Public Utilities Commission (CPUC) and the California Energy Commissions (CEC) are two agencies with authority over different aspects of energy. Key federal and State energy-related laws and plans are summarized below.

California Building Energy Efficiency Standards

The 2022 California Building Energy Efficiency Standards for Residential and Nonresidential Buildings (California Code of Regulations, Title 24, Part 6), commonly referred to as "Title 24," became effective on January 1, 2023. In general, Title 24 requires the design of building shells and building components to conserve energy. The standards are updated periodically to allow consideration and possible incorporation of new energy efficiency technologies and methods. The Title 24 standards require installation of energy efficient windows, insulation, lighting, ventilation systems, rooftop solar panels, and other features that reduce energy consumption in homes and businesses.

California Green Building Standards (CALGreen)

The 2022 California Green Building Standards Code (California Code of Regulations, Title 24, Part 11), commonly referred to as CALGreen, went into effect on January 1, 2023. The California Building Standards Commission developed CALGreen in an effort to meet the State's landmark initiative Assembly Bill (AB) 32 goals, which established a comprehensive program of cost-effective reductions of greenhouse gas (GHG) emissions to 1990 levels by 2020. CALGreen was developed to (1) reduce GHG emissions from buildings; (2) promote environmentally responsible, cost-effective, and healthier places to live and work; (3) reduce energy and water consumption; and (4) respond to the environmental directives of the administration. CALGreen requires that new buildings employ water efficiency and conservation, increase building system efficiencies (e.g., lighting, heating/ventilation and air conditioning [HVAC], and plumbing fixtures), divert construction waste from landfills, and incorporate electric vehicles charging infrastructure. There is growing recognition among developers and retailers that sustainable construction is not prohibitively expensive, and that there is a significant cost-savings potential in green building practices and materials.

Senate Bill 100

Senate Bill (SB) 100 (Chapter 312, Statutes of 2018) requires that retail sellers and local publicly owned electric utilities procure a minimum quantity of electricity products from eligible renewable energy resources so that the total kilowatt-hours (kWh) of those products sold to their retail end-use customers achieve 44 percent of retail sales by December 31, 2024; 52 percent by December 31, 2027; 60 percent by December 31, 2030; and 100 percent by December 31, 2045. SB 100 requires the CPUC, CEC, CARB, and all other State agencies to incorporate the policy into all relevant planning. In addition, SB 100 requires the CPUC, CEC, and CARB to utilize programs authorized under existing statutes to achieve that policy and, as part of a public process, issue a joint report to the Legislature by January 1, 2021, and every four years thereafter, that includes specified information relating to the implementation of SB 100.

a) Result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation?

b) Conflict with or obstruct a state or local plan for renewable energy or energy efficiency?

The means to achieve the goal of conserving energy include decreasing overall energy consumption, decreasing reliance on natural gas and oil, and increasing reliance on renewable energy sources. In particular, the proposed Project would be considered "wasteful, inefficient, and unnecessary" if it were to violate State and federal energy standards and/or result in significant adverse impacts related to project energy requirements, energy inefficiencies, energy intensiveness of materials, cause significant impacts on local and regional energy supplies or generate requirements for additional capacity, fail to comply with existing energy standards, otherwise result in significant adverse impacts on energy resources, or conflict or create an inconsistency with an applicable plan, policy, or regulation.

The Project proposes to develop 11 townhouse units and associated improvements. The amount of energy used at the Project site would directly correlate to the size of the proposed units, the energy consumption of associated unit appliances, and outdoor lighting. Other major sources of Project energy consumption include fuel used by vehicle trips generated during Project construction and operation, and fuel used by off-road construction vehicles during construction.

The following discussion provides calculated levels of energy use expected for the proposed Project, based on commonly used modeling software (i.e. CalEEMod v.2022.1 and the California Air Resource Board's EMFAC2021). It should be noted that many of the assumptions provided by CalEEMod are conservative relative to the Project; thus, this discussion provides a conservative estimate of proposed Project emissions.[12]

Electricity

The electricity used by the Project would be used primarily to power on-site buildings; natural gas would also be utilized for the proposed Project. Total annual electricity (kWh) and natural gas (kBTU) usage associated with the operation of the Project is shown in Table 4.6-1, *Project Operational Natural Gas and Electricity Usage*.

[12] In addition, this conservative analysis does not account for the offset associated with trips that currently occur at the site.

Table 4.6-1
Project Operational Natural Gas Electricity Usage

Emissions	Project Annual Consumption	Los Angeles County Annual Consumption[1]	Percent Increase
Electricity Consumption (MWh/year)	51	68,484,000	<0.01%
Natural Gas Consumption (kBTU/year)	264,334	282,000,000,000	<0.01%
Sources: CalEEMod version 2022.1; California Energy Commission, Electricity Consumption by County; California Energy Commission, Natural Gas Consumption by County.			
Notes: 1. Latest data is from year 2022.			

CalEEMod uses the California Commercial End Use Survey (CEUS) database to develop energy intensity value for non-residential buildings. The energy use from residential land uses is calculated based on the Residential Appliance Saturation Survey (RASS). Similar to CEUS, this is a comprehensive energy use assessment that includes the end use for various climate zones in California.

As shown in Table 4.6-1, Project operational electricity usage is forecast to represent less than a 0.01 percent increase above the County's typical annual electricity consumption. This increase is minimal in the context of the County as a whole.

On-Road Vehicles (Operation)

The Project would generate vehicle trips during its operational phase. The Project would generate approximately 80 average daily vehicle trips. In order to calculate operational on-road vehicle energy usage and emissions, default trip lengths generated by CalEEMod (version 2022.1) were used, which are based on the Project location and urbanization level parameters selected within CalEEMod; refer to Appendix A. Based on fleet mix data provided by CalEEMod and Year 2027 gasoline and diesel miles per gallon (MPG) factors for individual vehicle classes as provided by EMFAC2021, a weighted MPG factor for operational on-road vehicles of approximately 27.9 MPG for gasoline vehicles and 15.3 MPG for diesel vehicles were derived. Based on 699 Average Daily VMT, the Project would generate vehicle trips that would use approximately 24 gallons of gasoline per day and 3 gallons of diesel per day, or 8,635 gallons of gasoline per year and 935 gallons of diesel per year.[13]

On-Road Vehicles (Construction)

The Project would also generate on-road vehicle trips during Project construction (from construction workers and vendors). Estimates of anticipated vehicle fuel consumption were derived based on the assumed construction schedule, vehicle trip lengths, and number of workers per construction phase as provided by CalEEMod, and Year 2025 gasoline MPG factors provided by EMFAC2021. It was assumed that all vehicles would use gasoline as a fuel source (as opposed to diesel fuel or alternative sources). Table 4.6-2, *On-Road Mobile Fuel Generated by Project Construction Activities – By Phase*, describes gasoline and diesel fuel used by on-road mobile sources during each phase of the construction schedule. As shown,

[13] This is a conservative analysis and does not account for the offset associated with trips that currently occur at the site.

the vast majority of on-road mobile vehicle fuel used during the construction of the Project would occur during the grading phase.

Table 4.6-2
On-Road Mobile Fuel Generated by Project Construction Activities – By Phase

Construction Phase	# of Days	Total Daily Worker Trips[1]	Total Daily Vendor Trips[1]	Total Hauler Trips[1]	Gallons of Gasoline Fuel[2]	Gallons of Diesel Fuel[2]
Demolition	5	10	13	0	34	11
Grading	16	8	0	2	82	4
Building Construction	521	8	1	0	141	54
Paving	32	18	0	0	383	0
Architectural Coating	21	2	0	0	1	0
				Total	**641**	**69**

Sources: CalEEMod Version 2022.1; EMFAC2021.

Notes:
1. Provided by CalEEMod.
2. Refer to Appendix A for further detail.

Off-Road Vehicles (Construction)

Off-road construction vehicles would use diesel fuel during the construction phase of the Project. Off-road construction vehicles expected to be used during the construction phase of the Project include, but are not limited to, cranes, forklifts, generator sets, tractors, excavators, and dozers. Based on the total amount of CO_2 emissions expected to be generated by the proposed Project (as provided by the CalEEMod output), and a CO_2 to diesel fuel conversion factor (provided by the U.S. Energy Information Administration), the Project would use approximately 1,422 gallons of diesel fuel for off-road construction vehicles during the site preparation and grading phases of the Project; refer to Appendix A for detailed calculations.

Other

Project landscape maintenance activities would generally require the use of fossil fuel (e.g., gasoline) energy. For example, lawn mowers require the use of fuel for power. It is estimated that landscape care maintenance would require approximately two individuals, one hour per week, or 104 person-hours per year. Assuming an average of approximately 0.5 gallons of gasoline used per person-hour, the Project would use approximately 52 gallons of gasoline per year to power landscape maintenance equipment. The energy used to power landscape maintenance equipment would not differ substantially from the energy required for landscape maintenance for a similar Project.

Conclusion

The proposed Project would use energy resources for the operation of the residential buildings (e.g., electricity), for on-road vehicle trips (e.g. gasoline and diesel fuel) generated by the Project (both during Project construction and operation), and from off-road construction activities associated with the Project (e.g. diesel fuel). Each of these activities would require the use of energy resources. The Project would be responsible for conserving energy, to the extent feasible, and would be required to comply with Statewide and local measures regarding energy conservation, such as Title 24 building efficiency standards and General Plan EIR Mitigation Measures USS-8 and USS-9 requiring energy conservation.

The proposed Project would be in compliance with all applicable federal, State, and local regulations regulating energy usage. For example, Southern California Edison (SCE) is responsible for the mix of energy resources used to provide electricity for its customers, and it is in the process of implementing the Statewide Renewable Portfolio Standard (RPS) to increase the proportion of renewable energy (e.g. solar and wind) within its energy portfolio. SCE has achieved at least a 33 percent mix of renewable energy resources and will be required to achieve a renewable mix of at least 50 percent by 2030. Additionally, energy-saving regulations, including the latest State Title 24 building energy efficiency standards ("part 6"), would be applicable to the proposed Project. Other statewide measures, including those intended to improve the energy efficiency of the statewide passenger and heavy-duty truck vehicle fleet (e.g. the Pavley Bill and the Low Carbon Fuel Standard) are improving vehicle fuel economies, thereby conserving gasoline and diesel fuel. These energy savings would continue to accrue over time.

As a result, the Project would not result in any significant adverse impacts related to Project energy requirements, energy use inefficiencies, and/or the energy intensiveness of materials by amount and fuel type for each stage of the Project including construction, operations, maintenance, and/or removal. The electricity provider to the site, SCE, maintains sufficient capacity to serve the proposed Project. The Project would be required to comply with all existing energy efficiency standards and would not result in significant adverse impacts on energy resources. Therefore, the proposed Project would not result in a wasteful, inefficient, or unnecessary consumption of energy resources during Project construction or operation. Impacts would be less than significant.

Mitigation Measures: No mitigation measures are required.

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4.7 Geology and Soils

Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a. Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving:				
1) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.				X
2) Strong seismic ground shaking?			X	
3) Seismic-related ground failure, including liquefaction?			X	
4) Landslides?				X
b. Result in substantial soil erosion or the loss of topsoil?			X	
c. Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on-or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?			X	
d. Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial direct or indirect risks to life or property?			X	
e. Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water?				X
f. Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?		X		

This section is based in part on the *Report of Geotechnical Investigation, Proposed Residential Development, 1404 & 1414 Royal Oaks Drive APN: 8530-004-059 & -060 Duarte, California* (Geotechnical Investigation), prepared by Calland Engineering (CLE), dated December 12, 2023, and included in its entirety as Appendix D, *Geotechnical Investigation*; and the *Paleontological Resources Assessment, 1404 Royal Oaks Duarte Project, City of Duarte, Los Angeles County, California*, prepared by South Environmental LLC, dated May 2025, and included in its entirety as Appendix E, *Paleontological Resources Assessment*.

a) Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving:

1) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.

No Impact. The Alquist-Priolo Earthquake Fault Zoning Act was passed in 1972 to mitigate the hazard of surface faulting to structures for human occupancy. The Act's main purpose is to prevent the construction of buildings used for human occupancy on the surface trace of active faults. The Act requires the State Geologist to establish regulatory zones, known as "Alquist-Priolo Earthquake Fault Zones," around the surface traces of active faults and to issue appropriate maps. If an active fault is found, a structure for human occupancy cannot be placed over the trace of the fault and must be set back from the fault (typically 50 feet). According to the California Geological Survey (CGS) Earthquake Zones of Required Investigation Map, the Project site is not located within an Alquist-Priolo Fault Zone.[14] Additionally, the Preliminary Geotechnical Investigation notes that the potential for fault surface rupture is considered low due to the absence of known active faults at the Project site. Therefore, the Project would not directly or indirectly cause potential substantial adverse effects involving rupture of a known earthquake fault, and there would be no impact.

Mitigation Measures: No mitigation measures are required.

2) Strong seismic ground shaking?

Less Than Significant Impact. The Project site is located in a seismically active area that has historically been affected by moderate to occasionally high levels of ground motion. As a result, during the life of the proposed development, it is likely the Project site would continue to experience ground shaking from nearby fault zones, as well as some background shaking from other seismically active areas of the southern California region. The intensity of ground shaking on the Project site would depend upon the earthquake's magnitude, distance to the epicenter, and geology of the area between the Project site and epicenter. According to the Geotechnical Investigation, the nearest fault zone is the Sierra Madre and Sierra Madre Connected Fault, located approximately one mile from the Project site. Other faults include the Raymond, approximately 1.6 miles from the site; the Elsinore, approximately 11 miles from the site;

[14] California Department of Conservation, California Geological Survey, *Earthquake Zones of Required Investigation Map*, https://maps.conservation.ca.gov/cgs/informationwarehouse/eqzapp/, accessed January 31, 2025.

and the Puente Hills, approximately 14.8 miles from the site. Rupture of any of these faults, or of another known or unknown fault in the region, could cause seismic ground shaking.

Pursuant to Duarte Municipal Code Chapter 16.04, *Construction Codes*, the City has adopted the California Building Code (CBC), as amended. The Project would be required to comply with all applicable regulations in the current CBC as amended by the Municipal Code, which includes design requirements to mitigate the effects of potential hazards associated with seismic ground shaking. The City would review Project design and construction plans for compliance with the CBC, as well as the Geotechnical Investigation's recommendations. Thus, compliance with the City's established regulatory framework and standard engineering practices and design criteria, which would be verified through the City's plan review process, would reduce potential impacts associated with strong seismic ground shaking at the Project site.

Mitigation Measures: No mitigation measures are required.

3) Seismic-related ground failure, including liquefaction?

Less Than Significant Impact. Liquefaction is a phenomenon where earthquake-induced ground vibrations increase the pore pressure in saturated, granular soils until it is equal to the confining, overburden pressure. Engineering research of soil liquefaction potential indicates that generally three basic factors must exist concurrently in order for liquefaction to occur. These factors include:

- A source of ground shaking, such as an earthquake, capable of generating soil mass distortions.
- A relatively loose silty and/or sandy soil.
- A relative shallow groundwater table (within approximately 50 feet below ground surface) or completely saturated soil conditions that will allow positive pore pressure generation.

According to the CGS's Earthquake Zones of Required Investigation, the Project site is not located in a Liquefaction Zone.[15] Additionally, the Preliminary Geotechnical Investigation did not encounter groundwater during the subsurface exploration (11 feet below the existing ground surface). The Geotechnical Investigation estimates that the highest historical groundwater level is approximately 200 feet below the existing grade. Thus, the potential for liquefaction at the site is anticipated to be low, particularly due to the depth of groundwater and soil conditions, and impacts would be less than significant.

Mitigation Measures: No mitigation measures are required.

4) Landslides?

No Impact. Landslides are mass movements of the ground that include rock falls, relatively shallow slumping and sliding of soil, and deeper rotational or transitional movement of soil or rock. Geologic hazards associated with landsliding are not anticipated, as the Project site is not located within an area identified by the CGS as having potential for seismic slope instability.[16] Further, as discussed in the

[15] California Department of Conservation, California Geological Survey, *Earthquake Zones of Required Investigation Map*, https://maps.conservation.ca.gov/cgs/informationwarehouse/eqzapp/, accessed January 31, 2025.
[16] California Department of Conservation, California Geological Survey, *Earthquake Zones of Required Investigation Map*, https://maps.conservation.ca.gov/cgs/informationwarehouse/eqzapp/, accessed January 31, 2025.

Geotechnical Investigation, the potential for landsliding is often suggested in areas of moderate to steep terrain that is underlain by weak or unfavorably oriented geological conditions. The Project site does not exhibit these conditions; the Geotechnical Investigation concluded that due to the relatively flat nature of the site, the potential for landslide is remote. No impact would occur in this regard.

Mitigation Measures: No mitigation measures are required.

b) Result in substantial soil erosion or the loss of topsoil?

Less Than Significant Impact. The Project site and surrounding area are relatively flat. Soils materials consist of approximately three feet of fill materials over alluvium. Grading and earthwork activities associated with Project construction would expose soils to potential short-term erosion by wind and water. Duarte Municipal Code Chapter 6.15, *Stormwater and Runoff Pollution Control*, contains the City's Stormwater and Urban Runoff Pollution Control Ordinance, which establishes stormwater runoff controls and best management practices (BMPs) to prevent and/or reduce the quantity of pollutants from being discharged into the municipal stormwater system, in accordance with the requirements of the Clean Water Act (CWA) and State law. Duarte Municipal Code Section 6.15.070, *Construction Pollutant Reduction*, requires, in part, that construction site stormwater runoff containing sediment, construction waste, or other pollutants to be reduced to the maximum extent practicable

Development of the Project would increase the amount of impervious area when compared to existing conditions; refer to Section 4.10, *Hydrology and Water Quality*. The Project proposes to install an on-site storm drain and underground infiltration chambers system for stormwater capture/retention. A series of area drains and catch basins would collect and convey on-site stormwater to three underground infiltration chambers. The chamber systems would provide an overflow pipe to allow stormwater discharges, in the event of subsoil saturation, to the downstream existing alley concrete gutter system, eventually discharging into the public storm drain system located south of the Project site. Additionally, the Project would be required to implement various LID BMPs (refer to Section 4.10), including common area landscape management, which would ensure landscaped areas would be maintained and properly irrigated to reduce the amount of potential soil erosion or the loss of top soil. Following compliance with the established regulatory framework identified in the Duarte Municipal Code regarding stormwater and runoff pollution control and implementation of the LID BMPs, potential impacts associated with soil erosion and the loss of topsoil would be less than significant.

Mitigation Measures: No mitigation measures are required.

c) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on-or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?

Less Than Significant Impact. Refer to Responses 4.7(a)(3) and 4.7(a)(4) regarding the potential for liquefaction and landslides, respectively.

Lateral Spreading. Lateral spreading is the horizontal movement or spreading of soil toward an open face. Lateral spreading may occur when soils liquefy during an earthquake event, and the liquefied soils with overlying soils move laterally to unconfined spaces. Since liquefaction is not considered a hazard at the Project site, earthquake-induced lateral spreading would also not be considered a hazard at the Project site.

Subsidence. Subsidence is the sudden sinking or gradual downward settling of the earth's surface with little or no horizontal movement. Subsidence is caused by a variety of activities, which include, but are not limited to, withdrawal of groundwater, pumping of oil and gas from underground, the collapse of underground mines, liquefaction, and hydrocompaction. Proposed operations associated with the residential uses would not include activities known to cause subsidence, such as groundwater or oil extraction. The Geotechnical Investigation concluded that subsidence at the site appears unlikely.

The Geotechnical Investigation concluded that based on the subsurface investigation, development of the Project, as proposed, is feasible from a geotechnical standpoint provided the recommendations presented in the Geologic Investigation are incorporated into the design and construction of the Project. The recommendations address site grading, foundation design, and inspections by a geotechnical engineer during temporary excavations, removal of surficial and unsuitable soils, backfill placement and compaction, and utility trenches backfill.

The Project would be required to comply with all applicable regulations in the most recent as amended by the Duarte Municipal Code. The City would review construction plans for compliance with Duarte Municipal Code, as well as the Geotechnical Investigation's recommendations. Thus, compliance with the City's established regulatory framework and standard engineering practices and design criteria, which would be verified through the City's construction plan review process, would ensure potential impacts associated with a geologic unit or soil that is unstable or would become unstable at the Project site would be reduced to a less than significant impact.

Mitigation Measures: No mitigation measures are required.

d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial direct or indirect risks to life or property?

Less Than Significant Impact. Laboratory testing of onsite soils as part of the Geotechnical Investigation indicates that the soils within the Project site are very low in expansion potential. The Geotechnical Investigation indicates that foundation design and construction should be designed in accordance with the current building code to reduce the potential of any adverse effect as a result of expansive soils.

The Project would be required to comply with all applicable regulations in the most recent CBC as amended by the Duarte Municipal Code. The City would review construction plans for compliance with the CBC and Municipal Code, as well as the Geotechnical Investigation's recommendations. Thus, compliance with the City's established regulatory framework and standard engineering practices and design criteria, which would be verified through the City's construction plan review process, would ensure potential impacts associated with expansive soils at the Project site would be reduced to a less than significant impact.

Mitigation Measures: No mitigation measures are required.

e) Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water?

No Impact. The Project would be served by the existing sewer system and would not involve the use of septic tanks or alternative wastewater disposal systems. No impact would occur in this regard.

Mitigation Measures: No mitigation measures are required.

f) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?

Less Than Significant Impact with Mitigation Incorporated. Significant paleontological resources are determined to be fossils or assemblages of fossils that are unique, unusual, rare, uncommon, or diagnostically important. Significant fossils can include remains of large to very small aquatic and terrestrial vertebrates or remains of plants and animals previously not represented in certain portions of the stratigraphy. Assemblages of fossils that might aid stratigraphic correlation, particularly those offering data for the interpretation of tectonic events, geomorphologic evolution, and paleoclimatology are also critically important.

The geology of the Project site has been mapped as Holocene-aged alluvial fan deposits consisting of Holocene-aged alluvial gravel, sand, and clay that is largely derived from the canyons of the San Gabriel Mountains, located to the north. The Geotechnical Investigation performed on the Project site found that these young alluvial deposits extend to at least 11 feet below the existing ground surface (the borings conducted did not exceed 11 feet). Pleistocene-aged alluvial deposits are found in the vicinity and may directly underlay these younger sediments at the Project site, although the depth at which they may occur is currently undetermined. Holocene-aged sediments are typically considered to be of low potential for scientifically significant paleontological resources, while Pleistocene-age deposits are well known to contain scientifically significant vertebrate fossils and are of high potential to contain paleontological resources.

A records search was performed by the Natural History Museum of Los Angeles County to identify previously identified localities within one mile of the Project site. The results of the search indicates that no scientifically significant fossil materials have been discovered within the Project site; however, three scientifically significant fossil localities have been recorded within one mile of the site. One of the three fossil localities was located 30 feet below ground surface; the depth of discovery was not indicated for the other two, but they were recorded as being found within Pleistocene-aged deposits. The Paleontological Resources Assessment concludes that based on current site plans, construction activities related to the Project are not expected to exceed 11 feet and thus will not impact geologic units with a High potential to contain scientifically significant fossils. Therefore, the potential to impact scientifically significant fossil resources is low.

Further, the Project site has been altered by previous ground disturbance associated with residential development. As such, the Project is not unlikely to impact sediments with a High potential to contain scientifically significant fossil resources. Should construction plans change, and excavations take place at a depth greater than 11 feet below ground surface, Mitigation Measure GEO-1 would require a qualified vertebrate paleontologist (as defined by the Society for Vertebrate Paleontology) to conduct a spot check of the excavated materials retrieved from below 11 feet of depth to confirm that sediments with High potential are not being impacted. Mitigation Measure GEO-3 details the appropriate steps in the event paleontological resources are encountered during ground disturbing activities, including the requirement for all work within a 50-foot radius of the find to be halted and a professional vertebrate paleontologist to evaluate the find. The significance of the find would be evaluated and if determined to be significant, the paleontologist would determine any additional work, such as data recovery excavation, that would be warranted, prior to construction activities resuming. With implementation of Mitigation Measures GEO-1 and GEO-2, potential impacts to paleontological resources would be reduced to a less than significant level.

Mitigation Measures:

GEO-1: For all excavations at a depth greater than 11 feet below ground surface, a qualified vertebrate paleontologist (as defined by the Society for Vertebrate Paleontology) shall be contacted and retained to conduct a spot check of the excavated materials retrieved from below 11 feet of depth to confirm that sediments with High potential are not being impacted. Verification of retention of the qualified vertebrate paleontologist shall be provided to the City of Duarte Community Development Department one business day prior to such excavation.

GEO-2: Should fossil materials be discovered by the construction field crew, construction activities shall be halted within a 50-foot radius around the find. A qualified vertebrate paleontologist (as defined by the Society for Vertebrate Paleontology) shall be contacted and retained to evaluate the discovery, determine its significance, and decide if additional mitigation or treatment is required. Verification of retention of the qualified vertebrate paleontologist shall be provided to the City of Duarte Community Development Department within three business days after discovery. Documentation and treatment of the discovery shall occur in accordance with Society of Vertebrate Paleontology standards. The significance of the find shall be evaluated pursuant to the State CEQA Guidelines. If the discovery proves to be significant, before construction activities resume at the location of the find, additional work such as data recovery excavation may be warranted, as deemed necessary by the paleontologist. Resuming construction activities after discovery shall be authorized only by a qualified vertebrate paleontologist in writing, and a copy of such documentation provided to the City of Duarte Community Development Department.

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4.8 Greenhouse Gas Emissions

Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a. Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?			X	
b. Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?			X	

BACKGROUND

Constituent gases of the Earth's atmosphere, called atmospheric greenhouse gases (GHG), play a critical role in the Earth's radiation amount by trapping infrared radiation emitted from the Earth's surface, which otherwise would have escaped to space. Prominent greenhouse gases contributing to this process include carbon dioxide (CO_2), methane (CH_4), ozone, water vapor, nitrous oxide (N_2O), and chlorofluorocarbons (CFCs). This phenomenon, known as the Greenhouse Effect, is responsible for maintaining a habitable climate. Anthropogenic (caused or produced by humans) emissions of these greenhouse gases in excess of natural ambient concentrations are responsible for the enhancement of the Greenhouse Effect and have led to a trend of unnatural warming of the Earth's natural climate, known as global warming or climate change. Emissions of gases that induce global warming are attributable to human activities associated with industrial/manufacturing, agriculture, utilities, transportation, and residential land uses. Consumption of fossil fuels in the transportation sector was the single largest source of California's GHG emissions in 2021, accounting for 38.2 percent of total GHG emissions in the State.[17] This category was followed by the industrial sector (19.4 percent), the electricity generation sector (including both in-State and out-of-State sources) (16.4 percent), residential and commercial sector (10.2), agriculture sector (8.1 percent), high global warming potential gases (5.6 percent), and waste sectors (2.2 percent). Emissions of CO_2 and nitrous oxide (NO_2) are byproducts of fossil fuel combustion. Methane, a potent greenhouse gas, results from off-gassing associated with agricultural practices and landfills. Sinks of CO_2, where CO_2 is stored outside of the atmosphere, include uptake by vegetation and dissolution into the ocean.

[17] California Air Resources Board, *California Greenhouse Gas Emissions for 2000 to 2021: Trends of Emissions and Other Indicators*, https://ww2.arb.ca.gov/sites/default/files/2023-12/2000_2021_ghg_inventory_trends.pdf, December 2023, accessed March 29, 2025.

REGULATORY FRAMEWORK

The following section summarizes pertinent federal, State, and local regulations related to GHGs.

U.S. Environmental Protection Agency Endangerment Finding

The U.S. EPA's authority to regulate GHG emissions stems from the U.S. Supreme Court decision in Massachusetts v. EPA (2007). The Supreme Court ruled that GHGs meet the definition of air pollutants under the existing Clean Air Act and must be regulated if these gases could be reasonably anticipated to endanger public health or welfare. Responding to the Court's ruling, the EPA finalized an endangerment finding in December 2009. Based on scientific evidence it found that six GHGs (CO_2, CH_4, N_2O, HFCs, PFCs, and SF_6) constitute a threat to public health and welfare. Thus, it is the Supreme Court's interpretation of the existing FCAA and the EPA's assessment of the scientific evidence that form the basis for the EPA's regulatory actions.

Assembly Bill 32 (California Global Warming Solutions Act of 2006)

The California Global Warming Solutions Act of 2006 (AB 32; California Health and Safety Code Division 25.5, Sections 38500-38599) establishes regulatory, reporting, and market mechanisms to achieve quantifiable reductions in GHG emissions and establishes a cap on Statewide GHG emissions. AB 32 required that Statewide GHG emissions be reduced to 1990 levels by 2020 (this goal has been met). AB 32 specifies that regulations adopted in response to Assembly Bill (AB) 1493 (Pavley Bill) should be used to address GHG emissions from vehicles. However, AB 32 also includes language stating that if the AB 1493 regulations cannot be implemented, then CARB should develop new regulations to control vehicle GHG emissions under the authorization of AB 32.

Senate Bill 375

SB 375, signed in September 2008 (Chapter 728, Statutes of 2008), aligns regional transportation planning efforts, regional GHG reduction targets, and land use and housing allocations. SB 375 requires Metropolitan Planning Organizations (MPOs) to adopt a sustainable communities' strategy (SCS) or alternative planning strategy (APS) that will prescribe land use allocation in that MPOs' regional transportation plan. CARB, in consultation with MPOs, is required to provide each affected region with GHG reduction targets emitted by passenger cars and light trucks in the region for the years 2020 and 2035. These reduction targets are to be updated every eight years but can be updated every four years if advancements in emissions technologies affect the reduction strategies to achieve the targets. CARB is also charged with reviewing each MPO's SCS or APS for consistency with its assigned targets. If MPOs do not meet the GHG reduction targets, transportation projects may not be eligible for funding.

Executive Order S-3-05

Executive Order S-3-05 set forth a series of target dates by which Statewide emissions of GHGs would be progressively reduced, as follows:

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

Executive Order S-3-05 directed the California Environmental Protection Agency (CalEPA) Secretary to coordinate a multi-agency effort to reduce GHG emissions to the target levels. The Secretary is required to submit biannual reports to the Governor and California Legislature describing the progress made toward the emissions targets, the impacts of global climate change on California's resources, and mitigation and adaptation plans to combat these impacts. To comply with Executive Order S-3-05, the CalEPA Secretary created the California Climate Action Team, made up of members from various State agencies and commissions. The Climate Action Team released its first report in March 2006, which proposed to achieve the targets by building on the voluntary actions of California businesses, local governments, and communities and through State incentive and regulatory programs.

Title 24, Part 6

The California Energy Efficiency Standards for Residential and Nonresidential Buildings, Title 24, Part 6 of the California Code of Regulations (CCR) and commonly referred to as "Title 24" were established in 1978 in response to a legislative mandate to reduce California's energy consumption. Part 6 of Title 24 requires the design of building shells and building components to conserve energy. The standards are updated periodically to allow consideration and possible incorporation of new energy efficiency technologies and methods. The 2022 Title 24 standards took effect on January 1, 2023.

Title 24, Part 11

The California Green Building Standards Code (CCR Title 24, Part 11), commonly referred to as CALGreen, is a Statewide mandatory construction code developed and adopted by the California Building Standards Commission and the Department of Housing and Community Development. CALGreen also provides voluntary tiers and measures that local governments may adopt that encourage or require additional measures in five green building topical areas. The 2022 CALGreen Code went into effect on January 1, 2023.

Senate Bill 32

Signed into law in September 2016, SB 32 codifies the 2030 GHG reduction target in Executive Order B-30-15 (40 percent below 1990 levels by 2030). SB 32 authorizes CARB to adopt an interim GHG emissions level target to be achieved by 2030. CARB also must adopt rules and regulations in an open public process to achieve the maximum, technologically feasible, and cost-effective GHG reductions.

CARB Scoping Plan

On December 11, 2008, CARB adopted its *Climate Change Scoping Plan* (Scoping Plan), which functions as a roadmap of CARB's plans to achieve GHG reductions in California required by Assembly Bill (AB) 32 through subsequently enacted regulations. The Scoping Plan contains the main strategies California will implement to reduce carbon dioxide-equivalent (CO_2e) emissions by 169 million metric tons (MMT), or approximately 30 percent, from the State's projected 2020 emissions level of 596 MMT of CO_2e under a business-as-usual scenario. The Scoping Plan also breaks down the amount of GHG emissions reductions CARB recommends for each emissions sector of the State's GHG inventory.

CARB updated the Scoping Plan in 2013 and again in 2017. The 2013 Update built upon the initial Scoping Plan with new strategies and recommendations and also set the groundwork to reach the long-term goals set forth by the State. Successful implementation of existing programs (as identified in previous iterations of the Scoping Plan) has allowed California to meet the 2020 target. The 2017 Update expanded the scope

of the plan further by focusing on the strategy for achieving the State's 2030 GHG target of 40 percent emissions reductions below 1990 levels (to achieve the target codified into law by SB 32) and substantially advanced toward the State's 2050 climate goal to reduce GHG emissions by 80 percent below 1990 levels.

The 2017 Update relied on the preexisting programs paired with an extended, more stringent Cap-and-Trade Program, to deliver climate, air quality, and other benefits. The 2017 Update identified new technologically feasible and cost-effective strategies to ensure that California meets its GHG reduction goals.

CARB adopted the 2022 Scoping Plan Update (2022 Scoping Plan) on December 15, 2022. The 2022 Scoping Plan Update assesses progress towards the SB 32 GHG reduction target of at least 40 percent below 1990 emissions by 2030, while laying out a path to achieving carbon neutrality no later than 2045 and a reduction in anthropogenic emissions by 85 percent below 1990 levels. Unlike the 2017 Scoping Plan, CARB no longer includes a numeric per capita threshold and instead advocates for compliance with a local GHG reduction strategy (CAP) consistent with CEQA Guidelines section 15183.5.

THRESHOLDS OF SIGNIFICANCE

Amendments to CEQA Guidelines Section 15064.4 were adopted to assist lead agencies in determining the significance of the impacts of GHG emissions and gives lead agencies the discretion to determine whether to assess those emissions quantitatively or qualitatively. This section recommends certain factors to be considered in the determination of significance (i.e., the extent to which a project may increase or reduce GHG emissions compared to the existing environment; whether the project exceeds an applicable significance threshold; and the extent to which the project complies with regulations or requirements adopted to implement a plan for the reduction or mitigation of GHGs). The amendments do not establish a threshold of significance; rather, lead agencies are granted discretion to establish significance thresholds for their respective jurisdictions, including looking to thresholds developed by other public agencies or suggested by other experts, such as the California Air Pollution Control Officers Association (CAPCOA), so long as any threshold chosen is supported by substantial evidence (CEQA Guidelines Section 15064.7(c)). The California Natural Resources Agency has also clarified that the CEQA Guidelines amendments focus on the effects of GHG emissions as cumulative impacts, and therefore GHG emissions should be analyzed in the context of CEQA's requirements for cumulative impact analyses (CEQA Guidelines Section 15064(h)(3)).[18,19] A project's incremental contribution to a cumulative impact can be found not to be cumulatively considerable if the project would comply with an approved plan or mitigation program that provides specific requirements to avoid or substantially lessen the cumulative problem within the geographic area of the project.

[18] California Natural Resources Agency, *Final Statement of Reasons for Regulatory Action*, pp. 11-13, 14, 16, December 2009, https://resources.ca.gov/CNRALegacyFiles/ceqa/docs/Final_Statement_of_Reasons.pdf.
[19] State of California Governor's Office of Planning and Research, *Transmittal of the Governor's Office of Planning and Research's Proposed SB 97 CEQA Guidelines Amendments to the Natural Resources Agency*, April 13, 2009, https://planning.lacity.org/eir/CrossroadsHwd/deir/files/references/C01.pdf

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

b) Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?

Less Than Significant Impact. The proposed Project would generate GHGs during the construction and operational phases of the Project. The Project's primary source of construction-related GHGs would result from emissions of CO_2 associated with Project construction and worker vehicle trips; refer to Table 4.8-1, *Construction GHG Emissions (Metric Tons/Year)*. Additionally, the Project would require limited grading, and would also include site preparation, building construction, and architectural coating phases.

Table 4.8-1
Construction GHG Emissions (Metric Tons/Year)

Year	Bio-CO_2	NBio-CO_2	Total CO_2	CH_4	N_2O	R	CO_2e
2025	0	161.7	161.7	0	0	0	162.6
2026	0	170.8	170.8	0	0	0	171.7
2027	0	44.7	44.7	0	0	0	44.9
Maximum	**0**	**161.7**	**161.7**	**0**	**0**	**0**	**162.6**

Source: CalEEMod version 2022.1

As shown in Table 4.8-1, Project construction-related activities would generate a maximum of approximately 162 $MTCO_2e$ of GHG emissions in a single year, or approximately 379 $MTCO_2e$ over the course of construction. Construction GHG emissions are typically summed and amortized over the Project's lifetime (assumed to be 30 years), then added to the operational emissions.[20] The amortized Project emissions would be approximately 13 $MTCO_2e$ per year. Once construction is complete, the generation of construction-related GHG emissions would cease.

The operational phase of the Project would generate GHGs primarily from the Project's operational vehicle trips and building energy (electricity and natural gas) usage; refer to Table 4.8-2, *Operational GHG Emissions 2027 (Metric Tons/Year)*. Other sources of GHG emissions would be minimal.

[20] The Project lifetime is based on SCAQMD's standard 30-year assumption (South Coast Air Quality Management District, Minutes for the GHG CEQA Significance Threshold Stakeholder Working Group #13, August 26, 2009).

Table 4.8-2
Operational GHG Emissions 2027 (Metric Tons/Year)

Category	Bio-CO_2	NBio-CO_2	Total CO_2	CH_4	N_2O	R	CO_2e
Mobile	0	86.7	86.7	0	0	0.1	88.1
Area	0	0.2	0.2	0	0	0	0.2
Energy	0	22.0	22.0	0	0	0	22.0
Water	0.1	0.4	0.6	0	0	0	1.0
Waste	0.7	0	0.7	0.1	0	0	2.6
Refrigerants	0	0	0	0	0	0	0.0
Total	**0.9**	**109.3**	**110.2**	**0.1**	**0**	**0.1**	**113.9**

Source: CalEEMod version 2022.1
Note: This analysis does not account for the offset in GHG emissions associated with the existing residences.

As shown in Table 4.8-2, Project operational GHG emissions would total approximately 114 $MTCO_2e$ annually, and combined with construction-related GHG emissions, would total approximately 127 $MTCO_2e$ annually. Therefore, the proposed Project would not exceed the SCAQMD's proposed GHG threshold of 3,000 MTCO2e per year.[21] In addition, with continued implementation of various statewide measures, the Project's operational energy and mobile source emissions would continue to decline in the future.

Consistency with Applicable GHG Plans, Policies, or Regulations

2022 Scoping Plan Consistency

CARB's latest Climate Change Scoping Plan (2022) outlines the State's strategies to reduce GHG emissions in accordance with the targets established under AB 32, SB 32, and AB 1279. The Scoping Plan is applicable to State agencies and is not directly applicable to cities/counties and individual projects. Nonetheless, the Scoping Plan has been the primary tool that is used to develop performance-based and efficiency-based CEQA criteria and GHG reduction targets for climate action planning efforts.

Table 4.8-3, *Project Consistency with the 2022 Scoping Plan*, summarizes the Project's consistency with applicable policies and measures of the 2022 Scoping Plan. As indicated in Table 4.8-3, the Project would not conflict with any of the provisions of the 2022 Scoping Plan and would support four of the action categories through energy efficiency, water conservation, recycling, and landscaping.

[21] On September 28, 2010, air quality experts serving on the SCAQMD GHG CEQA Significance Threshold Stakeholder Working Group recommended an interim screening level numeric bright-line threshold of 3,000 metric tons of CO_2e annually. The Working Group was formed to assist the SCAQMD's efforts to develop a GHG significance threshold and is composed of a wide variety of stakeholders including the State Office of Planning and Research (OPR), CARB, the Attorney General's Office, a variety of city and county planning departments. The numeric bright line and efficiency-based thresholds were developed to be consistent with CEQA requirements for developing significance thresholds, are supported by substantial evidence, and provide guidance to CEQA practitioners and lead agencies for determining whether GHG emissions from a proposed project are significant.

Table 4.8-3
Project Consistency with the 2022 Scoping Plan

Sector/Source	Category/Description	Consistency Analysis
Area		
SCAQMD Rule 445 (Wood Burning Devices)	Restricts the installation of wood-burning devices in new development.	Mandatory Compliance. Approximately 15 percent of California's major anthropogenic sources of black carbon include fireplaces and woodstoves.[1] The Project would not include hearths (woodstove and fireplaces) as mandated by this rule.
Energy		
California Renewables Portfolio Standard, Senate Bill 350 (SB 350) and Senate Bill 100 (SB 100)	Increases the proportion of electricity from renewable sources to 33 percent renewable power by 2020. SB 350 requires 50 percent by 2030. SB 100 requires 44 percent by 2024, 52 percent by 2027, and 60 percent by 2030. It also requires the State Energy Resources Conservation and Development Commission to double the energy efficiency savings in electricity and natural gas final end uses of retail customers through energy efficiency and conservation.	No Conflict. The Project would utilize electricity provided by Southern California Edison (SCE), which is required to meet the 2020, 2030, 2045, and 2050 performance standards. In 2022, approximately 33 percent of SCE's electricity came from renewable resources.[2] By 2030, SCE plans to achieve 80 percent carbon-free energy.[3]
California Code of Regulations, Title 24, Building Standards Code	Requires compliance with energy efficiency standards for residential and nonresidential buildings.	Mandatory Compliance. The Project is required to meet the applicable requirements of the 2022 Title 24 Building Energy Efficiency Standards, including installation of rooftop solar panels and additional CALGreen requirements (see discussion under CALGreen Code requirements below).

Table 4.8-3 (continued)
Project Consistency with the 2022 Scoping Plan

Sector/Source	Category/Description	Consistency Analysis
California Green Building Standards (CALGreen) Code Requirements	All bathroom exhaust fans are required to be ENERGY STAR compliant.	Mandatory Compliance. The Project construction plans are required to demonstrate that energy efficiency appliances, including bathroom exhaust fans, and equipment are ENERGY STAR compliant.
	HVAC system designs are required to meet American Society of Heating, Refrigerating and Air-Conditioning Engineers (ASHRAE) standards.	Mandatory Compliance. The Project construction plans are required to demonstrate that the HVAC system meets the ASHRAE standards.
	Air filtration systems are required to meet a minimum efficiency reporting value (MERV) 8 or higher.	Mandatory Compliance. The Project is required to install air filtration systems (MERV 8 or higher) as part of its compliance with 2022 and later Title 24 Section 401.2, Filters.
	Refrigerants used in newly installed HVAC systems shall not contain any chlorofluorocarbons.	Mandatory Compliance. The Project must meet this requirement as part of its compliance with the CALGreen Code.
	Parking spaces shall be designed for carpool or alternative fueled vehicles. Up to eight percent of total parking spaces is required for such vehicles.	Mandatory Compliance. The Project's proposed townhome units would have in-unit charging stations for electric vehicles.

Table 4.8-3 (continued)
Project Consistency with the 2022 Scoping Plan

Sector/Source	Category/Description	Consistency Analysis
Mobile Sources		
Mobile Source Strategy (Cleaner Technology and Fuels)	Reduce GHGs and other pollutants from the transportation sector through transition to zero-emission and low-emission vehicles, cleaner transit systems, and reduction of vehicle miles traveled.	Consistent. The Project would be consistent with this strategy by supporting the use of zero-emission and low-emission vehicles through the provision of electric vehicle charging capabilities within each of the townhome units.
Senate Bill (SB) 375	SB 375 establishes mechanisms for the development of regional targets for reducing passenger vehicle GHG emissions. Under SB 375, CARB is required, in consultation with the state's Metropolitan Planning Organizations, to set regional GHG reduction targets for the passenger vehicle and light-duty truck sector for 2020 and 2035.	Consistent. As demonstrated in Table 4.8-4, the Project would comply with the Southern California Association of Governments (SCAG) Connect SoCal (SCAG's 2024-2050 RTP/SCS), and therefore, the Project would be consistent with SB 375.
Water		
CCR, Title 24, Building Standards Code	Title 24 includes water efficiency requirements for new residential and non- residential uses.	Mandatory Compliance. Refer to the discussion under Title 24 Building Standards Code and CALGreen Code, above.
Water Conservation Act of 2009 (Senate Bill X7-7)	The Water Conservation Act of 2009 sets an overall goal of reducing per capita urban water use by 20 percent by December 31, 2020. Each urban retail water supplier shall develop water use targets to meet this goal. This is an implementing measure of the Water Sector of the AB 32 Scoping Plan. Reduction in water consumption directly reduces the energy necessary and the associated emissions to convene, treat, and distribute the water; it also reduces emissions from wastewater treatment.	Consistent. Refer to the discussion under Title 24 Building Standards Code and CALGreen Code, above. Also, refer to Section X, Hydrology and Water Quality.

Table 4.8-3 (continued)
Project Consistency with the 2022 Scoping Plan

Sector/Source	Category/Description	Consistency Analysis
Solid Waste		
California Integrated Waste Management Act (IWMA) of 1989 and Assembly Bill (AB) 341	The IWMA mandates that State agencies develop and implement an integrated waste management plan which outlines the steps to divert at least 50 percent of solid waste from disposal facilities.	Mandatory Compliance. The City would continue to implement its diversion programs and require compliance with all federal, State and local statutes and regulations for solid waste, including those identified under the most current CALGreen standards.

Notes:
1. California Air Resources Board, *California's 2017 Climate Change Scoping Plan*, Figure 4: California 2013 Anthropogenic Black Carbon Emission Sources, November 2017.
2. California Energy Commission, *2022 Power Content Label,* https://www.sce.com/sites/default/files/custom-files/PDF_Files/SCE_2022_Power_Content_Label_B&W.pdf, accessed September 10, 2024.
3. Southern California Edison, *The Clean Power and Electrification Pathway,* https://newsroom.edison.com/internal_redirect/cms.ipressroom.com.s3.amazonaws.com/166/files/20187/g17-pathway-to-2030-white-paper.pdf, accessed June 24, 2020.
4. California Energy Commission, *2013 California Energy Efficiency Potential and Goals Study*, Appendix Volume I, August 15, 2013.

SCAG's Connect SoCal (2024-2045 RTP/SCS) Consistency

On September 3, 2020, the Regional Council of SCAG formally adopted the 2020-2045 RTP/SCS. The 2020-2045 RTP/SCS includes performance goals that were adopted to help focus future investments on the best-performing projects, as well as different strategies to preserve, maintain, and optimize the performance of the existing transportation system. The 2020-2045 RTP/SCS is forecast to help California reach its GHG reduction goals by reducing GHG emissions from passenger cars by 8 percent below 2005 levels by 2020 and 19 percent by 2035 in accordance with the most recent CARB targets adopted in March 2018. Five key SCS strategies are included in the 2020-2045 RTP/SCS to help the region meet its regional VMT and GHG reduction goals, as required by the State.

In order to assess the Project's consistency with the 2024-2045 RTP/SCS, the Project's land use assumptions are reviewed for consistency with those utilized by SCAG in its SCS. Generally, projects are considered consistent with the provisions and general policies of applicable City and regional land use plans and regulations, such as the 2024-2045 RTP/SCS, if they are compatible with the general intent of the plans and would not preclude the attainment of their primary goals. Table 4.8-4, *Project Consistency with the 2024-2045 RTP/SCS*, analyzes the Project's consistency with the actions and strategies set forth in the 2024-2045 RTP/SCS. As indicated in Table 4.8-4, the Project would be consistent with the 2024-2045 RTP/SCS. As mentioned above, the latest 2024-2050 RTP/SCS was adopted on April 4, 2024. However, CARB concluded that the technical methodology SCAG used to quantify the GHG emission reductions for the Connect 2024-2050 RTP/SCS does not operate accurately. SCAG is currently working on updating the technical methodology and resubmitting for CARB's review. Until CARB approves the methodology, the 2024-2050 RTP/SCS is not a fully adopted document, especially from the GHG reduction

perspective of the proposed strategies. As such, the consistency analysis relies upon the 2020-2045 RTP/SCS.

Table 4.8-4
Project Consistency with the 2024-2045 RTP/SCS

Sector/Source	Category/ Description	Consistency Analysis
Land Use Strategies		
Focus new growth around transit.	Local Jurisdictions	Consistent. The Project proposes an infill residential development within an area served by transit. The proposed Project is located within approximately 0.18 miles from the Project site, along Buena Vista Street. There are also several bus stops along Huntington Drive, located approximately 0.20 mile south of the Project site.
Provide more options for short trips through Neighborhood Mobility Areas and Complete Communities.	SCAG; Local Jurisdictions	Consistent. The Complete Communities strategy supports the creation of mixed-use districts through a concentration of activities with housing and employment located in close proximity to each other. The proposed Project is an infill residential development that would support this strategy by providing additional residential uses within close proximity to other uses, including recreational and commercial uses. Neighborhood Mobility Areas provide sustainable transportation options to make short trips within urban neighborhoods. The Project would support this strategy by providing additional residential uses within walking distance (i.e. 0.25-mile) of various recreational uses.
Transportation Strategies		
Manage congestion through programs like the Congestion Management Program, Transportation Demand Management, and Transportation Systems Management strategies.	County Transportation Commissions; Local Jurisdictions	Not Applicable. This strategy applies to public agencies that govern transportation facilities and transportation programs.
Technological Innovation and 21st Century Transportation		
Promote zero-emissions vehicles.	SCAG; Local Jurisdictions	Not Applicable. This action/strategy is directed at regional and local agencies, and not at individual development projects.
Source: Southern California Association of Governments, 2020-2024 Regional Transportation Plan/Sustainable Communities Strategy - Connect SoCal, September 3, 2020.		

Conclusion: As detailed above, the Project would result in a less than significant impact relative to GHG emissions. The Project would not result in new impacts, increase impacts, or involve substantial new information of importance related to GHG emissions. No impacts peculiar to the Project or the Project site have been identified.

Mitigation Measures: No mitigation measures are required.

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4.9 Hazards and Hazardous Materials

Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a. Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?			X	
b. Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?			X	
c. Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?			X	
d. Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?				X
e. For a project located within 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 result in a safety hazard or excessive noise for people residing or working in the project area?				X
f. Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?			X	
g. Expose people or structures, either directly or indirectly, to a significant risk of loss, injury or death involving wildland fires?			X	

a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?

b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?

Less Than Significant Impact. Generally, the exposure of persons to hazardous materials could occur in the following manners: 1) improper handling or use of hazardous materials or hazardous wastes during construction or operation of future development, particularly by untrained personnel; 2) an accident during transport; 3) environmentally unsound disposal methods; or 4) fire, explosion or other emergencies. The severity of potential effects varies with the activity conducted, the concentration and type of hazardous material or wastes present, and the proximity of sensitive receptors.

Construction activities associated with the proposed Project would include demolition of the existing single-family residences and detached structures, grading activities, and construction of the 11 residential townhome units and associated improvements. Project construction activities may involve the routine transport, use, or disposal of hazardous materials, such as petroleum-based fuels or hydraulic fluid used for construction equipment with the potential of accidental release. The level of risk associated with the accidental release of hazardous substances is not considered significant due to the small volume and low concentration of hazardous materials utilized during construction. The construction contractor would be required to use standard construction controls and safety procedures that would avoid and minimize the potential for accidental release of such substances into the environment. Standard construction practices would be observed such that any materials released are appropriately contained and remediated as required by local, State, and federal law.

The Project includes residential uses and would not involve the use or storage of hazardous substances other than limited quantities of hazardous materials such as solvents, fertilizers, pesticides, and other materials used for regular household maintenance of buildings and landscaping by homeowners and/or the Home Owner Association. The quantities of these materials would not typically be at an amount that would pose a significant hazard to the public or the environment. While the risk of exposure to hazardous materials cannot be eliminated, measures can be implemented to reduce risk to acceptable levels. Adherence to existing regulations would ensure compliance with safety standards related to the use and storage of hazardous materials, and the safety procedures mandated by applicable federal, State, and local laws and regulations, which would ensure that risks resulting from the routine transportation, use, storage, or disposal of hazardous materials or hazardous wastes associated with implementation of the proposed Project would be less than significant.

Mitigation Measures: No mitigation measures are required.

c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?

Less Than Significant Impact. The closest school to the Project site is the School of Little Scholars, located at 932 Buena Vista Street, approximately 0.1 mile to the southwest. As discussed, construction activities associated with the proposed Project may involve the routine transport, use, or disposal of hazardous materials, such as petroleum-based fuels or hydraulic fluid used for construction equipment. The level of risk associated with the accidental release of hazardous substances is not considered significant due to the small volume and low concentration of hazardous materials utilized during construction. The construction contractor would be required to use standard construction controls and safety procedures that would avoid and minimize the potential for accidental release of such substances into the

environment. Standard construction practices would be observed such that any materials released are appropriately contained and remediated as required by local, State, and federal law. With respect to Project operation, the proposed residential land use is not associated with the types of uses that utilize large quantities of hazardous materials. Any transport, storage, use, or disposal of hazardous materials would be subject to applicable State and federal laws, minimizing the potential for upset and accident conditions to occur within the site. Thus, impacts would be less than significant.

Mitigation Measures: No mitigation measures are required.

d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?

No Impact. Government Code Section 65962.5, commonly referred to as the "Cortese List," requires the Department of Toxic Substances Control (DTSC) and the State Water Resources Control Board (SWRCB) to compile and update a regulatory sites list (pursuant to the criteria of the Section). The California Department of Health Services is also required to compile and update, as appropriate, a list of all public drinking water wells that contain detectable levels of organic contaminants and that are subject to water analysis pursuant to Health and Safety Code Section 116395. Government Code Section 65962.5 requires the local enforcement agency, as designated pursuant to CCR Title 14, Section 18051, to compile, as appropriate, a list of all solid waste disposal facilities from which there is a known migration of hazardous waste. The Project site is not included on any of the data resources identified as meeting the Cortese List requirements.[22,23,24] As the Project site has not been included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5, there would be no impact.

Mitigation Measures: No mitigation measures are required.

e) For a project located within 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 result in a safety hazard or excessive noise for people residing or working in the project area?

No Impact. The Project site is not located within an airport land use plan, nor is the Project site located within two miles of a public airport or public use airport. Thus, the Project would not result in a safety hazard or excessive noise for people residing or working in the Project area.

Mitigation Measures: No mitigation measures are required.

[22] California Environmental Protection Agency, *Cortese List Data Resources*, https://calepa.ca.gov/sitecleanup/corteselist/, accessed February 3, 2025.
[23] California Department of Toxic Substances Control, *EnviroStor*, https://www.envirostor.dtsc.ca.gov/public/map/?global_id=71002656, accessed February 3, 2025.
[24] State Water Resources Control Board, *GeoTracker*, https://geotracker.waterboards.ca.gov/search, accessed February 3, 2025.

f) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?

Less Than Significant Impact. According to the City of Duarte Hazard Mitigation Plan (HMP), the City's Emergency Operations Plan (EOP) is a reference and guidebook to operations during a major emergency impacting Duarte.[25] The EOP includes a discussion on a wide range of hazards, organization and staffing of the Emergency Operations Center, and connectivity with field responders and external agencies.

Regional access to the Project site is provided via I-210, located south of the Project site. Local access to the Project site is provided directly from Royal Oaks Drive. The Project does not propose physical modifications to Royal Oaks Drive or other roadways within the vicinity of the Project site. Project-related construction activities are not anticipated to result in significant traffic or queuing along Royal Oaks Drive or other roadways within the area that could potentially impede emergency vehicles or impair any emergency evacuation plan. Additionally, any impacts associated with construction activities would be temporary in nature. The Project would be required to comply with all applicable requirements of the Duarte Development Code, including the CBC and Fire Code, and would be subject to approval by the Los Angeles County Fire Department (LACoFD). As such, construction and operation of the proposed Project would not impair implementation of or physically interfere with the City's EOP or emergency evacuation plan and impacts would be less than significant.

Mitigation Measures: No mitigation measures are required.

g) Expose people or structures, either directly or indirectly, to a significant risk of loss, injury or death involving wildland fires?

Less Than Significant Impact. The Project site is located within an area that is generally urbanized and developed with roadways and commercial and residential uses. According to the California Department of Forestry and Fire Protection (CALFIRE) Fire Hazard Severity Zone Map, the Project site is located within a Local Responsibility Area (LRA) and is not identified as being within a Very High Fire Hazard Severity Zone (VHFHSZ).[26] Thus, the Project site is not identified as having significant risk associated with wildland fires. However, a VHFHSZ within LRA is located approximately 500 feet northeast of the Project site.

The Project site is currently developed with two single-family residences and two detached structures, along with landscaping and other site improvements. The site is relatively flat and is not located within the City's hillside areas, as defined by Duarte Municipal Code Chapter 19.46, *Hillside Development Standards*, which contains additional requirements for hillside areas associated with wildland fires. The Project proposes to remove the existing single-family residences and structures and develop 11 townhomes. Duarte Municipal Code Chapter 15.04, *Fire Code*, adopts the Los Angeles County Fire Code by reference, with amendments, which would further reduce potential impacts related to wildland fire. Compliance with Municipal Code, and State and federal regulations pertaining to fire safety, would ensure

[25] City of Duarte, *Hazard Mitigation Plan*, June 3, 2020.
[26] California Department of Forestry and Fire Protection, *FHSZ Viewer*, https://experience.arcgis.com/experience/03beab8511814e79a0e4eabf0d3e7247/, accessed February 10, 2025.

the Project does not expose people to a significant risk of loss, injury or death involving wildland fires. Impacts would be less than significant.

Mitigation Measures: No mitigation measures are required.

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4.10 Hydrology and Water Quality

Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a. Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality?			X	
b. Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin?			X	
c. Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would:				
1) Result in substantial erosion or siltation on- or off-site?			X	
2) Substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or offsite?			X	
3) Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?			X	
4) Impede or redirect flood flows?			X	
d) In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation?			X	
e) Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?			X	

This section is based on the *Preliminary Hydrology/Drainage/LID Study* (Preliminary Hydrology/LID Study) prepared by Land Design Consultants, Inc., dated August 22, 2024, and included in its entirety as Appendix F, *Preliminary Hydrology/LID Study*.

a) Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality?

Less Than Significant Impact.

Short-Term Construction

Short-term construction activities associated with the proposed Project could impact water quality. Sources of potential construction-related storm water pollution include handling, storage, and disposal of construction materials containing pollutants; maintenance and operation of construction equipment; and site preparation activities, such as excavation, grading, and trenching. These sources, if not controlled, can generate soil erosion and on- and off-site transport via storm run-off or mechanical equipment. Generally, standard safety precautions for handling and storing construction materials can adequately reduce the potential pollution of storm water by these materials. These types of standard procedures can be extended to non-hazardous storm water pollutants such as sawdust, concrete washout, and other wastes.

Soil disturbance would temporarily occur during Project construction due to grading activities. Disturbed soils would be susceptible to increased rates of erosion from wind and water and could produce polluted runoff or degrade surface and/or ground water quality. The Project would be required to comply with the City's Stormwater and Urban Runoff Pollution Control Ordinance (Duarte Municipal Code Chapter 6.15, *Stormwater and Urban Runoff Pollution Control*), which establishes stormwater runoff controls and best management practices (BMPs) to prevent and/or reduce the quantity of pollutants from being discharged into the municipal stormwater system, in accordance with the requirements of the Clean Water Act (CWA) and State law. Municipal Code Section 6.15.070, *Construction Pollutant Reduction*, requires, in part, that construction site stormwater runoff containing sediment, construction waste, or other pollutants to be reduced to the maximum extent practicable. Prior to the issuance of a permit for a new development or redevelopment project, said project would be evaluated under the applicable NPDES Permit and the City's erosion and grading requirements to determine its potential to generate the flow of pollutants into the municipal separate storm sewer system (MS4) during construction; and the effectiveness of the SWPPP for the proposed project in complying with the City's Stormwater and Urban Runoff Pollution Control Ordinance. Based upon the review, the City may impose conditions upon the issuance of the building permit, in addition to any required by the State, in order to minimize the flow of pollutants into the MS4. In addition, the Project would be required to comply with Duarte Municipal Code Chapter 19.78, *Subdivision Design and Improvement Requirements*, including Section 19.78.050, *Site Preparation and Grading for Subdivision Construction*, which requires City approval of a grading plan prepared and signed by a registered civil engineer prior to issuance of a building permit. The grading plan must include BMPs to minimize airborne dust, erosion, sedimentation, and unnecessary grading, and all grading must incorporate appropriate erosion and sediment control measures. As such, Project construction would not violate any water quality standards or waste discharge requirements or substantially degrade surface or groundwater quality.

Long-Term Operations

The Project site is located within the jurisdiction of the Los Angeles Regional Water Quality Control Board (RWQCB) and would be subject to compliance with the Regional Municipal Separate Storm Sewer System (MS4) permit. The Regional MS4 permit (Order R4-2021-0105, NPDES Permit No. CAS004004),[27] requires co-permittees, including the City of Duarte, to control and reduce the discharge of pollutants in stormwater from new development and significant redevelopment to the maximum extent practicable.

The City's Stormwater and Urban Runoff Pollution Control Ordinance establishes requirements to protect water quality. The Project would be required to comply with Section 6.15.130, *New Development and Redevelopment Pollutant Reduction*, which requires applicable development and redevelopment projects to control pollutants, pollutant loads, and runoff volume to the maximum extent practicable by implementing Low Impact Development (LID) BMPs. Project applicants are required to prepare an LID plan which implements set LID standards and practices for pollution mitigation and demonstrates compliance with the Regional MS4 Permit.

A Preliminary Hydrology/LID Study has been prepared for the proposed Project; refer to Appendix F. According to the Preliminary Hydrology/LID Study, under existing conditions, the Project site is composed of one drainage area that drains to the southwest corner of the site towards the existing concrete gutter system located south of the site. The Project proposes to remove the existing single-family residential uses and structures and develop 11 townhomes. The Project proposes to install an on-site storm drain and underground infiltration chambers system for stormwater capture/retention. A series of area drains and catch basins would collect and convey on-site stormwater to three underground infiltration chambers. The chamber systems would provide an overflow pipe to allow stormwater discharges, in the event of subsoil saturation, to the downstream existing alley concrete gutter system, eventually discharging into the public storm drain system located south of the Project site.

The Project includes various structural, source control, and site design BMPs to address water quality conditions associated with the proposed Project. Proposed structural BMPs include the underground infiltration chambers system and stenciling at storm drain inlets. Proposed non-structural BMPs include maintenance of hardscape areas, landscaping, and trash and recycling containers; monitoring and maintenance of structural BMPs; and education and training to homeowners to ensure the proper maintenance of on-site BMPs. The Project also includes treatment control BMPs by designing the storm drain system to treat and mitigate the peak flow rate or volume of runoff produced by the 85th percentile rainfall event. Refer to Appendix F for a detailed list of proposed BMPs.

Compliance with the NPDES and Duarte Municipal Code requirements, which include implementation of LID BMPs, would ensure that Project operations would not violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or groundwater quality. Impacts would be less than significant in this regard.

[27] California Regional Water Resources Control Board, *Regional Phase I MS4 NPDES Permit, Order R4-2021-0105, NPDES No. CAS004004, Waste Discharge Requirements and National Pollutant Discharge Elimination System (NPDES) Permit for Municipal Separate Storm Sewer System (MS4) Discharges Within the Coastal Watersheds of Los Angeles and Ventura Counties*, https://www.waterboards.ca.gov/losangeles/water_issues/programs/stormwater/municipal/public_docs/2022/1_Order(ACC-RPSignature).pdf, accessed February 10, 2025.

Mitigation Measures: No mitigation measures are required.

b) Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin?

Less Than Significant Impact. The City of Duarte, including the Project site, receives water from California American Water (CAW) Southern Division Los Angeles County District. The CAW Los Angeles County District serves an estimated 101,670 people through 28,181 metered connections in the Baldwin Hills, Duarte, and San Marino service areas. The City is located within the Duarte service area, which serves an estimated 27,901 people through 7,494 connections in the cities of Azusa, Bradbury, Duarte, Irwindale, and Monrovia. Water delivered to the Duarte Service Area is a blend of groundwater from the Main San Gabriel Basin (MSGB), MSGB integrated right from the San Gabriel River, and imported water from the Upper San Gabriel Valley Municipal Water District (Upper District) via the MSGB Watermaster.[28] The MSGB is adjudicated and therefore subject to a maximum allowed pumping allocation for groundwater extraction across the entire basin; refer to Response 4.10(e) regarding groundwater management. According to the CAW 2020 Urban Water Management Plan (UWMP), the Los Angeles County District had a daily per capita water use of 169 gallons per capita per day (GPCD) in 2020, which was below the 2020 water use target of 187 GPCD. In compliance with the Urban Water Management Planning Act, the CAW 2020 UWMP demonstrates water supply reliability in a normal year, single-dry year, and multiple-dry years over a 25-year planning period. The 2020 UWMP's water supply reliability calculations are based on regional growth projections from SCAG's Connect SoCal (2020-2045 RTP/SCS), which utilizes growth forecasts defined in consultation with local governments and with reference to local general plans. CAW's 2020 UWMP (Tables 7-4, 7-5, and 7-6) indicates water supplies would meet the service area's water demands for normal, single-dry, and multiple dry-year conditions through 2045.

The Project proposes a GPA to change the General Plan land use designation from Low Density Residential to Medium Density Residential. As discussed in Section 4.14, *Population and Housing*, the Project involves the development of 11 townhome units, which would induce direct population growth in the City. Based on the 2024 California Department of Finance estimated household size of 2.78 persons per household, and accounting for the two existing single-family residential units located on the Project site, the Project's forecast population growth is approximately 26 persons. The Project's forecast population growth would increase the City's existing population by less than one percent (approximately 0.11 percent) to 23,682 persons. The Duarte General Plan anticipates a population of 25,418 persons at buildout. Thus, the Project would be within the population projections anticipated and planned for by the City's General Plan and would not increase growth beyond what was anticipated in the UWMP. Thus, Project implementation would not substantially decrease groundwater supplies associated with water demand such that the Project would impede sustainable groundwater management of the basin.

The Project site is located within the boundaries of the MSGB. The Project site is currently developed and contains approximately 40 percent (0.34 acres) of impervious area and 60 percent (0.5 acres) of pervious area. In the proposed condition, the Project site would contain approximately 70 percent (0.59 acres) of

[28] California American Water, *2020 Urban Water Management Plan*, June 2021, https://amwater.com/caaw/resources/PDF/Urban-Water-Management-Plans/California%20American%20Water%20Los%20Angeles%20County%20UWMP%20-%20FINAL%2007012021.pdf, accessed January 31, 2025.

impervious area and 30 percent (0.25 acres) of pervious area. The proposed Project would increase the impervious area when compared to existing conditions, potentially reducing groundwater recharge through infiltration. However, the Project proposes to install an on-site storm drain and underground infiltration chambers system for stormwater capture/retention, allowing for treated stormwater to infiltrate into the groundwater. Therefore, although the Project would increase impervious area in the proposed condition compared to the existing condition, the Project would not interfere substantially with groundwater recharge. Impacts would be less than significant in this regard.

Mitigation Measures: No mitigation measures are required.

c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would:

1) Result in substantial erosion or siltation on- or off-site?

2) Substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or offsite?

3) Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?

4) Impede or redirect flood flows?

Less Than Significant Impact. Refer to Response 4.10(a) regarding potential impacts involving erosion and water quality.

According to the Preliminary Hydrology/LID Study, under existing conditions, the Project site is composed of one drainage area that drains to the southwest corner of the site towards the existing concrete gutter system located south of the site. Under proposed conditions, the Project site would consist of two drainage areas (A2 and B2). A series of area drains and catch basins would collect and convey on-site stormwater to three underground infiltration chambers. The chamber systems would provide an overflow pipe to allow stormwater discharges, in the event of subsoil saturation, to the downstream existing alley concrete gutter system, eventually discharging into the public storm drain system located south of the Project site.

The proposed storm drain system was designed to treat and mitigate the peak flow rate or volume of runoff produced by the 85th percentile rainfall event. According to the Preliminary Hydrology/LID Study, the proposed Project would not have a negative impact on the existing drainage conditions of the site, tributary areas, and downslope improved areas, and would result in reduced sedimentation and pollutants conveyed to the existing County storm drain systems. As such, the Project would not substantially increase the rate or amount of surface runoff in a manner which would result in substantial erosion or siltation on- or off-site; increase the rate or amount of surface runoff which would result in flooding on- or offsite; create or contribute runoff that would exceed the capacity of the existing drainage system; or impede or redirect flood flows. Impacts would be less than significant.

Mitigation Measures: No mitigation measures are required.

d) In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation?

Less Than Significant Impact.

According to the Federal Emergency Management Agency, Flood Insurance Rate Map, the Project site is located within an area of minimal flood hazard.[29] Tsunamis are sea waves that are generated in response to large-magnitude earthquakes, which can result in coastal flooding. Tsunamis do not pose hazards due to the Project site's inland location approximately 30 miles from the Pacific Ocean. Seiches are the oscillation of large bodies of standing water, such as lakes or reservoirs, that can occur in response to ground shaking. According to the Duarte General Plan Safety Element (Figure Safe - 10), the Project site is not located within a dam inundation area. There are no other large bodies of standing water near the Project site that pose seiche hazard risks.

The Project site is not located within a flood hazard, tsunami, or seiche zones, potentially resulting in a release of pollutants due to Project Inundation; impacts would be less than significant.

Mitigation Measures: No mitigation measures are required.

e) Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?

Less Than Significant Impact. Refer to Response 4.10(a) regarding water quality. When permittees and projects comply with the provisions of applicable NPDES permits and water quality permitting, they are consistent with the local water quality control plan (Basin Plan). Through adherence to the existing regulatory environment, the Project would not conflict or obstruct a water quality control plan. Therefore, impacts in this regard would be less than significant.

As discussed above, the CAW Los Angeles County District's Duarte service area is supplied in part by groundwater from the MSGB. The MSGB is an adjudicated basin; groundwater extraction is monitored by the court-appointed Watermaster, who administers and enforces the terms of the MSGB Judgment (Upper San Gabriel Valley Municipal Water District v. City of Alhambra, et al., Los Angeles County Case No. 924128, Judgment entered January 4, 1973).[30] A court-appointed Watermaster manages water resources within the system and determines the safe annual yield of the basin based on annual audits. The Watermaster submits an annual report to the Court and the California Department of Water Resources (DWR). The San Gabriel Basin was designated as very low priority basins in DWR's Sustainable Groundwater Management Act (SGMA) Basin Prioritization report.[31] SGMA exempts adjudicated

[29] Federal Emergency Management Agency, *National Flood Hazard Layer FIRMette*, https://msc.fema.gov/portal/home, accessed February 11, 2025.
[30] California American Water, *2020 Urban Water Management Plan*, June 2021, https://amwater.com/caaw/resources/PDF/Urban-Water-Management-Plans/California%20American%20Water%20Los%20Angeles%20County%20UWMP%20-%20FINAL%2007012021.pdf, accessed January 31, 2025.
[31] California Department of Water Resources, *Sustainable Groundwater Management Act 2019 Basin Prioritization*, May 2020.

groundwater basins from the requirements of designating a Groundwater Sustainability Agency and developing a Groundwater Sustainability Plan.

The Project proposes a General Plan Amendment (GPA) to change the General Plan land use designation from Low Density Residential to Medium Density Residential. As discussed in Section 4.14, *Population and Housing*, the Project involves the development of 11 townhome units, which would induce direct population growth in the City. Based on the 2024 California Department of Finance estimated household size of 2.78 persons per household, and accounting for the two existing single-family residential units located on the Project site, the Project's forecast population growth is approximately 26 persons. The Project's forecast population growth would increase the City's existing population by less than one percent (approximately 0.11 percent) to 23,682 persons. The Duarte General Plan anticipates a population of 25,418 persons at buildout; as such, the Project would be within the population projections anticipated and planned for by the City's General Plan and would not increase growth beyond what was anticipated in the UWMP. The 2020 UWMP indicates that adequate water supplies would be available to serve future water demands during normal, single-dry, and multiple-dry years through 2045. Thus, the Project's anticipated water demand is accounted for in the UWMP, and there would be sufficient water supplies available to serve the Project development during normal, single-dry, and multiple-dry years. Impacts to water supply would be less than significant. Thus, the Project would not conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan, and impacts would be less than significant.

Mitigation Measures: No mitigation measures are required.

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4.11 Land Use and Planning

Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a. Physically divide an established community?				X
b. Cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect?			X	

a) Physically divide an established community?

No Impact. The Project site is currently developed with two single-family residences and two detached structures. The surrounding area is an established residential neighborhood and is developed primarily with residential uses. Single- and multi-family residential uses are located to the east, south, and west of the Project site. The site is bounded on the north by Royal Oaks Drive, followed by a landscaped parkway and the Duarte Bike Trail, followed by single-family residential uses. The Project proposes to remove the existing on-site uses and develop 11 two-story attached townhomes in five buildings. The proposed Project would not physically divide or separate the residential neighborhood within the surrounding area, as development of the site, as proposed, would provide a continuation of residential uses that occur within the surrounding area. Thus, no impact would occur in this regard.

Mitigation Measures: No mitigation measures are required.

b) Cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect?

Less Than Significant Impact. According to the City of Duarte (General Plan Land Use Element, Figure LU-1), the Project site is designated as Low Density Residential. The Low Density Residential designation permits the development of up to six detached single family units per acre depending on the zoning district in which the property is located.

The City of Duarte Zoning Map identifies the zoning for the Project site as Single Family Residential (R-1), with a 6,500 square foot minimum lot size. The Duarte Municipal Code, Chapter 19.10, *Residential Zones*, states the R-1 zones are established to provide areas for the development and preservation of residential subdivisions consisting of detached residences and accessory uses compatible with the residential use of the zone.

The Project proposes a General Plan Amendment (GPA) and a Zone Change (ZC) to change the General Plan land use designation from Low Density Residential to Medium Density Residential and to change the zoning from R-1 to R-3 Multiple Family Residential Medium Density (R-3). The Medium Density Residential designation provides for denser multiple family dwellings, mixed detached and attached residential developments, Planned Residential Unit Development projects, and duplexes. The permitted density range for the Medium Density Residential designation is 7 to 21 units per acre. The Project proposes multi-

family residential uses with a density of approximately 13.1 dwelling units per net acre. Thus, the Project would be consistent with the allowable use and density of the Medium Density Residential land use designation.

An analysis of the proposed Project's consistency with relevant policies of the Duarte General Plan adopted for the purpose of avoiding or mitigating an environmental effect is provided in Table 4.11-1, *Project Consistency with Applicable Policies of the Duarte General Plan*. As indicated in Table 4.11-1, the Project is consistent with the Duarte General Plan.

Table 4.11-1
Project Consistency with Applicable Policies of the Duarte General Plan

General Plan Policy	Consistency Analysis
Safety Element	
Safe 4.1.2: Restrict development in areas prone to seismic hazards and other geologic hazards.	Consistent. As discussed in Section 4.7, *Geology and Soils*, the Project would not result in significant impacts with regards to seismic and other geologic hazards. Therefore, the Project would be consistent with this policy.
Safe 4.1.4: Require that geotechnical reports include projected changes to slope stability related to climate change impacts on wildfires and erosion, and the development of mitigation strategies for new development projects in areas with the potential for liquefaction or landslide.	Consistent. As discussed in Section 4.7, *Geology and Soils*, the Project site is relatively flat and is not anticipated to have slope stability issues, nor is the site within a liquefaction or landslide hazard area. Therefore, the Project would be consistent with this policy.
Safe 5.1.8: Minimize new development in the Very High Fire Hazard Severity Zone, and, when feasible, locate all new essential public facilities outside of the Very High Fire Hazard Severity Zone.	Consistent. As discussed in Section 4.20, *Wildfire*, the proposed Project is not located within a Very High Fire Hazard Severity Zone (VHFHSZ). Therefore, the Project would be consistent with this policy.
Open Space and Conservation Element	
Con 2.1.3: Require the use of native and other drought-resistant plants to reduce the amount of water used for landscaping.	Consistent. The Project would be required to comply with CALGreen requirements and includes site design BMPs, including landscaping with California natives and drought tolerant species, which would promote water conservation. Therefore, the Project would be consistent with this policy.
Con 2.1.4: Require the installation of water saving irrigation systems for all new development.	Consistent. The Project would be required to comply with CALGreen requirements and includes BMPs, including water efficient irrigation, which would promote water conservation. Therefore, the Project would be consistent with this policy.

Table 4.11-1 (continued)
Project Consistency with Applicable Policies of the Duarte General Plan

General Plan Policy	Consistency Analysis
Con 2.1.5: Reduce the amount of impervious surfaces through the use of porous ground cover materials.	Consistent. As discussed in Section 4.10, *Hydrology and Water Quality*, development of the Project would increase the amount of impervious area when compared to existing conditions. However, the Project would implement various LID BMPs, including an on-site storm drain and underground infiltration chambers system for stormwater capture/retention, allowing for treated stormwater to infiltrate into the groundwater. Therefore, the Project would be consistent with this policy.
Con 2.1.6: Encourage water conservation in residential, commercial, and industrial development.	Consistent. The Project would be required to comply with CALGreen requirements and includes BMPs which would promote water conservation. Therefore, the Project would be consistent with this policy.
OS 2.1.2: Require new development to mitigate the burden it creates on existing parks through parkland dedication, recreational space development and/or mitigation fees.	Consistent. As discussed in Section 4.15, *Public Services*, the Project Applicant would be required to pay the required parkland dedication fees in accordance with Section 19.82.050, *Amount of Fee in Lieu of Land Dedication*, prior to City approval of the final map. The Project also includes on-site common and private open space. Therefore, the Project would be consistent with this policy.
Con 3.1.2: Analyze all projects as defined in CEQA for potential impacts on the community and utilize the proper mitigation measures to mitigate any potential adverse impacts on the community.	Consistent. The environmental analysis included within this IS/MND evaluates the potential environmental impacts of the proposed Project and determines that compliance with the regulatory requirements and implementation of mitigation measures at the Project-level would reduce the potential environmental impacts to a level that is less than significant. Therefore, the Project would be consistent with this policy.
Con 4.1.1: Work towards achieving waste-reduction and diversion goals.	Consistent. As discussed in Section 4.19, *Utilities and Service Systems*, the Project would comply with applicable regulations of the Municipal Code and achieve compliance with State law, including AB 939 and SB 1383, resulting in less than significant impacts concerning solid waste. Therefore, the Project would be consistent with this policy.
Noise Element	
Noise 1.1.1: Ensure noise mitigation measures are included in the design of new developments.	Consistent. As discussed in Section 4.13, *Noise*, the Project would not result in significant impacts with regards to construction or operational noise. Therefore, the Project would be consistent with this policy.

Table 4.11-1 (continued)
Project Consistency with Applicable Policies of the Duarte General Plan

General Plan Policy	Consistency Analysis
Noise 1.1.6: Ensure Community Noise Equivalent Levels (CNEL) for noise sensitive land uses meet or exceed normally acceptable levels, as defined by State of California standards.	Consistent. Refer to response to Policy Noise 1.1.1, above.
Noise 1.1.7: The City should encourage, support, and enforce all State and Federal legislation designed to abate and control noise pollution.	Consistent. Refer to response to Policy Noise 1.1.1, above.
Noise 3.1.3: Ensure that construction noise does not cause an adverse impact to the residents of the City.	Consistent. Refer to response to Policy Noise 1.1.1, above.
Noise 3.1.4: Minimize noise and light spillage onto other residential properties.	Consistent. As discussed in Section 4.13, *Noise*, the Project would not result in significant impacts with regards to construction or operational noise. Additionally, as discussed in Section 4.1, *Aesthetics*, the Project would comply with the City's development and design standards, including Development Code Section 19.50.070, which would reduce light spillage onto other residential properties. Therefore, the Project would be consistent with this policy.
Land Use Element	
LU 1.1.3: Encourage high-quality design for infill development, and continue to support new high-quality uses.	Consistent. As discussed in Section 4.1, *Aesthetics*, the Project would be subject to applicable development standards of the Duarte Development Code. The proposed Project is subject to discretionary approval and would be contingent upon approval of the GPA, ZC, TTM, and Site Plan and Design Review. As part of the City's Site Plan and Design Review process, the Project site plan would be reviewed and only approved after finding that the design, location, site plan configuration, and the effect of the proposed development on surrounding development, is consistent with the City's development standards, regulations, and applicable design guidelines/policies. In approving or conditionally approving the Site Plan and Design Review application, the reviewing authority is required to make certain findings, including that the proposed development is consistent with the General Plan. Subsection 19.122.040(D) of the Development Code includes further criteria that shall be considered as part of the review, including: compatibility with surrounding development, architectural design and detail, landscaping, lighting, parking, signs, and other design details. Therefore, the Project would be consistent with this policy.

Table 4.11-1 (continued)
Project Consistency with Applicable Policies of the Duarte General Plan

General Plan Policy	Consistency Analysis
LU 2.1.1: New infill residential development should be compatible in design, bulk, and height with existing nearby residential development as referenced in Duarte's Architectural Design Guidelines and applicable Specific Plans.	Consistent. Refer to response to Policy LU 1.1.3, above.
LU 2.1.5: Restrict development in areas prone to seismic and other safety hazards.	Consistent. Refer to response to Policy Safe 4.1.2, above.
Circulation Element	
Circ 3.1.4: Ensure that new developments incorporate both local and regional transit measures into the project design that promote the use of alternate modes of transportation.	Consistent. As discussed in Section 4.17, *Transportation*, the Project would not result in significant impacts with regards to transportation. Therefore, the Project would be consistent with this policy.

The Project would be subject to the requirements of Duarte Development Code Chapter 19.10, *Residential Zones (R-1, R-1A, R-1B, R-1D, R-1E, R-1F, R-2, R-3, R-4, R-MH)*, which addresses development within the proposed R-3 zone. According to Section 19.10.010(D), the R-3 zone accommodates residential development generally characterized by single structures or a collection of cohesive structures that house individual and/or multiple units, with common open space areas and amenities, at a maximum density of 21 dwelling units per net acre. The Project proposes multi-family residential uses with a density of approximately 13.1 dwelling units per net acre. Thus, the Project would be consistent with the allowable use and density of the R-3 zoning district.

An analysis of the proposed Project's consistency with the R-3 zone's applicable site development standards is provided in Table 4.11-2, *R-3 Zone Applicable Site Development Standards Consistency*.[32]

[32] Table 4.11-2 summarizes applicable site-specific development standards from Chapter 19.10, *Residential Zones (R-1, R-1A, R-1B, R-1D, R-1E, R-1F, R-2, R-3, R-4, R-MH)*, and Chapter 19.38, *Off-street Parking Regulations and Design*, of the Duarte Development Code. It is not intended to be an exhaustive list of all applicable development standards that the Project would be required to comply with.

Table 4.11-2
R-3 Zone Applicable Site Development Standards Consistency

Site Development Standard	Project Consistency
Table 2.4, Development Standards for Multi-Family Residential Zones	
Minimum Lot Area: 9,000 square feet (sf)	Consistent. The Project site is approximately 36,486 net square feet (0.84 net acres).
Minimum Lot Width (interior lot): 80 feet	Consistent. The Project site lot width is approximately 203 feet.
Minimum Lot Depth: 20 feet	Consistent. The Project site lot width is approximately 180 feet.
Density: Maximum of 1 unit per 2,074 sf of site area	Consistent. The Project proposes 11 units over approximately 36,486 net square feet, which is approximately 3,317 net square feet per unit.
Minimum Setbacks: -Front: 30 feet -Side (interior): 5 feet -Rear (abutting R-1 zone): 25 feet -Rear (all other zones): 20 feet	Consistent. The Project complies with the minimum front setback of 30 feet, side setback of five feet, and rear setback of 20 feet.
Lot Coverage: Maximum of 50%	Consistent. The Project complies with the maximum 50 percent lot coverage.
Height: Maximum of 40 feet or 3 stories, whichever is less	Consistent. The Project proposes two-story buildings with a maximum height of 31 feet, seven inches.
Minimum Floor Area of Dwelling Unit (three bedrooms): 1,000 sf	Consistent. The Project proposes units that range in size from 1,341 to 1,594 square feet.
Private Open Space (per unit): -Ground floor units: 200 sf	Consistent. The Project would require 2,200 sf of private open space (200 sf per unit). The Project proposes approximately 2,811 sf of private open space.
Common Open Space (per unit): 200 sf	Consistent. The Project would require 2,200 sf of common open space (200 sf per unit). The Project proposes approximately 3,494 sf of common open space
Section 19.10.040, Multi-story Setback	
For structures with more than one story in the R-3 and R-4 zones, the rear setback shall be increased by five feet for each story or fractional story above the first story.	Consistent. The Project proposes an additional five foot setback for the second floor and complies with the multi-story setback requirements.
Table 3-4, Off-street Parking Requirements Residential Uses	
Minimum parking requirements: 2 parking spaces per unit in a garage, plus 1 overflow and 1 guest parking space per each 4 units.	Consistent. The Project proposes 22 enclosed garage parking spaces and an additional six guest/overflow parking spaces.

In addition to the requirements of Duarte Development Code Chapter 19.10, the Project would be required to comply with applicable development standards set forth in other chapters of the Development Code, including, but not limited to: Chapter 19.32, *Site Planning and General Development Standards*; Chapter 19.36, *Fences, Walls, and Hedges*; Chapter 19.38, *Off-Street Parking Regulations and Design*; Chapter 19.40, *Landscaping*; Chapter 19.42, *Signs*; Chapter 19.44, *Architectural and Design Standards*; Chapter 19.48, *Property Maintenance*; and Chapter 19.50, *Performance Standards*.

As part of the City's Site Plan and Design Review process required under Development Code Chapter 19.122, *Site Plan and Design Review*, the Project site plan would be reviewed and only approved after finding that the design, location, site plan configuration, and the effect of the proposed development on surrounding development, is consistent with the City's development standards, regulations, and applicable design guidelines/policies. In approving or conditionally approving the Site Plan and Design Review application, the reviewing authority is required to make findings that the proposed development is:

1. Consistent with the General Plan and is in compliance with all applicable provisions of the Development Code and all other City ordinances and regulations;
2. To be constructed on a parcel that is adequate in shape, size, topography, and other circumstances to accommodate the proposed development;
3. In compliance with the applicable criteria specified in Subsection 19.122.040(D), *Application Filing, Processing, and Review*, and the site is suitable for the proposed development; and
4. Designed and arranged to provide adequate consideration to ensure the public health, safety, and general welfare, and to prevent adverse effects on neighboring property.

Subsection 19.122.040(D) of the Development Code includes criteria that shall be considered as part of the review, including: compatibility with surrounding development, architectural design and detail, landscaping, lighting, parking, signs, and other design details.

The proposed Project is subject to discretionary approval and would be contingent upon approval of the GPA, ZC, TTM, and Site Plan and Design Review. Following the City's approval of the requested GPA, ZC, TTM, and Site Plan and Design Review, the Project would be consistent with the Duarte General Plan and Municipal Code. Impacts would be less than significant.

Mitigation Measures: No mitigation measures are required.

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4.12 Mineral Resources

Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a. Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?				X
b. Result in the loss of availability of a locally-important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?				X

a) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?

b) Result in the loss of availability of a locally-important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?

a) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?

b) Result in the loss of availability of a locally-important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?

No Impact. The State Mining and Geology Board establishes Mineral Resources Zones (MRZs) to designate lands that contain mineral deposits. The following classifications are used by the State to define MRZs:

(a) *MRZ-1:* Areas where the available geologic information indicates no significant likelihood of significant mineral deposits.
(b) *MRZ-2a:* Areas where the available geologic information indicates that there are significant mineral deposits.
(c) *MRZ-2b:* Areas where the available geologic information indicates that there is a likelihood of significant mineral deposits.
(d) *MRZ-3a:* Areas where the available geologic information indicates that mineral deposits exist. However, the significance of the deposit is undetermined.
(e) *MRZ-3b:* Areas where the available geologic information indicates that mineral deposits are likely to exist. However, the significance of the deposit is undetermined.
(f) *MRZ-4:* Areas where there is not enough information available to determine the presence or absence of mineral deposits.

The Duarte General Plan does not discuss the presence of mineral resources, and the Department of Conservation Mineral Land Classification Map classifies the Project site as MRZ-4, where there is not

enough information available to determine the presence or absence of mineral deposits.[33] There are no existing mineral resource recovery operations on the Project site or surrounding area.[34] Therefore, the Project would not result in the loss of availability of known mineral resources of value to the region or result in the loss of a locally-important mineral resource recovery site delineated on a local general plan, specific plan, or other land use plan. No impact on mineral resources would occur.

Mitigation Measures: No mitigation measures are required.

[33] California Department of Conservation (California Geological Survey), *Special Report 143: Mineral Land Classification of the Greater Los Angeles Area, Plate 4.7*, 1984.
[34] California Department of Conservation, *Mines Online*, https://maps.conservation.ca.gov/mol/index.html, accessed March 3, 2023.

4.13 Noise

Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
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?			X	
b. Generation of excessive groundborne vibration or groundborne noise levels?			X	
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?				X

This section is based on the *Royal Oaks Townhomes Noise Impact Study* (Noise Study), prepared by MD Acoustics, dated April 7, 2025, and included in its entirety as Appendix G, *Noise Study*.

FUNDAMENTALS OF NOISE

Sound, Noise, Acoustics

Sound is a disturbance created by a moving or vibrating source and is capable of being detected by the hearing organs. Sound may be thought of as mechanical energy of a moving object transmitted by pressure waves through a medium to a human ear. For traffic, or stationary noise, the medium of concern is air. Noise is defined as sound that is loud, unpleasant, unexpected, or unwanted.

Frequency and Hertz

A continuous sound is described by its frequency (pitch) and its amplitude (loudness). Frequency relates to the number of pressure oscillations per second. Low-frequency sounds are low in pitch (bass sounding) and high-frequency sounds are high in pitch (squeak). These oscillations per second (cycles) are commonly referred to as Hertz (Hz). The human ear can hear from the bass pitch starting out at 20 Hz all the way to the high pitch of 20,000 Hz.

Sound Pressure Levels and Decibels

The amplitude of a sound determines its loudness. The loudness of sound increases or decreases as the amplitude increases or decreases. Sound pressure amplitude is measured in units of micro-Newton per square inch meter (N/m2), also called micro-Pascal (µPa). One µPa is approximately one hundred billionths (0.00000000001) of normal atmospheric pressure. Sound pressure level (SPL or Lp) is used to

describe in logarithmic units the ratio of actual sound pressures to a reference pressure squared. These units are called decibels abbreviated dB.

Addition of Decibels

Because decibels are on a logarithmic scale, sound pressure levels cannot be added or subtracted by simple plus or minus addition. When two sounds or equal SPL are combined, they will produce an SPL 3 dB greater than the original single SPL. In other words, sound energy must be doubled to produce a 3 dB increase. If two sounds differ by approximately 10 dB, the higher sound level is the predominant sound.

Human Response to Changes in Noise Levels

In general, the healthy human ear is most sensitive to sounds between 1,000 Hz and 5,000 Hz, (A weighted scale) and it perceives a sound within that range as being more intense than a sound with a higher or lower frequency with the same magnitude. For purposes of this analysis, the A-scale weighting is typically reported in terms of A-weighted decibel (dBA). Typically, the human ear can barely perceive the change in noise level of 3 dB. A change in 5 dB is readily perceptible, and a change in 10 dB is perceived as being twice or half as loud. As previously discussed, a doubling of sound energy results in a 3 dB increase in sound, which means that a doubling of sound energy (e.g. doubling the volume of traffic on a highway) would result in a barely perceptible change in sound level.

Noise Descriptors

Noise in our daily environment fluctuates over time. Some noise levels occur in regular patterns, others are random. Some noise levels are constant while others are sporadic. Noise descriptors were created to describe the different time-varying noise levels.

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 PM to 10:00 PM and after 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.

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

Noise: *A*ny 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...".

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.

Traffic Noise Prediction

Noise levels associated with traffic depends on a variety of factors: (1) volume of traffic, (2) speed of traffic, (3) auto, medium truck (2–3 axle) and heavy truck percentage (4 axle and greater), and sound propagation. The greater the volume of traffic, higher speeds, and truck percentages equate to a louder volume in noise. A doubling of the Average Daily Traffic (ADT) along a roadway will increase noise levels by approximately 3 dB.

Sound Propagation

As sound propagates from a source it spreads geometrically. Sound from a small, localized source (i.e., a point source) radiates uniformly outward as it travels away from the source in a spherical pattern. The sound level attenuates at a rate of 6 dB per doubling of distance. The movement of vehicles down a roadway makes the source of the sound appear to propagate from a line (i.e., line source) rather than a point source. This line source results in the noise propagating from a roadway in a cylindrical spreading versus a spherical spreading that results from a point source. The sound level attenuates for a line source at a rate of 3 dB per doubling of distance.

As noise propagates from the source, it is affected by the ground and atmosphere. Noise models use hard site (reflective surfaces) and soft site (absorptive surfaces) to help calculate predicted noise levels. Hard site conditions assume no excessive ground absorption between the noise source and the receiver. Soft site conditions such as grass, soft dirt or landscaping attenuate noise at a rate of 1.5 dB per doubling of distance. When added to the geometric spreading, the excess ground attenuation results in an overall noise attenuation of 4.5 dB per doubling of distance for a line source and 7.5 dB per doubling of distance for a point source.

Research has demonstrated that atmospheric conditions can have a significant effect on noise levels when noise receivers are located 200 feet from a noise source. Wind, temperature, air humidity and turbulence can further impact have far sound can travel.

GROUND-BOURNE VIBRATION FUNDAMENTALS

Vibration Descriptors

Ground-borne vibrations consist of rapidly fluctuating motions within the ground that have an average motion of zero. The effects of ground-borne vibrations typically only cause a nuisance to people, but at extreme vibration levels, damage to buildings may occur. Although ground-borne vibration can be felt outdoors, it is typically only an annoyance to people indoors where the associated effects of the shaking of a building can be notable. Ground-borne noise is an effect of ground-borne vibration and only exists indoors, since it is produced from noise radiated from the motion of the walls and floors of a room and may also consist of the rattling of windows or dishes on shelves.

Several different methods are used to quantify vibration amplitude.

- PPV – Known as the peak particle velocity (PPV) which is the maximum instantaneous peak in vibration velocity, typically given in inches per second.
- RMS – Known as root mean squared (RMS) can be used to denote vibration amplitude.
- VdB – A commonly used abbreviation to describe the vibration level (VdB) for a vibration source.

Vibration Perception

Typically, developed areas are continuously affected by vibration velocities of 50 VdB or lower. These continuous vibrations are not noticeable to humans whose threshold of perception is around 65 VdB. Outdoor sources that may produce perceptible vibrations are usually caused by construction equipment, steel-wheeled trains, and traffic on rough roads, while smooth roads rarely produce perceptible groundborne noise or vibration. To counter the effects of ground-borne vibration, the Federal Transit Administration (FTA) has published guidance related to vibration impacts. According to the FTA, fragile buildings can be exposed to ground-borne vibration levels of 0.3 inches per second without experiencing structural damage. The types of construction vibration impacts include human annoyance and building damage. Human annoyance occurs when construction vibration rises significantly above the threshold of human perception for extended periods of time. Building damage can be cosmetic or structural. Ordinary buildings that are not particularly fragile would not experience any cosmetic damage (e.g., plaster cracks) at distances beyond 30 feet. This distance can vary substantially depending on the soil composition and underground geological layer between vibration source and receiver. In addition, not all buildings respond similarly to vibration generated by construction equipment.

There are three main types of vibration propagation: surface, compression, and shear waves. Surface waves, or Rayleigh waves, travel along the ground's surface. These waves carry most of their energy along an expanding circular wave front, similar to ripples produced by throwing a rock into a pool of water. P-waves, or compression waves, are body waves that carry their energy along an expanding spherical wave front. The particle motion in these waves is longitudinal (i.e., in a "push-pull" fashion). P-waves are analogous to airborne sound waves. S-waves, or shear waves, are also body waves that carry energy along an expanding spherical wave front. However, unlike P-waves, the particle motion is transverse, or side-to-side and perpendicular to the direction of propagation.

As vibration waves propagate from a source, the vibration energy decreases in a logarithmic nature and the vibration levels typically decrease by 6 VdB per doubling of the distance from the vibration source. As stated above, this drop-off rate can vary greatly depending on the soil but has been shown to be effective

enough for screening purposes, in order to identify potential vibration impacts that may need to be studied through actual field tests.

EXISTING NOISE ENVIRONMENT

Sensitive Receptors

Noise exposure standards and guidelines for various types of land uses reflect the varying noise sensitivities associated with each of these uses. Residences, hospitals, schools, guest lodging, libraries, and churches are treated as the most sensitive to noise intrusion and therefore have more stringent noise exposure targets than do other uses, such as manufacturing or agricultural uses that are not subject to impacts such as sleep disturbance. Sensitive receptors nearest to the Project site consist of single-family residential uses to the east, and multi-family residential uses to the south and west.

Noise Measurements

To assess the existing noise level environment, one long-term (24-hour) noise measurement was conducted at the Project site; refer to Exhibit E of the Noise Study. The noise monitoring location was selected in part based on acoustically representative sensitive receptor locations relative to the proposed onsite noise sources. The results of the long-term noise measurement are presented in Table 4.13-1, *Long-Term Noise Measurement Data (dBA)*. As shown, the 24-hour noise level is 59 dBA Ldn, which falls within the normally acceptable range for multi-family uses according to the land use compatibility guidelines (Table N-1 of the City's Noise Element). The measured noise levels and field notes indicate that local traffic noise and residential noise are the main sources of noise impacting the Project site.

Table 4.13-1
Long-Term Noise Measurement Data (dBA)[1]

Date	Start	Stop	Leq	Lmax	Lmin	L(2)	L(8)	L(25)	L(50)	L(90)
1/30/2025	12:00 PM	1:00 PM	52.2	61.5	46.6	61.1	60	56.9	52.2	47.7
1/30/2025	1:00 PM	2:00 PM	53.5	75.4	44.4	74.5	71.9	64.5	53.5	46.2
1/30/2025	2:00 PM	3:00 PM	52.2	67.2	42.6	66.6	64.8	59.7	52.2	44.5
1/30/2025	3:00 PM	4:00 PM	50.4	68.4	41	67.7	65.5	59.4	50.4	42.9
1/30/2025	4:00 PM	5:00 PM	51.7	63.7	45.1	63.2	61.8	57.7	51.7	46.4
1/30/2025	5:00 PM	6:00 PM	52.6	72	45.7	71.2	68.9	62.3	52.6	47.1
1/30/2025	6:00 PM	7:00 PM	53.8	67.2	45.5	66.7	65.1	60.5	53.8	47.2
1/30/2025	7:00 PM	8:00 PM	53.3	71.1	47.3	70.4	68.3	62.2	53.3	48.5
1/30/2025	8:00 PM	9:00 PM	52.6	67	47.6	66.4	64.7	59.8	52.6	48.6
1/30/2025	9:00 PM	10:00 PM	52.2	57.1	48.7	56.9	56.3	54.7	52.2	49.4
1/30/2025	10:00 PM	11:00 PM	53.6	63.2	48	62.8	61.7	58.4	53.6	49.1
1/30/2025	11:00 PM	12:00 AM	50.3	62.3	45.7	61.8	60.4	56.3	50.3	46.6
1/31/2025	12:00 AM	1:00 AM	51.6	58	45.7	57.7	57	54.8	51.6	46.9
1/31/2025	1:00 AM	2:00 AM	50.1	60.3	44.9	59.9	58.7	55.2	50.1	45.9
1/31/2025	2:00 AM	3:00 AM	50.8	65.7	44.3	65.1	63.3	58.3	50.8	45.6
1/31/2025	3:00 AM	4:00 AM	51.1	59.3	46.8	59	58	55.2	51.1	47.7
1/31/2025	4:00 AM	5:00 AM	52.7	62.1	49.7	61.7	60.6	57.4	52.7	50.3
1/31/2025	5:00 AM	6:00 AM	55.1	60	51.3	59.8	59.2	57.6	55.1	52.1
1/31/2025	6:00 AM	7:00 AM	56.1	67.2	52.7	66.8	65.4	61.7	56.1	53.4
1/31/2025	7:00 AM	8:00 AM	56.5	70.8	47.5	70.2	68.5	63.7	56.5	49.3
1/31/2025	8:00 AM	9:00 AM	56	74.4	43.2	73.7	71.5	65.2	56	45.8
1/31/2025	9:00 AM	10:00 AM	56.6	78.8	39.7	77.9	75.2	67.7	56.6	43.1
1/31/2025	10:00 AM	11:00 AM	51.3	66.5	41.8	65.9	64.1	58.9	51.3	43.7
1/31/2025	11:00 AM	12:00 PM	51.3	71.5	44.4	70.7	68.3	61.4	51.3	45.8
Ldn:	**58.9**									

Notes:
1. Measurement Locations are indicated in Exhibit E.

REGULATORY FRAMEWORK

City of Duarte General Plan

Applicable policies and standards governing environmental noise in the City are set forth in the General Plan Noise Element. Table N-1 of the Duarte Noise Element outlines the exterior noise standards for community noise environments. In addition, the General Plan Noise Element contains goals, objectives, policies, and implementation measures to reduce potential noise impacts. Relevant goals, objectives, and policies include:

Goal 1: **To reduce noise impacts from transportation sources.**

Objective 1.1: Maintain and reduce where feasible background noise levels emanating from citywide transportation sources.

Policy 1.1.1: Ensure noise mitigation measures are included in the design of new developments.

Policy 1.1.4: Encourage acoustical materials in all new residential and commercial developments where noise levels exceed the compatibility standards outlined in the Noise Element.

Policy 1.1.5: Limit construction, delivery, and through truck traffic to designated routes.

Goal 2: **Develop measures to control non-transportation noise impacts.**

Objective 1.2: Commercial and industrial uses, construction activity and other non-transportation related sources of noise can contribute negatively to the noise environment. Identifying and mitigating these potential noise sources will reduce negative impacts.

Policy 2.1.4: Prohibit significant noise generating activities from locating adjacent to residential neighborhoods and near schools.

Goal 3: **To establish land uses which are compatible with noise levels within the community.**

Objective 1.3: Land use planning decisions directly relate to potential noise impacts. Therefore, careful consideration of noise impacts should be a part of all land use decisions.

Policy 3.1.3: Ensure that construction noise does not cause an adverse impact to the residents of the City.

Policy 3.1.4: Minimize noise and light spillage onto other residential properties.

City of Duarte Municipal Code

Chapter 9.68, *Noise,* contains the City's Noise Ordinance. The Noise Ordinance outlines the City's exterior noise limits as it relates to stationary noise sources. Per Duarte Municipal Code Section 9.68.050, *Ambient Base Noise Levels*, it is unlawful for any person within the City to make, cause, or allow to be produced noise which is received on property occupied by another person within the designated zone, in excess of the levels shown in Table 4.13-2, *City of Duarte Noise Ordinance Standards (dBA)*, except as expressly provided otherwise in the Noise Ordinance. At the boundary line between a residential property and a commercial and manufacturing property, the noise level of the quieter zone shall be used.

Table 4.13-2
City of Duarte Noise Ordinance Standards (dBA)

Zone	Daytime 7:00 A.M. – 9:00 P.M.	Nighttime 9:00 P.M. – 7:00 A.M.
R-1 and R-2	55	45
R-3 and R-4	55	50
Commercial	60	55
Industrial and Light Manufacturing	70	70
Source: Duarte Municipal Code, Section 9.68.050(a).		

Per Duarte Municipal Code Section 9.68.050(b), the numerical limits reproduced above in Table 4.13-2 shall be adjusted by the following corrections shown in Table 4.13-3, *Corrections to Noise Limits (dBA)*, where appropriate.

Table 4.13-3
Corrections to Noise Limits (dBA)

Noise Condition	Correction
Repetitive impulsive noise, pure tones and sound with cyclically varying amplitude	-5
Steady whine, screech or hum	-5
The following corrections apply to day only:	
Noise occurring more than 5 but less than 15 minutes per hour	+5
Noise occurring more than 1 but less than 5 minutes per hour	+10
Noise occurring less than 1 minute per hour	+15
Source: Duarte Municipal Code, Section 9.68.050(b).	

Duarte Municipal Code Section 9.68.060, *Loud, Unnecessary and Unusual Noise*, states that it is unlawful for any person to willfully make or continue, or cause to be made and continued, any loud, unnecessary or unusual noise which disturbs the peace and quiet of any neighborhood, or which causes discomfort or annoyance to residents of the area. The standards which shall be considered in determining whether a violation of the provisions of this section exists may include, but not be limited to, the following:

(a) The level of the noise;

(b) Whether the nature of the noise is usual or unusual;

(c) The nature and zoning of the area within which the noise emanates;

(d) The density of the inhabitation of the area within which the noise emanates;

(e) The time of day or night the noise occurs;

(f) The duration of the noise;

(g) Whether the noise is recurrent, intermittent, or constant; and

(h) Whether the origin of the noise is natural or unnatural.

Duarte Municipal Code Section 9.68.120, *Construction of Buildings and Projects*, prohibits any person within a residential zone, or within a radius of five hundred feet therefrom, to operate equipment or perform any outside construction or repair work on buildings, structures, or projects or to operate any pile-driver, power shovel, pneumatic hammer, derrick, power hoist, or any other construction type device (between the hours of ten p.m. of one day and seven a.m. of the next day) in such a manner that a reasonable person of normal sensitiveness residing in the area is caused discomfort or annoyance unless beforehand a permit therefor has been duly obtained from the planning and zoning division, department of public services. No permit shall be required to perform emergency work (as defined in Municipal Code Section 9.68.020(h)). Duarte Municipal Code Section 9.68.150, *Schools, Churches, Libraries, Hospitals, and Convalescent Homes*, prohibits persons from creating any noise on any city street, sidewalk, or public place adjacent to any school, institution of learning, church or library while the same is in use or adjacent to any hospital or convalescent home, which noise unreasonably interferes with the workings of such institution or which disturbs or unduly annoys patients in such medical facilities, provided conspicuous signs are placed in such streets, sidewalks or public place indicating the presence of these facilities. Duarte Municipal Code Section 9.68.160, *Machinery, Equipment, Fans, and Air Conditioning*, states that it is unlawful for any person to operate any machinery, equipment, pump, fan, air conditioning apparatus, or similar mechanical device (between the hours of 10:00 P.M. and 7:00 A.M. of the following day), use of which is attended by loud or unusual noises.

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?

Less Than Significant Impact.

CONSTRUCTION NOISE

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 would vary with the different phases of construction. Typical noise levels associated with construction equipment are shown in Table 4.13-4, *Typical Construction Noise Levels*.

Table 4.13-4
Typical Construction Noise Levels

Type	Noise Levels (dBA) at 50 Feet[1]
Earth Moving	
Compactors (Rollers)	73-76
Front Loaders	73-84
Backhoes	73-92
Tractors	75-95
Scrapers, Graders	78-92
Pavers	85-87
Trucks	81-94
Materials Handling	
Concrete Mixers	72-87
Concrete Pumps	81-83
Cranes (Movable)	72-86
Cranes (Derrick)	85-87
Stationary	
Pumps	68-71
Generators	71-83
Compressors	75-86
Impact Equipment	
Saws	71-82
Vibrators	68-82
Notes: 1. Referenced Noise Levels from the Environmental Protection Agency (EPA).	

Construction activities would include demolition, site preparation, grading, building construction, and paving, architectural coating, and landscaping. Such activities are anticipated to require concrete saws, tractors, and dozers during demolition; graders and tractors during site preparation; graders, dozers, and tractors during grading; cranes, forklifts, and tractors during building construction; pavers, rollers, mixers, tractors, and paving equipment during paving; and air compressors during architectural coating. Typical operating cycles for these types of construction equipment may involve one or two minutes of full power operation followed by three to four minutes at lower power settings. Noise levels would be the loudest during demolition. A likely worst-case construction noise scenario assumes equipment operating as close as 12 feet and an average of 115 feet from the nearest sensitive receptor. Leq levels represent the average construction noise level during each phase.

Construction noise would have a temporary or periodic increase in the ambient noise level above existing noise levels within the Project site vicinity. Construction noise is considered a short-term impact and would be considered significant if construction activities occur outside the allowable times as described in Section 9.68.120 the City's Municipal Code. The City does not have a defined significance threshold for construction noise; however, the FTA recommends a construction noise level threshold of 80 dBA Leq at residential uses. The Noise Study concludes that Project-related construction noise would range from 64 to 77 dBA Leq at the nearest sensitive receptors. Thus, construction noise may temporarily or periodically increase the existing ambient noise level by up to 27 dBA Leq at surrounding uses. However, the noise associated with Project construction would be below the FTA's recommended construction noise level

limit of 80 dBA Leq and Project construction would occur during the permissible hours in accordance with the City's Municipal Code. Thus, construction impacts would not be considered significant.

OPERATIONAL NOISE

Stationary Noise Sources

The Project proposes to remove existing on-site improvements, with the exception of two of the three mature Coast Live Oak trees which would be protected in place, and construct 11 two-story attached townhomes in five buildings. Mechanical equipment (e.g., heating ventilation and air conditioning [HVAC] equipment) would be the primary stationary noise source within the Project site.

The Noise Study modeled future worst-case noise level projections using referenced sound level data for the various stationary on-site sources (parking spaces, HVAC units). The worst-case stationary noise was modeled using SoundPLAN acoustical modeling software and assumes that 11 HVAC units (one for each townhome unit) are operating simultaneously and continuously and that there are 0.5 vehicles per hour coming or going from the on-site outdoor parking spots. A total of three receptors were modeled to evaluate the proposed Project's operational impact, with one receptor (Receptor 2) representing the single-family residential use directly east of the Project site, and the other two receptors (Receptor 1 and Receptor 3) representing the multi-family residential uses directly west and south of the site, respectively. Table 4.13-5, *Worst-Case Predicted Operational Leq Noise Levels (dBA)*, demonstrates the Project plus the ambient operational noise levels.

Table 4.13-5
Worst-Case Predicted Operational Leq Noise Levels (dBA)

Receptor[1]	Existing Ambient Noise Level (dBA, Leq)[2]	Project Noise Level (dBA, Leq)[3]	Nighttime Exterior Noise Limit (dBA, Leq)	Total Combined Noise Level (dBA, Leq)	Change in Noise Level as Result of Project (dBA)
1	50	44	50	51	1
2	50	45	45	51	1
3	50	47	50	52	2

Notes:
1 Receptors 1 and 3 represent multi-family residential uses, and Receptor 2 represents single-family uses.
2. Refer to Appendix A of the Noise Study (Appendix G) for the ambient noise measurement.
3. Refer to Exhibit F of the Noise Study (Appendix G) for the operational noise level projections at said receptors.

As shown, the existing ambient noise level at all receptors is 50 dBA. The Project-only hourly noise levels range from 44 to 47 dBA Leq at the multi-family residential uses (Receptor 1 and Receptor 3) and 45 dBA Leq at the single-family residential uses (Receptor 2). Thus, in compliance with Duarte Municipal Code Section 9.68.050, the Project-only noise levels thus meet the City's nighttime noise level limit of 50 dBA Leq for multi-family zones (i.e., R-3 and R-4 zones) and 45 dBA Leq for single-family zones (i.e., R-1 and R-2 zones). In addition, the Project plus existing ambient noise level are anticipated to be 51 to 53 dBA Leq during daytime operation, meaning the change in noise level due to the Project is anticipated to be up to 2 dBA. As previously discussed, it takes a change of 3 dB for the human ear to perceive a difference in noise levels. Therefore, the change in noise level would be imperceptible at the residential receptors. Since the Project noise level would meet the City's noise standards for residential uses, and the change in noise level would be imperceptible, impacts associated with Project stationary noise would be less than significant.

Off-Site Traffic Noise

Traffic noise impacts would be considered significant if Project-related activities increased the existing traffic noise level by 3 dB or more. Based on the ITE Trip Generation Manual, the Project is expected to generate approximately 79 daily trips. It takes a change in noise level of 3 dB for the human ear to perceive a difference, which occurs with a doubling of traffic volume. The Project is not anticipated to double the existing traffic volumes on adjacent roadways. Therefore, the change in noise levels due to Project-related off-site traffic is not perceptible, and impacts would be less than significant in this regard.

Mitigation Measures: No mitigation measures are required.

b) Generation of excessive groundborne vibration or groundborne noise levels?

Less Than Significant Impact. Construction activities can produce vibration that may be felt by adjacent land uses. The Caltrans Transportation and Construction Induced Vibration Guidance Manual provides general thresholds and guidelines as to the vibration damage potential from vibration impacts. Table 4.13-6, *Guideline Vibration Damage Potential Threshold Criteria*, identifies the thresholds and Table 4.13-7, *Vibration Source Levels for Construction Equipment*, identifies the approximate vibration levels for particular construction activities at a distance of 25 feet.

Table 4.13-6
Guideline Vibration Damage Potential Threshold Criteria

Structure and Condition	Maximum Peak Particle Velocity (inches/second)	
	Transient Sources	Continuous/Frequent Intermittent Sources
Extremely fragile historic buildings, ruins, ancient monuments	0.12	0.08
Fragile buildings	0.2	0.1
Historic and some older buildings	0.5	0.25
Older residential structures	0.5	0.3
New residential structures	1.0	0.5
Modern industrial/commercial buildings	2.0	0.5
Source: Caltrans, *Transportation and Construction Vibration Guidance Manual*, Table 19, September 2013.		
Note: Transient sources create a single isolated vibration event, such as blasting or drop balls. Continuous/frequent intermittent sources include impact pile drivers, pogo-stick compactors, crack-and-seat equipment, vibratory pile drivers, and vibratory compaction equipment.		

Table 4.13-7
Vibration Source Levels for Construction Equipment

Equipment	Peak Particle Velocity (inches/second) at 25 feet	Approximate Vibration Level LV (dVB) at 25 feet
Pile driver (impact	1.518 (upper range)	112
	0.644 (typical)	104
Pile driver (sonic)	0.734 (upper range)	105
	0.170 (typical)	93
Clam shovel drop (slurry wall)	0.202	94
Hydromill	0.008 (in soil)	66
Slurry wall	0.017 (in rock)	75
Vibratory roller	0.21	94
Hoe ram	0.089	87
Large bulldozer	0.089	87
Caisson drill	0.089	87
Loaded trucks	0.076	86
Jackhammer	0.035	79
Small bulldozer	0.003	58
Source: Federal Transit Administration, *Transit Noise and Vibration Impact Assessment*, May 2006.		

Residential structures are located to the south, east, and west of the Project site. 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 vibratory roller. A vibratory roller has a vibration impact of 0.210 inches per second peak particle velocity (PPV) at 25 feet, which is perceptible but below any risk of architectural damage. At a distance of 12 feet, which represents the nearest building to the Project construction, a vibrational roller would yield a worst-case 0.471 PPV (in/sec), which will be perceptible, but is below the threshold of any risk of damage. It is also acknowledged that construction activities would occur throughout the Project site and would not be concentrated at the point closest to the nearest residential structures. Potential vibration impacts would be less than significant, and no mitigation is required.

Mitigation Measures: No mitigation measures are required.

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?

No Impact. The Project site is not located within an airport land use plan, nor is the Project site located within two miles of a private airstrip, public airport or public use airport. Thus, people residing or working at or near the proposed Project site would not be exposed to excessive noise associated with airports, and there would be no impact.

Mitigation Measures: No mitigation measures are required.

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4.14 Population and Housing

Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a. Induce substantial unplanned population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?			X	
b. Displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere?			X	

a) Induce substantial unplanned population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?

Less Than Significant Impact. The Project would not induce substantial unplanned population growth directly through new businesses or indirectly through the extension of roads or other infrastructure. The Project site is currently developed and surrounded by existing development. The Project proposes construction of a residential development and does not propose any employment-generating uses or new roadways.

As of January 2024, the City of Duarte has a population of 23,656 persons.[35] The Project involves the development of 11 townhome units, which would induce direct population growth in the City. Based on the 2024 California Department of Finance estimated household size of 2.78 persons per household, and accounting for the two existing single-family residential units located on the Project site, the Project's forecast population growth is approximately 26 persons.[36] The Project's forecast population growth would increase the City's existing population by less than one percent (approximately 0.11 percent) to 23,682 persons. The Duarte General Plan anticipates a population of 25,418 persons at buildout.[37] Thus, the Project would be within the population projections anticipated and planned for by the City's General Plan and would not induce substantial unplanned population growth in the area.

Mitigation Measures: No mitigation measures are required.

[35] State of California, Department of Finance, *E-5 Population and Housing Estimates for Cities, Counties, and the State, 2020-2024*, Sacramento, California, May 2024.
[36] Based upon an average household size of 2.78 persons per household per the State of California, Department of Finance, *E-5 Population and Housing Estimates for Cities, Counties, and the State, 2020-2024*, Sacramento, California, May 2024.
[37] City of Duarte, *Duarte General Plan 2005 – 2020*, August 2007 (revised March 2018). Table LU-4.

b) Displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere?

Less than Significant Impact. The Project proposes to remove two existing single-family residences and detached structures to construct 11 townhomes within five buildings. As the townhomes would replace the current two single-family homes, the Project would not displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere. Therefore, impacts would be less than significant.

Mitigation Measures: No mitigation measures are required.

4.15 Public Services

Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a. Result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:				
1) Fire protection?			X	
2) Police protection?			X	
3) Schools?			X	
4) Parks?			X	
5) Other public facilities?			X	

a) Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:

1) Fire protection?

Less Than Significant Impact. The City contracts with the Los Angeles County Fire Department (LACoFD) to provide fire protection and emergency medical services within the City, including the Project site. The nearest fire station to the Project site is Station 44, located at 1105 Highland Avenue, approximately 0.4 miles to the southeast.

The Project proposes to remove two existing single-family residences and detached structures to construct 11 townhomes. Similar to existing conditions, emergency access to the site would be provided from Royal Oaks Drive via a driveway along the northern property line. The existing northeastern driveway would be reconstructed to a 26-foot-wide driveway approach and a new 24- to 26-foot-wide interior driveway system would provide access to the individual townhome units.

Service to the Project site by LACoFD occurs under existing conditions. Project implementation is not anticipated to increase calls for service or alter response times or other performance objectives that would result in the need for new or substantially altered LACoFD facilities. The introduction of nine additional residential units to the Project site could incrementally increase the demand for fire protection

and emergency medical services to the site. However, as discussed in Section 4.14(a), the forecast population growth associated with the Project represents an approximately 0.11 percent increase in population over existing conditions and is within the growth projections anticipated by the City's General Plan. Therefore, the population increase associated with the Project would not significantly impact fire protection services resulting in the need for new or physically altered facilities.

As part of the development review process, the LACoFD Fire Prevention Division would review the proposed Project site plan and determine if access and water system requirements, which would enhance the proposed development's fire protection, are adequate. The LACoFD would review and addresses fire and life safety requirements for project construction at the fire plan check stage. Further, the Project would be required to comply with applicable City, County, and State code and ordinance requirements for fire protection. The City of Duarte Municipal Code Chapter 15.04, *Fire Prevention Code*, adopts the Los Angeles County Fire Code by reference. Implementation of all Fire Code requirements would further reduce potential impacts concerning fire protection services. Compliance with building and fire codes prior to approval of the development plan would reduce impacts on fire services and no expansion of fire facilities would be required. Impacts would be less than significant in this regard.

Mitigation Measures: No mitigation measures are required.

2) Police protection?

Less Than Significant Impact. The City contracts with the Los Angeles County Sheriff's Department to provide police protection services within the City, including the Project Site. The Duarte Satellite Station is located at 1042 Huntington Drive, approximately 0.6 mile southwest of the Project site.

The proposed Project would not result in the need for construction of new or physically altered police facilities. Similar to fire protection services, the Los Angeles County Sheriff's Department currently provides services to the Project site under existing conditions and the proposed Project is not anticipated to significantly increase calls for service or alter response times or other performance objectives that would result in the need for new or substantially altered law enforcement facilities. The introduction of nine additional residential units to the Project site could incrementally increase the demand for police protection services to the site. However, as discussed in Section 4.14(a), the forecast population growth associated with the Project represents an approximately 0.11 percent increase in population over existing conditions and is within the growth projections anticipated by the City's General Plan. Therefore, the population increase associated with the Project would not significantly impact police protection services resulting in the need for new or physically altered facilities. Impacts would be less than significant in this regard.

Mitigation Measures: No mitigation measures are required.

3) Schools?

Less Than Significant Impact. The City is located within the Duarte Unified School District (DUSD) boundaries. The Project site is located within the service area of the following schools:[38]

According to the DUSD's facilities master plan, the DUSD has seen declining school enrollment and the student population at each campus is relatively low, meaning that many campus sites are underutilized.[39] The DUSD's master plan includes the modernization and construction of new facilities at existing schools; however, there are no plans to construct new facilities at this time. The Project proposes to remove two existing single-family residences and detached structures to construct 11 townhomes. As discussed in Section 4.14(a), the forecast population growth associated with the Project is approximately 26 persons, representing an approximately 0.11 percent increase in population over existing conditions, and is within the growth projections anticipated by the City's General Plan. This number of new residents is not anticipated to significantly contribute to the school-aged population of the City such that there would be a need for new or physically altered school facilities. Additionally, the Project would be subject to payment of school impact fees in accordance with Senate Bill 50 (SB 50). Pursuant to Government Code Section 65995(3)(h), payment of statutory fees is deemed to be full and complete mitigation of impacts of any legislative or adjudicative act, or both, involving, but not limited to, the planning, use or development of real property…" Developer fees collected by DUSD pursuant to SB 50 are used for the provision of additional and reconstructed or modernized school facilities. The Project Applicant would be required to pay all statutory fees in place at the time to the DUSD and demonstrate proof of payment to the City prior to issuance of building permits. With payment of the fees, Project impacts to schools would be less than significant.

Mitigation Measures: No mitigation measures are required.

4) Parks?

Less Than Significant Impact. The proposed Project is forecast to generate approximately 26 residents, which could increase the use of parks within the Project area. However, as discussed in Section 4.14(a), the forecast population growth associated with the Project represents an approximately 0.11 percent increase in population over existing conditions and is within the growth projections anticipated by the City's General Plan.

Chapter 19.82, *Dedication of Land for Park and Recreation Purposes*, of the Duarte Municipal Code establishes requirements for the dedication of land for parks and related recreational purposes to serve the residents of newly created subdivisions. The developer is required to dedicate a portion of the land, pay a fee, or do both, as specified in Chapter 19.82 for the purpose of providing park and recreational facilities to serve future residents of the subdivision. Municipal Code Section 19.82.030, *Relationship of Land Required to Population Density*, sets the City's requirement of 2.5 acres of park area per 1,000

[38] Duarte Unified District, *Resident School Identifier*, https://www.schoolsitelocator.com/apps/duarte//, accessed January 30, 2025.
[39] Little Diversified Architectural Consulting, *[the} rethink & transform FACILITY MASTER PLAN*, June 2016, https://4.files.edl.io/b4c4/06/22/23/033837-bae2ea61-fcd5-4d94-9a5e-a35e826aa88e.pdf, accessed February 6, 2025.

persons. The Project Applicant would be required to pay the required fee in accordance with Section 19.82.050, *Amount of Fee in Lieu of Land Dedication*, prior to City approval of the final map. Payment of the fees would reduce impacts on park facilities to less than significant.

In addition to the parkland dedication requirements of Chapter 19.82, Duarte Municipal Code Section 19.10.030 *Development Standards*, requires a minimum of 200 square feet of common open space and 200 square feet of private open space be provided for each unit in the R-3 zone. The Project proposes 11 units, resulting in the requirement to provide 2,200 square feet of common open space and 2,200 square feet of private open space. The Project proposes approximately 6,306 square feet of open space areas within the site, including 3,494 square feet within private patio yards and 2,811 square feet within common open space areas. Three common open space lawn areas, sunken from the street, would be provided within the northern portion of the site. A native oak garden with decomposed granite and/or river cobble would be provided around both existing oak trees. A lawn area and seating would also be provided around the existing oak tree within the northern-central portion of the Project site. A barbeque area and shade pergola are proposed within the southern portion of the site. With the provision of on-site amenities and compliance with Municipal Code Chapter 19.82, the Project would not result in the need for new or physically altered public park or recreation facilities and impacts would be less than significant.

Mitigation Measures: No mitigation measures are required.

5) Other public facilities?

Less Than Significant Impact. The Los Angeles County Library (LA County Library) provides library, cultural resource centers and bookmobile services to over 3.4 million residents across 3,000 square miles through its 86 libraries, four Cultural Resource Centers, and mobile fleet of 15 vehicles.[40] In addition to the LA County Library's book collection, the library system also provides magazines, newspapers, government publications and specialized materials including online databases. There is one library located within the City of Duarte: Duarte Library at 1301 Buena Vista Avenue. As of January 2025, the library was closed for renovations. The forecast population growth associated with the Project could result in a slight increase in the demand for library services. As part of its Strategic Plan, the County of Los Angeles will support the library system by identifying funding opportunities to extend programs and services at all County libraries.[41] Although the Project could increase demand for library services, it would not result in the need for new or physically altered library or other public facilities to adequately serve the community, as growth associated with the Project would result in an approximately 0.11 percent increase in population over existing conditions and is within the growth projections anticipated by the City's General Plan. Impacts to library and other public facilities would be less than significant.

Mitigation Measures: No mitigation measures are required.

[40] Los Angeles County Library, *About LA County Library*, https://lacountylibrary.org/about-us/, accessed February 10, 2025.

[41] Los Angeles County Library, *Strategic Plan 2024-2028*,, https://lacountylibrary.org/wp-content/uploads/2024/03/LACountyLibrary_Strategic_Plan_2024-28.pdf, accessed February 3, 2025.

4.16 Recreation

Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a. Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?			X	
b. Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?			X	

a) Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?

b) Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?

***Less Than Significant Impact*.** Refer to Response to 4.15(a)(4). The potential environmental effects associated with construction and operation of the Project, including the proposed private patio yards and on-site open space areas, are analyzed within this Initial Study and impacts have been determined to be less than significant with compliance with regulatory requirements and/or implementation of mitigation measures. The proposed Project would not include recreational facilities or require the construction or expansion of recreational facilities that would have a significant adverse physical effect on the environment. Maintenance of the proposed open space areas and landscaping would be the responsibility of homeowners and/or the Home Owner Association. Impacts would be less than significant.

Mitigation Measures: No mitigation measures are required.

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4.17 Transportation

Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a. Conflict with a program plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities?			X	
b. Would the project conflict or be inconsistent with CEQA Guidelines section 15064.3, subdivision (b)?			X	
c. Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?			X	
d. Result in inadequate emergency access?			X	

a) Conflict with a program plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities?

Less Than Significant Impact. As described below, the Project would not conflict with a program plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle, and pedestrian facilities; impacts would be less than significant in this regard.

Transit Facilities

The City of Duarte, Foothill Transit, and Los Angeles County Metropolitan Transportation Authority (Metro) provide transit services to the City.

The City partners with Foothill Transit for fixed bus service. The closest bus stop to the Project site (Bus Route 272) is located along Buena Vista Street near the intersection of Huntington Drive, approximately 0.2-mile southwest of the Project site. Bus Route 272 serves Duarte, Irwindale, Baldwin Park, and West Covina.[42] The Project site area is also served by Bus Line 187, which serves Pasadena, East Pasadena, East San Gabriel, Arcadia, Monrovia, Duarte, Irwindale, and Azusa via Huntington Drive; and Line 861, which serves Duarte, Monrovia, South Monrovia Island, Irwindale, and Azusa via Royal Oaks Drive.

The Metro A Line (formerly Gold Line) is a light-rail transit line running from Long Beach to Azusa. The Duarte/City of Hope Station is located approximately 0.8-mile southeast of the Project site.

[42] Foothill Transit, *System Area Map*, https://www.foothilltransit.org/sites/default/files/2025-01/22FHB101_Bus-Book-Project_System-Map-Combined.pdf, accessed February 24, 2025.

The Project does not propose physical modifications to roadways within the vicinity of the Project site and would not result in physical impacts to transit facilities. The Project would continue to be served by the existing transit system. Population growth associated with the Project could incrementally increase the demand for public transit services. However, the Project would not generate significant population growth resulting in a significant increase in the use of transit; refer to Section 4.14, *Population and Housing* Therefore, the Project would not conflict with a program plan, ordinance, or policy addressing transit.

Roadway Facilities

Royal Oaks Drive provides access to the Project site. The Project does not propose physical modifications to Royal Oaks Drive or other roadways within the vicinity of the Project site. Vehicular access to the Project site would be provided from Royal Oaks Drive via a driveway along the northern property line. The Project would not conflict with a program plan, ordinance, or policy addressing roadway facilities.

Bicycle Facilities

The site is bounded on the north by Royal Oaks Drive, followed by a landscaped parkway and the Duarte Bike Trail. The Duarte Citywide Bicycle Master Plan (Exhibit 2) identifies the Duarte Bike Trail as an existing Class I Bike Path.[43] According to the Bicycle Master Plan, Royal Oaks Drive is identified as a proposed Class III Bike Route. The Project does not propose any modifications to Royal Oaks Drive or the Duarte Bike Path. The Project would involve reconstruction of the existing driveway along the northern portion of the Project site. These improvements would not interfere or conflict with the existing Duarte Bike Trail or the proposed Class III Bike Route along Royal Oaks Drive. Residents of the proposed Project could incrementally increase the use of bicycle facilities within the Project area and throughout the City. However, the Project would not generate significant population growth resulting in a significant increase in the use of bicycle facilities; refer to Section 4.14, *Population and Housing*. As such, the Project would not conflict with a program plan, ordinance, or policy addressing bicycle facilities.

Pedestrian Facilities

A sidewalk is currently provided along the southern boundary of Royal Oaks Drive, adjacent to the Project site. As discussed above, the Project would involve the reconstruction of the existing driveway along the northwestern portion of the site. The existing driveway would be closed, and new curbs and sidewalk would be constructed. Pedestrian access to the Project site would continue to be provided from Royal Oaks Drive. The Project proposes an interior pedestrian walkway system that would provide access to each townhome unit. The Project would not conflict with a program, plan, ordinance or policy addressing pedestrian facilities.

Mitigation Measures: No mitigation measures are required.

[43] City of Duarte, *Duarte Citywide Bicycle Master Plan. Exhibit 2: Existing and Proposed Bicycle Facilities*, https://www.accessduarte.com/home/showpublisheddocument/530/637771570088030000, accessed February 24, 2025.

b) Would the project conflict or be inconsistent with CEQA Guidelines section 15064.3, subdivision (b)?

Less Than Significant Impact. CEQA Guidelines section 15064.3 establishes vehicle miles traveled (VMT) as the primary metric for evaluating transportation-related environmental impacts under CEQA. The City's *Transportation Study Guidelines for Vehicle Miles Traveled and Level of Service Assessment* (Transportation Study Guidelines) establishes a VMT analysis methodology and thresholds for determining a project's significant transportation impact under CEQA. The City's Transportation Study Guidelines include criteria for individual project screening that can be used to determine whether a project would be presumed to have a less than significant impact without having to conduct a detailed analysis. Screening criteria are divided into the following:[44]

- Transit Priority Area (TPA) Screening: Projects located within a Transit Priority Area (TPA) may be presumed to have a less than significant impact absent substantial evidence to the contrary.
- Low VMT Area Screening: Residential and office projects located within a low VMT-generating area may be presumed to have a less than significant impact absent substantial evidence to the contrary.
- Project Type Screening: Some project types have been identified as having the presumption of a less than significant impact. The following uses can be presumed to have a less than significant impact absent substantial evidence to the contrary as their uses are local serving in nature:
    - Local-serving K-12 schools
    - Local parks
    - Day care centers
    - Local-serving retail uses less than 50,000 square feet, including:
        - Gas stations
        - Banks
        - Restaurants
        - Shopping Center
    - Local-serving hotels (e.g. non-destination hotels)
    - Local-serving assembly uses (places of worship, community organizations)
    - Community institutions (public libraries, fire stations, local government)
    - Affordable, supportive, or transitional housing
    - Assisted living facilities
    - Senior housing (as defined by HUD)
    - Local serving community colleges that are consistent with the assumptions noted in the RTP/SCS
    - Student housing projects on or adjacent to a college campus
    - Other local-serving uses as approved by the City Traffic Engineer
    - Projects generating less than 110 daily vehicle trips[45]
        - This generally corresponds to the following "typical" development potentials:
            - 11 single family housing units

[44] City of Duarte, *City of Duarte Transportation Study Guidelines for Vehicle Miles Traveled and Level of Service Assessment*, September 2020.
[45] Note that a redevelopment project replacing an existing use would estimate the net increase in trips above trips that already exists.

- 16 multi-family, condominiums, or townhouse housing units
- 10,000 sq. ft. of office
- 15,000 sq. ft. of light industrial
- 63,000 sq. ft. of warehousing
- 79,000 sq. ft. of high cube transload and short-term storage warehouse

A project is presumed to have a less than significant impact on VMT under CEQA if the project satisfies at least one of the above VMT screening criteria. Given that the proposed Project would replace two existing single-family residences to construct 11 townhomes, which is less than the 16 multi-family, condominiums, or townhouse housing units identified above, the Project meets the Project Type Screening and a detailed VMT analysis would not be required. The City may presume such development creates a less than significant transportation impact. Thus, the Project would not conflict or be inconsistent with CEQA Guidelines section 15064.3, subdivision (b).

Mitigation Measures: No mitigation measures are required.

c) Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?

Less Than Significant Impact. The Project proposes to remove the existing on-site single-family residential uses and develop 11 two-story attached townhomes in five buildings. The proposed uses would not be incompatible with existing uses in the surrounding area. The area surrounding the Project site is primarily developed with single- and multi-family residential uses. Further, the Project would not provide any off-site roadway improvements that could substantially increase hazards due to a design feature. Similar to existing conditions, vehicular access to the Project site would be provided from Royal Oaks Drive via a driveway along the northern property line. The existing northeastern driveway would be reconstructed to a 26-foot-wide driveway approach and a new 24- to 26-foot-wide interior driveway system would provide access to the individual townhome units. The existing driveway along the northwestern portion of the site would be closed and new curbs and sidewalk would be constructed. As part of the City's Site Plan and Design Review process required under Development Code Chapter 19.122, *Site Plan and Design Review*, the Project site plan would be reviewed and only approved after finding that the design, location, site plan configuration, and the effect of the proposed development on surrounding development, is consistent with the City's development standards, regulations, and applicable design guidelines/policies. Therefore, the Project would not substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment). Impacts would be less than significant in this regard.

Mitigation Measures: No mitigation measures are required.

d) Result in inadequate emergency access?

Less Than Significant Impact. Local access to the site is provided directly from Royal Oaks Drive. The construction and operation of the proposed Project would not place any permanent physical barriers on Royal Oaks Drive or other roadways within the area. There is the potential that the traffic lanes located immediately adjacent to the Project site may be temporarily closed or controlled by construction personnel during construction activities. However, this would be temporary and emergency access to the Project site and the surrounding area would be required to be maintained at all times. The Project would be required to comply with all applicable requirements of the Duarte Development Code, including the

CBC and Fire Code, and would be subject to approval by the LACoFD. Approval by LACoFD would ensure compliance with access requirements, minimum roadway widths, fire lanes, signage, access walkways, among other requirements to ensure adequate emergency access would be provided to and within the Project site. Therefore, the Project would not result in inadequate emergency access and impacts would be less than significant.

Mitigation Measures: No mitigation measures are required.

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4.18 Tribal Cultural Resources

Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a. Cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is:				
1) Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code section 5020.1(k), or		X		
2) A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1. In applying the criteria set forth in subdivision (c) of Public Resource Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.		X		

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

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

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

Less Than Significant Impact With Mitigation Incorporated. Assembly Bill (AB) 52 requires that lead agencies evaluate a project's potential impact on "tribal cultural resources", which include "[s]ites, features, places, cultural landscapes, sacred places, and objects with cultural value to a California Native American tribe that are eligible for inclusion in the California Register of Historical Resources or included in a local register of historical resources". AB 52 also gives lead agencies the discretion to determine, based on substantial evidence, whether a resource qualifies as a "tribal cultural resource." AB 52 applies whenever a lead agency adopts an environmental impact report, mitigated negative declaration, or negative declaration.

Senate Bill (SB) 18 requires that lead agencies, "prior to the adoption or amendment of a city or county's general plan, conduct consultations with California Native American tribes for the purpose of preserving specified places, features, and objects that are located within the city or county's jurisdiction. The bill would define the term "consultation" for purposes of those provisions. By imposing new duties on local governments with respect to consultations regarding the protection and preservation of California Native American historical, cultural, and sacred sites, the bill would impose a state-mandated local program." As the Project requests a General Plan Amendment, Native American groups may have knowledge about the area's cultural resources and may have concerns about a development's adverse effects on tribal cultural resources, as defined in Public Resources Code Section 21074.

In compliance with both AB 52 and SB 18, the City provided formal notification to those California Native American Tribal representatives requesting notification in accordance with AB 52 and those on the California Native American Heritage Commission's (NAHC) list for Tribal Consultation under SB 18; refer to Appendix H, *Tribal Consultation Communications*. Two responses were received from the Gabrieleño Band of Mission Indians - Kizh Nation, dated February 24, 2025 and March 4, 2025. The email of February 24, 2025, provided confidential information pertaining to the Tribe's traditional and cultural affiliation with the area, and to substantiate the potential for tribal cultural resources to be impacted by the Project. Additional information as to the nature of existing on-site soils was requested and proposed mitigation measures were provided for the City's consideration. The letter dated March 4, 2025, stated they agree with the amendment, but requested consultation for future projects within the location.

The City sent a letter to the Gabrieleño Band of Mission Indians - Kizh Nation on March 13, 2025, acknowledging receipt of the email and letter and requesting further clarification regarding the request for consultation and the mitigation measures provided and asking that a response be provided within 45 days. On April 23, 2025, the City sent an email reminding the tribe of the letter that was sent on March 13, 2025, and to inquire again if the tribe would like a formal consultation meeting. The email also noted that if no response was received, the City would take into consideration the tribe's recommendation for active monitoring during ground disturbing activities, and the City would consider consultation to be closed. No response was received.

To mitigate potential impacts to previously unidentified Native American tribal cultural resources, Mitigation Measure TCR-1 would require the retention of a qualified Native American Monitor who would be present during all construction related ground disturbances. In the event tribal cultural resources are unearthed, they would be evaluated by the Native American Monitor and if determined to be Native American in origin, would be recovered and retained in the form and/or manner the Tribe deems appropriate, including for educational, cultural and/or historic purposes (Mitigation Measure TCR-2).

As discussed in Section 4.5, *Cultural Resources*, results of the records search indicate that six previous studies had been completed within one-half mile of the Project site, none of which included the Project

site. No previously recorded cultural resources are located within the Project site or within the one-half-mile search radius. A SLF search was requested from the NAHC on January 30, 2025. On February 11, 2025, the NAHC responded that a search of the SLF was completed with positive results.

The Project site has been previously developed and graded. The Cultural Resources Report concluded that the Project site is unlikely to contain intact buried archaeological deposits. However, there is the potential for unknown or undiscovered resources to be uncovered through construction activities. In the unlikely event where tribal cultural resources are found, the resources would require proper treatment in accordance with applicable laws, including State CEQA Guidelines Section 15064.5. State CEQA Guidelines Section 15064.5 protects historical resources, archeological sites, human remains, and dedicated cemeteries. Should ground disturbing activities during Project construction encounter archaeological resources, Mitigation Measure CUL-1 would require all work within 50 feet of the find to be suspended until the resource is evaluated by a qualified archaeologist. In the event an identified cultural resource is Native American in origin, the qualified archaeologist shall consult with the Project owner and the Director of Community Development, or designee, to implement Native American consultation procedures. Following compliance with the established regulatory framework (State CEQA Guidelines Section 15064.5), Mitigation Measure CUL-1, which detail the appropriate actions required in the event cultural resources are encountered, and Mitigation Measures TCR-1 and TCR-2, the Project's potential impacts concerning tribal cultural resources would be less than significant.

Mitigation Measures: Refer to Mitigation Measure CUL-1.

TCR-1: Retain a Native American Monitor Prior to Commencement of Ground-Disturbing Activities

a) The project applicant/lead agency shall retain a Native American Monitor from or approved by the Gabrieleño Band of Mission Indians – Kizh Nation. The monitor shall be retained prior to the commencement of any "ground-disturbing activity" for the subject project at all project locations (i.e., both on-site and any off-site locations that are included in the project description/definition and/or required in connection with the project, such as public improvement work). "Ground-disturbing activity" shall include, but is not limited to, demolition, pavement removal, potholing, auguring, grubbing, tree removal, boring, grading, excavation, drilling, and trenching.

b) A copy of the executed monitoring agreement shall be submitted to the City of Duarte Community Development Director, or designee prior to the earlier of the commencement of any ground-disturbing activity, or the issuance of any permit necessary to commence a ground-disturbing activity.

c) The monitor shall complete daily monitoring logs that will provide descriptions of the relevant ground-disturbing activities, the type of construction activities performed, locations of ground-disturbing activities, soil types, cultural-related materials, and any other facts, conditions, materials, or discoveries of significance to the Tribe. Monitor logs shall identify and describe any discovered tribal cultural resources (TCRs), including but not limited to, Native American cultural and historical artifacts, remains, places of significance, etc., (collectively, tribal cultural resources, or "TCR"), as well as any discovered Native American (ancestral) human remains and burial goods. Copies of monitor logs shall be provided to the project applicant and the City of Duarte Community Development Director, or designee upon written request to the Tribe.

d) On-site tribal monitoring shall conclude upon the latter of the following (1) written confirmation to the monitor and City of Duarte Community Development Director, or designee from a designated point of contact for the project applicant that all ground-disturbing activities and phases that may involve ground-disturbing activities on the project site or in connection with the project are complete; or (2) a determination and written notification by the monitor to the City of Duarte Community Development Director, or designee that no future, planned construction activity and/or development/construction phase at the project site possesses the potential to impact TCRs.

TCR-2: Unanticipated Discovery of Tribal Cultural Resource Objects (Non-Funerary/Non-Ceremonial)

a) Upon discovery of any tribal cultural resources (TCRs), all construction activities in the immediate vicinity of the discovery shall cease (i.e., not less than the surrounding 50 feet) and shall not resume until the discovered TCR has been fully assessed by the Native American monitor. The monitor will recover and retain all discovered TCRs in the form and/or manner the Tribe deems appropriate, in the Tribe's sole discretion, and for any purpose the Tribe deems appropriate, including for educational, cultural and/or historic purposes.

4.19 Utilities and Service Systems

Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a. Require or result in the relocation or construction of new or expanded water, or wastewater treatment or storm water drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects?			X	
b. Have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry and multiple dry years?			X	
c. Result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?			X	
d. Generate solid waste in excess of State or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals?			X	
e. Comply with federal, state, and local management and reduction statutes and regulations related to solid waste?			X	

a) Require or result in the relocation or construction of new or expanded water, or wastewater treatment or storm water drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects?

***Less Than Significant Impact*.**

WATER

The Project site is currently served by the California American Water (CAW) Southern Division Los Angeles County District. The Project proposes to install a new 8-inch water main within the Project site that would connect to the existing 8-inch water main within Royal Oaks Drive. The potential environmental effects associated with construction and operation of the Project, including the proposed water lines to serve the residential development are analyzed within this Initial Study and impacts have been determined to be less than significant with compliance with regulatory requirements and implementation of mitigation

measures. Thus, the proposed Project would not require or result in relocation or construction of water facilities, the construction or relocation of which could cause significant environmental effects.

Refer to Response 4.19(b) regarding water supply.

WASTEWATER AND WASTEWATER TREATMENT

The Project proposes to install a new 8-inch sewer main within the Project site that would connect to the existing 8-inch sewer main just south of the Project site. The potential environmental effects associated with construction and operation of the Project, including the proposed sewer lines to serve the residential development are analyzed within this Initial Study and impacts have been determined to be less than significant with compliance with regulatory requirements and implementation of mitigation measures. Thus, the proposed Project would not require or result in relocation or construction of wastewater facilities, the construction or relocation of which could cause significant environmental effects.

Refer to Response 4.19(c) below, regarding wastewater treatment.

STORMWATER DRAINAGE

The Project proposes to install an on-site storm drain and underground infiltration chambers system for stormwater capture/retention. A series of area drains and catch basins would collect and convey on-site stormwater to three underground infiltration chambers. The chamber systems would provide an overflow pipe to allow stormwater discharges, in the event of subsoil saturation, to the downstream existing alley concrete gutter system, eventually discharging into the public storm drain system located south of the Project site. No off-site drainage improvements are proposed. The potential environmental effects associated with construction and operation of the Project, including the proposed storm drain improvements to serve the residential development are analyzed within this Initial Study and impacts have been determined to be less than significant with compliance with regulatory requirements and implementation of mitigation measures. Thus, the proposed Project would not require or result in relocation or construction of stormwater drainage facilities, the construction or relocation of which could cause significant environmental effects.

Refer to Section 4.10 regarding drainage patterns and the Project's proposed hydrology and drainage.

ELECTRICITY, NATURAL GAS, AND TELECOMMUNICATIONS

The Project site receives electrical power from Southern California Edison (SCE) and natural gas service from Southern California Gas (SoCalGas). Telecommunication services are provided by a variety of companies and are typically selected by the individual customer. Transmission lines/infrastructure for these services are provided within the Project area and currently serve on-site uses.

The Project's anticipated electricity demand would be approximately 51 MWh per year. The Project's anticipated natural gas demand would be approximately 264,334 kBTU per year; refer to Section 4.6 regarding an analysis of the Project's energy use. The Project would connect to existing electrical, natural gas, and telecommunications infrastructure, and no off-site improvements are proposed. The potential environmental effects associated with the Project's energy demand are analyzed within this Initial Study and impacts have been determined to be less than significant. The proposed Project would not require or result in relocation or construction of electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects.

Mitigation Measures: No mitigation measures are required.

b) Have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry and multiple dry years?

Less Than Significant Impact. CAW supplies water to the Project site. In compliance with the Urban Water Management Planning Act, the CAW 2020 UWMP demonstrates water supply reliability in a normal year, single-dry year, and multiple-dry years over a 25-year planning period. The 2020 UWMP's water supply reliability calculations are based on regional growth projections from SCAG's Connect SoCal (2020-2045 RTP/SCS), which utilizes growth forecasts defined in consultation with local governments and with reference to local general plans. CAW's 2020 UWMP (Tables 7-4, 7-5, and 7-6) indicates water supplies would meet the service area's water demands for normal, single-dry, and multiple dry-year conditions through 2045.[46]

The Project proposes a GPA to change the General Plan land use designation from Low Density Residential to Medium Density Residential. As discussed in Section 4.14, the Project involves the development of 11 townhome units, which would induce direct population growth in the City. Based on the 2024 California Department of Finance estimated household size of 2.78 persons per household, and accounting for the two existing single-family residential units located on the Project site, the Project's forecast population growth is approximately 26 persons. The Project's forecast population growth would increase the City's existing population by less than one percent (approximately 0.11 percent) to 23,682 persons. The Duarte General Plan anticipates a population of 25,418 persons at buildout. Thus, the Project would be within the population projections anticipated and planned for by the City's General Plan and would not increase growth beyond what was anticipated in the UWMP.

In 2020, CAW's Los Angeles County District had a daily per capita water use of 169 gallons per capita per day (GPCD), which was below the 2020 water use target of 187 GPCD. As such, the Project's water demand (including growth of 26 persons associated with proposed residential uses) would total approximately 4,394 GPCD. This is a conservative assumption and does not account for Project-specific water conservation measures or CAW's water conservation programs and incentives that are projected to occur and would likely reduce the Project's water consumption. As such, sufficient water supplies would be available to serve the Project, and impacts would be less than significant.

Mitigation Measures: No mitigation measures are required.

[46] California American Water, *2020 Urban Water Management Plan*, June 2021, https://amwater.com/caaw/resources/PDF/Urban-Water-Management-Plans/California%20American%20Water%20Los%20Angeles%20County%20UWMP%20-%20FINAL%2007012021.pdf, accessed January 31, 2025.

c) Result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?

Less Than Significant Impact. The Project proposes to install a new 8-inch sewer main within the Project site that would connect to the existing 8-inch vitrified clay pipe (VCP) sewer main flowing in an east-west direction just south of the Project site.

Wastewater treatment services for the majority of the City, including the Project site, are provided by Los Angeles County Sanitation District (LACSD). Wastewater generated by the proposed Project would be treated at LACSD's San Jose Creek Water Reclamation Plant located in the City of Whitter. The San Jose Creek Water Reclamation Plant consists of two hydraulically interconnected facilities and provides primary, secondary, and tertiary treatment for a design capacity of 100 mgd.[47] According to the LACSD, the San Jose Creek Water Reclamation Plant has a current flow of 58.5 mgd.[48]

The Project site is currently developed with two single-family residences and two detached structures totaling approximately 4,400 square feet. The Project proposes to remove the existing single-family residences and develop the site with 11 townhomes, which would increase wastewater demand requiring treatment. According to CalEEMod calculations conducted as part of the Air Quality/Energy/Greenhouse Gas Emissions Data, total unmitigated annual wastewater use associated with the operation of the Project would be 410,012 gallons per year.[49] This is a conservative assumption and would be approximately 0.02 percent of the current total daily wastewater flows (58.5 mgd) and would be within the San Jose Creek Water Reclamation Plant's remaining capacity (41.5 mgd). Further, LACSD charges annual wastewater sewer fees through its Wastewater Treatment Surcharge Program, as well as sewer connection fees through its Connection Fee Program, in order to maintain and expand LACSD's wastewater services. The Project Applicant would be required to pay sewer connection fees when acquiring new sewer services and Project residents would pay annual wastewater sewer fees. Wastewater treatment capacity would be available to serve the proposed Project, and impacts would be less than significant.

Mitigation Measures: No mitigation measures are required.

[47] Los Angeles County Sanitation District, *San Jose Water Reclamation Plant*, https://www.lacsd.org/services/wastewater-sewage/facilities/san-jose-creek-water-reclamation-plant, accessed February 3, 2025.

[48] Los Angeles County Sanitation District, *Who We Are & What We Do For You*, https://www.lacsd.org/services/wastewater-programs-permits/wastewater-revenue-program/who-we-are-what-we-do-for-you, accessed February 10, 2025.

[49] This is a conservative analysis and does not account for the offset associated with existing wastewater generation at the site.

d) Generate solid waste in excess of State or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals?

e) Comply with federal, state, and local management and reduction statutes and regulations related to solid waste?

Less Than Significant Impact. Burrtec Waste Services is the authorized waste hauler for the City, providing construction debris and other building materials removal, as well as commercial, industrial, and residential refuse collection.[50] The City has been an active member of Los Angeles Area Integrated Waste Management Authority (LAAIWMA) since 2003. The LAAIWMA regional agency allows the City to measure solid waste diversion jointly with the other 13 members of the regional agency. Waste from the LAAIWMA is disposed of at a number of solid waste facilities, with the majority of waste disposed at Sunshine Canyon City/County Landfill, Chiquita Canyon Sanitary Landfill, and Simi Valley Landfill and Recycling Center.[51]

The Project proposes to remove the two existing single-family residences and develop 11 townhomes, which would increase solid waste generation requiring disposal. In accordance with State law and Duarte Municipal Code Chapter 6.10, *Construction and Demolition Waste*, the Project would be required to divert at least 65 percent of the nonhazardous construction and demolition debris from the Project site by recycling, reuse, and/or salvage. The Project would also be required to comply with other City ordinances that addresses solid waste disposal, recycling, and organic waste, including Chapter 6.08, *Garbage and Rubbish Disposal,* which pertains to refuse collection and disposal; Chapter 6.09*, Collection of Recyclable Materials,* which requires compliance with CALGreen recycling provisions and organic waste collections pursuant to SB 1383; and Chapter 6.14, *Solid Waste Disposal*, which adopts the County's Solid Waste Ordinance, as amended, and pertains to standards for solid waste handling and disposal. Compliance with the Municipal Code would achieve compliance with State law, including AB 939 and SB 1383.

Project implementation would increase solid waste disposal demand over existing conditions. In 2023, solid waste in the LAAIWMA was primarily disposed in the Sunshine Canyon City/ County Landfill located at 14747 San Fernando Road, Sylmar; the Chiquita Canyon Sanitary Landfill located at 29201 Henry Mayo Drive, Castaic; and the Simi Valley Landfill and Recycling Center located at 2801 Madera Road, Simi Valley. The Sunshine Canyon City/County Landfill has a maximum permitted throughput of 12,100 tons per day. The facility's maximum capacity is 140,900,000 cubic yards and has a remaining capacity of 66,200,000.[52] The Simi Valley Landfill and Recycling Center has a maximum permitted throughput of 9,250 tons per day. The facility's maximum capacity is 119,600,000 cubic yards and has a remaining capacity of 79,783,835 cubic yards.[53] Both the Sunshine Canyon and Simi Valley Landfill and Recycling Center will continue

[50] City of Duarte, *Trash and Recycling*, https://www.accessduarte.com/government/departments/city-manager-s-office/trash-recycling, accessed February 10, 2025.
[51] California Department of Resources Recycling and Recovery (CalRecycle), *RDRS Report 2: Jurisdiction Disposal and Beneficial Reuse by Destination, Los Angeles Integrate Waste Management Authority*, https://www2.calrecycle.ca.gov/RecyclingDisposalReporting/Reports/JurisdictionDisposalAndBeneficial, accessed February 3, 2025.
[52] California Department of Resources Recycling and Recovery (CalRecycle), *SWIS Facility/Site Activity Details, Sunshine Canyon City/County Landfill (19-AA-2000)*, https://www2.calrecycle.ca.gov/SolidWaste/Site/Summary/4702, accessed February 3, 2025.
[53] California Department of Resources Recycling and Recovery (CalRecycle), *SWIS Facility/Site Activity Details, Simi Valley Landfill & Recycling Center (56-AA-0007)*,

accepting waste from the LAAIWMA. Solid waste generated from the Project could be accommodated at the Sunshine Canyon City/County Landfill and Simi Valley Landfill and Recycling Center in addition to other waste disposal facilities. In January 2025, Chiquita Canyon Landfill was closed for waste disposal due to a series of legal and regulatory actions which impacted the economic viability of the trash disposal site.[54]

According to the California Department of Resources Recycling and Recovery (CalRecycle), members of the LAAIWMA has a per capita disposal rate target of 7.1 pounds per person per day.[55] Since at least 2007, members of LAAIWMA have met the per capita disposal rate target through its diversion programs, with the most recent disposal rate (2023) of 6.60 pounds per person per day.[56] The City would continue to implement its diversion programs and require compliance with all federal, State and local statutes and regulations for solid waste, including those identified under the most current CALGreen standards and in compliance with AB 939 and SB 1383. Thus, the proposed Project would result in less than significant impacts concerning solid waste.

Mitigation Measures: No mitigation measures are required.

https://www2.calrecycle.ca.gov/SolidWaste/SiteActivity/Details/608?siteID=3954, accessed February 10, 2025.
[54] WasteDive, *Dive Brief, Waste Connections closes embattled Chiquita Canyon Landfill in California*, January 2, 2025, https://www.wastedive.com/news/waste-connections-chiquita-canyon-landfill-close-los-angeles/736264/, accessed February 2, 2025.
[55] California Department of Resources Recycling and Recovery (CalRecycle), *Disposal Rate Calculator, Los Angeles Area Integrated Waste Management Authority*, 2023, https://www2.calrecycle.ca.gov/LGCentral/AnnualReporting/DisposalRateCalculator, accessed February 3, 2025.
[56] California Department of Resources Recycling and Recovery (CalRecycle), *Jurisdiction per Capita Disposal Trend, Los Angeles Area Integrated Waste Management Authority*, https://www2.calrecycle.ca.gov/LGCentral/AnnualReporting/ReviewReports, accessed February 3, 2025.

4.20 Wildfire

If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a. Substantially impair an adopted emergency response plan or emergency evacuation plan?			X	
b. Due to slope, prevailing winds, and other factors, exacerbate wildfire risks, and thereby expose project occupants to, pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire?			X	
c. Require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment?				X
d. Expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes?				X

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

a) Substantially impair an adopted emergency response plan or emergency evacuation plan?

Less Than Significant Impact. According to the CALFIRE Fire Hazard Severity Zone Map, the Project site is located within a LRA and is not identified as being within a VHFHSZ.[57] While the Project site is not located within a State Responsibility Area (SRA) or lands classified as VHFHSZ, a VHFHSZ within an LRA is located approximately 500 feet northeast of the site.

Regional access to the Project site is provided via I-210, located south of the Project site. Local access to the Project site is provided directly from Royal Oaks Drive. The Project does not propose physical modifications to Royal Oaks Drive or other roadways within the vicinity of the Project site. Project-related construction activities are not anticipated to result in significant traffic or queuing along Royal Oaks Drive

[57] California Department of Forestry and Fire Protection, *FHSZ Viewer*, https://experience.arcgis.com/experience/03beab8511814e79a0e4eabf0d3e7247/, accessed February 10, 2025.

or other roadways within the area that could potentially impede emergency vehicles or impair any emergency evacuation plan. Additionally, any impacts associated with construction activities would be temporary in nature. The Project would be required to comply with all applicable requirements of the Duarte Development Code, including the CBC and Fire Code, and would be subject to approval by the LACoFD. As such, construction and operation of the proposed Project would not impair implementation of or physically interfere with the City's EOP or emergency evacuation plan and impacts would be less than significant.

The Project would be required to comply with all City and LACoFD requirements for fire prevention and safety measures, including site access. Royal Oaks Drive provides direct access to the Project site and would serve as a primary evacuation and emergency access route within the area. The construction and operation of the proposed Project would not place any permanent physical barriers that would obstruct access to the site or surrounding area. There is the potential that the traffic lanes located immediately adjacent to the Project site may be temporarily closed or controlled by construction personnel during construction activities. However, this would be temporary and emergency access to the Project site and surrounding area would be required to be maintained along Royal Oaks Drive at all times. The Project would be required to comply with all applicable requirements of the Duarte Development Code, including the CBC and Fire Code, and would be subject to approval by the LACoFD. Thus, the Project would not substantially impair an adopted emergency response plan or emergency evacuation plan. Impacts would be less than significant in this regard.

Mitigation Measures: No mitigation measures are required.

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

Less Than Significant Impact. As discussed above, the Project site is located within a LRA and is not identified as being within a VHFHSZ. While the Project site is not located within an SRA or lands classified as VHFHSZ, a VHFHSZ within an LRA is located approximately 500 feet northeast of the site. The Project site is relatively flat and does not contain any slopes or other physical features that would exacerbate wildfire risks. Similar to the rest of the City and region, the Project site may experience intense, dry, gusty Santa Ana winds. As discussed in the City's HMP, these winds can rapidly spread what might otherwise be a small fire and create a particularly high wildfire risk.[58]

The area surrounding the Project site is generally urbanized and developed with roadways and commercial and residential uses. The Project would be required to comply with the Duarte Municipal Code, including the CBC and Fire Code, and would be subject to approval by the LACoFD. Project construction and operation would not exacerbate wildfire risks and thereby expose Project occupants to pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire beyond existing conditions. As such, impacts would be less than significant in this regard.

Mitigation Measures: No mitigation measures are required.

[58] City of Duarte, *Hazard Mitigation Plan*, June 3, 2020. Page 127.

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

No Impact. As discussed above, the Project site is located within a LRA and is not identified as being within a VHFHSZ. While the Project site is not located within an SRA or lands classified as VHFHSZ, a VHFHSZ within an LRA is located approximately 500 feet northeast of the site. The Project site is located within an urbanized area and surrounded by existing development and associated infrastructure. The Project would not require the installation or maintenance of infrastructure that may exacerbate fire risk or result in temporary or ongoing impacts to the environment. No impact would occur in this regard.

Mitigation Measures: No mitigation measures are required.

d) Expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes?

No Impact. As discussed above, the Project site is located within a LRA and is not identified as being within a VHFHSZ. While the Project site is not located within an SRA or lands classified as VHFHSZ, a VHFHSZ within an LRA is located approximately 500 feet northeast of the site. Further, the Project site and surrounding area are relatively flat. The Project site is not located within an area identified as being at risk of flooding or landslides. The Project would not expose people or structures to significant risk associated with wildfires, including flooding or landslides as a result of runoff, post-fire slope instability, or drainage changes. No impact would occur in this regard.

Mitigation Measures: No mitigation measures are required.

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4.21 Mandatory Findings of Significance

Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a. Does the project have the potential to substantially degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, substantially reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?		X		
b. Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects)?		X		
c. Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?		X		

a) Does the project have the potential to substantially degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, substantially reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?

Less Than Significant Impact With Mitigation Incorporated. As discussed throughout this Initial Study, the Project does not have the potential to substantially degrade the quality of the environment or result in significant environmental impacts that cannot be reduced to a less than significant level with compliance with the established regulatory framework and implementation of mitigation measures.

As discussed in Section 4.4, *Biological Resources*, the Project would not substantially reduce the habitat of fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, or substantially reduce the number or restrict the range of a rare or endangered plant or animal. Potential impacts to migratory bird or raptor nests associated with construction activities would be reduced to less than significant with the implementation of Mitigation

Measure BIO-2, which requires a pre-construction survey of potential nesting habitat if construction activities were to occur during the general bird nesting season for migratory birds.

As discussed in Section 4.5, *Cultural Resources*, there are no known cultural resources within the Project site. Should Project excavation encounter archaeological resources, Mitigation Measure CUL-1 would require construction work to halt until a qualified archaeologist can evaluate the find. Additionally, as discussed in Section 4.18, *Tribal Cultural Resources*, to mitigate potential impacts to previously unidentified Native American tribal cultural resources, Mitigation Measure TCR-1 would require the retention of a qualified Native American Monitor who would be present during all construction related ground disturbances. In the event tribal cultural resources are unearthed, they would be evaluated by the Native American Monitor and if determined to be Native American in origin, would be recovered and retained in the form and/or manner the Tribe deems appropriate, including for educational, cultural and/or historic purposes (Mitigation Measure TCR-2). Thus, with implementation of Mitigation Measures CUL-1, TCR-1 and TCR-2, the Project would not eliminate important examples of the major periods of California history or prehistory.

Mitigation Measures: Refer to Mitigation Measures BIO-1, CUL-1, TCR-1, and TCR-2.

b) Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects)?

Less Than Significant Impact with Mitigation Incorporated. Based on the analysis contained in this Initial Study, the proposed Project would not have cumulatively considerable impacts that cannot be mitigated or reduced to a less than significant level with compliance with the established regulatory framework and implementation of mitigation measures. Compliance with the regulatory requirements and implementation of mitigation measures at the Project level would reduce the potential for the incremental effects that would occur with construction and operation of the proposed Project relevant to the environmental topical areas discussed within this Initial Study.

Mitigation Measures: No additional mitigation measures are required.

c) Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?

Less Than Significant Impact with Mitigation Incorporated. Previous sections of this Initial Study reviewed the proposed Project's potential impacts to human beings related to several environmental topical areas. As determined throughout this Initial Study, the proposed Project would not result in any potentially significant impacts that cannot be mitigated or reduced with compliance with the established regulatory requirements and implementation of mitigation measures. The Project would not cause a substantial adverse effect on human beings, either directly or indirectly and impacts would be less than significant.

Mitigation Measures: No additional mitigation measures are required.

5.0 REFERENCES

Ahrens, Donald C., Meteorology Today: An Introduction to Weather, Climate, & the Environment, 2006.

Arbor Care, Inc., July 2025. *Protected Tree Report for the compliance of the City of Duarte Tree Protection Ordinance, 1404 & 1414 Royal Oaks Drive Duarte, CA 91010*.

California Air Resources Board, *California Greenhouse Gas Emissions for 2000 to 2021: Trends of Emissions and Other Indicators*, https://ww2.arb.ca.gov/sites/default/files/2023-12/2000_2021_ghg_inventory_trends.pdf, December 2023, accessed March 29, 2025.

California Air Resources Board, *California's 2017 Climate Change Scoping Plan: The Strategy for Achieving California's 2030 Greenhouse Gas Target*, November 2017, https://ww3.arb.ca.gov/cc/scopingplan/scoping_plan_2017.pdf.

California Air Resources Board, *EMFAC2021 Emissions Inventory*, https://arb.ca.gov/emfac/emissions-inventory/f88ac6a0034c553872efa516b2fc053e0bf2a176.

California Air Resources Board, *Risk Reduction Plan to Reduce Particulate Matter Emissions from Diesel-Fueled Engines and Vehicles*, October 2000, https://www.arb.ca.gov/diesel/documents/rrpFinal.pdf.

California American Water, *2020 Urban Water Management Plan*, June 2021, https://amwater.com/caaw/resources/PDF/Urban-Water-Management-Plans/California%20American%20Water%20Los%20Angeles%20County%20UWMP%20-%20FINAL%2007012021.pdf, accessed January 31, 2025.

California Department of Conservation (California Geological Survey), *Special Report 143: Mineral Land Classification of the Greater Los Angeles Area, Plate 4.7*, 1984.

California Department of Conservation, California Geological Survey, *Earthquake Zones of Required Investigation Map*, https://maps.conservation.ca.gov/cgs/informationwarehouse/eqzapp/, accessed January 31, 2025.

California Department of Conservation, *California Important Farmland Finder*, https://maps.conservation.ca.gov/DLRP/CIFF/, accessed January 30, 2025.

California Department of Conservation, *Mines Online*, https://maps.conservation.ca.gov/mol/index.html, accessed March 3, 2023.

California Department of Forestry and Fire Protection, *FHSZ Viewer*, https://experience.arcgis.com/experience/03beab8511814e79a0e4eabf0d3e7247/, accessed February 10, 2025.

California Department of Toxic Substances Control, *EnviroStor*, https://www.envirostor.dtsc.ca.gov/public/map/?global_id=71002656, accessed February 3, 2025.

California Department of Transportation (Caltrans), *California State Scenic Highway System Map*, https://caltrans.maps.arcgis.com/apps/webappviewer/index.html?id=465dfd3d807c46cc8e8057116f1aacaa, accessed February 7, 2025.

California Department of Water Resources, *Sustainable Groundwater Management Act 2019 Basin Prioritization*, May 2020.

California Energy Commission, *2022 Scoping Plan for Achieving Carbon Neutrality*, https://ww2.arb.ca.gov/sites/default/files/2023-04/2022-sp.pdf.

California Energy Commission, *Electricity Consumption by County*, http://www.ecdms.energy.ca.gov/elecbycounty.aspx, accessed March 30, 2025.

California Energy Commission, *Inventory of California Greenhouse Gas Emissions and Sinks 1990 to 2004 (CEC-600-2006-013-SF.)*, http://web.archive.org/web/20170323185651/http:/www.energy.ca.gov/2006publications/CEC-600-2006-013/CEC-600-2006-013-SF.PDF.

California Energy Commission, *Natural Gas Consumption by County*, http://www.ecdms.energy.ca.gov/gasbycounty.aspx, accessed March 30, 2025.

California Environmental Protection Agency, *Cortese List Data Resources*, https://calepa.ca.gov/sitecleanup/corteselist/, accessed February 3, 2025.

California Natural Resources Agency, *Final Statement of Reasons for Regulatory Action*, pp. 11-13, 14, 16, December 2009, https://resources.ca.gov/CNRALegacyFiles/ceqa/docs/Final_Statement_of_Reasons.pdf.

California Regional Water Resources Control Board, *Regional Phase I MS4 NPDES Permit, Order R4-2021-0105, NPDES No. CAS004004, Waste Discharge Requirements and National Pollutant Discharge Elimination System (NPDES) Permit for Municipal Separate Storm Sewer System (MS4) Discharges Within the Coastal Watersheds of Los Angeles and Ventura Counties*, https://www.waterboards.ca.gov/losangeles/water_issues/programs/stormwater/municipal/public_docs/2022/1_Order(ACC-RPSignature).pdf, accessed February 10, 2025.

California Department of Resources Recycling and Recovery (CalRecycle), *Disposal Rate Calculator, Los Angeles Area Integrated Waste Management Authority*, 2023, https://www2.calrecycle.ca.gov/LGCentral/AnnualReporting/DisposalRateCalculator, accessed February 3, 2025.

California Department of Resources Recycling and Recovery (CalRecycle), *Jurisdiction per Capita Disposal Trend, Los Angeles Area Integrated Waste Management Authority*, https://www2.calrecycle.ca.gov/LGCentral/AnnualReporting/ReviewReports, accessed February 3, 2025.

California Department of Resources Recycling and Recovery (CalRecycle), *RDRS Report 2: Jurisdiction Disposal and Beneficial Reuse by Destination, Los Angeles Integrate Waste Management Authority*,

https://www2.calrecycle.ca.gov/RecyclingDisposalReporting/Reports/JurisdictionDisposalAndBeneficial, accessed February 3, 2025.

California Department of Resources Recycling and Recovery (CalRecycle), *SWIS Facility/Site Activity Details, Simi Valley Landfill & Recycling Center (56-AA-0007)*, https://www2.calrecycle.ca.gov/SolidWaste/SiteActivity/Details/608?siteID=3954, accessed February 10, 2025.

California Department of Resources Recycling and Recovery (CalRecycle), *SWIS Facility/Site Activity Details, Sunshine Canyon City/County Landfill (19-AA-2000)*, https://www2.calrecycle.ca.gov/SolidWaste/Site/Summary/4702, accessed February 3, 2025.

Calland Engineering (CLE), *Report of Geotechnical Investigation, Proposed Residential Development, 1404 & 1414 Royal Oaks Drive APN: 8530-004-059 & -060 Duarte, California,* dated December 12, 2023.

City of Duarte, *City of Duarte Transportation Study Guidelines for Vehicle Miles Traveled and Level of Service Assessment*, September 2020.

City of Duarte, *Duarte Citywide Bicycle Master Plan*, https://www.accessduarte.com/home/showpublisheddocument/530/637771570088030000, accessed February 24, 2025.

City of Duarte, *Duarte General Plan 2005 – 2020*, August 2007 (revised March 2018).

City of Duarte, *Hazard Mitigation Plan*, June 3, 2020.

City of Duarte, *Trash and Recycling*, https://www.accessduarte.com/government/departments/city-manager-s-office/trash-recycling, accessed February 10, 2025.

Duarte Unified District, *Resident School Identifier*, https://www.schoolsitelocator.com/apps/duarte//, accessed January 30, 2025.

Federal Emergency Management Agency, *National Flood Hazard Layer FIRMette*, https://msc.fema.gov/portal/home, accessed February 11, 2025.

Foothill Transit, *System Area Map*, https://www.foothilltransit.org/sites/default/files/2025-01/22FHB101_Bus-Book-Project_System-Map-Combined.pdf, accessed February 24, 2025.

Land Design Consultants, Inc., *Preliminary Hydrology/Drainage/LID Study,* August 22, 2024.

Little Diversified Architectural Consulting, *[the} rethink & transform FACILITY MASTER PLAN*, June 2016, https://4.files.edl.io/b4c4/06/22/23/033837-bae2ea61-fcd5-4d94-9a5e-a35e826aa88e.pdf, accessed February 6, 2025.

Los Angeles County Library, *About LA County Library*, https://lacountylibrary.org/about-us/, accessed February 10, 2025.

Los Angeles County Library, *Strategic Plan 2024-2028*, https://lacountylibrary.org/wp-content/uploads/2024/03/LACountyLibrary_Strategic_Plan_2024-28.pdf, accessed February 3, 2025.

Los Angeles County Sanitation District, *San Jose Water Reclamation Plant*, https://www.lacsd.org/services/wastewater-sewage/facilities/san-jose-creek-water-reclamation-plant, accessed February 3, 2025.

Los Angeles County Sanitation District, *Who We Are & What We Do For You*, https://www.lacsd.org/services/wastewater-programs-permits/wastewater-revenue-program/who-we-are-what-we-do-for-you, accessed February 10, 2025.

MD Acoustics, *Royal Oaks Townhomes Noise Impact Study,* April 7, 2025.

RBF Consulting, *City of Duarte General Plan Update Final Environmental Impact Report,* August 2007. Table 3-2.

South Coast Air Quality Management District, *2022 Air Quality Management Plan*, https://www.aqmd.gov/docs/default-source/clean-air-plans/air-quality-management-plans/2022-air-quality-management-plan/final-2022-aqmp/final-2022-aqmp.pdf?sfvrsn=16.

South Coast Air Quality Management District, CEQA Air Quality Handbook, 1993, https://www.aqmd.gov/home/rules-compliance/ceqa/air-quality-analysis-handbook#.

South Coast Air Quality Management District, *Final Localized Significance Threshold Methodology*, June 2003, Revised July 2008. https://www.aqmd.gov/docs/default-source/ceqa/handbook/localized-significance-thresholds/final-lst-methodology-document.pdf?sfvrsn=2.

South Coast Air Quality Management District, *Localized Significance Thresholds Methodology – Appendix C*, Revised October 21, 2009.

South Environmental, *Cultural Resources Technical Report, 1404 Royal Oaks Project, City of Duarte, Los Angeles County, California*, March 2025.

South Environmental LLC, *Paleontological Resources Assessment, 1404 Royal Oaks Duarte Project, City of Duarte, Los Angeles County, California*, May 2025

Southern California Association of Governments, *Connect SoCal,* Adopted April 4, 2024, https://scag.ca.gov/sites/main/files/file-attachments/23-2987-connect-socal-2024-final-complete-040424.pdf?1714175547.

State of California Governor's Office of Planning and Research, *Transmittal of the Governor's Office of Planning and Research's Proposed SB97 CEQA Guidelines Amendments to the Natural Resources Agency*, April 13, 2009, https://planning.lacity.org/eir/CrossroadsHwd/deir/files/references/C01.pdf.

State of California, Department of Finance, *E-5 Population and Housing Estimates for Cities, Counties, and the State, 2020-2024*, Sacramento, California, May 2024.

State Water Resources Control Board, *GeoTracker*, https://geotracker.waterboards.ca.gov/search, accessed February 3, 2025.

U.S. Fish and Wildlife Service, *National Wetlands Inventory*, https://fwsprimary.wim.usgs.gov/wetlands/apps/wetlands-mapper/, accessed February 3, 2025.

WasteDive, *Dive Brief, Waste Connections closes embattled Chiquita Canyon Landfill in California*, January 2, 2025, https://www.wastedive.com/news/waste-connections-chiquita-canyon-landfill-close-los-angeles/736264/, accessed February 2, 2025.

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7.0 MITIGATION MONITORING AND REPORTING PROGRAM

The California Environmental Quality Act (CEQA) requires that when a public agency completes an environmental document which includes measures to mitigate or avoid significant environmental effects, the public agency must adopt a reporting or monitoring program. This requirement ensures that environmental impacts found to be significant will be mitigated. The reporting or monitoring program must be designed to ensure compliance during project implementation (Public Resources Code Section 21081.6). Specifically, Public Resources Code Section 21081.6 states:

> (a) *When making findings required by paragraph (1) of subdivision (a) of Section 21081 or when adopting a mitigated negative declaration pursuant to paragraph (2) of subdivision (c) of Section 21080, the following requirements shall apply:*
>
> *(1) The public agency shall adopt a reporting or monitoring program for the changes made to the project or conditions of project approval, adopted in order to mitigate or avoid significant effects on the environment. The reporting or monitoring program shall be designed to ensure compliance during project implementation. For those changes which have been required or incorporated into the project at the request of a responsible agency or a public agency having jurisdiction by law over natural resources affected by the project, that agency shall, if so requested by the lead or responsible agency, prepare and submit a proposed reporting or monitoring program.*
>
> *(2) The lead agency shall specify the location and custodian of the documents or other material which constitute the record of proceedings upon which its decision is based.*

This Mitigation Monitoring and Reporting Program (MMRP) has been developed to provide the mechanism by which to monitor mitigation measures outlined in the 1404 Royal Oaks Project Initial Study/Mitigated Negative Declaration (IS/MND). The 1404 Royal Oaks Project MMRP has been prepared in conformance with Public Resources Code Section 21081.6 and City of Duarte (City) monitoring requirements.

State CEQA Guidelines Section 15097 provides clarification of mitigation monitoring and reporting requirements and guidance to local lead agencies on implementing strategies. The reporting or monitoring program must be designed to ensure compliance during project implementation. The City of Duarte is the Lead Agency for the 1404 Royal Oaks Project and is therefore responsible for ensuring MMRP implementation. This MMRP has been drafted to meet Public Resources Code Section 21081.6 requirements as a fully enforceable monitoring program.

The MMRP Checklist is intended to provide verification that all applicable mitigation measures relative to significant environmental impacts are monitored and reported. Monitoring will include: 1) verification that each mitigation measure has been implemented; 2) recordation of the actions taken to implement each mitigation; and 3) retention of records in the 1404 Royal Oaks Project file.

This MMRP delineates responsibilities for monitoring the Project but also allows the City flexibility and discretion in determining how best to monitor implementation. Monitoring procedures will vary according to the type of mitigation measure. Adequate monitoring consists of demonstrating that monitoring

procedures took place and that mitigation measures were implemented. This includes the review of all monitoring reports, enforcement actions, and document disposition, unless otherwise noted in the MMRP Checklist. If an adopted mitigation measure is not being properly implemented, the designated monitoring personnel shall require corrective actions to ensure adequate implementation.

The numbering system in the following table corresponds with the IS/MND's numbering system. The MMRP table "Verification" column will be used by the parties responsible for documenting when the mitigation measure has been completed. The project applicant shall retain all records related to required mitigation and monitoring. The City of Duarte will complete ongoing documentation and mitigation compliance monitoring. The completed MMRP and supplemental documents will be kept on file at the City of Duarte Community Development Department.

Mitigation Measures	Implementation Timing	Monitoring/ Reporting Methods	Responsible for Approval/ Monitoring	Verification		
				Initials	Date	Remarks
BIOLOGICAL RESOURCES						
BIO-1: To the extent possible, construction activities (i.e., earthwork, clearing, and grubbing) shall occur outside of the general bird nesting season for migratory birds (February 1 to August 31). If construction activities (i.e., earthwork, clearing, and grubbing) occur during the general bird nesting season for migratory birds (February 1 to August 31), a qualified biologist shall be retained to perform a pre-construction survey of potential nesting habitat to confirm the absence of active nests belonging to migratory birds and raptors afforded protection under the Migratory Bird Treaty Act and California Fish and Game Code. The pre-construction survey shall be performed no more than three days prior to the commencement of construction activities. The results of the pre-construction survey shall be documented by a qualified biologist and provided to the City of Duarte Director of Community Development, or designee, along with the qualified biologist's credentials at least one business day prior to the commencement of construction. If the qualified biologist determines that no active migratory bird or raptor nests occur, the biologist shall document a negative survey and construction activities shall be allowed to proceed without any further requirements. If the qualified biologist determines that an active migratory bird or raptor nest is present, the biologist shall establish a no-disturbance buffer. A biological monitor shall be present to delineate the boundaries of the buffer area and to monitor the active nest to ensure that nesting behavior is not adversely affected by the construction activity. No impacts within	If construction activities occur during the general bird nesting season for migratory birds (February 1 to August 31)	Pre-construction Survey; Implementation of no-disturbance buffer, if active migratory bird or raptor nest is present	Project Applicant; Contractor; Qualified Biologist / City of Duarte Director of Community Development, or designee			

Mitigation Measures	Implementation Timing	Monitoring/ Reporting Methods	Responsible for Approval/ Monitoring	Verification		
				Initials	Date	Remarks
the no-disturbance buffer shall occur until the young have fledged the nest, and the nest is confirmed to no longer be active, or as determined by the qualified biologist. The biological monitor may modify the buffer as applicable for the specific bird species and type of work or propose other recommendations to avoid indirect impacts to nesting birds.						
BIO-2: Prior to any removal or alteration of the three Coast Live Oak trees, the applicant is required to obtain a tree removal/alteration permit pursuant to Duarte Municipal Code Section 13.12.040 and implement required replacement per Duarte Municipal Code Section 13.12.080, including planting timing (at the landscape phase unless otherwise directed), species, size, location, and maintenance consistent with City conditions of approval.	Prior to tree removal or alteration	Issuance of tree removal/ alteration permit	Project Applicant; Contractor / City of Duarte Director of Community Development, or designee			
BIO-3: Prior to issuance of demolition permits, protective fences shall be installed around Trees #1 and #2 that encompass as much of the Tree Protection Zone areas as possible with the objective to enclose an adequate amount of space underneath the trees so that the heavy equipment required for demolition and grading can be routed away from root zones; prevent any soil disruptions or mechanical damage to the trunks and branches; and signify to all workers that the trees are Protected. Initial placement of the fences shall be approved and monitored by a qualified Arborist. The Arborists credentials shall be provided to the City of Duarte Director of Community Development, or designee. The fenced Tree Protection Zones shall be constructed with chain link on metal tube frames, at least five feet tall and set on stands. The fence panels	Prior to issuance of demolition permits	Installation of protective fences; Documentation of movement/ relocation of fencing; Documentation of Arborist monitoring	Project Applicant; Contractor; Project Arborist / City of Duarte Director of Community Development, or designee			

Mitigation Measures	Implementation Timing	Monitoring/ Reporting Methods	Responsible for Approval/ Monitoring	Verification		
				Initials	Date	Remarks
shall be secured together with couplers or clamps and leave a 24 inch wide access gap between two panels for monitoring, mulching, irrigating, and other preservation activities. The fences shall be required during the demolition phase and throughout the construction of all residential structures and infrastructure. Any movement/relocation of the protective fences necessary for the construction phases shall be approved by the Project's Arborist of record and documentation provided to the City of Duarte Director of Community Development, or designee. The fenced areas shall be covered with a three-inch layer of clean chipped bark mulch. The area shall be fitted with a soaker hose set on the surface of the mulch and anchored with landscape staples. The length of the soaker hose shall be adequate to offer an even amount of water throughout the fenced area. Irrigation shall be provided only during the months of January through May in the absence of normal rainfall. No supplemental water is required or advised in the summer or fall seasons. Root pruning shall be done by exposing encountered roots by hand with a shovel and cutting with a clean hand saw at the point where roots are entire and undamaged. The required live crown pruning shall occur during the framing phase so the reduction pruning can be done with precision and kept to a minimum. A licensed tree service, to be approved by the Director of Community Development, shall be hired to do the work, and the work can be done at any time of the year.						

Mitigation Measures	Implementation Timing	Monitoring/ Reporting Methods	Responsible for Approval/ Monitoring	Verification		
				Initials	Date	Remarks
Other monitoring visits by the approved Arborist of record shall occur for the repositioning of fences for the excavation and grading phase and during excavation and grading that encroaches into the Tree Protection Zones. Monthly monitoring visits shall be scheduled for the Arborist to properly manage the soil moisture and tree health. Confirmation of the visits shall be provided to the Community Development Department. The existing concrete driveway pavement located within the TPZ shall remain in place throughout construction activities to serve as soil and root protection. The concrete may be removed at the time the new driveway is installed. The main haul route, and material storage and staging area throughout the Project site shall be in the planned driveway and fire lane areas after demolition and grading occurs and located outside of the Tree Protection Zones.						
CULTURAL RESOURCES						
CUL-1: If previously unidentified cultural resources are encountered during ground-disturbing activities, work within 50 feet of the find shall cease and the Director of Community Development shall be notified and a qualified archaeologist, defined as an archaeologist who meets the Secretary of the Interior's Professional Qualification Standards for archaeology, shall be contacted immediately to evaluate the find. If necessary, the evaluation may require preparation of a treatment plan and archaeological testing for the California Register of Historical Resources (CRHR) or	If resources are encountered during ground-disturbing activities	Disposition and treatment of any tribal cultural resource or if not a tribal cultural resource, preparation of a treatment plan and	Project Applicant; Contractor; Archaeological Monitor/ City of Duarte Director of Community Development, or designee			

Mitigation Measures	Implementation Timing	Monitoring/ Reporting Methods	Responsible for Approval/ Monitoring	Verification		
				Initials	Date	Remarks
National Register of Historic Places (NRHP) eligibility. If the discovery proves to be significant under CEQA and cannot be avoided by the Project, additional work such as data recovery excavation may be warranted to mitigate any significant impacts. In the event an identified cultural resource is Native American in origin, the qualified archaeologist shall consult with the Project owner and the City of Duarte Director of Community Development, or designee, to implement Native American consultation procedures. Construction shall not resume in the area until appropriate protection and preservation measures are in place and have been approved by the City of Duarte Director of Community Development, or designee, and the qualified archaeologist states in writing that the proposed construction activities would not significantly damage any archaeological resources.		archaeological testing; data recovery, excavation, and archaeological mitigation if cannot be protected				
GEOLOGY AND SOILS						
GEO-1: For all excavations at a depth greater than 11 feet below ground surface, a qualified vertebrate paleontologist (as defined by the Society for Vertebrate Paleontology) shall be contacted and retained to conduct a spot check of the excavated materials retrieved from below 11 feet of depth to confirm that sediments with High potential are not being impacted. Verification of retention of the qualified vertebrate paleontologist shall be provided to the City of Duarte Community Development Department one business day prior to such excavation.	During excavations at a depth greater than 11 feet below ground surface	Retention of and spot check during excavation by a professional vertebrate paleontologist	Project Applicant; Contractor; Qualified Vertebrate Paleontologist/ City of Duarte Community Development Department			
GEO-2: Should fossil materials be discovered by the construction field crew, construction activities shall be halted within a 50-foot radius around the find. A	If fossil discovery during ground-	Assessment of resources by a professional	Project Applicant; Contractor;			

Mitigation Measures	Implementation Timing	Monitoring/ Reporting Methods	Responsible for Approval/ Monitoring	Verification		
				Initials	Date	Remarks
qualified vertebrate paleontologist (as defined by the Society for Vertebrate Paleontology) shall be contacted and retained to evaluate the discovery, determine its significance, and decide if additional mitigation or treatment is required. Verification of retention of the qualified vertebrate paleontologist shall be provided to the City of Duarte Community Development Department within three business days after discovery. Documentation and treatment of the discovery shall occur in accordance with Society of Vertebrate Paleontology standards. The significance of the find shall be evaluated pursuant to the State CEQA Guidelines. If the discovery proves to be significant, before construction activities resume at the location of the find, additional work such as data recovery excavation may be warranted, as deemed necessary by the paleontologist. Resuming construction activities after discovery shall be authorized only by a qualified vertebrate paleontologist in writing, and a copy of such documentation provided to the City of Duarte Community Development Department.	disturbing activities	vertebrate paleontologist/ If significant under CEQA, verify additional work, such as data recovery excavation, has been implemented	Qualified Vertebrate Paleontologist/ City of Duarte Community Development Director, or designee			
TRIBAL CULTURAL RESOURCES						
TCR-1: Retain a Native American Monitor Prior to Commencement of Ground-Disturbing Activities. a) The project applicant/lead agency shall retain a Native American Monitor from or approved by the Gabrieleño Band of Mission Indians – Kizh Nation. The monitor shall be retained prior to the commencement of any "ground-disturbing activity" for the subject project at all project locations (i.e., both on-site and any off-site locations that are included in the project	Prior to the issuance of grading permit or any ground disturbing activity/On-going during ground-	Executed contract/ Monitoring logs/Written confirmation of completion of monitoring	Project Applicant; Contractor; Native American Monitor/City of Duarte Community Development			

Mitigation Measures	Implementation Timing	Monitoring/ Reporting Methods	Responsible for Approval/ Monitoring	Verification		
				Initials	Date	Remarks
description/definition and/or required in connection with the project, such as public improvement work). "Ground-disturbing activity" shall include, but is not limited to, demolition, pavement removal, potholing, auguring, grubbing, tree removal, boring, grading, excavation, drilling, and trenching. b) A copy of the executed monitoring agreement shall be submitted to the City of Duarte Community Development Director, or designee prior to the earlier of the commencement of any ground-disturbing activity, or the issuance of any permit necessary to commence a ground-disturbing activity. c) The monitor shall complete daily monitoring logs that will provide descriptions of the relevant ground-disturbing activities, the type of construction activities performed, locations of ground-disturbing activities, soil types, cultural-related materials, and any other facts, conditions, materials, or discoveries of significance to the Tribe. Monitor logs shall identify and describe any discovered tribal cultural resources (TCRs), including but not limited to, Native American cultural and historical artifacts, remains, places of significance, etc., (collectively, tribal cultural resources, or "TCR"), as well as any discovered Native American (ancestral) human remains and burial goods. Copies of monitor logs shall be provided to the project applicant and the City of Duarte Community Development Director, or designee upon written request to the Tribe. d) On-site tribal monitoring shall conclude upon the latter of the following (1) written confirmation to the monitor and City of Duarte Community Development Director, or designee from a designated point of contact for the project applicant that all ground-disturbing activities	disturbing activities		Director, or designee			

Mitigation Measures	Implementation Timing	Monitoring/ Reporting Methods	Responsible for Approval/ Monitoring	Verification		
				Initials	Date	Remarks
and phases that may involve ground-disturbing activities on the project site or in connection with the project are complete; or (2) a determination and written notification by the monitor to the City of Duarte Community Development Director, or designee that no future, planned construction activity and/or development/construction phase at the project site possesses the potential to impact TCRs.						
TCR-2: Unanticipated Discovery of Tribal Cultural Resource Objects (Non-Funerary/Non-Ceremonial). a) Upon discovery of any tribal cultural resources (TCRs), all construction activities in the immediate vicinity of the discovery shall cease (i.e., not less than the surrounding 50 feet) and shall not resume until the discovered TCR has been fully assessed by the Native American monitor. The monitor will recover and retain all discovered TCRs in the form and/or manner the Tribe deems appropriate, in the Tribe's sole discretion, and for any purpose the Tribe deems appropriate, including for educational, cultural and/or historic purposes.	During ground-disturbing activities	Disposition and treatment of any tribal cultural resource	Project Applicant; Contractor; Native American Monitor/ City of Duarte Community Development Director, or designee			
Refer to Mitigation Measure CUL-1	--	--	--			

Appendix A
Air Quality/Energy/Greenhouse Gas Emissions Data

Duarte - 1404 Royal Oaks Project Detailed Report

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3.11. Paving (2027) - Unmitigated

3.12. Paving (2027) - Mitigated

3.13. Architectural Coating (2027) - Unmitigated

3.14. Architectural Coating (2027) - Mitigated

4. Operations Emissions Details

4.1. Mobile Emissions by Land Use

4.1.1. Unmitigated

4.1.2. Mitigated

4.2. Energy

4.2.1. Electricity Emissions By Land Use - Unmitigated

4.2.2. Electricity Emissions By Land Use - Mitigated

4.2.3. Natural Gas Emissions By Land Use - Unmitigated

4.2.4. Natural Gas Emissions By Land Use - Mitigated

4.3. Area Emissions by Source

4.3.1. Unmitigated

4.3.2. Mitigated

4.4. Water Emissions by Land Use

4.4.1. Unmitigated

4.4.2. Mitigated

4.5. Waste Emissions by Land Use

4.5.1. Unmitigated

4.5.2. Mitigated

4.6. Refrigerant Emissions by Land Use

4.6.1. Unmitigated

4.6.2. Mitigated

4.7. Offroad Emissions By Equipment Type

4.7.1. Unmitigated

4.7.2. Mitigated

4.8. Stationary Emissions By Equipment Type

4.8.1. Unmitigated

4.8.2. Mitigated

4.9. User Defined Emissions By Equipment Type

4.9.1. Unmitigated

4.9.2. Mitigated

4.10. Soil Carbon Accumulation By Vegetation Type

4.10.1. Soil Carbon Accumulation By Vegetation Type - Unmitigated

4.10.2. Above and Belowground Carbon Accumulation by Land Use Type - Unmitigated

4.10.3. Avoided and Sequestered Emissions by Species - Unmitigated

4.10.4. Soil Carbon Accumulation By Vegetation Type - Mitigated

4.10.5. Above and Belowground Carbon Accumulation by Land Use Type - Mitigated

4.10.6. Avoided and Sequestered Emissions by Species - Mitigated

5. Activity Data

5.1. Construction Schedule

5.2. Off-Road Equipment

5.2.1. Unmitigated

5.2.2. Mitigated

5.3. Construction Vehicles

5.3.1. Unmitigated

5.3.2. Mitigated

5.4. Vehicles

5.4.1. Construction Vehicle Control Strategies

5.5. Architectural Coatings

5.6. Dust Mitigation

5.6.1. Construction Earthmoving Activities

5.6.2. Construction Earthmoving Control Strategies

5.7. Construction Paving

5.8. Construction Electricity Consumption and Emissions Factors

5.9. Operational Mobile Sources

5.9.1. Unmitigated

5.9.2. Mitigated

5.10. Operational Area Sources

5.10.1. Hearths

5.10.1.1. Unmitigated

5.10.1.2. Mitigated

5.10.2. Architectural Coatings

5.10.3. Landscape Equipment

5.10.4. Landscape Equipment - Mitigated

5.11. Operational Energy Consumption

5.11.1. Unmitigated

5.11.2. Mitigated

5.12. Operational Water and Wastewater Consumption

5.12.1. Unmitigated

5.12.2. Mitigated

5.13. Operational Waste Generation

5.13.1. Unmitigated

5.13.2. Mitigated

5.14. Operational Refrigeration and Air Conditioning Equipment

5.14.1. Unmitigated

5.14.2. Mitigated

5.15. Operational Off-Road Equipment

5.15.1. Unmitigated

5.15.2. Mitigated

5.16. Stationary Sources

5.16.1. Emergency Generators and Fire Pumps

5.16.2. Process Boilers

5.17. User Defined

5.18. Vegetation

5.18.1. Land Use Change

5.18.1.1. Unmitigated

5.18.1.2. Mitigated

5.18.1. Biomass Cover Type

5.18.1.1. Unmitigated

5.18.1.2. Mitigated

5.18.2. Sequestration

5.18.2.1. Unmitigated

5.18.2.2. Mitigated

6. Climate Risk Detailed Report

6.1. Climate Risk Summary

6.2. Initial Climate Risk Scores

6.3. Adjusted Climate Risk Scores

6.4. Climate Risk Reduction Measures

7. Health and Equity Details

7.1. CalEnviroScreen 4.0 Scores

7.2. Healthy Places Index Scores

7.3. Overall Health & Equity Scores

7.4. Health & Equity Measures

7.5. Evaluation Scorecard

7.6. Health & Equity Custom Measures

8. User Changes to Default Data

1. Basic Project Information

1.1. Basic Project Information

Data Field	Value
Project Name	Duarte - 1404 Royal Oaks Project
Construction Start Date	3/1/2025
Operational Year	2027
Lead Agency	—
Land Use Scale	Project/site
Analysis Level for Defaults	County
Windspeed (m/s)	1.80
Precipitation (days)	22.4
Location	Duarte, CA 91010, USA
County	Los Angeles-South Coast
City	Duarte
Air District	South Coast AQMD
Air Basin	South Coast
TAZ	4902
EDFZ	7
Electric Utility	Southern California Edison
Gas Utility	Southern California Gas
App Version	2022.1.1.29

1.2. Land Use Types

Land Use Subtype	Size	Unit	Lot Acreage	Building Area (sq ft)	Landscape Area (sq ft)	Special Landscape Area (sq ft)	Population	Description
Condo/Townhouse	11.0	Dwelling Unit	0.84	11,660	0.00	0.00	33.0	—

1.3. User-Selected Emission Reduction Measures by Emissions Sector

Sector	#	Measure Title
Construction	C-10-A	Water Exposed Surfaces
Construction	C-10-C	Water Unpaved Construction Roads
Construction	C-11	Limit Vehicle Speeds on Unpaved Roads

2. Emissions Summary

2.1. Construction Emissions Compared Against Thresholds

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Un/Mit.	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.66	0.56	5.22	7.51	0.01	0.22	0.11	0.33	0.20	0.03	0.23	—	1,452	1,452	0.06	0.02	0.50	1,459
Mit.	0.66	0.56	5.22	7.51	0.01	0.22	0.11	0.33	0.20	0.03	0.23	—	1,452	1,452	0.06	0.02	0.50	1,459
% Reduced	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	4.86	4.64	15.5	18.0	0.03	0.68	5.55	6.24	0.63	2.63	3.26	—	3,366	3,366	0.15	0.17	0.08	3,386
Mit.	4.86	4.64	15.5	18.0	0.03	0.68	1.62	2.31	0.63	0.73	1.35	—	3,366	3,366	0.15	0.17	0.08	3,386
% Reduced	—	—	—	—	—	—	71%	63%	—	72%	58%	—	—	—	—	—	—	—
Average Daily (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.46	0.39	3.65	5.27	0.01	0.15	0.32	0.48	0.14	0.13	0.27	—	1,032	1,032	0.04	0.02	0.16	1,037
Mit.	0.46	0.39	3.65	5.27	0.01	0.15	0.15	0.31	0.14	0.05	0.19	—	1,032	1,032	0.04	0.02	0.16	1,037

% Reduced	—	—	—	—	—	—	53%	36%	—	62%	30%	—	—	—	—	—	—	—
Annual (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.08	0.07	0.67	0.96	< 0.005	0.03	0.06	0.09	0.03	0.02	0.05	—	171	171	0.01	< 0.005	0.03	172
Mit.	0.08	0.07	0.67	0.96	< 0.005	0.03	0.03	0.06	0.03	0.01	0.03	—	171	171	0.01	< 0.005	0.03	172
% Reduced	—	—	—	—	—	—	53%	36%	—	62%	30%	—	—	—	—	—	—	—

2.2. Construction Emissions by Year, Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Year	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily - Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2025	0.66	0.56	5.22	7.51	0.01	0.22	0.11	0.33	0.20	0.03	0.23	—	1,452	1,452	0.06	0.02	0.50	1,459
2026	0.62	0.52	4.88	7.44	0.01	0.19	0.11	0.30	0.17	0.03	0.20	—	1,448	1,448	0.06	0.02	0.46	1,456
Daily - Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2025	2.00	1.68	15.5	18.0	0.03	0.68	5.55	6.24	0.63	2.63	3.26	—	3,366	3,366	0.15	0.17	0.08	3,386
2026	0.62	0.52	4.88	7.36	0.01	0.19	0.11	0.30	0.17	0.03	0.20	—	1,443	1,443	0.06	0.02	0.01	1,450
2027	4.86	4.64	9.70	14.7	0.02	0.35	0.36	0.72	0.33	0.09	0.41	—	2,637	2,637	0.10	0.04	0.03	2,650
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2025	0.46	0.39	3.65	5.02	0.01	0.15	0.32	0.48	0.14	0.13	0.27	—	976	976	0.04	0.02	0.16	982
2026	0.45	0.37	3.49	5.27	0.01	0.14	0.08	0.22	0.12	0.02	0.14	—	1,032	1,032	0.04	0.01	0.14	1,037
2027	0.34	0.31	0.96	1.48	< 0.005	0.04	0.03	0.07	0.03	0.01	0.04	—	270	270	0.01	< 0.005	0.05	271
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2025	0.08	0.07	0.67	0.92	< 0.005	0.03	0.06	0.09	0.03	0.02	0.05	—	162	162	0.01	< 0.005	0.03	163
2026	0.08	0.07	0.64	0.96	< 0.005	0.02	0.01	0.04	0.02	< 0.005	0.03	—	171	171	0.01	< 0.005	0.02	172

2027	0.06	0.06	0.18	0.27	< 0.005	0.01	0.01	0.01	0.01	< 0.005	0.01	—	44.7	44.7	< 0.005	< 0.005	0.01	44.9

2.3. Construction Emissions by Year, Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Year	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily - Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2025	0.66	0.56	5.22	7.51	0.01	0.22	0.11	0.33	0.20	0.03	0.23	—	1,452	1,452	0.06	0.02	0.50	1,459
2026	0.62	0.52	4.88	7.44	0.01	0.19	0.11	0.30	0.17	0.03	0.20	—	1,448	1,448	0.06	0.02	0.46	1,456
Daily - Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2025	2.00	1.68	15.5	18.0	0.03	0.68	1.62	2.31	0.63	0.73	1.35	—	3,366	3,366	0.15	0.17	0.08	3,386
2026	0.62	0.52	4.88	7.36	0.01	0.19	0.11	0.30	0.17	0.03	0.20	—	1,443	1,443	0.06	0.02	0.01	1,450
2027	4.86	4.64	9.70	14.7	0.02	0.35	0.36	0.72	0.33	0.09	0.41	—	2,637	2,637	0.10	0.04	0.03	2,650
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2025	0.46	0.39	3.65	5.02	0.01	0.15	0.15	0.31	0.14	0.05	0.19	—	976	976	0.04	0.02	0.16	982
2026	0.45	0.37	3.49	5.27	0.01	0.14	0.08	0.22	0.12	0.02	0.14	—	1,032	1,032	0.04	0.01	0.14	1,037
2027	0.34	0.31	0.96	1.48	< 0.005	0.04	0.03	0.07	0.03	0.01	0.04	—	270	270	0.01	< 0.005	0.05	271
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2025	0.08	0.07	0.67	0.92	< 0.005	0.03	0.03	0.06	0.03	0.01	0.03	—	162	162	0.01	< 0.005	0.03	163
2026	0.08	0.07	0.64	0.96	< 0.005	0.02	0.01	0.04	0.02	< 0.005	0.03	—	171	171	0.01	< 0.005	0.02	172
2027	0.06	0.06	0.18	0.27	< 0.005	0.01	0.01	0.01	0.01	< 0.005	0.01	—	44.7	44.7	< 0.005	< 0.005	0.01	44.9

2.4. Operations Emissions Compared Against Thresholds

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Un/Mit.	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.65	0.61	0.28	3.07	0.01	0.01	0.55	0.56	0.01	0.14	0.15	5.23	740	746	0.57	0.03	1.93	769
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.59	0.55	0.29	2.26	0.01	0.01	0.55	0.56	0.01	0.14	0.15	5.23	714	719	0.57	0.03	0.13	741
Average Daily (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.59	0.56	0.27	2.51	0.01	0.01	0.49	0.50	0.01	0.12	0.13	5.23	660	666	0.56	0.02	0.80	688
Annual (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.11	0.10	0.05	0.46	< 0.005	< 0.005	0.09	0.09	< 0.005	0.02	0.02	0.87	109	110	0.09	< 0.005	0.13	114

2.5. Operations Emissions by Sector, Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Sector	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	0.31	0.28	0.21	2.42	0.01	< 0.005	0.55	0.56	< 0.005	0.14	0.14	—	603	603	0.03	0.02	1.85	613
Area	0.33	0.32	0.01	0.62	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	1.67	1.67	< 0.005	< 0.005	—	1.67
Energy	0.01	< 0.005	0.07	0.03	< 0.005	0.01	—	0.01	0.01	—	0.01	—	133	133	0.01	< 0.005	—	133
Water	—	—	—	—	—	—	—	—	—	—	—	0.79	2.65	3.43	0.08	< 0.005	—	6.03
Waste	—	—	—	—	—	—	—	—	—	—	—	4.44	0.00	4.44	0.44	0.00	—	15.5
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.08	0.08
Total	0.65	0.61	0.28	3.07	0.01	0.01	0.55	0.56	0.01	0.14	0.15	5.23	740	746	0.57	0.03	1.93	769
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Mobile	0.31	0.28	0.23	2.23	0.01	< 0.005	0.55	0.56	< 0.005	0.14	0.14	—	578	578	0.03	0.02	0.05	586
Area	0.27	0.27	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Energy	0.01	< 0.005	0.07	0.03	< 0.005	0.01	—	0.01	0.01	—	0.01	—	133	133	0.01	< 0.005	—	133
Water	—	—	—	—	—	—	—	—	—	—	—	0.79	2.65	3.43	0.08	< 0.005	—	6.03
Waste	—	—	—	—	—	—	—	—	—	—	—	4.44	0.00	4.44	0.44	0.00	—	15.5
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.08	0.08
Total	0.59	0.55	0.29	2.26	0.01	0.01	0.55	0.56	0.01	0.14	0.15	5.23	714	719	0.57	0.03	0.13	741
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	0.27	0.25	0.20	2.05	0.01	< 0.005	0.49	0.49	< 0.005	0.12	0.13	—	524	524	0.03	0.02	0.71	532
Area	0.31	0.31	< 0.005	0.43	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	1.14	1.14	< 0.005	< 0.005	—	1.15
Energy	0.01	< 0.005	0.07	0.03	< 0.005	0.01	—	0.01	0.01	—	0.01	—	133	133	0.01	< 0.005	—	133
Water	—	—	—	—	—	—	—	—	—	—	—	0.79	2.65	3.43	0.08	< 0.005	—	6.03
Waste	—	—	—	—	—	—	—	—	—	—	—	4.44	0.00	4.44	0.44	0.00	—	15.5
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.08	0.08
Total	0.59	0.56	0.27	2.51	0.01	0.01	0.49	0.50	0.01	0.12	0.13	5.23	660	666	0.56	0.02	0.80	688
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	0.05	0.05	0.04	0.37	< 0.005	< 0.005	0.09	0.09	< 0.005	0.02	0.02	—	86.7	86.7	< 0.005	< 0.005	0.12	88.1
Area	0.06	0.06	< 0.005	0.08	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.19	0.19	< 0.005	< 0.005	—	0.19
Energy	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	22.0	22.0	< 0.005	< 0.005	—	22.0
Water	—	—	—	—	—	—	—	—	—	—	—	0.13	0.44	0.57	0.01	< 0.005	—	1.00
Waste	—	—	—	—	—	—	—	—	—	—	—	0.74	0.00	0.74	0.07	0.00	—	2.57
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.01	0.01
Total	0.11	0.10	0.05	0.46	< 0.005	< 0.005	0.09	0.09	< 0.005	0.02	0.02	0.87	109	110	0.09	< 0.005	0.13	114

2.6. Operations Emissions by Sector, Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Sector	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	0.31	0.28	0.21	2.42	0.01	< 0.005	0.55	0.56	< 0.005	0.14	0.14	—	603	603	0.03	0.02	1.85	613
Area	0.33	0.32	0.01	0.62	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	1.67	1.67	< 0.005	< 0.005	—	1.67
Energy	0.01	< 0.005	0.07	0.03	< 0.005	0.01	—	0.01	0.01	—	0.01	—	133	133	0.01	< 0.005	—	133
Water	—	—	—	—	—	—	—	—	—	—	—	0.79	2.65	3.43	0.08	< 0.005	—	6.03
Waste	—	—	—	—	—	—	—	—	—	—	—	4.44	0.00	4.44	0.44	0.00	—	15.5
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.08	0.08
Total	0.65	0.61	0.28	3.07	0.01	0.01	0.55	0.56	0.01	0.14	0.15	5.23	740	746	0.57	0.03	1.93	769
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	0.31	0.28	0.23	2.23	0.01	< 0.005	0.55	0.56	< 0.005	0.14	0.14	—	578	578	0.03	0.02	0.05	586
Area	0.27	0.27	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Energy	0.01	< 0.005	0.07	0.03	< 0.005	0.01	—	0.01	0.01	—	0.01	—	133	133	0.01	< 0.005	—	133
Water	—	—	—	—	—	—	—	—	—	—	—	0.79	2.65	3.43	0.08	< 0.005	—	6.03
Waste	—	—	—	—	—	—	—	—	—	—	—	4.44	0.00	4.44	0.44	0.00	—	15.5
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.08	0.08
Total	0.59	0.55	0.29	2.26	0.01	0.01	0.55	0.56	0.01	0.14	0.15	5.23	714	719	0.57	0.03	0.13	741
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	0.27	0.25	0.20	2.05	0.01	< 0.005	0.49	0.49	< 0.005	0.12	0.13	—	524	524	0.03	0.02	0.71	532
Area	0.31	0.31	< 0.005	0.43	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	1.14	1.14	< 0.005	< 0.005	—	1.15
Energy	0.01	< 0.005	0.07	0.03	< 0.005	0.01	—	0.01	0.01	—	0.01	—	133	133	0.01	< 0.005	—	133
Water	—	—	—	—	—	—	—	—	—	—	—	0.79	2.65	3.43	0.08	< 0.005	—	6.03
Waste	—	—	—	—	—	—	—	—	—	—	—	4.44	0.00	4.44	0.44	0.00	—	15.5
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.08	0.08
Total	0.59	0.56	0.27	2.51	0.01	0.01	0.49	0.50	0.01	0.12	0.13	5.23	660	666	0.56	0.02	0.80	688
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Mobile	0.05	0.05	0.04	0.37	< 0.005	< 0.005	0.09	0.09	< 0.005	0.02	0.02	—	86.7	86.7	< 0.005	< 0.005	0.12	88.1
Area	0.06	0.06	< 0.005	0.08	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.19	0.19	< 0.005	< 0.005	—	0.19
Energy	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	22.0	22.0	< 0.005	< 0.005	—	22.0
Water	—	—	—	—	—	—	—	—	—	—	—	0.13	0.44	0.57	0.01	< 0.005	—	1.00
Waste	—	—	—	—	—	—	—	—	—	—	—	0.74	0.00	0.74	0.07	0.00	—	2.57
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.01	0.01
Total	0.11	0.10	0.05	0.46	< 0.005	< 0.005	0.09	0.09	< 0.005	0.02	0.02	0.87	109	110	0.09	< 0.005	0.13	114

3. Construction Emissions Details

3.1. Demolition (2025) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.56	0.47	4.33	5.65	0.01	0.16	—	0.16	0.14	—	0.14	—	852	852	0.03	0.01	—	855
Demolition	—	—	—	—	—	—	1.05	1.05	—	0.16	0.16	—	—	—	—	—	—	—
Onsite truck	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	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Off-Road Equipm	0.01	0.01	0.06	0.08	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	11.7	11.7	< 0.005	< 0.005	—	11.7
Demolition	—	—	—	—	—	—	0.01	0.01	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	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	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	1.93	1.93	< 0.005	< 0.005	—	1.94
Demolition	—	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	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	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.05	0.04	0.05	0.59	0.00	0.00	0.13	0.13	0.00	0.03	0.03	—	131	131	0.01	< 0.005	0.01	133
Vendor	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	0.00
Hauling	0.07	0.01	1.11	0.42	0.01	0.01	0.23	0.24	0.01	0.06	0.08	—	873	873	0.05	0.14	0.05	915
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	1.82	1.82	< 0.005	< 0.005	< 0.005	1.85
Vendor	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	0.00
Hauling	< 0.005	< 0.005	0.02	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	12.0	12.0	< 0.005	< 0.005	0.01	12.5
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.30	0.30	< 0.005	< 0.005	< 0.005	0.31
Vendor	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	0.00

Hauling	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	1.98	1.98	< 0.005	< 0.005	< 0.005	2.08

3.2. Demolition (2025) - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.56	0.47	4.33	5.65	0.01	0.16	—	0.16	0.14	—	0.14	—	852	852	0.03	0.01	—	855
Demolition	—	—	—	—	—	—	1.05	1.05	—	0.16	0.16	—	—	—	—	—	—	—
Onsite truck	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	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.01	0.06	0.08	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	11.7	11.7	< 0.005	< 0.005	—	11.7
Demolition	—	—	—	—	—	—	0.01	0.01	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	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	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	1.93	1.93	< 0.005	< 0.005	—	1.94

Demoliti	—	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	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	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.05	0.04	0.05	0.59	0.00	0.00	0.13	0.13	0.00	0.03	0.03	—	131	131	0.01	< 0.005	0.01	133
Vendor	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	0.00
Hauling	0.07	0.01	1.11	0.42	0.01	0.01	0.23	0.24	0.01	0.06	0.08	—	873	873	0.05	0.14	0.05	915
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	1.82	1.82	< 0.005	< 0.005	< 0.005	1.85
Vendor	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	0.00
Hauling	< 0.005	< 0.005	0.02	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	12.0	12.0	< 0.005	< 0.005	0.01	12.5
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.30	0.30	< 0.005	< 0.005	< 0.005	0.31
Vendor	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	0.00
Hauling	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	1.98	1.98	< 0.005	< 0.005	< 0.005	2.08

3.3. Grading (2025) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.29	1.09	10.1	10.0	0.02	0.46	—	0.46	0.43	—	0.43	—	1,714	1,714	0.07	0.01	—	1,720
Dust From Material Movement	—	—	—	—	—	—	5.31	5.31	—	2.57	2.57	—	—	—	—	—	—	—
Onsite truck	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	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.06	0.05	0.44	0.44	< 0.005	0.02	—	0.02	0.02	—	0.02	—	75.1	75.1	< 0.005	< 0.005	—	75.4
Dust From Material Movement	—	—	—	—	—	—	0.23	0.23	—	0.11	0.11	—	—	—	—	—	—	—
Onsite truck	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	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.01	0.08	0.08	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	12.4	12.4	< 0.005	< 0.005	—	12.5
Dust From Material Movement	—	—	—	—	—	—	0.04	0.04	—	0.02	0.02	—	—	—	—	—	—	—
Onsite truck	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	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.04	0.03	0.04	0.44	0.00	0.00	0.10	0.10	0.00	0.02	0.02	—	98.3	98.3	< 0.005	< 0.005	0.01	99.5
Vendor	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	0.00
Hauling	0.01	< 0.005	0.14	0.05	< 0.005	< 0.005	0.03	0.03	< 0.005	0.01	0.01	—	108	108	0.01	0.02	0.01	114
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.02	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	4.37	4.37	< 0.005	< 0.005	0.01	4.43
Vendor	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	0.00
Hauling	< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	4.75	4.75	< 0.005	< 0.005	< 0.005	4.98
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.72	0.72	< 0.005	< 0.005	< 0.005	0.73
Vendor	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	0.00
Hauling	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.79	0.79	< 0.005	< 0.005	< 0.005	0.82

3.4. Grading (2025) - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Off-Road Equipment	1.29	1.09	10.1	10.0	0.02	0.46	—	0.46	0.43	—	0.43	—	1,714	1,714	0.07	0.01	—	1,720
Dust From Material Movement	—	—	—	—	—	—	1.38	1.38	—	0.67	0.67	—	—	—	—	—	—	—
Onsite truck	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	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.06	0.05	0.44	0.44	< 0.005	0.02	—	0.02	0.02	—	0.02	—	75.1	75.1	< 0.005	< 0.005	—	75.4
Dust From Material Movement	—	—	—	—	—	—	0.06	0.06	—	0.03	0.03	—	—	—	—	—	—	—
Onsite truck	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	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.01	0.08	0.08	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	12.4	12.4	< 0.005	< 0.005	—	12.5
Dust From Material Movement	—	—	—	—	—	—	0.01	0.01	—	0.01	0.01	—	—	—	—	—	—	—
Onsite truck	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	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.04	0.03	0.04	0.44	0.00	0.00	0.10	0.10	0.00	0.02	0.02	—	98.3	98.3	< 0.005	< 0.005	0.01	99.5
Vendor	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	0.00
Hauling	0.01	< 0.005	0.14	0.05	< 0.005	< 0.005	0.03	0.03	< 0.005	0.01	0.01	—	108	108	0.01	0.02	0.01	114
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.02	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	4.37	4.37	< 0.005	< 0.005	0.01	4.43
Vendor	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	0.00
Hauling	< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	4.75	4.75	< 0.005	< 0.005	< 0.005	4.98
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.72	0.72	< 0.005	< 0.005	< 0.005	0.73
Vendor	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	0.00
Hauling	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.79	0.79	< 0.005	< 0.005	< 0.005	0.82

3.5. Building Construction (2025) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.62	0.52	5.14	6.94	0.01	0.22	—	0.22	0.20	—	0.20	—	1,305	1,305	0.05	0.01	—	1,309
Onsite truck	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	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Off-Roa Equipment	0.62	0.52	5.14	6.94	0.01	0.22	—	0.22	0.20	—	0.20	—	1,305	1,305	0.05	0.01	—	1,309
Onsite truck	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	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Roa d Equipm ent	0.37	0.31	3.08	4.16	0.01	0.13	—	0.13	0.12	—	0.12	—	781	781	0.03	0.01	—	784
Onsite truck	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	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Roa d Equipm ent	0.07	0.06	0.56	0.76	< 0.005	0.02	—	0.02	0.02	—	0.02	—	129	129	0.01	< 0.005	—	130
Onsite truck	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	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.04	0.03	0.03	0.55	0.00	0.00	0.10	0.10	0.00	0.02	0.02	—	110	110	< 0.005	< 0.005	0.40	111
Vendor	< 0.005	< 0.005	0.04	0.02	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	37.3	37.3	< 0.005	0.01	0.10	39.0
Hauling	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	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.04	0.03	0.04	0.47	0.00	0.00	0.10	0.10	0.00	0.02	0.02	—	104	104	< 0.005	< 0.005	0.01	105
Vendor	< 0.005	< 0.005	0.04	0.02	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	37.3	37.3	< 0.005	0.01	< 0.005	38.9
Hauling	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	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Worker	0.02	0.02	0.02	0.29	0.00	0.00	0.06	0.06	0.00	0.01	0.01	—	63.1	63.1	< 0.005	< 0.005	0.10	63.9
Vendor	< 0.005	< 0.005	0.03	0.01	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	22.3	22.3	< 0.005	< 0.005	0.03	23.3
Hauling	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	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.05	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	10.4	10.4	< 0.005	< 0.005	0.02	10.6
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	3.70	3.70	< 0.005	< 0.005	< 0.005	3.86
Hauling	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	0.00

3.6. Building Construction (2025) - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.62	0.52	5.14	6.94	0.01	0.22	—	0.22	0.20	—	0.20	—	1,305	1,305	0.05	0.01	—	1,309
Onsite truck	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	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.62	0.52	5.14	6.94	0.01	0.22	—	0.22	0.20	—	0.20	—	1,305	1,305	0.05	0.01	—	1,309
Onsite truck	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	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Off-Road	0.37	0.31	3.08	4.16	0.01	0.13	—	0.13	0.12	—	0.12	—	781	781	0.03	0.01	—	784
Onsite truck	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	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.07	0.06	0.56	0.76	< 0.005	0.02	—	0.02	0.02	—	0.02	—	129	129	0.01	< 0.005	—	130
Onsite truck	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	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.04	0.03	0.03	0.55	0.00	0.00	0.10	0.10	0.00	0.02	0.02	—	110	110	< 0.005	< 0.005	0.40	111
Vendor	< 0.005	< 0.005	0.04	0.02	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	37.3	37.3	< 0.005	0.01	0.10	39.0
Hauling	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	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.04	0.03	0.04	0.47	0.00	0.00	0.10	0.10	0.00	0.02	0.02	—	104	104	< 0.005	< 0.005	0.01	105
Vendor	< 0.005	< 0.005	0.04	0.02	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	37.3	37.3	< 0.005	0.01	< 0.005	38.9
Hauling	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	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.02	0.02	0.02	0.29	0.00	0.00	0.06	0.06	0.00	0.01	0.01	—	63.1	63.1	< 0.005	< 0.005	0.10	63.9
Vendor	< 0.005	< 0.005	0.03	0.01	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	22.3	22.3	< 0.005	< 0.005	0.03	23.3
Hauling	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	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.05	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	10.4	10.4	< 0.005	< 0.005	0.02	10.6
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	3.70	3.70	< 0.005	< 0.005	< 0.005	3.86

Hauling	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	0.00

3.7. Building Construction (2026) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.59	0.49	4.81	6.91	0.01	0.19	—	0.19	0.17	—	0.17	—	1,304	1,304	0.05	0.01	—	1,309
Onsite truck	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	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.59	0.49	4.81	6.91	0.01	0.19	—	0.19	0.17	—	0.17	—	1,304	1,304	0.05	0.01	—	1,309
Onsite truck	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	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.42	0.35	3.43	4.93	0.01	0.13	—	0.13	0.12	—	0.12	—	932	932	0.04	0.01	—	935
Onsite truck	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	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Off-Road Equipm	0.08	0.06	0.63	0.90	< 0.005	0.02	—	0.02	0.02	—	0.02	—	154	154	0.01	< 0.005	—	155
Onsite truck	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	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.03	0.03	0.03	0.51	0.00	0.00	0.10	0.10	0.00	0.02	0.02	—	107	107	< 0.005	< 0.005	0.36	109
Vendor	< 0.005	< 0.005	0.04	0.02	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	36.7	36.7	< 0.005	0.01	0.10	38.4
Hauling	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	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.03	0.03	0.03	0.44	0.00	0.00	0.10	0.10	0.00	0.02	0.02	—	102	102	< 0.005	< 0.005	0.01	103
Vendor	< 0.005	< 0.005	0.04	0.02	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	36.7	36.7	< 0.005	0.01	< 0.005	38.3
Hauling	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	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.02	0.02	0.03	0.33	0.00	0.00	0.07	0.07	0.00	0.02	0.02	—	73.7	73.7	< 0.005	< 0.005	0.11	74.7
Vendor	< 0.005	< 0.005	0.03	0.01	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	26.2	26.2	< 0.005	< 0.005	0.03	27.4
Hauling	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	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.06	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	12.2	12.2	< 0.005	< 0.005	0.02	12.4
Vendor	< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	4.34	4.34	< 0.005	< 0.005	0.01	4.53
Hauling	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	0.00

3.8. Building Construction (2026) - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e

Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.59	0.49	4.81	6.91	0.01	0.19	—	0.19	0.17	—	0.17	—	1,304	1,304	0.05	0.01	—	1,309
Onsite truck	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	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.59	0.49	4.81	6.91	0.01	0.19	—	0.19	0.17	—	0.17	—	1,304	1,304	0.05	0.01	—	1,309
Onsite truck	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	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.42	0.35	3.43	4.93	0.01	0.13	—	0.13	0.12	—	0.12	—	932	932	0.04	0.01	—	935
Onsite truck	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	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.08	0.06	0.63	0.90	< 0.005	0.02	—	0.02	0.02	—	0.02	—	154	154	0.01	< 0.005	—	155
Onsite truck	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	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.03	0.03	0.03	0.51	0.00	0.00	0.10	0.10	0.00	0.02	0.02	—	107	107	< 0.005	< 0.005	0.36	109
Vendor	< 0.005	< 0.005	0.04	0.02	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	36.7	36.7	< 0.005	0.01	0.10	38.4
Hauling	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	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.03	0.03	0.03	0.44	0.00	0.00	0.10	0.10	0.00	0.02	0.02	—	102	102	< 0.005	< 0.005	0.01	103
Vendor	< 0.005	< 0.005	0.04	0.02	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	36.7	36.7	< 0.005	0.01	< 0.005	38.3
Hauling	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	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.02	0.02	0.03	0.33	0.00	0.00	0.07	0.07	0.00	0.02	0.02	—	73.7	73.7	< 0.005	< 0.005	0.11	74.7
Vendor	< 0.005	< 0.005	0.03	0.01	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	26.2	26.2	< 0.005	< 0.005	0.03	27.4
Hauling	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	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.06	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	12.2	12.2	< 0.005	< 0.005	0.02	12.4
Vendor	< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	4.34	4.34	< 0.005	< 0.005	0.01	4.53
Hauling	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	0.00

3.9. Building Construction (2027) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.57	0.48	4.56	6.90	0.01	0.17	—	0.17	0.15	—	0.15	—	1,304	1,304	0.05	0.01	—	1,309
Onsite truck	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	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.07	0.06	0.53	0.81	< 0.005	0.02	—	0.02	0.02	—	0.02	—	153	153	0.01	< 0.005	—	154
Onsite truck	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	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.01	0.10	0.15	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	25.4	25.4	< 0.005	< 0.005	—	25.4
Onsite truck	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	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.03	0.03	0.03	0.40	0.00	0.00	0.10	0.10	0.00	0.02	0.02	—	99.8	99.8	< 0.005	< 0.005	0.01	101
Vendor	< 0.005	< 0.005	0.04	0.02	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	36.0	36.0	< 0.005	< 0.005	< 0.005	37.5
Hauling	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	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Worker	< 0.005	< 0.005	< 0.005	0.05	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	11.9	11.9	< 0.005	< 0.005	0.02	12.0
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	4.22	4.22	< 0.005	< 0.005	< 0.005	4.41
Hauling	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	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	1.97	1.97	< 0.005	< 0.005	< 0.005	1.99
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.70	0.70	< 0.005	< 0.005	< 0.005	0.73
Hauling	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	0.00

3.10. Building Construction (2027) - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.57	0.48	4.56	6.90	0.01	0.17	—	0.17	0.15	—	0.15	—	1,304	1,304	0.05	0.01	—	1,309
Onsite truck	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	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.07	0.06	0.53	0.81	< 0.005	0.02	—	0.02	0.02	—	0.02	—	153	153	0.01	< 0.005	—	154
Onsite truck	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	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Off-Roa Equipment	0.01	0.01	0.10	0.15	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	25.4	25.4	< 0.005	< 0.005	—	25.4
Onsite truck	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	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.03	0.03	0.03	0.40	0.00	0.00	0.10	0.10	0.00	0.02	0.02	—	99.8	99.8	< 0.005	< 0.005	0.01	101
Vendor	< 0.005	< 0.005	0.04	0.02	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	36.0	36.0	< 0.005	< 0.005	< 0.005	37.5
Hauling	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	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.05	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	11.9	11.9	< 0.005	< 0.005	0.02	12.0
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	4.22	4.22	< 0.005	< 0.005	< 0.005	4.41
Hauling	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	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	1.97	1.97	< 0.005	< 0.005	< 0.005	1.99
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.70	0.70	< 0.005	< 0.005	< 0.005	0.73
Hauling	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	0.00

3.11. Paving (2027) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.58	0.48	4.15	5.31	0.01	0.17	—	0.17	0.15	—	0.15	—	823	823	0.03	0.01	—	826
Paving	0.00	0.00	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	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	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.05	0.04	0.36	0.47	< 0.005	0.01	—	0.01	0.01	—	0.01	—	72.2	72.2	< 0.005	< 0.005	—	72.4
Paving	0.00	0.00	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	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	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.01	0.07	0.08	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	11.9	11.9	< 0.005	< 0.005	—	12.0
Paving	0.00	0.00	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	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	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.07	0.06	0.08	0.89	0.00	0.00	0.23	0.23	0.00	0.05	0.05	—	220	220	< 0.005	0.01	0.02	223

Vendor	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	0.00
Hauling	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	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.01	0.08	0.00	0.00	0.02	0.02	0.00	< 0.005	< 0.005	—	19.6	19.6	< 0.005	< 0.005	0.03	19.9
Vendor	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	0.00
Hauling	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	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	3.25	3.25	< 0.005	< 0.005	< 0.005	3.29
Vendor	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	0.00
Hauling	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	0.00

3.12. Paving (2027) - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.58	0.48	4.15	5.31	0.01	0.17	—	0.17	0.15	—	0.15	—	823	823	0.03	0.01	—	826
Paving	0.00	0.00	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	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	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Off-Road	0.05	0.04	0.36	0.47	< 0.005	0.01	—	0.01	0.01	—	0.01	—	72.2	72.2	< 0.005	< 0.005	—	72.4
Paving	0.00	0.00	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	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	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.01	0.07	0.08	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	11.9	11.9	< 0.005	< 0.005	—	12.0
Paving	0.00	0.00	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	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	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.07	0.06	0.08	0.89	0.00	0.00	0.23	0.23	0.00	0.05	0.05	—	220	220	< 0.005	0.01	0.02	223
Vendor	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	0.00
Hauling	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	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.01	0.08	0.00	0.00	0.02	0.02	0.00	< 0.005	< 0.005	—	19.6	19.6	< 0.005	< 0.005	0.03	19.9
Vendor	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	0.00
Hauling	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	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	3.25	3.25	< 0.005	< 0.005	< 0.005	3.29
Vendor	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	0.00
Hauling	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	0.00

3.13. Architectural Coating (2027) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.14	0.11	0.83	1.13	< 0.005	0.02	—	0.02	0.02	—	0.02	—	134	134	0.01	< 0.005	—	134
Architectural Coatings	3.48	3.48	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	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	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.01	0.05	0.06	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	7.68	7.68	< 0.005	< 0.005	—	7.71
Architectural Coatings	0.20	0.20	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	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	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Off-Road Equipment	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	1.27	1.27	< 0.005	< 0.005	—	1.28
Architectural Coatings	0.04	0.04	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	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	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.01	0.08	0.00	0.00	0.02	0.02	0.00	< 0.005	< 0.005	—	20.0	20.0	< 0.005	< 0.005	< 0.005	20.2
Vendor	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	0.00
Hauling	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	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	1.17	1.17	< 0.005	< 0.005	< 0.005	1.18
Vendor	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	0.00
Hauling	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	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.19	0.19	< 0.005	< 0.005	< 0.005	0.20
Vendor	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	0.00
Hauling	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	0.00

3.14. Architectural Coating (2027) - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.14	0.11	0.83	1.13	< 0.005	0.02	—	0.02	0.02	—	0.02	—	134	134	0.01	< 0.005	—	134
Architectural Coatings	3.48	3.48	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	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	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.01	0.05	0.06	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	7.68	7.68	< 0.005	< 0.005	—	7.71
Architectural Coatings	0.20	0.20	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	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	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	1.27	1.27	< 0.005	< 0.005	—	1.28

Architectural Coating	0.04	0.04	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	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	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.01	0.08	0.00	0.00	0.02	0.02	0.00	< 0.005	< 0.005	—	20.0	20.0	< 0.005	< 0.005	< 0.005	20.2
Vendor	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	0.00
Hauling	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	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	1.17	1.17	< 0.005	< 0.005	< 0.005	1.18
Vendor	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	0.00
Hauling	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	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.19	0.19	< 0.005	< 0.005	< 0.005	0.20
Vendor	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	0.00
Hauling	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	0.00

4. Operations Emissions Details

4.1. Mobile Emissions by Land Use

4.1.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Condo/Townhouse	0.31	0.28	0.21	2.42	0.01	< 0.005	0.55	0.56	< 0.005	0.14	0.14	—	603	603	0.03	0.02	1.85	613
Total	0.31	0.28	0.21	2.42	0.01	< 0.005	0.55	0.56	< 0.005	0.14	0.14	—	603	603	0.03	0.02	1.85	613
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Condo/Townhouse	0.31	0.28	0.23	2.23	0.01	< 0.005	0.55	0.56	< 0.005	0.14	0.14	—	578	578	0.03	0.02	0.05	586
Total	0.31	0.28	0.23	2.23	0.01	< 0.005	0.55	0.56	< 0.005	0.14	0.14	—	578	578	0.03	0.02	0.05	586
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Condo/Townhouse	0.05	0.05	0.04	0.37	< 0.005	< 0.005	0.09	0.09	< 0.005	0.02	0.02	—	86.7	86.7	< 0.005	< 0.005	0.12	88.1
Total	0.05	0.05	0.04	0.37	< 0.005	< 0.005	0.09	0.09	< 0.005	0.02	0.02	—	86.7	86.7	< 0.005	< 0.005	0.12	88.1

4.1.2. Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Condo/Townhouse	0.31	0.28	0.21	2.42	0.01	< 0.005	0.55	0.56	< 0.005	0.14	0.14	—	603	603	0.03	0.02	1.85	613
Total	0.31	0.28	0.21	2.42	0.01	< 0.005	0.55	0.56	< 0.005	0.14	0.14	—	603	603	0.03	0.02	1.85	613

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Condo/Townhouse	0.31	0.28	0.23	2.23	0.01	< 0.005	0.55	0.56	< 0.005	0.14	0.14	—	578	578	0.03	0.02	0.05	586
Total	0.31	0.28	0.23	2.23	0.01	< 0.005	0.55	0.56	< 0.005	0.14	0.14	—	578	578	0.03	0.02	0.05	586
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Condo/Townhouse	0.05	0.05	0.04	0.37	< 0.005	< 0.005	0.09	0.09	< 0.005	0.02	0.02	—	86.7	86.7	< 0.005	< 0.005	0.12	88.1
Total	0.05	0.05	0.04	0.37	< 0.005	< 0.005	0.09	0.09	< 0.005	0.02	0.02	—	86.7	86.7	< 0.005	< 0.005	0.12	88.1

4.2. Energy

4.2.1. Electricity Emissions By Land Use - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Condo/Townhouse	—	—	—	—	—	—	—	—	—	—	—	—	47.9	47.9	< 0.005	< 0.005	—	48.2
Total	—	—	—	—	—	—	—	—	—	—	—	—	47.9	47.9	< 0.005	< 0.005	—	48.2
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Condo/Townhouse	—	—	—	—	—	—	—	—	—	—	—	—	47.9	47.9	< 0.005	< 0.005	—	48.2
Total	—	—	—	—	—	—	—	—	—	—	—	—	47.9	47.9	< 0.005	< 0.005	—	48.2
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Condo/T	—	—	—	—	—	—	—	—	—	—	—	—	7.93	7.93	< 0.005	< 0.005	—	7.98
Total	—	—	—	—	—	—	—	—	—	—	—	—	7.93	7.93	< 0.005	< 0.005	—	7.98

4.2.2. Electricity Emissions By Land Use - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Condo/Townhouse	—	—	—	—	—	—	—	—	—	—	—	—	47.9	47.9	< 0.005	< 0.005	—	48.2
Total	—	—	—	—	—	—	—	—	—	—	—	—	47.9	47.9	< 0.005	< 0.005	—	48.2
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Condo/Townhouse	—	—	—	—	—	—	—	—	—	—	—	—	47.9	47.9	< 0.005	< 0.005	—	48.2
Total	—	—	—	—	—	—	—	—	—	—	—	—	47.9	47.9	< 0.005	< 0.005	—	48.2
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Condo/Townhouse	—	—	—	—	—	—	—	—	—	—	—	—	7.93	7.93	< 0.005	< 0.005	—	7.98
Total	—	—	—	—	—	—	—	—	—	—	—	—	7.93	7.93	< 0.005	< 0.005	—	7.98

4.2.3. Natural Gas Emissions By Land Use - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Condo/Townhouse	0.01	< 0.005	0.07	0.03	< 0.005	0.01	—	0.01	0.01	—	0.01	—	84.7	84.7	0.01	< 0.005	—	85.0
Total	0.01	< 0.005	0.07	0.03	< 0.005	0.01	—	0.01	0.01	—	0.01	—	84.7	84.7	0.01	< 0.005	—	85.0
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Condo/Townhouse	0.01	< 0.005	0.07	0.03	< 0.005	0.01	—	0.01	0.01	—	0.01	—	84.7	84.7	0.01	< 0.005	—	85.0
Total	0.01	< 0.005	0.07	0.03	< 0.005	0.01	—	0.01	0.01	—	0.01	—	84.7	84.7	0.01	< 0.005	—	85.0
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Condo/Townhouse	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	14.0	14.0	< 0.005	< 0.005	—	14.1
Total	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	14.0	14.0	< 0.005	< 0.005	—	14.1

4.2.4. Natural Gas Emissions By Land Use - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Condo/Townhouse	0.01	< 0.005	0.07	0.03	< 0.005	0.01	—	0.01	0.01	—	0.01	—	84.7	84.7	0.01	< 0.005	—	85.0
Total	0.01	< 0.005	0.07	0.03	< 0.005	0.01	—	0.01	0.01	—	0.01	—	84.7	84.7	0.01	< 0.005	—	85.0
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Condo/T	0.01	< 0.005	0.07	0.03	< 0.005	0.01	—	0.01	0.01	—	0.01	—	84.7	84.7	0.01	< 0.005	—	85.0
Total	0.01	< 0.005	0.07	0.03	< 0.005	0.01	—	0.01	0.01	—	0.01	—	84.7	84.7	0.01	< 0.005	—	85.0
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Condo/Townhouse	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	14.0	14.0	< 0.005	< 0.005	—	14.1
Total	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	14.0	14.0	< 0.005	< 0.005	—	14.1

4.3. Area Emissions by Source

4.3.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Source	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Consumer Products	0.25	0.25	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	0.02	0.02	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Landscape Equipment	0.06	0.05	0.01	0.62	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	1.67	1.67	< 0.005	< 0.005	—	1.67
Total	0.33	0.32	0.01	0.62	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	1.67	1.67	< 0.005	< 0.005	—	1.67
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Consumer Products	0.25	0.25	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	0.02	0.02	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	0.27	0.27	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Consumer Products	0.05	0.05	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	< 0.005	< 0.005	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Landscape Equipment	0.01	0.01	< 0.005	0.08	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.19	0.19	< 0.005	< 0.005	—	0.19
Total	0.06	0.06	< 0.005	0.08	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.19	0.19	< 0.005	< 0.005	—	0.19

4.3.2. Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Source	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Consumer Products	0.25	0.25	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Architectural Coating	0.02	0.02	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Landscape Equipment	0.06	0.05	0.01	0.62	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	1.67	1.67	< 0.005	< 0.005	—	1.67
Total	0.33	0.32	0.01	0.62	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	1.67	1.67	< 0.005	< 0.005	—	1.67
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Consumer Products	0.25	0.25	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	0.02	0.02	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	0.27	0.27	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Consumer Products	0.05	0.05	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	< 0.005	< 0.005	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Landscape Equipment	0.01	0.01	< 0.005	0.08	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.19	0.19	< 0.005	< 0.005	—	0.19
Total	0.06	0.06	< 0.005	0.08	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.19	0.19	< 0.005	< 0.005	—	0.19

4.4. Water Emissions by Land Use

4.4.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Condo/Townhouse	—	—	—	—	—	—	—	—	—	—	—	0.79	2.65	3.43	0.08	< 0.005	—	6.03
Total	—	—	—	—	—	—	—	—	—	—	—	0.79	2.65	3.43	0.08	< 0.005	—	6.03
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Condo/Townhouse	—	—	—	—	—	—	—	—	—	—	—	0.79	2.65	3.43	0.08	< 0.005	—	6.03
Total	—	—	—	—	—	—	—	—	—	—	—	0.79	2.65	3.43	0.08	< 0.005	—	6.03
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Condo/Townhouse	—	—	—	—	—	—	—	—	—	—	—	0.13	0.44	0.57	0.01	< 0.005	—	1.00
Total	—	—	—	—	—	—	—	—	—	—	—	0.13	0.44	0.57	0.01	< 0.005	—	1.00

4.4.2. Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Condo/Townhouse	—	—	—	—	—	—	—	—	—	—	—	0.79	2.65	3.43	0.08	< 0.005	—	6.03

Total	—	—	—	—	—	—	—	—	—	—	—	0.79	2.65	3.43	0.08	< 0.005	—	6.03
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Condo/Townhouse	—	—	—	—	—	—	—	—	—	—	—	0.79	2.65	3.43	0.08	< 0.005	—	6.03
Total	—	—	—	—	—	—	—	—	—	—	—	0.79	2.65	3.43	0.08	< 0.005	—	6.03
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Condo/Townhouse	—	—	—	—	—	—	—	—	—	—	—	0.13	0.44	0.57	0.01	< 0.005	—	1.00
Total	—	—	—	—	—	—	—	—	—	—	—	0.13	0.44	0.57	0.01	< 0.005	—	1.00

4.5. Waste Emissions by Land Use

4.5.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Condo/Townhouse	—	—	—	—	—	—	—	—	—	—	—	4.44	0.00	4.44	0.44	0.00	—	15.5
Total	—	—	—	—	—	—	—	—	—	—	—	4.44	0.00	4.44	0.44	0.00	—	15.5
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Condo/Townhouse	—	—	—	—	—	—	—	—	—	—	—	4.44	0.00	4.44	0.44	0.00	—	15.5
Total	—	—	—	—	—	—	—	—	—	—	—	4.44	0.00	4.44	0.44	0.00	—	15.5

Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Condo/Townhouse	—	—	—	—	—	—	—	—	—	—	—	0.74	0.00	0.74	0.07	0.00	—	2.57
Total	—	—	—	—	—	—	—	—	—	—	—	0.74	0.00	0.74	0.07	0.00	—	2.57

4.5.2. Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Condo/Townhouse	—	—	—	—	—	—	—	—	—	—	—	4.44	0.00	4.44	0.44	0.00	—	15.5
Total	—	—	—	—	—	—	—	—	—	—	—	4.44	0.00	4.44	0.44	0.00	—	15.5
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Condo/Townhouse	—	—	—	—	—	—	—	—	—	—	—	4.44	0.00	4.44	0.44	0.00	—	15.5
Total	—	—	—	—	—	—	—	—	—	—	—	4.44	0.00	4.44	0.44	0.00	—	15.5
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Condo/Townhouse	—	—	—	—	—	—	—	—	—	—	—	0.74	0.00	0.74	0.07	0.00	—	2.57
Total	—	—	—	—	—	—	—	—	—	—	—	0.74	0.00	0.74	0.07	0.00	—	2.57

4.6. Refrigerant Emissions by Land Use

4.6.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Condo/Townhouse	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.08	0.08
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.08	0.08
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Condo/Townhouse	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.08	0.08
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.08	0.08
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Condo/Townhouse	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.01	0.01
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.01	0.01

4.6.2. Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Condo/Townhouse	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.08	0.08
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.08	0.08

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Condo/Townhouse	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.08	0.08
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.08	0.08
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Condo/Townhouse	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.01	0.01
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.01	0.01

4.7. Offroad Emissions By Equipment Type

4.7.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Equipment Type	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.7.2. Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Equipm Type	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.8. Stationary Emissions By Equipment Type

4.8.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Equipment Type	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.8.2. Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Equipment Type	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.9. User Defined Emissions By Equipment Type

4.9.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Equipment Type	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.9.2. Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Equipment Type	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10. Soil Carbon Accumulation By Vegetation Type

4.10.1. Soil Carbon Accumulation By Vegetation Type - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Vegetation	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10.2. Above and Belowground Carbon Accumulation by Land Use Type - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10.3. Avoided and Sequestered Emissions by Species - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Species	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10.4. Soil Carbon Accumulation By Vegetation Type - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Vegetation	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10.5. Above and Belowground Carbon Accumulation by Land Use Type - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10.6. Avoided and Sequestered Emissions by Species - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Species	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

5. Activity Data

5.1. Construction Schedule

Phase Name	Phase Type	Start Date	End Date	Days Per Week	Work Days per Phase	Phase Description
Demolition	Demolition	3/1/2025	3/8/2025	5.00	5.00	—
Grading	Grading	3/9/2025	3/31/2025	5.00	16.0	—
Building Construction	Building Construction	3/1/2025	3/1/2027	5.00	521	—
Paving	Paving	1/1/2027	2/15/2027	5.00	32.0	—
Architectural Coating	Architectural Coating	2/1/2027	3/1/2027	5.00	21.0	—

5.2. Off-Road Equipment

5.2.1. Unmitigated

Phase Name	Equipment Type	Fuel Type	Engine Tier	Number per Day	Hours Per Day	Horsepower	Load Factor
Demolition	Tractors/Loaders/Backhoes	Diesel	Average	2.00	6.00	84.0	0.37
Demolition	Rubber Tired Dozers	Diesel	Average	1.00	1.00	367	0.40
Demolition	Concrete/Industrial Saws	Diesel	Average	1.00	8.00	33.0	0.73
Grading	Graders	Diesel	Average	1.00	6.00	148	0.41
Grading	Rubber Tired Dozers	Diesel	Average	1.00	6.00	367	0.40
Grading	Tractors/Loaders/Backhoes	Diesel	Average	1.00	7.00	84.0	0.37
Building Construction	Cranes	Diesel	Average	1.00	4.00	367	0.29
Building Construction	Forklifts	Diesel	Average	2.00	6.00	82.0	0.20
Building Construction	Tractors/Loaders/Backhoes	Diesel	Average	2.00	8.00	84.0	0.37
Paving	Tractors/Loaders/Backhoes	Diesel	Average	1.00	7.00	84.0	0.37
Paving	Cement and Mortar Mixers	Diesel	Average	4.00	6.00	10.0	0.56
Paving	Pavers	Diesel	Average	1.00	7.00	81.0	0.42

Paving	Rollers	Diesel	Average	1.00	7.00	36.0	0.38
Architectural Coating	Air Compressors	Diesel	Average	1.00	6.00	37.0	0.48

5.2.2. Mitigated

Phase Name	Equipment Type	Fuel Type	Engine Tier	Number per Day	Hours Per Day	Horsepower	Load Factor
Demolition	Tractors/Loaders/Backhoes	Diesel	Average	2.00	6.00	84.0	0.37
Demolition	Rubber Tired Dozers	Diesel	Average	1.00	1.00	367	0.40
Demolition	Concrete/Industrial Saws	Diesel	Average	1.00	8.00	33.0	0.73
Grading	Graders	Diesel	Average	1.00	6.00	148	0.41
Grading	Rubber Tired Dozers	Diesel	Average	1.00	6.00	367	0.40
Grading	Tractors/Loaders/Backhoes	Diesel	Average	1.00	7.00	84.0	0.37
Building Construction	Cranes	Diesel	Average	1.00	4.00	367	0.29
Building Construction	Forklifts	Diesel	Average	2.00	6.00	82.0	0.20
Building Construction	Tractors/Loaders/Backhoes	Diesel	Average	2.00	8.00	84.0	0.37
Paving	Tractors/Loaders/Backhoes	Diesel	Average	1.00	7.00	84.0	0.37
Paving	Cement and Mortar Mixers	Diesel	Average	4.00	6.00	10.0	0.56
Paving	Pavers	Diesel	Average	1.00	7.00	81.0	0.42
Paving	Rollers	Diesel	Average	1.00	7.00	36.0	0.38
Architectural Coating	Air Compressors	Diesel	Average	1.00	6.00	37.0	0.48

5.3. Construction Vehicles

5.3.1. Unmitigated

Phase Name	Trip Type	One-Way Trips per Day	Miles per Trip	Vehicle Mix

Demolition	—	—	—	—
Demolition	Worker	10.0	18.5	LDA,LDT1,LDT2
Demolition	Vendor	—	10.2	HHDT,MHDT
Demolition	Hauling	12.6	20.0	HHDT
Demolition	Onsite truck	—	—	HHDT
Grading	—	—	—	—
Grading	Worker	7.50	18.5	LDA,LDT1,LDT2
Grading	Vendor	—	10.2	HHDT,MHDT
Grading	Hauling	1.56	20.0	HHDT
Grading	Onsite truck	—	—	HHDT
Building Construction	—	—	—	—
Building Construction	Worker	7.92	18.5	LDA,LDT1,LDT2
Building Construction	Vendor	1.18	10.2	HHDT,MHDT
Building Construction	Hauling	0.00	20.0	HHDT
Building Construction	Onsite truck	—	—	HHDT
Paving	—	—	—	—
Paving	Worker	17.5	18.5	LDA,LDT1,LDT2
Paving	Vendor	—	10.2	HHDT,MHDT
Paving	Hauling	0.00	20.0	HHDT
Paving	Onsite truck	—	—	HHDT
Architectural Coating	—	—	—	—
Architectural Coating	Worker	1.58	18.5	LDA,LDT1,LDT2
Architectural Coating	Vendor	—	10.2	HHDT,MHDT
Architectural Coating	Hauling	0.00	20.0	HHDT
Architectural Coating	Onsite truck	—	—	HHDT

5.3.2. Mitigated

Phase Name	Trip Type	One-Way Trips per Day	Miles per Trip	Vehicle Mix

Demolition	—	—	—	—
Demolition	Worker	10.0	18.5	LDA,LDT1,LDT2
Demolition	Vendor	—	10.2	HHDT,MHDT
Demolition	Hauling	12.6	20.0	HHDT
Demolition	Onsite truck	—	—	HHDT
Grading	—	—	—	—
Grading	Worker	7.50	18.5	LDA,LDT1,LDT2
Grading	Vendor	—	10.2	HHDT,MHDT
Grading	Hauling	1.56	20.0	HHDT
Grading	Onsite truck	—	—	HHDT
Building Construction	—	—	—	—
Building Construction	Worker	7.92	18.5	LDA,LDT1,LDT2
Building Construction	Vendor	1.18	10.2	HHDT,MHDT
Building Construction	Hauling	0.00	20.0	HHDT
Building Construction	Onsite truck	—	—	HHDT
Paving	—	—	—	—
Paving	Worker	17.5	18.5	LDA,LDT1,LDT2
Paving	Vendor	—	10.2	HHDT,MHDT
Paving	Hauling	0.00	20.0	HHDT
Paving	Onsite truck	—	—	HHDT
Architectural Coating	—	—	—	—
Architectural Coating	Worker	1.58	18.5	LDA,LDT1,LDT2
Architectural Coating	Vendor	—	10.2	HHDT,MHDT
Architectural Coating	Hauling	0.00	20.0	HHDT
Architectural Coating	Onsite truck	—	—	HHDT

5.4. Vehicles

5.4.1. Construction Vehicle Control Strategies

Non-applicable. No control strategies activated by user.

5.5. Architectural Coatings

Phase Name	Residential Interior Area Coated (sq ft)	Residential Exterior Area Coated (sq ft)	Non-Residential Interior Area Coated (sq ft)	Non-Residential Exterior Area Coated (sq ft)	Parking Area Coated (sq ft)
Architectural Coating	23,612	7,871	0.00	0.00	—

5.6. Dust Mitigation

5.6.1. Construction Earthmoving Activities

Phase Name	Material Imported (Cubic Yards)	Material Exported (Cubic Yards)	Acres Graded (acres)	Material Demolished (Building Square Footage)	Acres Paved (acres)
Demolition	0.00	0.00	0.00	5,400	—
Grading	0.00	200	12.0	0.00	—
Paving	0.00	0.00	0.00	0.00	—

5.6.2. Construction Earthmoving Control Strategies

Non-applicable. No control strategies activated by user.

5.7. Construction Paving

Land Use	Area Paved (acres)	% Asphalt
Condo/Townhouse	—	0%

5.8. Construction Electricity Consumption and Emissions Factors

kWh per Year and Emission Factor (lb/MWh)

Year	kWh per Year	CO2	CH4	N2O
2025	0.00	532	0.03	< 0.005
2026	0.00	532	0.03	< 0.005

2027	0.00	532	0.03	< 0.005

5.9. Operational Mobile Sources

5.9.1. Unmitigated

Land Use Type	Trips/Weekday	Trips/Saturday	Trips/Sunday	Trips/Year	VMT/Weekday	VMT/Saturday	VMT/Sunday	VMT/Year
Condo/Townhouse	80.5	89.5	69.1	29,264	702	781	602	255,140

5.9.2. Mitigated

Land Use Type	Trips/Weekday	Trips/Saturday	Trips/Sunday	Trips/Year	VMT/Weekday	VMT/Saturday	VMT/Sunday	VMT/Year
Condo/Townhouse	80.5	89.5	69.1	29,264	702	781	602	255,140

5.10. Operational Area Sources

5.10.1. Hearths

5.10.1.1. Unmitigated

5.10.1.2. Mitigated

5.10.2. Architectural Coatings

Residential Interior Area Coated (sq ft)	Residential Exterior Area Coated (sq ft)	Non-Residential Interior Area Coated (sq ft)	Non-Residential Exterior Area Coated (sq ft)	Parking Area Coated (sq ft)
23611.5	7,871	0.00	0.00	—

5.10.3. Landscape Equipment

Season	Unit	Value
Snow Days	day/yr	0.00
Summer Days	day/yr	250

5.10.4. Landscape Equipment - Mitigated

Season	Unit	Value
Snow Days	day/yr	0.00
Summer Days	day/yr	250

5.11. Operational Energy Consumption

5.11.1. Unmitigated

Electricity (kWh/yr) and CO2 and CH4 and N2O and Natural Gas (kBTU/yr)

Land Use	Electricity (kWh/yr)	CO2	CH4	N2O	Natural Gas (kBTU/yr)
Condo/Townhouse	50,514	346	0.0330	0.0040	264,334

5.11.2. Mitigated

Electricity (kWh/yr) and CO2 and CH4 and N2O and Natural Gas (kBTU/yr)

Land Use	Electricity (kWh/yr)	CO2	CH4	N2O	Natural Gas (kBTU/yr)
Condo/Townhouse	50,514	346	0.0330	0.0040	264,334

5.12. Operational Water and Wastewater Consumption

5.12.1. Unmitigated

Land Use	Indoor Water (gal/year)	Outdoor Water (gal/year)
Condo/Townhouse	410,012	0.00

5.12.2. Mitigated

Land Use	Indoor Water (gal/year)	Outdoor Water (gal/year)
Condo/Townhouse	410,012	0.00

5.13. Operational Waste Generation

5.13.1. Unmitigated

Land Use	Waste (ton/year)	Cogeneration (kWh/year)
Condo/Townhouse	8.24	—

5.13.2. Mitigated

Land Use	Waste (ton/year)	Cogeneration (kWh/year)
Condo/Townhouse	8.24	—

5.14. Operational Refrigeration and Air Conditioning Equipment

5.14.1. Unmitigated

Land Use Type	Equipment Type	Refrigerant	GWP	Quantity (kg)	Operations Leak Rate	Service Leak Rate	Times Serviced
Condo/Townhouse	Average room A/C & Other residential A/C and heat pumps	R-410A	2,088	< 0.005	2.50	2.50	10.0
Condo/Townhouse	Household refrigerators and/or freezers	R-134a	1,430	0.12	0.60	0.00	1.00

5.14.2. Mitigated

Land Use Type	Equipment Type	Refrigerant	GWP	Quantity (kg)	Operations Leak Rate	Service Leak Rate	Times Serviced
Condo/Townhouse	Average room A/C & Other residential A/C and heat pumps	R-410A	2,088	< 0.005	2.50	2.50	10.0
Condo/Townhouse	Household refrigerators and/or freezers	R-134a	1,430	0.12	0.60	0.00	1.00

5.15. Operational Off-Road Equipment

5.15.1. Unmitigated

Equipment Type	Fuel Type	Engine Tier	Number per Day	Hours Per Day	Horsepower	Load Factor

5.15.2. Mitigated

Equipment Type	Fuel Type	Engine Tier	Number per Day	Hours Per Day	Horsepower	Load Factor

5.16. Stationary Sources

5.16.1. Emergency Generators and Fire Pumps

Equipment Type	Fuel Type	Number per Day	Hours per Day	Hours per Year	Horsepower	Load Factor

5.16.2. Process Boilers

Equipment Type	Fuel Type	Number	Boiler Rating (MMBtu/hr)	Daily Heat Input (MMBtu/day)	Annual Heat Input (MMBtu/yr)

5.17. User Defined

Equipment Type	Fuel Type

5.18. Vegetation

5.18.1. Land Use Change

5.18.1.1. Unmitigated

Vegetation Land Use Type	Vegetation Soil Type	Initial Acres	Final Acres

5.18.1.2. Mitigated

Vegetation Land Use Type	Vegetation Soil Type	Initial Acres	Final Acres

5.18.1. Biomass Cover Type

5.18.1.1. Unmitigated

Biomass Cover Type	Initial Acres	Final Acres

5.18.1.2. Mitigated

Biomass Cover Type	Initial Acres	Final Acres

5.18.2. Sequestration

5.18.2.1. Unmitigated

Tree Type	Number	Electricity Saved (kWh/year)	Natural Gas Saved (btu/year)

5.18.2.2. Mitigated

Tree Type	Number	Electricity Saved (kWh/year)	Natural Gas Saved (btu/year)

6. Climate Risk Detailed Report

6.1. Climate Risk Summary

Cal-Adapt midcentury 2040–2059 average projections for four hazards are reported below for your project location. These are under Representation Concentration Pathway (RCP) 8.5 which assumes GHG emissions will continue to rise strongly through 2050 and then plateau around 2100.

Climate Hazard	Result for Project Location	Unit
Temperature and Extreme Heat	25.9	annual days of extreme heat
Extreme Precipitation	8.95	annual days with precipitation above 20 mm

Sea Level Rise	—	meters of inundation depth
Wildfire	28.5	annual hectares burned

Temperature and Extreme Heat data are for grid cell in which your project are located. The projection is based on the 98th historical percentile of daily maximum/minimum temperatures from observed historical data (32 climate model ensemble from Cal-Adapt, 2040–2059 average under RCP 8.5). Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.
Extreme Precipitation data are for the grid cell in which your project are located. The threshold of 20 mm is equivalent to about ¾ an inch of rain, which would be light to moderate rainfall if received over a full day or heavy rain if received over a period of 2 to 4 hours. Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.
Sea Level Rise data are for the grid cell in which your project are located. The projections are from Radke et al. (2017), as reported in Cal-Adapt (Radke et al., 2017, CEC-500-2017-008), and consider inundation location and depth for the San Francisco Bay, the Sacramento-San Joaquin River Delta and California coast resulting different increments of sea level rise coupled with extreme storm events. Users may select from four scenarios to view the range in potential inundation depth for the grid cell. The four scenarios are: No rise, 0.5 meter, 1.0 meter, 1.41 meters
Wildfire data are for the grid cell in which your project are located. The projections are from UC Davis, as reported in Cal-Adapt (2040–2059 average under RCP 8.5), and consider historical data of climate, vegetation, population density, and large (> 400 ha) fire history. Users may select from four model simulations to view the range in potential wildfire probabilities for the grid cell. The four simulations make different assumptions about expected rainfall and temperature are: Warmer/drier (HadGEM2-ES), Cooler/wetter (CNRM-CM5), Average conditions (CanESM2), Range of different rainfall and temperature possibilities (MIROC5). Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.

6.2. Initial Climate Risk Scores

Climate Hazard	Exposure Score	Sensitivity Score	Adaptive Capacity Score	Vulnerability Score
Temperature and Extreme Heat	3	0	0	N/A
Extreme Precipitation	N/A	N/A	N/A	N/A
Sea Level Rise	1	0	0	N/A
Wildfire	1	0	0	N/A
Flooding	N/A	N/A	N/A	N/A
Drought	N/A	N/A	N/A	N/A
Snowpack Reduction	N/A	N/A	N/A	N/A
Air Quality Degradation	0	0	0	N/A

The sensitivity score reflects the extent to which a project would be adversely affected by exposure to a climate hazard. Exposure is rated on a scale of 1 to 5, with a score of 5 representing the greatest exposure.
The adaptive capacity of a project refers to its ability to manage and reduce vulnerabilities from projected climate hazards. Adaptive capacity is rated on a scale of 1 to 5, with a score of 5 representing the greatest ability to adapt.
The overall vulnerability scores are calculated based on the potential impacts and adaptive capacity assessments for each hazard. Scores do not include implementation of climate risk reduction measures.

6.3. Adjusted Climate Risk Scores

Climate Hazard	Exposure Score	Sensitivity Score	Adaptive Capacity Score	Vulnerability Score
Temperature and Extreme Heat	3	1	1	3

Extreme Precipitation	N/A	N/A	N/A	N/A
Sea Level Rise	1	1	1	2
Wildfire	1	1	1	2
Flooding	N/A	N/A	N/A	N/A
Drought	N/A	N/A	N/A	N/A
Snowpack Reduction	N/A	N/A	N/A	N/A
Air Quality Degradation	1	1	1	2

The sensitivity score reflects the extent to which a project would be adversely affected by exposure to a climate hazard. Exposure is rated on a scale of 1 to 5, with a score of 5 representing the greatest exposure.
The adaptive capacity of a project refers to its ability to manage and reduce vulnerabilities from projected climate hazards. Adaptive capacity is rated on a scale of 1 to 5, with a score of 5 representing the greatest ability to adapt.
The overall vulnerability scores are calculated based on the potential impacts and adaptive capacity assessments for each hazard. Scores include implementation of climate risk reduction measures.

6.4. Climate Risk Reduction Measures

7. Health and Equity Details

7.1. CalEnviroScreen 4.0 Scores

The maximum CalEnviroScreen score is 100. A high score (i.e., greater than 50) reflects a higher pollution burden compared to other census tracts in the state.

Indicator	Result for Project Census Tract
Exposure Indicators	—
AQ-Ozone	88.7
AQ-PM	69.7
AQ-DPM	84.5
Drinking Water	11.9
Lead Risk Housing	61.3
Pesticides	0.00
Toxic Releases	72.6
Traffic	82.7
Effect Indicators	—

CleanUp Sites	47.0
Groundwater	80.3
Haz Waste Facilities/Generators	91.7
Impaired Water Bodies	23.9
Solid Waste	86.6
Sensitive Population	—
Asthma	58.8
Cardio-vascular	41.6
Low Birth Weights	35.8
Socioeconomic Factor Indicators	—
Education	60.5
Housing	66.1
Linguistic	76.6
Poverty	63.3
Unemployment	45.8

7.2. Healthy Places Index Scores

The maximum Health Places Index score is 100. A high score (i.e., greater than 50) reflects healthier community conditions compared to other census tracts in the state.

Indicator	Result for Project Census Tract
Economic	—
Above Poverty	37.79032465
Employed	45.74618247
Median HI	30.23225972
Education	—
Bachelor's or higher	34.71063775
High school enrollment	100
Preschool enrollment	30.29641986
Transportation	—

Auto Access	6.223533941
Active commuting	72.25715386
Social	—
2-parent households	6.082381625
Voting	25.67688952
Neighborhood	—
Alcohol availability	18.37546516
Park access	55.01090722
Retail density	24.82997562
Supermarket access	94.25125112
Tree canopy	59.32246888
Housing	—
Homeownership	26.30565892
Housing habitability	28.55126395
Low-inc homeowner severe housing cost burden	60.07955858
Low-inc renter severe housing cost burden	33.04247402
Uncrowded housing	44.45014757
Health Outcomes	—
Insured adults	30.20659566
Arthritis	0.0
Asthma ER Admissions	40.3
High Blood Pressure	0.0
Cancer (excluding skin)	0.0
Asthma	0.0
Coronary Heart Disease	0.0
Chronic Obstructive Pulmonary Disease	0.0
Diagnosed Diabetes	0.0
Life Expectancy at Birth	17.9

Cognitively Disabled	16.7
Physically Disabled	6.0
Heart Attack ER Admissions	45.8
Mental Health Not Good	0.0
Chronic Kidney Disease	0.0
Obesity	0.0
Pedestrian Injuries	64.6
Physical Health Not Good	0.0
Stroke	0.0
Health Risk Behaviors	—
Binge Drinking	0.0
Current Smoker	0.0
No Leisure Time for Physical Activity	0.0
Climate Change Exposures	—
Wildfire Risk	0.4
SLR Inundation Area	0.0
Children	72.4
Elderly	7.3
English Speaking	33.2
Foreign-born	61.5
Outdoor Workers	62.7
Climate Change Adaptive Capacity	—
Impervious Surface Cover	27.1
Traffic Density	86.1
Traffic Access	23.0
Other Indices	—
Hardship	59.6
Other Decision Support	—

2016 Voting	33.3

7.3. Overall Health & Equity Scores

Metric	Result for Project Census Tract
CalEnviroScreen 4.0 Score for Project Location (a)	78.0
Healthy Places Index Score for Project Location (b)	24.0
Project Located in a Designated Disadvantaged Community (Senate Bill 535)	Yes
Project Located in a Low-Income Community (Assembly Bill 1550)	Yes
Project Located in a Community Air Protection Program Community (Assembly Bill 617)	No

a: The maximum CalEnviroScreen score is 100. A high score (i.e., greater than 50) reflects a higher pollution burden compared to other census tracts in the state.
b: The maximum Health Places Index score is 100. A high score (i.e., greater than 50) reflects healthier community conditions compared to other census tracts in the state.

7.4. Health & Equity Measures

No Health & Equity Measures selected.

7.5. Evaluation Scorecard

Health & Equity Evaluation Scorecard not completed.

7.6. Health & Equity Custom Measures

No Health & Equity Custom Measures created.

8. User Changes to Default Data

Screen	Justification
Land Use	Land uses as provided by applicant.
Construction: Construction Phases	Construction schedule as provided by Project applicant.
Operations: Hearths	No hearths

Source: EMFAC2021 (v1.0.2) Emissions Inventory
Region Type: County
Region: Los Angeles
Calendar Year: 2025, 2027
Season: Annual
Vehicle Classification: EMFAC202x Categories
Units: miles/day for CVMT and EVMT, trips/day for Trips, kWh/day for Energy Consumption, tons/day for Emissions, 1000 gallons/day for Fuel Consumption

Region	Calendar Year	Vehicle Category	Model Year	Speed	Fuel	Population	Total VMT	Trips	Fuel Consumption	MPG	
Los Angeles	2025	All Other Buses	Aggregate	Aggregate	Diesel	1553.32101	84000.92353	13824.56	9.016047606	**9.316823**	
Los Angeles	2025	LDA	Aggregate	Aggregate	Gasoline	3337440.433	132004234	15494312	4457.058985	**29.61689**	
Los Angeles	2025	LDA	Aggregate	Aggregate	Diesel	8388.612851	246778.3811	34377.62	6.052721754	**40.77147**	
Los Angeles	2025	LDT1	Aggregate	Aggregate	Gasoline	313468.9775	11445443.39	1380698	463.6453307	**24.68577**	
Los Angeles	2025	LDT1	Aggregate	Aggregate	Diesel	110.6654953	2175.901799	310.4912	0.094175691	**23.10471**	
Los Angeles	2025	LDT2	Aggregate	Aggregate	Gasoline	1623396.817	67107094.54	7642462	2753.099179	**24.37511**	
Los Angeles	2025	LDT2	Aggregate	Aggregate	Diesel	5270.982587	227598.8752	25409.94	7.061296711	**32.23188**	
Los Angeles	2025	LHD1	Aggregate	Aggregate	Gasoline	126376.0753	5050030.715	1882815	365.0578633	**13.83351**	
Los Angeles	2025	LHD1	Aggregate	Aggregate	Diesel	60972.66542	2684490.855	766959.4	130.3435566	**20.5955**	
Los Angeles	2025	LHD2	Aggregate	Aggregate	Gasoline	19233.99329	720176.2088	286557.8	59.75694771	**12.05176**	
Los Angeles	2025	LHD2	Aggregate	Aggregate	Diesel	27705.39815	1195933.128	348499.1	68.74096166	**17.39768**	
Los Angeles	2025	MCY	Aggregate	Aggregate	Gasoline	154401.1518	1011349.118	308802.3	24.45026089	**41.36353**	
Los Angeles	2025	MDV	Aggregate	Aggregate	Gasoline	972359.0465	37248308.09	4511661	1878.418335	**19.82961**	
Los Angeles	2025	MDV	Aggregate	Aggregate	Diesel	11358.20366	442895.3306	53411.24	18.41121058	**24.05574**	
Los Angeles	2025	MH	Aggregate	Aggregate	Gasoline	15450.11077	154665.7849	1545.629	31.9235545	**4.84488**	
Los Angeles	2025	MH	Aggregate	Aggregate	Diesel	5805.209734	61011.77583	580.521	6.117787888	**9.972849**	
Los Angeles	2025	Motor Coach	Aggregate	Aggregate	Diesel	646.2232833	86392.90228	14850.21	15.46935774	**5.584776**	
Los Angeles	2025	OBUS	Aggregate	Aggregate	Gasoline	3624.478429	141502.8164	72518.56	27.83449774	**5.083721**	
Los Angeles	2025	PTO	Aggregate	Aggregate	Diesel	0	111556.2897	0	22.23468075	**5.01722**	
Los Angeles	2025	SBUS	Aggregate	Aggregate	Gasoline	1458.983596	67167.49895	5835.934	7.438108511	**9.030185**	
Los Angeles	2025	SBUS	Aggregate	Aggregate	Diesel	1908.769685	38926.17223	27638.99	5.265440037	**7.392767**	
Los Angeles	2025	T6 CAIRP Class 4	Aggregate	Aggregate	Diesel	34.36575334	2266.304778	789.725	0.243221578	**9.317861**	
Los Angeles	2025	T6 CAIRP Class 5	Aggregate	Aggregate	Diesel	45.49834584	3114.065867	1045.552	0.334412634	**9.312046**	
Los Angeles	2025	T6 CAIRP Class 6	Aggregate	Aggregate	Diesel	153.828142	8082.586947	3534.971	0.854164134	**9.462569**	
Los Angeles	2025	T6 CAIRP Class 7	Aggregate	Aggregate	Diesel	253.7878791	51194.688	5832.045	5.039133241	**10.15942**	**MHD**
Los Angeles	2025	T6 Instate Delivery C	Aggregate	Aggregate	Diesel	3942.518812	132324.1555	56259.74	14.8511303	**8.910039**	**9.010174**
Los Angeles	2025	T6 Instate Delivery C	Aggregate	Aggregate	Diesel	4030.100943	136692.7564	57509.54	15.45381201	**8.845245**	
Los Angeles	2025	T6 Instate Delivery C	Aggregate	Aggregate	Diesel	12354.13791	417640.9624	176293.5	47.02593642	**8.881077**	
Los Angeles	2025	T6 Instate Delivery C	Aggregate	Aggregate	Diesel	3088.557008	168421.2232	44073.71	18.5284084	**9.089892**	
Los Angeles	2025	T6 Instate Other Cla	Aggregate	Aggregate	Diesel	5010.986175	206729.382	57927	23.26032622	**8.887639**	
Los Angeles	2025	T6 Instate Other Cla	Aggregate	Aggregate	Diesel	11105.60615	477166.8035	128380.8	53.91545024	**8.850279**	
Los Angeles	2025	T6 Instate Other Cla	Aggregate	Aggregate	Diesel	10008.35682	424540.4267	115696.6	47.83365782	**8.875349**	
Los Angeles	2025	T6 Instate Other Cla	Aggregate	Aggregate	Diesel	4632.100002	213539.4729	53547.08	23.63124305	**9.03632**	
Los Angeles	2025	T6 Instate Tractor Cl	Aggregate	Aggregate	Diesel	135.0734798	7022.074458	1561.449	0.784956751	**8.945811**	
Los Angeles	2025	T6 Instate Tractor Cl	Aggregate	Aggregate	Diesel	1770.112665	104093.2251	20462.5	10.89070338	**9.557989**	
Los Angeles	2025	T6 OOS Class 4	Aggregate	Aggregate	Diesel	20.05771075	1313.280546	460.9262	0.139353473	**9.424096**	
Los Angeles	2025	T6 OOS Class 5	Aggregate	Aggregate	Diesel	26.42347643	1801.58475	607.2115	0.191483742	**9.408552**	
Los Angeles	2025	T6 OOS Class 6	Aggregate	Aggregate	Diesel	90.00033987	4707.592497	2068.208	0.490047606	**9.606398**	
Los Angeles	2025	T6 OOS Class 7	Aggregate	Aggregate	Diesel	136.2844275	34230.05129	3131.816	3.340508678	**10.24696**	
Los Angeles	2025	T6 Public Class 4	Aggregate	Aggregate	Diesel	706.7802903	24849.20528	3625.783	2.897001691	**8.57756**	
Los Angeles	2025	T6 Public Class 5	Aggregate	Aggregate	Diesel	488.486761	17225.14873	2505.937	2.034479656	**8.466611**	
Los Angeles	2025	T6 Public Class 6	Aggregate	Aggregate	Diesel	601.213461	20818.34369	3084.225	2.459672999	**8.463866**	
Los Angeles	2025	T6 Public Class 7	Aggregate	Aggregate	Diesel	2588.329304	114572.7311	13278.13	13.23330009	**8.657911**	
Los Angeles	2025	T6 Utility Class 5	Aggregate	Aggregate	Diesel	637.9059053	25770.63019	8165.196	2.767748812	**9.311044**	
Los Angeles	2025	T6 Utility Class 6	Aggregate	Aggregate	Diesel	120.5199251	4848.775192	1542.655	0.518653179	**9.348781**	
Los Angeles	2025	T6 Utility Class 7	Aggregate	Aggregate	Diesel	136.6218574	6722.913869	1748.76	0.714827849	**9.404941**	
Los Angeles	2025	T6TS	Aggregate	Aggregate	Gasoline	14498.99682	795156.392	290095.9	152.4376713	**5.216272**	
Los Angeles	2025	T7 CAIRP Class 8	Aggregate	Aggregate	Diesel	7077.435116	1438200.104	162639.5	228.3726565	**6.297602**	**HHD**
Los Angeles	2025	T7 NNOOS Class 8	Aggregate	Aggregate	Diesel	6360.856312	1726778.1	146172.5	266.2481301	**6.485597**	**5.803263**
Los Angeles	2025	T7 NOOS Class 8	Aggregate	Aggregate	Diesel	2695.713556	627011.5955	61947.5	99.10071708	**6.327014**	
Los Angeles	2025	T7 POAK Class 8	Aggregate	Aggregate	Diesel	1.466332697	113.0893275	23.9892	0.020324541	**5.564176**	
Los Angeles	2025	T7 POLA Class 8	Aggregate	Aggregate	Diesel	9482.601436	1179706.284	155135.4	197.4742282	**5.973976**	
Los Angeles	2025	T7 Public Class 8	Aggregate	Aggregate	Diesel	3573.360592	143209.0585	18331.34	24.89995858	**5.751377**	
Los Angeles	2025	T7 Single Concrete/T	Aggregate	Aggregate	Diesel	742.3898134	50540.4262	6993.312	8.23457519	**6.137588**	
Los Angeles	2025	T7 Single Dump Clas	Aggregate	Aggregate	Diesel	2166.145468	122431.2176	20405.09	20.33540327	**6.020595**	
Los Angeles	2025	T7 Single Other Clas	Aggregate	Aggregate	Diesel	6498.252603	349642.5017	61213.54	57.60831669	**6.069306**	
Los Angeles	2025	T7 SWCV Class 8	Aggregate	Aggregate	Diesel	1044.84413	67740.93634	4806.283	25.88436488	**2.61706**	
Los Angeles	2025	T7 Tractor Class 8	Aggregate	Aggregate	Diesel	15293.8656	1128795.345	222219.9	182.1339301	**6.197612**	
Los Angeles	2025	T7 Utility Class 8	Aggregate	Aggregate	Diesel	470.6043551	20679.16866	6023.736	3.33683046	**6.197249**	
Los Angeles	2025	T7IS	Aggregate	Aggregate	Gasoline	38.05001349	2751.394918	761.3047	0.663401206	**4.147407**	
Los Angeles	2025	UBUS	Aggregate	Aggregate	Gasoline	434.3887861	30651.97854	1737.555	6.643775924	**4.613638**	
Los Angeles	2025	UBUS	Aggregate	Aggregate	Diesel	35.62762191	5946.561117	142.5105	0.926191045	**6.420448**	
Los Angeles	2027	All Other Buses	Aggregate	Aggregate	Diesel	1599.016922	83424.00229	14231.25	8.764950211	**9.517909**	
Los Angeles	2027	LDA	Aggregate	Aggregate	Gasoline	3252972.868	127411268.6	15084514	4134.430858	**30.81712**	
Los Angeles	2027	LDA	Aggregate	Aggregate	Diesel	6767.856667	201833.5552	28082.93	4.799534652	**42.05273**	
Los Angeles	2027	LDT1	Aggregate	Aggregate	Gasoline	305004.155	11091280.07	1345171	432.899059	**25.62094**	
Los Angeles	2027	LDT1	Aggregate	Aggregate	Diesel	46.31412876	915.8440894	129.7694	0.03801334	**24.0927**	
Los Angeles	2027	LDT2	Aggregate	Aggregate	Gasoline	1690654.952	69171014.47	7955024	2709.655332	**25.52761**	
Los Angeles	2027	LDT2	Aggregate	Aggregate	Diesel	5724.008731	241831.3231	27452.66	7.218911638	**33.49969**	
Los Angeles	2027	LHD1	Aggregate	Aggregate	Gasoline	126122.2747	5037761.844	1879034	349.8702448	**14.39894**	
Los Angeles	2027	LHD1	Aggregate	Aggregate	Diesel	66210.8642	2872082.695	832849.4	138.1321537	**20.79228**	
Los Angeles	2027	LHD2	Aggregate	Aggregate	Gasoline	18986.19599	708229.2229	282866	56.57443148	**12.51854**	
Los Angeles	2027	LHD2	Aggregate	Aggregate	Diesel	30543.23938	1291571.379	384195.5	73.24781074	**17.6329**	
Los Angeles	2027	MCY	Aggregate	Aggregate	Gasoline	160831.8787	1042272.874	321663.8	25.05705665	**41.59598**	
Los Angeles	2027	MDV	Aggregate	Aggregate	Gasoline	995506.8199	37949923.61	4626268	1826.109785	**20.78184**	
Los Angeles	2027	MDV	Aggregate	Aggregate	Diesel	11636.58936	445305.215	54488.97	17.8304804	**24.97438**	
Los Angeles	2027	MH	Aggregate	Aggregate	Gasoline	14694.27766	151088.1543	1470.016	31.20274731	**4.842143**	
Los Angeles	2027	MH	Aggregate	Aggregate	Diesel	6106.799638	64332.90122	610.68	6.45264657	**9.970002**	
Los Angeles	2027	Motor Coach	Aggregate	Aggregate	Diesel	699.24111	87406.95341	16068.56	15.29773716	**5.713718**	
Los Angeles	2027	OBUS	Aggregate	Aggregate	Gasoline	3402.812669	127437.7026	68083.48	24.57312959	**5.186059**	
Los Angeles	2027	PTO	Aggregate	Aggregate	Diesel	0	112257.5491	0	21.81486661	**5.14592**	
Los Angeles	2027	SBUS	Aggregate	Aggregate	Gasoline	1518.749108	69457.45034	6074.996	7.62436157	**9.109937**	
Los Angeles	2027	SBUS	Aggregate	Aggregate	Diesel	1772.30207	36021.23954	25662.93	4.834702869	**7.450559**	
Los Angeles	2027	T6 CAIRP Class 4	Aggregate	Aggregate	Diesel	34.60765146	2268.198197	795.2838	0.239908628	**9.454425**	**MHD**
Los Angeles	2027	T6 CAIRP Class 5	Aggregate	Aggregate	Diesel	45.27788876	3122.416846	1040.486	0.330958571	**9.434464**	**9.134025**
Los Angeles	2027	T6 CAIRP Class 6	Aggregate	Aggregate	Diesel	161.5787872	8052.427316	3713.081	0.839942919	**9.586874**	
Los Angeles	2027	T6 CAIRP Class 7	Aggregate	Aggregate	Diesel	259.8750677	51646.87365	5971.929	4.953838186	**10.42563**	
Los Angeles	2027	T6 Instate Delivery C	Aggregate	Aggregate	Diesel	4000.037015	133383.8523	57080.53	14.84657539	**8.984149**	
Los Angeles	2027	T6 Instate Delivery C	Aggregate	Aggregate	Diesel	4132.493968	137978.7395	58970.69	15.48363414	**8.911263**	
Los Angeles	2027	T6 Instate Delivery C	Aggregate	Aggregate	Diesel	12639.67179	421463.6594	180368.1	47.12067593	**8.944347**	
Los Angeles	2027	T6 Instate Delivery C	Aggregate	Aggregate	Diesel	3268.308085	172252.9767	46638.76	18.94995092	**9.08989**	
Los Angeles	2027	T6 Instate Other Cla	Aggregate	Aggregate	Diesel	5099.705469	207967.5087	58952.6	23.19258404	**8.966983**	
Los Angeles	2027	T6 Instate Other Cla	Aggregate	Aggregate	Diesel	11502.9852	480858.8337	132974.5	53.88431583	**8.923911**	
Los Angeles	2027	T6 Instate Other Cla	Aggregate	Aggregate	Diesel	10301.14964	427663.9117	119081.3	47.79384417	**8.948096**	
Los Angeles	2027	T6 Instate Other Cla	Aggregate	Aggregate	Diesel	5008.558032	216408.428	57898.93	23.83184503	**9.080641**	
Los Angeles	2027	T6 Instate Tractor Cl	Aggregate	Aggregate	Diesel	141.9746149	7032.876064	1641.227	0.77955262	**9.021682**	
Los Angeles	2027	T6 Instate Tractor Cl	Aggregate	Aggregate	Diesel	1911.830955	106054.6059	22100.77	10.98993529	**9.650157**	
Los Angeles	2027	T6 OOS Class 4	Aggregate	Aggregate	Diesel	20.6737132	1350.783705	475.0819	0.139133306	**9.708558**	
Los Angeles	2027	T6 OOS Class 5	Aggregate	Aggregate	Diesel	26.87629762	1853.032341	617.6173	0.191603022	**9.671206**	
Los Angeles	2027	T6 OOS Class 6	Aggregate	Aggregate	Diesel	97.26491803	4842.026522	2235.148	0.488996667	**9.901962**	
Los Angeles	2027	T6 OOS Class 7	Aggregate	Aggregate	Diesel	139.5714825	35207.55382	3207.353	3.328101359	**10.57887**	
Los Angeles	2027	T6 Public Class 4	Aggregate	Aggregate	Diesel	688.5913442	24252.79223	3532.474	2.80232293	**8.654532**	
Los Angeles	2027	T6 Public Class 5	Aggregate	Aggregate	Diesel	476.464627	16866.16999	2444.264	1.97077333	**8.558148**	
Los Angeles	2027	T6 Public Class 6	Aggregate	Aggregate	Diesel	569.4379486	20244.3948	2921.217	2.349669797	**8.615847**	
Los Angeles	2027	T6 Public Class 7	Aggregate	Aggregate	Diesel	2500.018482	111487.6798	12825.09	12.68036696	**8.792149**	
Los Angeles	2027	T6 Utility Class 5	Aggregate	Aggregate	Diesel	625.1887561	25099.75563	8002.416	2.678278146	**9.371602**	
Los Angeles	2027	T6 Utility Class 6	Aggregate	Aggregate	Diesel	118.0723739	4726.797244	1511.326	0.50256885	**9.405273**	
Los Angeles	2027	T6 Utility Class 7	Aggregate	Aggregate	Diesel	132.3013351	6532.222049	1693.457	0.689119173	**9.479089**	
Los Angeles	2027	T6TS	Aggregate	Aggregate	Gasoline	13816.7581	755094.268	276445.7	141.8040251	**5.324914**	
Los Angeles	2027	T7 CAIRP Class 8	Aggregate	Aggregate	Diesel	7231.334465	1461343.126	166176.1	224.9173708	**6.497244**	
Los Angeles	2027	T7 NNOOS Class 8	Aggregate	Aggregate	Diesel	6573.68892	1791228.38	151063.4	263.1970574	**6.805655**	**HHD**
Los Angeles	2027	T7 NOOS Class 8	Aggregate	Aggregate	Diesel	2821.745846	650414.1816	64843.72	98.7386578	**6.587229**	**5.90894**
Los Angeles	2027	T7 POAK Class 8	Aggregate	Aggregate	Diesel	1.413150415	116.5885753	23.11914	0.02089984	**5.578443**	
Los Angeles	2027	T7 POLA Class 8	Aggregate	Aggregate	Diesel	9885.566451	1267216.636	161727.9	211.3438149	**5.995996**	
Los Angeles	2027	T7 Public Class 8	Aggregate	Aggregate	Diesel	3348.608117	134380.0474	17178.36	23.09700753	**5.818072**	
Los Angeles	2027	T7 Single Concrete/T	Aggregate	Aggregate	Diesel	733.1076141	49502.86701	6905.874	7.907435591	**6.260293**	
Los Angeles	2027	T7 Single Dump Clas	Aggregate	Aggregate	Diesel	2236.85898	120679.5656	21071.21	19.87538019	**6.071812**	
Los Angeles	2027	T7 Single Other Clas	Aggregate	Aggregate	Diesel	7022.543842	355342.9743	66152.36	58.02104103	**6.124381**	
Los Angeles	2027	T7 SWCV Class 8	Aggregate	Aggregate	Diesel	846.3010337	54850.03474	3892.985	20.83488606	**2.632605**	
Los Angeles	2027	T7 Tractor Class 8	Aggregate	Aggregate	Diesel	16727.3708	1158955.776	243048.7	184.0888626	**6.295632**	
Los Angeles	2027	T7 Utility Class 8	Aggregate	Aggregate	Diesel	478.6528847	20432.22894	6126.757	3.27444108	**6.239913**	
Los Angeles	2027	T7IS	Aggregate	Aggregate	Gasoline	28.51963201	2421.965475	570.6208	0.556322256	**4.35353**	
Los Angeles	2027	UBUS	Aggregate	Aggregate	Gasoline	433.2360292	30482.51385	1732.944	6.572380998	**4.637971**	
Los Angeles	2027	UBUS	Aggregate	Aggregate	Diesel	14.34866314	2363.510755	57.39465	0.41301156	**5.722626**	

On-road Mobile (Operational) Energy Usage

Unmitigated:

Step 1:

Therefore:

Average Daily VMT:

699	Source: CalEEMod Output File

Step 2: Given:

Fleet Mix (CalEEMod Output)

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
49.3284%	4.2329%	24.0235%	14.3400%	2.6967%	0.6925%	1.1011%	0.8945%	0.0845%	0.0619%	2.2009%	0.0649%	0.2781%
49.32835102	4.232947	24.0235	14.34000432	2.696694434	0.692535797	1.101103	0.89450693	0.0845281	0.0619211	2.200900577	0.064909	0.278102

And:

Gasoline MPG Factors for each Vehicle Class - Year 2027 (EMFAC2021 Output)

LDA	LDT1	LDT2	MDV	MCY	MH	OBUS
30.81712404	25.62094	25.52761	20.78184123	41.59598187	4.842142676	5.186059

Diesel MPG Factors for each Vehicle Class - Year 2027 (EMFAC2021 Output)

LHD1	LHD2	MHD	HHD	UBUS	SBUS
20.79228202	17.6329	9.134025	5.908939775	5.722626149	7.450559119

Therefore:

Weighted Average MPG Factors

Gasoline: **27.9** Diesel: **15.3**

Step 3: **Therefore:**

24	**daily gallons of gasoline**	**3**	**daily gallons of diesel**

or

8,635	**annual gallons of gasoline**	**932**	**annual gallons of diesel**

Off-road Mobile (Construction) Energy Usage

Note: For the sake of simplicity, and as a conservative estimation, it was assumed that all off-road vehicles use diesel fuel as an energy source. Demolition (if applicable), Site preparation and grading off-road mobile vehicle on-site gallons of fuel are calculated below.

Given Factor:	**14.4**	**metric tons**	**CO2**	**(provided in CalEEMod Output File)**	
Conversion Factor:	2204.6262	pounds	per metric ton		
Intermediate Result:	**31,835**	**pounds**	**CO2**		
Conversion Factor:	22.38	pounds	CO2 per 1 gallon of diesel fuel	Source: U.S. EIA, 2016	
Final Result:	**1,422**	**gallons**	**diesel fuel**	http://www.eia.gov/tools/faqs/faq.cfm?id=307&t=11	

Mitigated Onsite Scenario	Total CO2 (MT/yr) (provided in CalEEMod Output File)
Demolition - 2025	1.9
Grading - 2025	12.5

On-road Mobile (Construction) Energy Usage - Demolition

Step 1:

Total Daily Worker Trips (CalEEMod Output)

10

Total Daily Haul Trips (CalEEMod Output)

13	5%	**1**

Worker Trip Length (miles) (CalEEMod Output)

18.5

Haul Trip Length (miles) (CalEEMod Output)

20

Therefore:

Average Worker Daily VMT:

185

Average Haul Daily VMT:

13

Step 2:

Given:

Assumed Fleet Mix for Workers (Percentage mix is provided on Appendix A: Calculation Details for CalEEMOD p. 15)

LDA	LDT1	LDT2
0.5	0.25	0.25

Fleet Mix for Workers (CalEEMod Output)

MHD	HHD
0%	100%

And:

MPG Factors for each Vehicle Class - Year 2025 (EMFAC2021 Output)

LDA	LDT1	LDT2
29.616892	24.685773	24.37511

Diesel:

MHD	HHD
9.083978	5.702523

Therefore:

Weighted Average Worker MPG Factor

27.1

Weighted Average Haul (Diesel) MPG Factor

5.7

Step 3:

Therefore:

6.8 **Worker daily gallons of gasoline**

Therefore:

Step 4:

5	**# of Days (CalEEMod Output)**

2 **Haul daily gallons of diesel**

Therefore:

Result:

34	**Total gallons of gasoline**

Therefore:

11	**Total gallons of diesel**

On-road Mobile (Construction) Energy Usage - Grading

Step 1:

Total Daily Worker Trips (CalEEMod Output)

8

Total Daily Haul Trips (CalEEMod Output)

2 5% **0**

Worker Trip Length (miles) (CalEEMod Output)

18.5

Haul Trip Length (miles) (CalEEMod Output)

20

Therefore:

Average Worker Daily VMT:

139

Average Haul Daily VMT:

2

Step 2:

Given:

Assumed Fleet Mix for Workers (Percentage mix is provided on Appendix A: Calculation Details for CalEEMOD p. 15)

LDA	LDT1	LDT2
0.5	0.25	0.25

Fleet Mix for Workers (CalEEMod Output)

MHD	HHD
0%	100%

And:

MPG Factors for each Vehicle Class - Year 2026 (EMFAC2021 Output)

LDA	LDT1	LDT2
29.616892	24.685773	24.37511

Diesel:

MHD	HHD
9.083978	5.702523

Therefore:

Weighted Average Worker MPG Factor

27.1

Weighted Average Haul (Diesel) MPG Factor

5.7

Step 3:

Therefore:

5.1 **Worker daily gallons of gasoline**

Therefore:

0 **Haul daily gallons of diesel**

Step 4:

16 **# of Days (CalEEMod Output)**

Therefore:

Result:

82 **Total gallons of gasoline**

Therefore:

4 **Total gallons of diesel**

On-road Mobile (Construction) Energy Usage - Building Construction

Step 1:

Total Daily Worker Trips (CalEEMod Output)

8	5%	**0**

Total Daily Vendor Trips (CalEEMod Output)

1	5%	**0**

Note: Assumes 5% of Plan Area under construction at given point in time (on average) until buildout.

Worker Trip Length (miles) (CalEEMod Output)

18.5

Vendor Trip Length (miles) (CalEEMod Output)

10.2

Therefore:

Average Worker Daily VMT:

7

Average Vendor Daily VMT:

1

Step 2:

Given:

Assumed Fleet Mix for Workers (Percentage mix is provided on Appendix A: Calculation Details for CalEEMOD p. 15)

LDA	LDT1	LDT2
0.5	0.25	0.25

Fleet Mix for Workers (CalEEMod Output)

MHD	HHD
0%	100%

Assumed Fleet Mix for Vendors

And:

MPG Factors for each Vehicle Class - Year 2026 (EMFAC2021 Output)

Gasoline:

LDA	LDT1	LDT2
29.6168919	24.685773	24.37511

Diesel:

MHD	HHD
9.010174273	5.8032626

Therefore:

Weighted Average Worker (Gasoline) MPG Factor

27.1

Weighted Average Vendor (Diesel) MPG Factor

5.8

Step 3:

Therefore:

0 **Worker daily gallons of gasoline**

Therefore:

0 **Vendor daily gallons of diesel**

Step 4:

521 **# of Days (CalEEMod Output)**

Therefore:

141 **Total gallons of gasoline**

Therefore:

54 **Total gallons of diesel**

On-road Mobile (Construction) Energy Usage - Paving

Step 1: **Total Daily Worker Trips (CalEEMod Output)**

18

Worker Trip Length (miles) (CalEEMod Output)

18.5

Therefore:

Average Worker Daily VMT:

324

Step 2: Given:

Assumed Fleet Mix for Workers (Percentage mix is provided on Appendix A: Calculation Details for CalEEMOD p. 15)

LDA	LDT1	LDT2
0.5	0.25	0.25

And:

MPG Factors for each Vehicle Class - Year 2026 (EMFAC2021 Output)

LDA	LDT1	LDT2
29.616892	24.68577	24.37511

Therefore:

Weighted Average Worker MPG Factor

27.1

Step 3: **Therefore:**

12.0 **Worker daily gallons of gasoline**

Step 4: 32 **# of Days (CalEEMod Output)**

Therefore:

Result: **383** **Total gallons of gasoline**

On-road Mobile (Construction) Energy Usage - Architectural Coating 2027

Step 1: **Total Daily Worker Trips (CalEEMod Output)**

2	5%	0

Note: Assumes 5% of Plan Area under construction at given point in time (on average) until buildout.

Worker Trip Length (miles) (CalEEMod Output)

18.5

Therefore:

Average Worker Daily VMT:

1

Step 2: Given:

Assumed Fleet Mix for Workers (Percentage mix is provided on Appendix A: Calculation Details for CalEEMOD p. 15)

LDA	LDT1	LDT2
0.5	0.25	0.25

And:

MPG Factors for each Vehicle Class - Year 2026 (EMFAC2021 Output)

LDA	LDT1	LDT2
29.616892	24.68577	24.37511

Therefore:

Weighted Average Worker MPG Factor

27.1

Step 3: **Therefore:**

0.1 **Worker daily gallons of gasoline**

Step 4: 21 **# of Days (CalEEMod Output)**

Therefore:

Result: **1** **Total gallons of gasoline**

Appendix B
Arborist Report

Protected Tree Report

For the compliance of the City of Duarte Tree Protection Ordinance

1404 & 1414 Royal Oaks Drive
Duarte, CA 91010

Prepared For: Feng Xiao Architect, Inc.
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San Marino, CA 91108
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July 2025

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SUMMARY OF DATA

Total number of live Protected Native Trees on site	3
Total number of live Protected Specimen Trees on site	0
Total number of non-viable Protected Native or Specimen Trees located on site	0
Total number of off-site live Protected Native or Specimen Trees with canopies encroaching over the property	0
Total number of live Protected Native Trees that will be removed	1
Total number of live Protected Specimen Trees that will be removed	0
Total number of live Protected Native or Specimen Trees to be preserved in place and encroached by construction within dripline	2
Total number of live Protected Native or Specimen Trees which will not be encroached	0
Total number of proposed mitigation trees to be planted on site	tbd

BACKGROUND & PURPOSE

I was retained by the project's architect to write a protected tree report for the Native and Specimen trees located on and encroaching onto 1404 and 1414 Royal Oaks Dr., Duarte. There are three Protected Oak Trees located on site that will be encroached by construction, and this report will serve to both notify the Planning Department of the extent of the encroachments and expected impacts as well as to inform the builder of the proper protection measures which must be taken to preserve or mitigate them. As part of my preparation for this report I made a site visit on July 30, 2025. I was provided with a scaled site plan with a layout of the planned construction and an architectural survey showing all existing structures and hardscape.

PROJECT LOCATION and DESCRIPTION

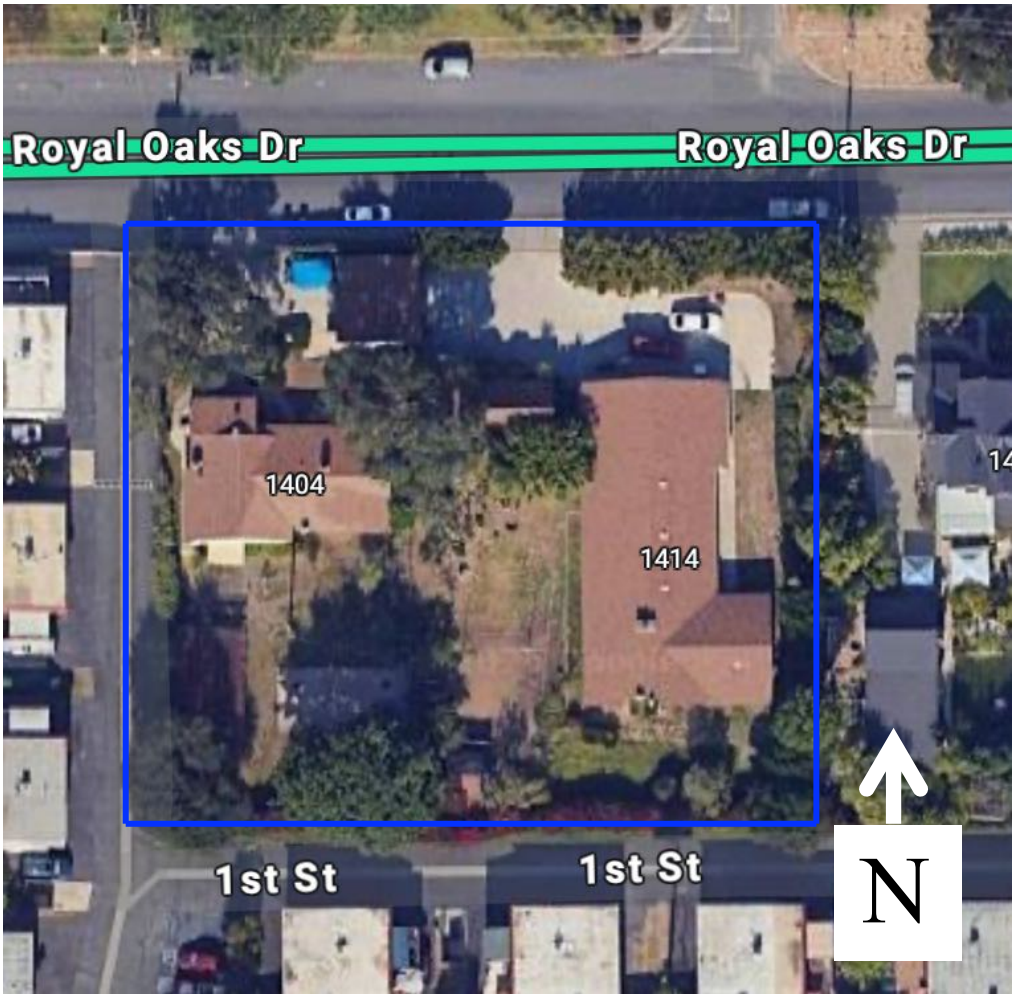


Figure 1: This aerial view (courtesy of Google Maps) has been illustrated with blue lines to show the boundary area of the double lot at 1404 and 1414 Royal Oaks Dr.

Site Description

The subject property consists of two contiguous parcels each with a single-family home. The structures appear to be in fair condition with a minimum amount of maintenance occurring on the exteriors. The project consists of demolishing the two homes, combining the lots and redeveloping the property into eleven townhome units.

The landscape is minimally maintained and appears that no supplemental irrigation is supplied anywhere. The plant material consists of naturalized annual grasses and herbaceous broadleaf groundcover and weeds that have been periodically mowed or cut to a height of six inches or less. The soil has a loam texture and the A horizon in Duarte is typically several feet deep. The three Oak trees on the property are all Coast Live Oak (Quercus agrifolia) trees and appear to be in good health and structural condition with no visible signs or symptoms of water deprivation, extensive decay, destructive diseases or harmful insects.

TREE ASSESSMENT METHODS

The tree survey was conducted on July 30, 2025. Inventoried trees were tagged on their trunks with rectangular (1" x 3") metallic coated tags inscribed with their corresponding Tree Matrix number. The details of these methods are:

Trunk diameter measurements were taken at four and one half (4.5) feet above natural grade (Diameter at Breast Height – DBH). Trees with multiple trunks growing from one root system were measured with the diameters of the trunks and noted as "m" in the trunk diameter section of the Tree Identification Size and Condition Matrix.

The height of each tree was approximated. The extent of the canopy for each tree was measured by using a tape measure and extending it from the trunk of the tree to the edge of the foliar canopy at the northern, eastern, southern and western extents. The heights and average measurement of the canopy extent at north to south and east to west is recorded in the Tree Identification Size and Condition Matrix.

The health rating considers the condition of the biological health of the tree, also known as the symplastic parts, which are formed by living cells with protoplasm. These components broadly consist of leaves, cork cambium, vascular tissue containing living phloem and xylem, and fine feeder roots. The health rating is based on the life and vigor of the tree.

The structure rating considers the integrity of the wood strength and other attributes that would raise the hazard rating of a tree. These components contain the apoplastic parts which are made up of non-living cells without protoplasm, mainly heartwood and buttress roots. Decay is the primary issue affecting the quality of structural wood. Other factors are trunk and branch taper, overextended and end-weighted branches and poor branch attachments.

The overall rating of each tree is given according to its health and structure. It isn't an average of both scores as a tree or shrub that is non-viable but has no decay and is sound and stable is still dead; and a tree or shrub with a full crown of live foliage but with extensive decay at the buttress area still has a high probability of toppling at any time.

The rating is determined as:

Good
A healthy and vigorous tree with no visible signs of stress, decay, structural defects, destructive disease, or harmful pest infestation.

Fair
Although healthy in overall appearance, the tree shows evidence of stress, decay, structural defects, destructive disease, or harmful pest infestation.

Poor
Obvious and significant symptoms and signs of stress, decay, structural defects, destructive disease, or harmful pest infestation. The tree appears to be in decline.

Non-viable
This tree exhibits very little or no signs of life at all.

Tree Identification, Size & Condition Matrix

Identification			Size			Health				Structure			Rating
Tree #	Species		Trunk Diameter (Inches)	Height (Feet)	Spread (Feet)	Good	Fair	Poor	Non-Viable	Sound and Stable	Manageable Defects	Hazardous	Overall Health and Structure
1	Quercus agrifolia	Coast Live Oak	38	40	30	X					X		Good
2	Quercus agrifolia	Coast Live Oak	34	40	50	X					X		Good
3	Quercus agrifolia	Coast Live Oak	m 24, 22	40	40	X					X		Good

CONSTRUCTION IMPACTS MATRIX

This section includes all Protected Native and Specimen Trees that are either located or encroaching on the property. It provides data collected from the analysis of construction plans. The trees have been surveyed, and numbers correspond to the locations plotted on the Site Plan included in this report.

The botanical name is given for each tree or shrub as well as its trunk diameter and condition rating as provided in the Identification, Size and Condition Matrix.

Analysis regarding rootzone impacts are based on the type of impact, e.g, soil compaction, grading, fill, which are all significant. The severity of these encroachments is determined by the number of sides which they occur as well as the distance from the trunk. The area containing structural roots responsible for keeping the tree upright is called the root plate and its diameter is most simply defined by taking the trunk diameter and multiplying by .367. (see Appendix C - Space Required for a Stable Root Plate). Beyond the root plate a Tree Protection Zone can be defined by a multiple of the trunk's diameter which is determined by factoring the trees relative age and species tolerance to root zone disruptions. (see Appendix D - Defining the Tree Protection Zone)

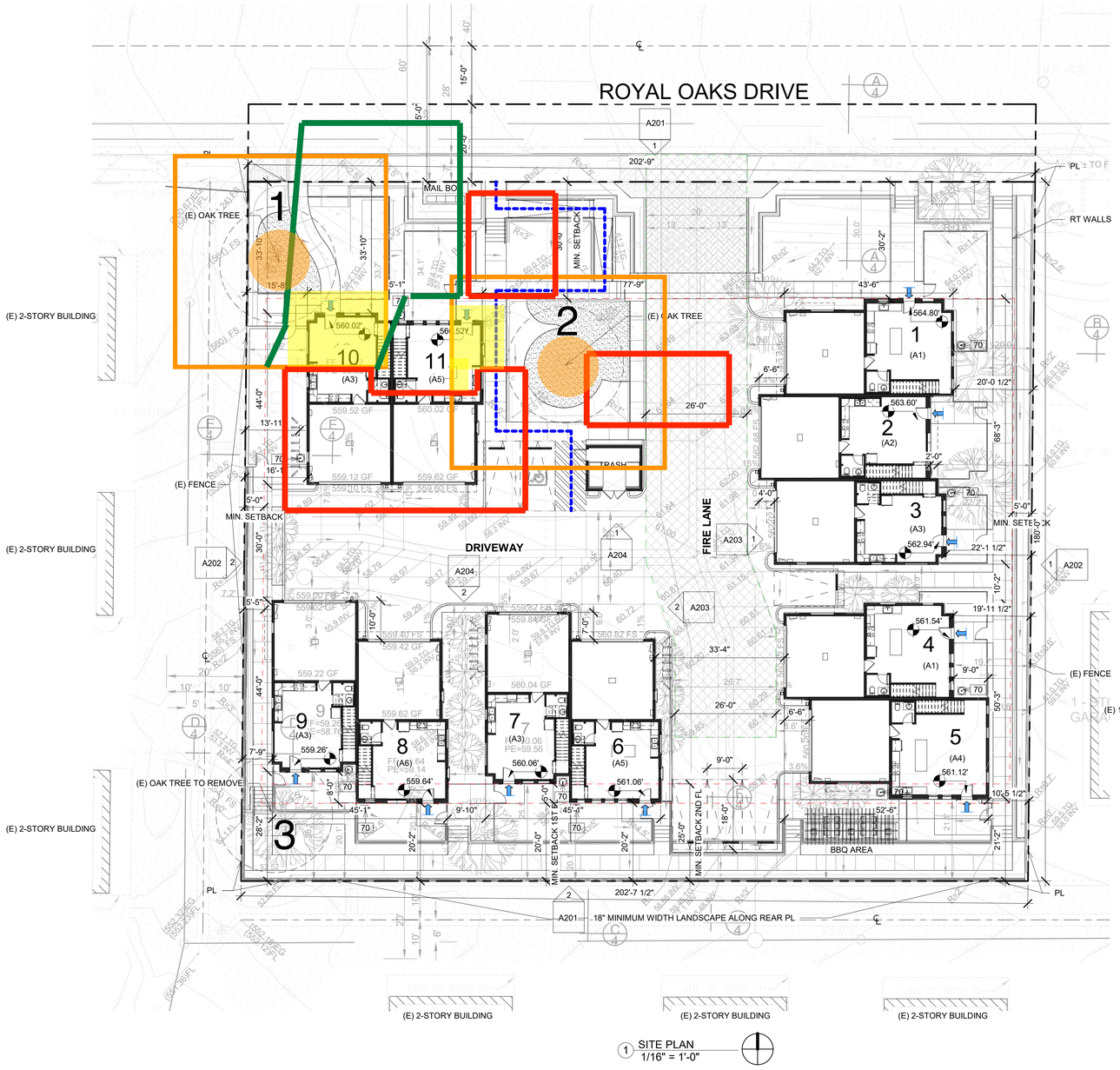
Encroachments that do not impact the stability of a tree typically sever relatively smaller roots that are usually two inches in diameter or smaller and make up the root mass responsible for water and nutrient uptake. Coast Live Oak is listed as having good tolerance to developmental impacts (Best Management Practices – Managing Trees During Construction). An estimation has been made in the matrix of the percentage of total root mass that will be removed from each tree's Tree Protection Zone. It considers any additional light grading of six inches or less that will be required for typical improvements such as hardscape construction and landscape renovations.

Analysis of required pruning of the live crown of each tree or shrub is provided. Examples for required pruning include crown raising for roofline clearance and vertical clearance for driveways, and reduction pruning for exterior walls.

The site plan has been illustrated to show each tree's Root Plate and Tree Protection Zone. It also shows areas where existing structures with foundations are located as well as the existing concrete driveway area, which is a four-inch concrete slab, presumably built on a compacted subgrade. Areas where significant encroachments from the planned construction requiring excavation and compaction for building pads (factoring a typical five-foot over-excavation are shaded within the Tree Protection Zones. Tree #3 is planned for removal and does not have any of these details illustrated around it.

CONSTRUCTION IMPACTS MATRIX

	TREE or SHRUB SPECIES	SIZE & CONDITION		TREE PROTECTION ZONE IMPACTS								REQUIRED PRUNING OF LIVE CROWN				
TREE NUMBER		TRUNK DIAMETER (DBH)	CONDITION	sides where grading (six inches or deeper) will occur	sides where grading impacts are buffered by existing infrastructure	**Excavation will remain outside of the Tree Protection Zone (TPZ)**	**Excavation will encroach but will be limited to less than 25% of the TPZ**	**Excavation will encroach the Root Plate**	**Removal or Relocation**	Additional light grading less than six inches deep will occur within dripline	Estimated % of total root mass to be removed or severed	**No Pruning Required**	**Pruning not to exceed 10%**	**Pruning not to exceed 30%**	Number of cuts larger than 3" in diameter required	Diameter of cuts for branch removals
1	Quercus agrifolia	40	Good	S	S					Yes	<20				1	n/a
2	Quercus agrifolia	36	Good	S,E,W	S,E,W					Yes	<20				0	n/a
3	Quercus agrifolia	38	Good	All	None					No	0	-	-	-	-	-


ROYAL OAKS DRIVE
(E) 2-STORY BUILDING
(E) OAK TREE
(E) FENCE
(E) OAK TREE TO REMOVE
MAIL BO
MIN. SETBACK
DRIVEWAY
FIRE LANE
TRASH
BBQ AREA
MIN. SETBACK 1ST FL
MIN. SETBACK 2ND FL
18" MINIMUM WIDTH LANDSCAPE ALONG REAR PL
(E) 1-STORY BUILDING
RT WALLS
PL
202'-9"
202'-7 1/2"
77'-9"
43'-6"
26'-0"
33'-4"
1 (A1)
2 (A2)
3 (A3)
4 (A1)
5 (A4)
6 (A5)
7 (A3)
8 (A6)
9 (A3)
10 (A3)
11 (A5)
564.80'
563.60'
562.94'
561.54'
561.12'
561.06'
560.06'
559.64'
559.26'
560.02'
559.52'
559.12 GF
559.62 GF
560.04 GF
559.22 GF
559.42 GF
559.40 FS
559.00 FS
559.87 FS
560.82 FS
560.67 FS
559.84 FS
559.17 FS
559.97 FS
559.79 FS
559.20 FS
559.64 FS
559.60 FS
559.00 INV ES
559.12 INV ES
559.17 INV ES
559.97 INV ES
559.79 INV ES
559.20 INV ES
559.64 INV ES
559.60 INV ES
559.84 INV ES
560.67 INV ES
560.82 INV ES
559.87 INV ES
560.04 INV ES
559.42 INV ES
559.40 INV ES
559.22 INV ES
559.62 INV ES
559.52 INV ES
560.02 INV ES
559.26' INV ES
559.64' INV ES
560.06' INV ES
561.06' INV ES
561.12' INV ES
561.54' INV ES
562.94' INV ES
563.60' INV ES
564.80' INV ES
559.62 GF
559.62 FS
559.60 FS
559.62 INV ES
559.60 INV ES
559.62

FINDINGS

Tree #1 and Tree #2 will be preserved in place. Tree #3 will be removed to accommodate the required grading and retaining walls at the south end of the property.

Tree #1 will be encroached in the southeast portion of the dripline by the construction of Unit #10. The excavation for the foundation of Unit #10 will occur as close as 12 feet from the trunk. Approximately 20% of the Tree Protection Zone will be encroached and all of the excavation and compaction planned within the Tree Protection Zone will occur within the footprint of the existing concrete driveway. Pruning will be required to accommodate the second story roofline and exterior wall. The pruning will be industry standard branch reduction. Less than 10% of the total live canopy will be removed, which is less than the industry standard 25% maximum live crown removal in any single pruning. (Best Management Practices – Tree Pruning)

Tree #2 will be encroached by the construction of Unit #11 on the west side; a trash enclosure and parking spaces on the south; and a driveway/fire lane on the east. The excavation for the foundation of Unit #11 will occur as close as 15 feet from the trunk and more than half of the excavation and compaction will occur within the footprint of an existing home. The trash enclosure and driveway on the south will be built as close as 20 feet from the trunk and approximately half of the required grading will occur in the footprint of an existing home. The driveway/fire lane on the east will be built as close as 20 feet from the trunk and a little more than one third of the grading occurring in the Tree Protection Zone will occur in the footprint of an existing home. Pruning will be required to accommodate the second story roofline and exterior wall. The pruning will be industry standard branch reduction and can be accomplished with standard reduction or removal cuts. Less than 10% of the total live canopy will be removed. (Best Management Practices – Tree Pruning)

Tree #3 will be removed to accommodate the design. A retaining wall is planned to raise the grade enough to create the necessary space to build Unit #9. The wall will be five feet tall and be built where the trunk is located. The grade immediately on the north side of the trunk and well within the root plate will be raised slightly over five feet, and the excavation required for the wall's footing will occur where the trunk is located.

RECOMMENDATIONS

To prevent unnecessary root zone disturbances protective fences shall be installed around Trees #1 and #2 that will encompass as much of the Protection Zone areas as possible. The fences will be required during the demolition phase and throughout the construction of the new homes and infrastructure. The objective for fencing the Tree Protection Zones is to enclose an adequate amount of space underneath the trees so that the heavy equipment required for demolition and grading can be routed away from root zones; to prevent any soil disruptions or mechanical damage to the trunks and branches; and to signify to all workers that the trees are Protected. The recommended fence placements

are different for the demolition and construction phases, and each fencing plan is illustrated on a Site Plan at the end of this section.

The fenced Protection Zones should be constructed with chain link on metal tube frames, at least five feet tall and set on stands. The fence panels shall be secured together with couplers or clamps and a 24-inch-wide gap should be left between two of the panels for access, so that monitoring, mulching, irrigating and other preservation activity can occur.

The existing concrete driveway pavement located within the Tree Protection Zone shall remain in place throughout the project and serve as soil and root protection material. The concrete may be removed at the time that the new driveway is built in its place.

Monitoring by the project's arborist of record shall occur prior to the commencement of any work and begin with approval of the fence placement for the demolition phase. Other monitoring visits by the arborist will be for the repositioning of fences for the excavation and grading phase and then during excavation and grading that encroaches into the Tree Protection Zones. Monthly monitoring visits shall be scheduled for the arborist to properly manage the soil moisture and tree health.

The fenced areas should be covered with a three-inch layer of clean chipped bark mulch. The area should be fitted with a soaker hose set on the surface of the mulch and anchored with landscape staples. The length of the soaker hose should be adequate to offer an even amount of water throughout the fenced area.

Irrigation should be provided only during the months of January through May in the absence of normal rainfall. No supplemental water is required or advised in the summer or fall seasons.

Root pruning shall be done by exposing encountered roots by hand with a shovel and cutting with a clean hand saw at the point where roots are entire and undamaged.

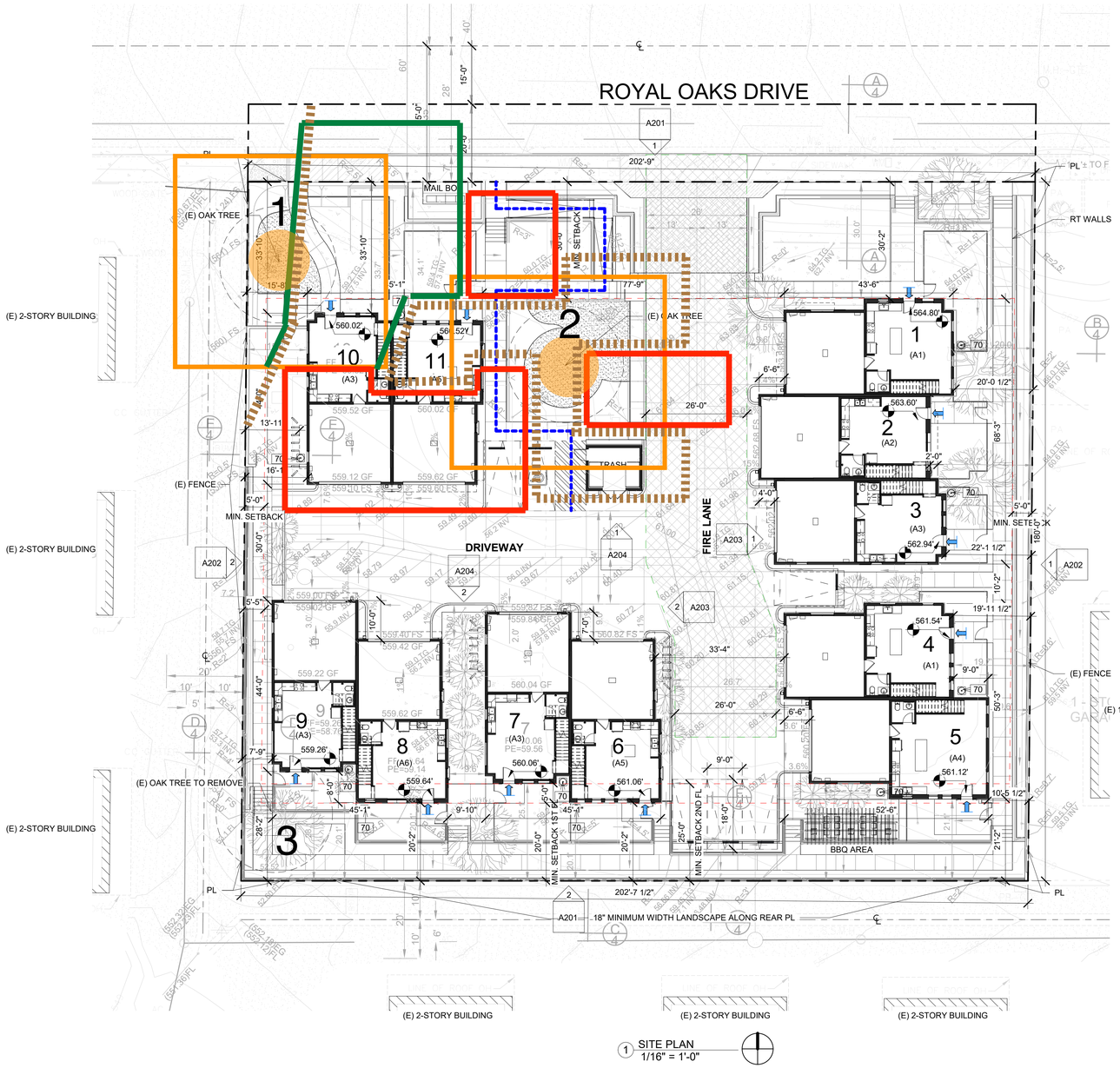
The required live crown pruning should occur during the framing phase so the reduction pruning can be done with precision and kept to a minimum. A licensed tree service should be hired to do the work, and the work can be done at any time of the year.

The main haul route, and material storage and staging area throughout the project will be in the planned driveway and fire lane areas after demolition and grading occurs and can be located well clear of Tree Protection Zones.

Mitigation for the removal of Tree #3 will be determined by the City of Duarte. The mitigation trees should be planted during the finishing stages of the project during the landscape installation phase unless otherwise advised by the city.

More information regarding rootzone impacts is provided in the Excavation and Root Pruning section of the Construction Impact Guidelines in Appendix B of this report.

Demolition Phase Tree Protection Zone Fencing Plan



1 SITE PLAN
1/16" = 1'-0"

LEGENDS

- FIRE LANE
- ACCESSIBLE PATH
- MINIMUM SETBACK
- UNIT MAIN ENTRY
- R 15'-0" — EXISTING OAK TREES AND PROTECTION DISTANCE

KEYNOTE LEGEND	
Key Value	Keynote Text
70	A/C UNIT

UNIT SCHEDULE	
UNIT #	UNIT TYPE
UNIT 1	A1
UNIT 2	A2
UNIT 3	A3
UNIT 4	A1
UNIT 5	A4
UNIT 6	A5
UNIT 7	A3
UNIT 8	A6
UNIT 9	A3
UNIT 10	A3
UNIT 11	A5

TOTAL UNITS: 11

Legend

- Tree Protection Zone
- Root Plate Area
- Existing Structures with Foundations
- Existing Concrete Pavement
- Protective Fencing

NOTE:
1. DIMENSIONS FOR WALLS INDICATED IN PROJECT SUMMARY AND ON PLANS ARE TO FACE OF STUDS, FROM FACE OF STUDS, AND/OR EDGE OF STUDS.
2. AREA INDICATED IN PROJECT SUMMARY AND ON PLANS ARE TO EXTERIOR FACE OF WALLS.

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LICENSED ARCHITECT
FENG XIAO
No. C-31198
Oct. 31, 2025
STATE OF CALIFORNIA

PLANNING SUBMISSION 05/17/2024

NO.	DESCRIPTION	DATE

ROYAL OAKS

1404 & 1414 ROYAL OAKS DR,
DUARTE, CA 91010

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SITE PLAN

Drawing No. A001

Project number:	Date:	05/08/24
22013	Scale:	1/16" = 1'-0"

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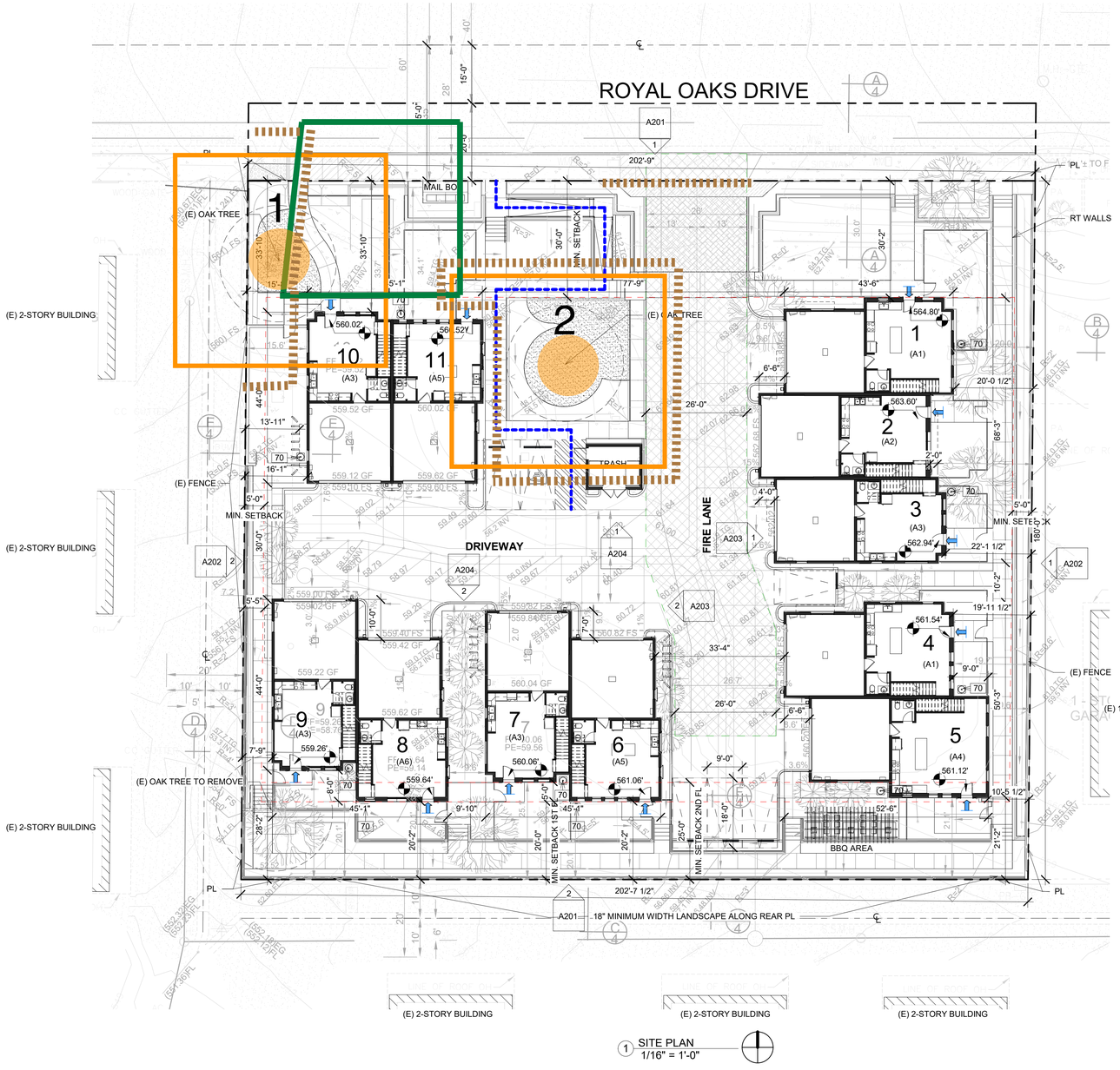
Construction Phase Tree Protection Zone Fencing Plan



1 SITE PLAN
1/16" = 1'-0"

LEGENDS

- FIRE LANE
- ACCESSIBLE PATH
- MINIMUM SETBACK
- UNIT MAIN ENTRY
- EXISTING OAK TREES AND PROTECTION DISTANCE (R 15'-0")

KEYNOTE LEGEND	
Key Value	Keynote Text
70	A/C UNIT

UNIT SCHEDULE	
UNIT #	UNIT TYPE
UNIT 1	A1
UNIT 2	A2
UNIT 3	A3
UNIT 4	A1
UNIT 5	A4
UNIT 6	A5
UNIT 7	A3
UNIT 8	A6
UNIT 9	A3
UNIT 10	A3
UNIT 11	A5

TOTAL UNITS: 11

Legend

- Tree Protection Zone
- Root Plate Area
- Existing Concrete Pavement
- Protective Fencing

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SITE PLAN

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22013	Scale: 1/16" = 1'-0"

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APPENDIX A – Photos

ABOVE: Looking south at Tree #1. BELOW: The existing concrete driveway located in the Tree Protection Zone shall remain in place throughout the project as soil and root protection material.

ABOVE: Looking west at the low branch on Tree #1 that will be reduced at the arrow to accommodate the exterior wall of Unit #10. BELOW: Looking east at Tree #2.

ABOVE: The existing structures, which all encroach into the Tree Protection Zone, will need to be demolished with care so that no root zone disruptions occur outside of the footprints of the foundations. BELOW: The east side of the crown beyond the line will be reduced to accommodate the roofline of Unit #11.

ABOVE: Looking east at Tree #3. BELOW: A five-foot retaining wall will be built where the yellow line is drawn and the grade will be raised to that level. Excavation for the footing will occur in the trunk's location.

APPENDIX B - Protected Tree Construction Impact Guidelines

Size and Distribution of Tree Roots – Taken from Arboriculture, Integrated Management of Landscape Trees Shrubs and Vines. Harris, R.W., Clark, J.W., Matheny N.P. Prentice Hall 2004.

Roots of most plants, including large trees, grow primarily in the top meter (3 ft) of soil (see figure below). Most plants concentrate the majority of their small absorbing roots in the upper 150 mm (6 in.) of soil if the surface is protected by a mulch or forest litter. In the absence of a protective mulch, exposed bare soil can become so hot near the surface that roots do not grow in the upper 200 to 250 mm (8 to 10 in.). Under forest and many landscape situations, however, soil near the surface is most favorable for root growth. In addition, roots tend to grow at about the same soil depth regardless of the slope of the soil surface.

Although root growth is greatly influenced by soil conditions, individual roots seem to have an inherent guidance mechanism. Large roots with vigorous tips usually grow horizontally. Similar roots lateral to the large roots grow at many angles to the vertical, and some grow up into the surface soil. However, few roots in a root system actually grow down.

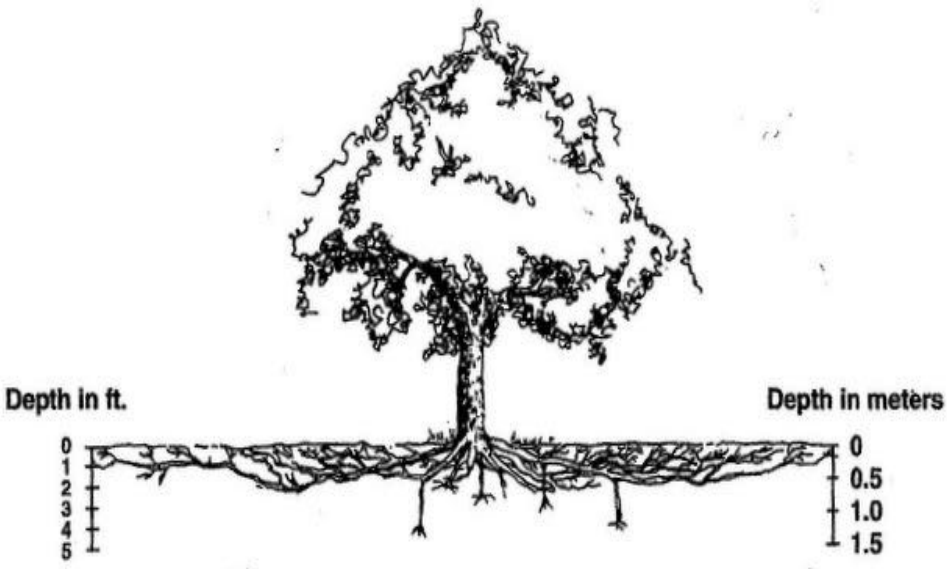

FIGURE In mature trees, the taproot is either lost or reduced in size. The vast majority of the root system is composed of horizontally oriented lateral roots.

The importance of soil

Soil supports and anchors tree roots and provides water, minerals and oxygen. Furthermore, soil is a habitat for soil microorganisms that enhance root function. A soil's ability to sustain tree growth is largely determined by its texture, structure (bulk density), organic matter, water and mineral content, salinity, aeration, and soil-microbe abundance and diversity.

Soil physical properties

Soil texture – the relative proportion of sand, silt and clay, is important because it affects water – and nutrient-holding capacity, drainage and aeration (gaseous diffusion). Soil structure is the arrangement of individual soil particles into clumps (aggregates). The net result is the formulation of larger voids between the aggregates which serve as channels for gaseous diffusion, movement of water and root penetration. Unfortunately, soil aggregates are readily destroyed by activities that compact the soil (increase bulk density). When this occurs, gaseous exchange, permeability, drainage and root growth are restricted.

The influence of the organic matter content of soil properties is quiet significant. Its decomposition by soil organisms releases substances that bind soil particles into larger granules, which improves both soil aeration, and drainage. In essence, the breakdown of organic matter improves water – and nutrient-holding capacity and reduces bulk density. Furthermore, it is the primary source of nitrogen and a major source of nitrogen and a major source of phosphorus and sulfur. Without organic matter soil organisms could not survive and most biochemical processes in the soil would cease.

Soil aeration, the movement and the availability of oxygen, is determined by both soil texture and structure. In general, compacted and finer soils, due to a higher proportion of small pore spaces (micropores), tend to drain slowly and hold less air than coarser, sandy, or well-structured find soils. Water retained in the small pores displaces oxygen and inhibits gaseous diffusion.

The availability of soil water is largely determined by the size of the pore spaces between the soil particles and the larger aggregates in which water is held. Most of the water in the larger pore spaces drains readily due to gravitational forces. A relatively thin film of water, which is readily available to plant roots, remains following drainage. Much of water held within the smaller pore spaces resists uptake by plant roots because it is held tightly on the soil surfaces.

Plant roots require an adequate supply of oxygen for development. Injury or dysfunction results when oxygen availability drops below a critical level. Root respiration is the first process to be restricted, followed by disruptions in growth, metabolism, nutrient and water uptake, and photosynthesis. Furthermore, the accumulation of high levels of

carbon dioxide, produced by the roots during respiration can also impair root function. Reduced soil aeration resulting from soil compaction, flooding, excess irrigation, or impervious pavement favors the development of crown rot (Phytophthora root disease). It also inhibits mycorrhizal fungi that enhance water and nutrient uptake and resist root pathogens.

The forest floor under a canopy in most undeveloped forests and woodland settings is typically covered by a layer of fallen leaves and other woody debris. It is usually cool, shady, well-aerated, and relatively moist – conditions that favor normal root growth. When the natural leaf litter is removed and when a tree's lower canopy is pruned up to provide clearance, the absorbing roots in the upper few inches of the soil experience higher soil temperatures and increased desiccation due to direct exposure to sunlight.

Minimizing the Effects of Construction and Development on Tree Root Systems

Activities that injure roots or adversely affect the root zone should be avoided or kept as far from the trunk as possible. Design changes or alternative building practices that avoid or minimize construction-related impacts should be considered and proposed when applicable.

Soil Compaction

Soils are intentionally compacted under structures, sidewalks, reads, parking areas, and load-bearing fill to prevent subsidence, and to prevent soil movement on slopes. Although unintentional, soil within the root zone of trees is often compacted by unrestricted foot traffic, parking of vehicles, operation of heavy equipment, and during installation of fill. Compaction destroys the soil's natural porosity by eliminating much of the air space contained within it. It leaves the soil hard and impenetrable and largely unfavorable for root growth. The soil's natural porosity, which allows for water movement and storage, gaseous exchange, and root penetration, is greatly reduced. Consequently, root growth and tree health suffer. Soil compaction is best managed by preventing it.

Bulk density is used to describe a soil's porosity, or the amount of space between soil particles and aggregates. High bulk densities indicate a low percentage of total pore space.

Pavement

Paving over the root systems of trees is another serious problem because it reduces the gaseous diffusion and soil moisture. Most paving materials are relatively impervious to water penetration and typically divert water away from a tree's root zone. Cracks and expansion joints do, though, allow for some water infiltration into the soil below. Of greater concern, is the loss of roots from excavation to achieve the required grade, and the necessary compaction to prevent subsidence. Once the soil surface is compacted, a

base material is then added and compacted as well. With that done, the surface can then be paved. Thus, pavement within the root zones of trees can damage roots and create unfavorable soil conditions. One alternative to minimize pavement impacts is to consider placing the pavement on the natural grade over a layer of minimally compacted base material. To reduce sub-grade compaction, consider using reinforced concrete or asphalt over a geotextile blanket to help stabilize the soil. On-grade patios or paving that covers more than one-third of the tree protection zone (TPZ) should be constructed using permeable materials that allow aeration and water penetration. Soil under permeable surfaces should not be compacted to more than 80 percent.

Excavation and root pruning

Excavation within the root zones of trees should be avoided as much as possible. The extent of root pruning (selective) or cutting (non-selective) should be based on the species growth characteristics and adaptive traits, environmental conditions, age, health, crown size, density, live crown ration and structural condition of the tree. The timing of the root pruning or cutting is another important consideration. Moderate to severe root loss during droughts or particularly hot periods can cause serious water-deficit injury or death.

When root pruning/ cutting is unavoidable, roots should be pruned or cut as far from the trunk as possible. Cutting roots on more than one side of a tree should also be avoided. Root cutting extending more than half-way around a tree should generally be no closer

than about 10 times the trunk diameter. Recommended distances range from as little as 6 times trunk diameter (DBH) for young trees to 12 times trunk diameter for mature trees. The size of the TPZ should, however, be increased for over mature and declining trees and species that are sensitive to root loss.

The minimum distance from the trunk that roots can be cut on one side of the tree without destabilizing it, is a distance equal to about three times the diameter (DBH) of the trunk. Roots severed within that distance provide little or no structural support. Root pruning or cutting distances from the trunk should be greater for trees that lean and/ or those growing on shallow or wet soil.

In cases where the proposed grading will adversely affect trees designated for retention, special attention should be given to proper root pruning and post-construction care for injured trees.

When excavation within 5 times trunk diameter is unavoidable, roots greater than 1 ½ inches in diameter should be located prior to excavation and then pruned to avoid unnecessary damage. Hand-digging or use of a hydraulic or pneumatic soil excavation tool is the least disruptive way to locate roots for pruning. Although mechanical root pruners make clean cuts, they are non-selective. A backhoe bucket, dozer blade or trencher will typically pull, rip or shatter the larger root, causing additional damage toward the tree. Once the roots that interfere with the structure being built, e.g.,

foundations, footings, retaining wall, curbs, etc., are exposed, they should then be cut perpendicular to their long axis using a hand-saw, 'carbide-tipped chainsaw' or sharp ax, depending on size. Roots that are pruned in this manner typically regenerate new roots from near the cut. Roots exposed by excavation should be protected from exposure to sun and desiccation. Exposed roots that can not be covered with soil by the end of the day should be covered with moistened burlap or similar material.

Roots can generally be cut in a non-selective manner when excavating near of beyond the dripline. Ripped, splintered or fractured portions of roots however, should be re-cut. The damaged portion should be removed using sharp tools. The cut should be flat across the root with the adjacent bark intact. Wound dressings should not be applied to pruned or damaged roots except when recommended for disease, insect or sprout control.

The best approach to avoid water-deficit injury following root loss during the growing season is to provide ample irrigation. Irrigation should be considered prior to, during, and after root pruning. Watering schedules should also consider local soil conditions, climate, topography, time of year, species adaptability, extent of root pruning and tree health. If possible, irrigate the tree 7 to 10 days prior to excavation so that there is an adequate reservoir of soil water. Water can be delivered to large construction sites via water-tank trucks and applied directly to affected trees or stored nearby in plastic tanks. On relatively flat terrain, a 6 to 8 inch soil berm at the tree's dripline should be constructed to act as a watering basin. On steep terrain, soaker hoses should be used. They can be placed across the slope or spirally around the trunk, from about six feet away to the dripline. In addition, a two to four inch layer of wood chip mulch should be applied to as much of the root zone as possible to retard soil water loss.

Pruning foliage to compensate for root loss is not supported by scientific research and likely to result in slower recovery. Fertilization to stimulate root growth is generally unwarranted and may be counterproductive.

Trenching within the Tree Protection Zone

Trenching for underground utilities should be routed around the TPZ. When this is unavoidable, trenching within the TPZ should be done by 'hand' or using a pneumatic or hydraulic soil excavation tool, carefully working around larger roots. Roots larger than 1 ½ inches in diameter should not be cut. Dig below these roots to route utilities or install drains. A combination of tools can also produce satisfactory results, for example, a skillful backhoe operator under the arborist's supervision can dig down several inches at a time and detect larger roots by 'feel' (resistance). At that point, as assistant can expose the root and dig around it. In this manner, the backhoe can then continue extending the trench though the TPZ. Tunneling (boring) through the TPZ is the preferable alternative. For most large trees, tunneling depth should be at least 36 inches. Tunneling should begin at the edge of the TPZ, but no closer than a distance equal to one foot of clearance for each inch of tree DBH. Tunnels should also be offset to either side of the trunk. For trenching that extends only part way into TPZ, consider trenching radially to the tree trunk, as this is less harmful than tangential trenching. All trenches

made within the TPZ should be backfilled as quickly as possible to prevent root and soil desiccation.

Managing Root Injured Trees

Root-pruned trees should be monitored for symptoms of water-deficit injury for a specified period following root pruning. Irrigation should be considered prior to, during, and after root pruning. Irrigation schedules should consider local soil conditions, climate, topography, time of year, species tolerance, extent of root pruning and tree health.

Grade Change: Fill Soil

Fill soil placed within the root zones of trees can have an adverse effect, particularly if the soil is compacted to support a structure or pavement. Soil compaction reduces aeration and water infiltration. Fill soil, which can have textural changes, can also prevent water from penetrating the original soil layer below where the roots are. Furthermore, soil placed against the root crown and lower trunk can lead to root disease problems, especially if the soil near the trunk remains moist during the summer from irrigation. Alternatives to placing fills over root zones shall be considered and proposed as appropriate.

Appendix C - Space Required for a Stable Root Plate

Taken from: Tree Anchorage and Root Strength, by Dr. Kim Coder, Univ. of Georgia

Trees develop stiff, shallow, quickly tapering roots around their stem base. These large roots and associated soil form a compound, horizontal, disk-like structure on and in soil referred to as a "root plate." A root plate can be the same as, or a great deal larger in diameter than a "zone of rapid taper" (ZRT), depending upon the author. A ZRT usually is associated with defining the distance away from a stem of leeward root hinging or bending. Since root plate and ZRT are not synonymous in arboricultural terms, only the term "root plate" will be used here.

Plate Size

There are several ways to describe or define a root plate. One way to define a root plate is as an ellipse when viewed looking down on a tree and soil surface, as in the figure on the right. In this case, the ratio of short axis to long is about 0.85. The root plate long axis can be determined by multiplying the stem diameter in inches times 0.92 to yield the long axis in feet. For example, a 9.5 inch tree would have a root plate with dimensions of 8.7 feet perpendicular to the wind direction (long axis of the ellipse) and 7.4 feet parallel to the wind direction (short axis of the ellipse). (Koizumi et al. 2007)

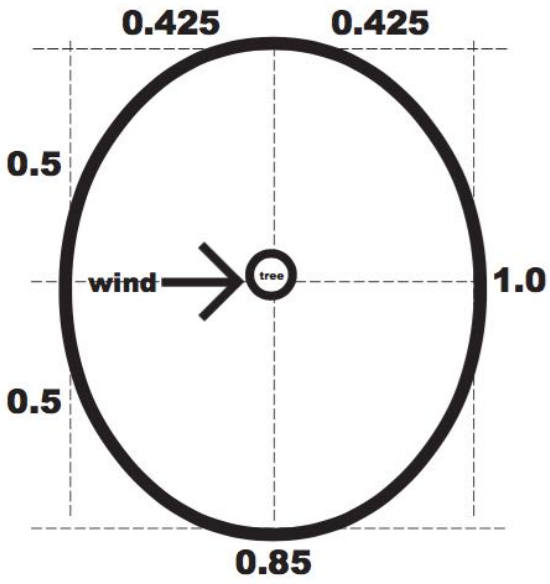

Figure 31: Proportions of a tree root plate viewed from above, delineated with an ellipse having a long axis of 1.0 and a short axis of 0.85.
(from Koizumi et al. 2007)

These root plate dimensions can then be used to estimate differences in resistance to over- turning: (Koizumi et al. 2007; modified from Koizumi et al. 2007

Root plate resistance to overturning =

[(root plate radius to windward)^2 X (root plate diameter)] / 3

or

[($DBH_{in.}$ X 0.39)^2 X ($DBH_{in.}$ X 0.92)] / 3

Specific components of root plates cited here as having key roles in resistance to up-rooting include two counteracting forces: A) increasing dimensions of the windward side of root plate resisting up-turning; and, B) increasing upturning force applied to entire root plate initiating up-turning. In these formula, simple surface measures of root plate dimensions or stem diameter help define anchorage, with emphasis on windward roots. Note this study examined root plates with depths of ~24 inches, but root plate depth was not found to be a significant factor for anchorage. (Koizumi et al. 2007)

Plate Measures

Other ways to define root plates are circular shaped delineations at the soil surface proportional to tree diameter. An easy root plate definition method is to use stem diameter (DBH) times some value. Figure 32. The Coder structural root plate formula multiplies tree diameter in inches times 1.2 for the extent of windward roots holding in tension into the wind (in feet), 0.9 for the standard structural root plate diameter (in feet), or 0.3 for the position away from a stem base of the leeward hinge or bending point opposite from the wind (in feet). In contrast, another way to define a root plate diameter in feet is by taking the diameter of a tree in inches times 0.367. (Danjon et al. 2005) Many other calculations exist. Clearly no calculation will fit the highly variable conditions existing in tree root system development.

A side view (depth view) of a root plate in cross-section has been defined as a shallow cone under a stem base. Figure 33. The depth is limited by aerobic soil values. (Peltola 2006) Another way of defining a side cross-section of a root plate is as a half ellipse shape with a proportion ratio of roughly 3 units horizontal radius to 2 units depth from the stem base. Figure 34. The normal hinge or bending point is considered to be 1 unit away from the stem base on the leeward side. (Lundstrom et al. 2007) An additional definition of root plate depth is 1/3 maximum rooting depth. (Danjon et al. 2005) The Coder structural root plate formula multiples tree diameter in inches times 0.6 for a root plate depth in feet within an unconstrained rooting volume.
Stiffness Successful tree anchorage comes from a stiff root plate. The stiffness or rigidity of a root plate is proportional to root plate diameter to the 4^{th} power. (Tobin et al. 2007; Coutts et al. 1999) Figure 35. For example, a 1-foot increase in diameter of a 10 feet diameter root plate (+10% diameter increase) represents a +46% increase in root plate stiffness.

Root plate symmetry, in addition to stiffness, is also critical to anchorage. Root plates providing effective anchorage display no more than 60% of the roots along the axis of dominant winds. Leeward roots tend to be larger in diameter at the surface and have sinkers growing downward. Windward roots tend to be longer and more distally branched. (Tobin et al. 2007)

In one study, leeward roots in the root plate were reinforced +21% more than other roots generating a greater volume of roots due primarily to greater diameter growth. Beyond the root plate, windward roots were reinforced +30% more than other roots generating a greater volume of roots. To windward, both root length (+28%) and root number (+32%) were increased. (Danjon et al. 2005)

Soil Changes

Tree root plate stability is impacted by soil type. Comparing sand and clay soils, with everything else being equal, tree anchorage in sandy soils depended predominantly upon rooting depth and conservation of windward roots. (Dupuy et al. 2005b) In sandy soils, plate stiffness shared by many roots defines resistance to failure, especially stiffness of leeward roots. (Fourcaud et al. 2008) In clay soils, tree anchorage depended predominately upon larger root diameters and conservation of both windward and leeward roots close to the stem base. (Dupuy et al. 2005b) In clay soils, plate resistance to failure can be defined by the 2-3 longest roots, not by root biomass. (Fourcaud et al. 2008)

Appendix D - Defining the Tree Protection Zone

Taken from ANSI A300 Standard Practices (Managing Trees During Construction)

A tree's Critical Root Zone (CRZ) is the area around the trunk where roots essential for tree health and stability are located. A Tree Protection Zone (TPZ) is an arborist-defined area surrounding the trunk intended to protect roots and soil within the critical root zone and beyond, to ensure future tree health and stability. There are many methods for determining size for a TPZ. The dripline method uses the tree's canopy dripline to define the boundary of the TPZ (Figure 1). The entire area within the dripline is considered the TPZ.

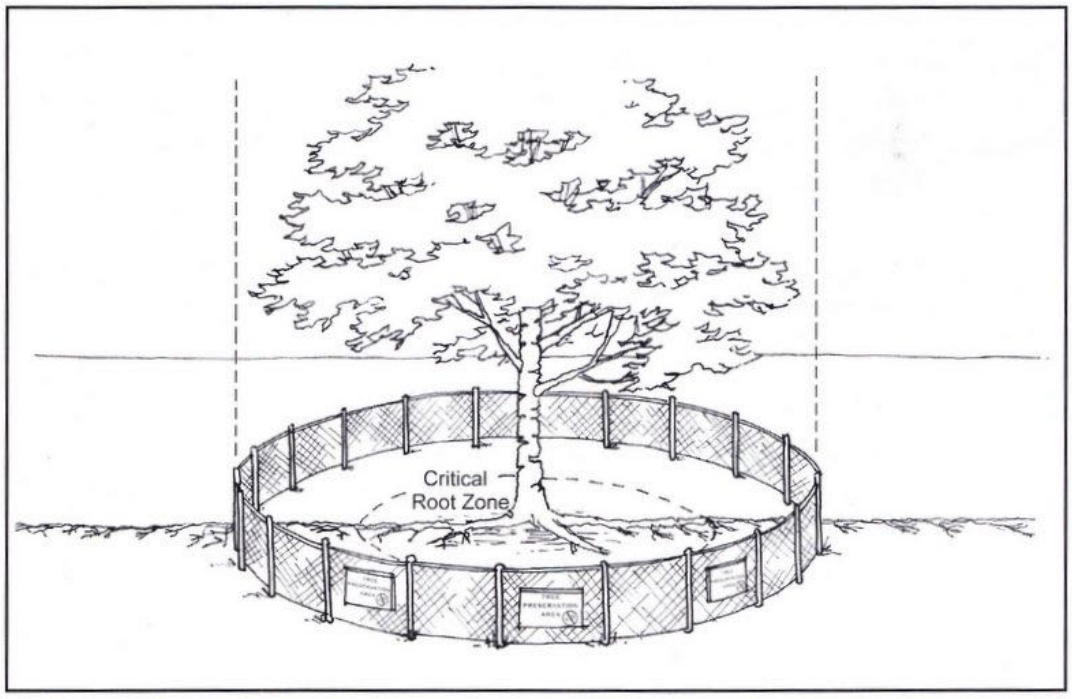

Figure 1. Dripline method of establishing a TPZ.

Leaning trunks, excurrent trees, trees with small or suppressed canopies, and trees with irregular rooting areas (often caused by infrastructure or geological factors in the area) introduce complexity in determining the TPZ because the dripline of the canopy may not incorporate an adequate amount of the root zone for successful preservation. In these and other situations the TPZ can be calculated from the trunk diameter. The trunk diameter method is based on diameter measured at 4.5 feet (1.4 m); this measurement is multiplied by a factor of 6 to 18 to determine the radius of the TPZ (Table 1; Figure 2). For example, a mature tree with medium tolerance to construction damage with a 30-inch trunk diameter would have a TPZ radius of 360 to 540 inches (30 to 45 feet).

Even when the TPZ is placed at the dripline or at the location defined by the trunk diameter method, large portions of the root system may be lost. The arborist needs to inspect the tree and site and alter the TPZ as needed to provide adequate protection for the tree.

Table 1. Guidelines for determining tree protection zones of healthy, structurally sound trees (adapted from Matheny and Clark, 1998 and the British Standards Institute).

Species Tolerance to Construction Damage	Relative Tree Age	Distance from Trunk to TPZ Boundary		
		in multiples of Trunk Dia.	in feet per inch of Trunk Dia.	in meters per cm of Trunk Dia.
High	Young	6	0.50	0.06
	Mature	8	0.75	0.09
	Overmature	12	1.00	0.12
Medium	Young	8	0.75	0.09
	Mature	12	1.00	0.12
	Overmature	15	1.25	0.15
Low	Young	12	1.00	0.12
	Mature	15	1.25	0.15
	Overmature	18	1.50	0.18

The TPZ should be established before any site work begins. Trees on adjacent properties may also need to have TPZ established if they are close to construction activities.

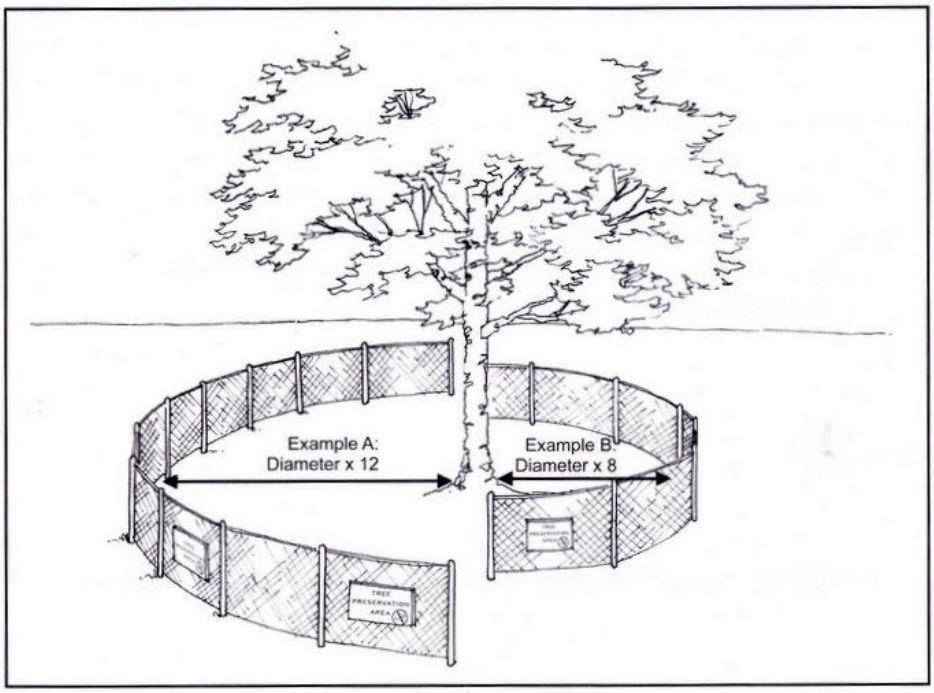

Figure 2. Measurements to use the trunk formula method of determining distances from the trunk to the TPZ.

D x M = Distance to TPZ fence
D = Diameter at 4.5 ft (1.4 m)
M = Multiplier based on species tolerance and tree age

Example A: Calculating the TPZ for a medium tolerance, mature tree with a diameter of 20 inches (51 cm)
D x 12 = 20 in (51 cm) x 12 = 240 in (610 cm) = 20 ft (6 m)

Example B: Calculating the TPZ for a highly tolerant, mature tree with a diameter of 20 inches (51 cm)
D x 8 = 20 in (51 cm) x 8 = 160 in (406 cm) = 13.3 ft (4.1 m)

In some cases, none of these methods will be acceptable and excavation must be conducted within the TPZ. In these cases the TPZ may need to be reduced in size on one or more sides of the tree. Increasing the TPZ on the opposite side of the tree, may be beneficial with this occurs. The TPZ may also need to be temporarily reduced in size while work is done. It can then be returned to the full size after that particular part of the development phase. In any case, the TPZ should not be reduced to an area smaller than the CRZ. Compromising the CRZ will reduce the chances of long-term tree survival and increase the risk of tree failure.

In addition to preserving existing trees, areas for future tree planting should be preserved in an undisturbed state, if possible. The areas for planting should be treated with the same care as the areas within the TPZ. The goal is to protect the soil structure and soil resources, so future plantings will be better able to thrive.

BIBLIOGRAPHY

FITE, K. and SMILEY, T. 2008. Best Management Practices Managing Trees During Construction - Companion publication to the ANSI A300 Part 5: Tree, Shrub and Other Woody Plant Maintenance. *International Society of Arboriculture.*

GILMAN, E. and LILLY, S. 2002. Best Management Practices Tree Pruning - Companion publication to the ANSI A300 Part 1: Tree, Shrub and Other Woody Plant Maintenance – Standard Practices, Pruning. *International Society of Arboriculture*

CODER, K. 2018. Tree Anchorage and Root Strength. *Univ. of Georgia*

AUTHOR'S CURRENT CREDENTIALS

The American Society of Consulting Arborists

in recognition of fulfillment of the requirements for
Registered Consulting Arborist status

confers upon

Michael Crane, RCA #440

Registered Membership
January 18, 2006

President

ASCA
AMERICAN SOCIETY of CONSULTING ARBORISTS

Executive Director

The International Society of Arboriculture

Hereby Announces That

Michael J. Crane

Has Earned the Credential

ISA Board Certified Master Arborist®

By successfully meeting ISA Board Certified Master Arborist certification requirements through demonstrated attainment of relevant competencies as supported by the ISA Credentialing Council

Caitlyn Pollihan
CEO & Executive Director

9 November 2006	31 December 2027	WE-6643B
Issue Date	Expiration Date	Certification Number

CERTIFICATION OF PERFORMANCE

I, Michael Crane, certify that:

- I have personally inspected the tree(s) and the property referred to in this report and have stated my findings accurately.
- 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.
- The analysis, opinions, and conclusions stated herein are my own and are based on current scientific procedures and facts.
- My analysis, opinions, and conclusions were developed and this report has been prepared according to commonly accepted arboricultural practices.
- No one provided significant professional assistance to me, except as indicated within the report.
- My compensation is not contingent upon the reporting of a predetermined conclusion that favors the cause of the client or any other party not upon the results of the assessment, the attainment of stipulated results, or the occurrence of any subsequent events.

I further certify that I am a member in good standing of the American Society of Consulting Arborists and the International Society of Arboriculture. I have been involved in the field of Horticulture in a full-time capacity for a period of more than 15 years.

Signed: _____

Registered Consulting Arborist #440; American Society of Consulting Arborist
Board Certified Master Arborist #WE 6643B; International Society of Arboriculture
Licensed California Agricultural Pest Control Adviser #AA08269

Date: July 31, 2025

Appendix C
Cultural Resources Report

Cultural Resources Technical Report

1404 Royal Oaks Project, City of Duarte, Los Angeles County, California

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March 2025

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Executive Summary

South Environmental was retained to complete a cultural resources technical report for the 1404 Royal Oaks Project (project) in the City of Duarte, Los Angeles County, California. This study includes the results of a California Historical Resources Information Center (CHRIS) records search of the project site and a one-half-mile radius; an intensive-level pedestrian survey of the project site by a qualified cultural resources specialist; and evaluation of built environment resources over 45 years old for historical significance by a qualified architectural historian in consideration of California Register of Historical Resources (CRHR) and local designation criteria and integrity requirements. This study was completed in compliance with the California Environmental Quality Act (CEQA) and all applicable City of Duarte codes, ordinances, and plans.

The project site is comprised of the addresses and Assessor's Parcel Numbers (APNs) 1404 Royal Oaks Drive (APN 8530-004-059) and 1414 Royal Oaks Drive (APN 8530-004-060). One property, identified as 1404 Royal Oaks Avenue, was constructed in 1953. It was recorded and evaluated for historical significance in consideration of California Register of Historical Resources (CRHR) and local designation criteria and integrity requirements. The property was found not eligible under all designation criteria due to a lack of significant historical associations and architectural merit. In addition, there is not enough architectural cohesion or integrity present in the surrounding properties to indicate the potential for a historic district. The remaining property within the project site boundaries was constructed in 1999 and is therefore not of historic age and does not require recordation and evaluation.

No archaeological resources were identified within the project site as a result of the CHRIS records search or pedestrian survey. Further, most of the project site has been heavily disturbed by the previous construction of residential buildings and subsurface infrastructure. Therefore, the project site is unlikely to contain intact buried archaeological deposits; however, ground disturbance always presents a possibility of encountering resources. Standard unanticipated discovery procedures for archaeological resources and human remains are provided in Section 8.2. With implementation of these regulatory requirements, the proposed project would have a less than significant impact on cultural resources.

In conclusion, no historic built environment or archaeological cultural resources were identified within the project site as a result of this study. Therefore, the proposed project will have a less than significant impact on cultural resources under CEQA. No mitigation is required.

1 Introduction

South Environmental was retained to complete a cultural resources technical report for Royal Oaks Project (project) in the City of Duarte, Los Angeles County, California. This study includes the results of a California Historical Resources Information Center (CHRIS) records search of the project site and a one-half-mile radius; an intensive-level pedestrian survey of the project site by a qualified cultural resources specialist; and evaluation of built environment resources over 45 years old for historical significance by a qualified architectural historian in consideration of California Register of Historical Resources (CRHR) and local designation criteria and integrity requirements. This study was completed in compliance with the California Environmental Quality Act (CEQA) and all applicable City of Duarte codes, ordinances, and plans.

The historic built environment components of this report and the property significance evaluation were prepared by South Environmental Architectural Historian Marlena Krcelich, BA and Principal Architectural Historian Sarah Corder, MFA, who meet the Secretary of the Interior's Professional Qualification Standards (PQS) for architectural history and history. All archaeological components of the report were prepared by South Environmental Archaeologist Samantha Jovanovic, MA, MS, Principal Archaeologist, Kevin Hunt, BA and Archaeological Principal Investigator Samantha Murray, MA, Registered Professional Archaeologist (RPA), who meet the PQS for archaeology and history. Resumes for all report authors are provided in Appendix D.

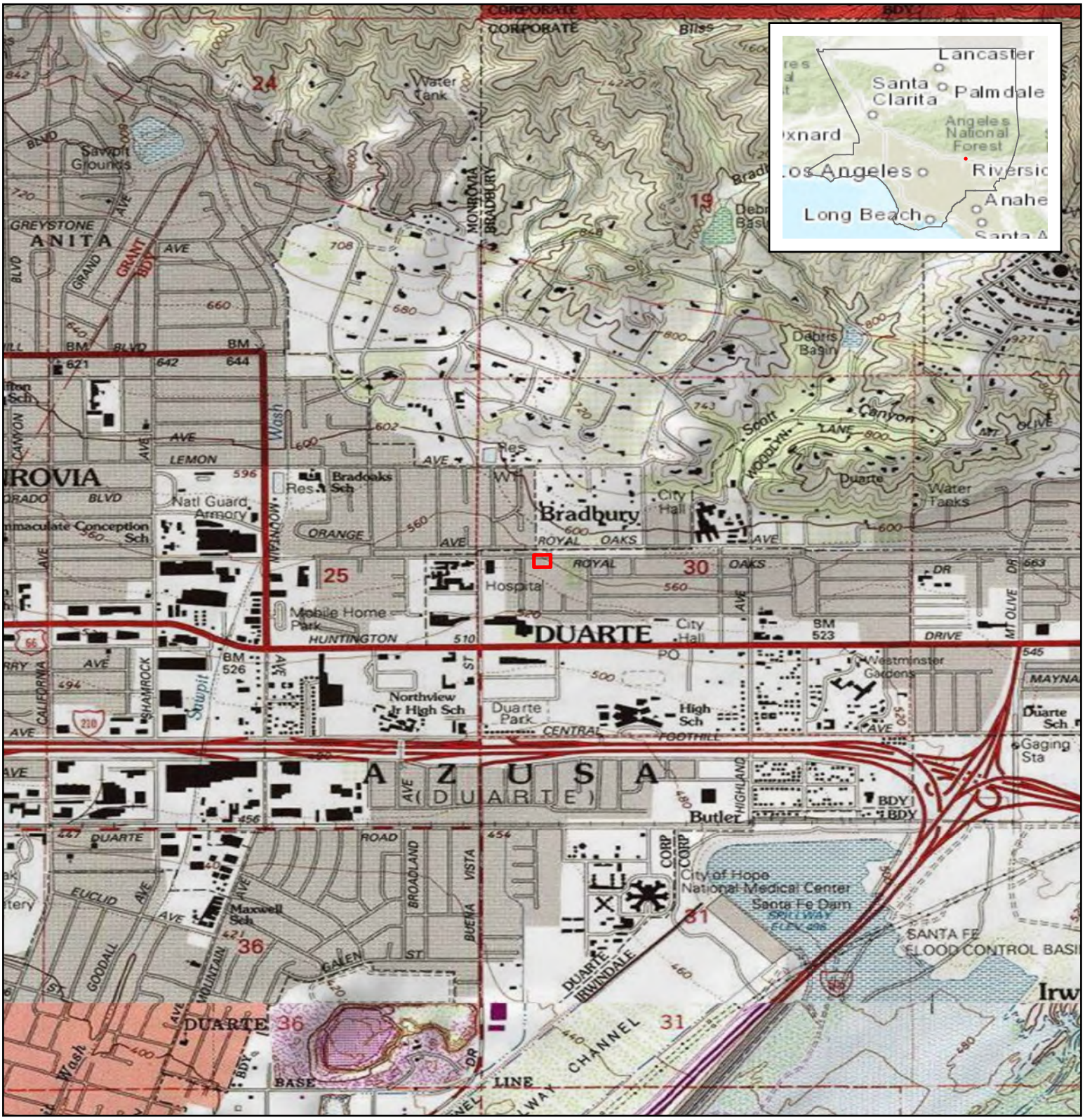
1.1 Project Location

The project site is comprised of the addresses and Assessor's Parcel Numbers (APNs) 1404 Royal Oaks Drive (APN 8530-004-059) constructed in 1953 and 1414 Royal Oaks Drive (APN 8530-004-060) constructed in 1999. The site is bound by Royal Oaks Drive to the north, 1st Street to the south, an unnamed alley to the west, and a residence to the east. It is located approximately 0.2-mile north of Historic Route 66/Huntington Drive and approximately 0.5-mile north of Interstate 210.

The project site is depicted on the U.S. Geological Survey (USGS) *Azusa, California* 7.5-minute topographic quadrangle map, and within Section 30 of Township 01 North, Range 10 West, San Bernardino base and meridian (Figures 1 and 2).

1.2 Project Description

The project proposes a General Plan Amendment for density, and a Zone Change from R-1 to R-3, for the development of 11 townhouses on a 40,540 square foot (approximately 0.84 acre) property. Two existing single-family homes are within the project site at 1404 and 1414 Royal Oaks Drive and are proposed for demolition as part of the project.



Source: ESRI USA Topo Maps and World Topo Map 2025

City of Duarte - 1404 Royal Oaks CEQA Project

Figure 1. Project Location Map

Project Site

Project Site is within Duarte, California, in Los Angeles County
on the USGS Azusa 7.5-minute quadrangle map
in Section 30 of Township 01 North and Range 10 West

Center Coordinate (Decimal Degrees):
Latitude: 34.1429354N Longitude: -117.9750467W

0 1,000 2,000 Feet

Scale: 1:24,000

N

SOUTH ENVIRONMENTAL

Source: BING Aerial Map 2025

City of Duarte - 1404 Royal Oaks CEQA Project

Figure 2. Project Site Detail

Project Site

0 36.25 72.5 Feet

N

Scale: 1:700

SOUTH ENVIRONMENTAL

2 Regulatory Setting

2.1 State

2.1.1 California Register of Historical Resources

In California, the term "historical resource" includes but is not limited to "any object, building, structure, site, area, place, record, or manuscript which is historically or archaeologically significant, or is significant in the architectural, engineering, scientific, economic, agricultural, educational, social, political, military, or cultural annals of California" (California Public Resources Code [PRC] Section 5020.1(j)). In 1992, the California legislature established the California Register of Historical Resources (CRHR) "to be used by state and local agencies, private groups, and citizens to identify the state's historical resources and to indicate what properties are to be protected, to the extent prudent and feasible, from substantial adverse change" (California PRC Section 5024.1(a)). The criteria for listing resources on the CRHR were expressly developed to be in accordance with previously established criteria developed for listing in the National Register of Historic Places (NRHP), enumerated below. According to California PRC Section 5024.1(c)(1–4), a resource is considered historically significant if it (i) retains "substantial integrity," and (ii) meets at least one of the following criteria:

(1) Is associated with events that have made a significant contribution to the broad patterns of California's history and cultural heritage.

(2) Is associated with the lives of persons important in our past.

(3) Embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of an important creative individual, or possesses high artistic values.

(4) Has yielded, or may be likely to yield, information important in prehistory or history.

In order to understand the historic importance of a resource, sufficient time must have passed to obtain a scholarly perspective on the events or individuals associated with the resource. A resource less than 50 years old may be considered for listing in the CRHR if it can be demonstrated that sufficient time has passed to understand its historical importance (see 14 CCR 4852(d)(2)).

The CRHR protects cultural resources by requiring evaluations of the significance of prehistoric and historic resources. The criteria for the CRHR are nearly identical to those for the NRHP, and properties listed or formally designated as eligible for listing in the NRHP are automatically listed in the CRHR, as are the state landmarks and points of interest. The CRHR also includes properties designated under local ordinances or identified through local historical resource surveys.

2.1.2 California Environmental Quality Act

As described further below, the following CEQA statutes and CEQA Guidelines are of relevance to the analysis of archaeological, historic, and tribal cultural resources:

- California PRC Section 21083.2(g) defines "unique archaeological resource."
- California PRC Section 21084.1 and CEQA Guidelines Section 15064.5(a) define "historical resources." In addition, CEQA Guidelines Section 15064.5(b) defines the phrase "substantial adverse change in the significance of an historical resource." It also defines the circumstances when a project would materially impair the significance of an historical resource.
- California PRC Section 21074(a) defines "tribal cultural resources."
- California PRC Section 5097.98 and CEQA Guidelines Section 15064.5(e) set forth standards and steps to be employed following the accidental discovery of human remains in any location other than a dedicated ceremony.
- California PRC Sections 21083.2(b)-(c) and CEQA Guidelines Section 15126.4 provide information regarding the mitigation framework for archaeological and historic resources, including examples of preservation-in-place mitigation measures; preservation-in-place is the preferred manner of mitigating impacts to significant archaeological sites because it maintains the relationship between artifacts and the archaeological context and may also help avoid conflict with religious or cultural values of groups associated with the archaeological site(s).

More specifically, under CEQA, a project may have a significant effect on the environment if it may cause "a substantial adverse change in the significance of an historical resource" (California PRC Section 21084.1; CEQA Guidelines Section 15064.5(b).) If a site is either listed or eligible for listing in the CRHR, or if it is included in a local register of historic resources or identified as significant in a historical resources survey (meeting the requirements of California PRC Section 5024.1(q)), it is a "historical resource" and is presumed to be historically or culturally significant for purposes of CEQA (California PRC Section 21084.1; CEQA Guidelines Section 15064.5(a)). The lead agency is not precluded from determining that a resource is a historical resource even if it does not fall within this presumption (California PRC Section 21084.1; CEQA Guidelines Section 15064.5(a)).

A "substantial adverse change in the significance of an historical resource" reflecting a significant effect under CEQA means "physical demolition, destruction, relocation, or alteration of the resource or its immediate surroundings such that the significance of an historical resource would be materially impaired" (CEQA Guidelines Section 15064.5(b)(1); California PRC Section 5020.1(q)). In turn, CEQA Guidelines section 15064.5(b)(2) states the significance of an historical resource is materially impaired when a project:

1. Demolishes or materially alters in an adverse manner those physical characteristics of an historical resource that convey its historical significance and that justify its inclusion in, or eligibility for, inclusion in the California Register of Historical Resources; or
2. Demolishes or materially alters in an adverse manner those physical characteristics that account for its inclusion in a local register of historical resources pursuant to section 5020.1(k) of the PRC or its identification in an historical resources survey meeting the requirements of section 5024.1(g) of the PRC, unless the public agency reviewing the effects of the project establishes by a preponderance of evidence that the resource is not historically or culturally significant; or
3. Demolishes or materially alters in an adverse manner those physical characteristics of a historical resource that convey its historical significance and that justify its eligibility for inclusion in the California Register of Historical Resources as determined by a lead agency for purposes of CEQA.

Pursuant to these sections, the CEQA inquiry begins with evaluating whether a project site contains any "historical resources," then evaluates whether that project will cause a substantial adverse change in the significance of a historical resource such that the resource's historical significance is materially impaired.

If it can be demonstrated that a project will cause damage to a unique archaeological resource, the lead agency may require reasonable efforts be made to permit any or all of these resources to be preserved in place or left in an undisturbed state. To the extent that they cannot be left undisturbed, mitigation measures are required (California PRC Section 21083.2[a], [b], and [c]).

California PRC Section 21083.2(g) defines a unique archaeological resource as an archaeological artifact, object, or site about which it can be clearly demonstrated that without merely adding to the current body of knowledge, there is a high probability that it meets any of the following criteria:

1. Contains information needed to answer important scientific research questions and that there is a demonstrable public interest in that information.
2. Has a special and particular quality such as being the oldest of its type or the best available example of its type.
3. Is directly associated with a scientifically recognized important prehistoric or historic event or person.

Impacts to non-unique archaeological resources are generally not considered a significant environmental impact (California PRC section 21083.2(a); CEQA Guidelines Section 15064.5(c)(4)). However, if a non-unique archaeological resource qualifies as tribal cultural resource (California PRC Section 21074(c), 21083.2(h)), further consideration of significant impacts is required. CEQA Guidelines Section 15064.5 assigns special importance to human remains and specifies procedures to be used

when Native American remains are discovered. As described below, these procedures are detailed in California PRC Section 5097.98.

2.1.3 California State Assembly Bill 52 of 2014 (AB 52)

AB 52 amended PRC Section 5097.94 and added PRC Sections 21073, 21074, 21080.3.1, 21080.3.2, 21082.3, 21083.09, 21084.2, and 21084.3. Section 4 of AB 52 adds Sections 21074(a) and (b) to the PRC, which address tribal cultural resources and cultural landscapes. Section 21074(a) defines tribal cultural resources as one of the following:

(1) Sites, features, places, cultural landscapes, sacred places, and objects with cultural value to a California Native American tribe that are either of the following:

(A) Included or determined to be eligible for inclusion in the California Register of Historical Resources.
(B) Included in a local register of historical resources as defined in subdivision (k) of Section 5020.1.

(2) A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Section 5024.1. In applying the criteria set forth in subdivision (c) of Section 5024.1 for the purposes of this paragraph, the lead agency shall consider the significance of the resource to a California Native American tribe.

Section 1(a)(9) of AB 52 establishes that "a substantial adverse change to a tribal cultural resource has a significant effect on the environment." Effects on tribal cultural resources should be considered under CEQA. Section 6 of AB 52 adds Section 21080.3.2 to the PRC, which states that parties may propose mitigation measures "capable of avoiding or substantially lessening potential significant impacts to a tribal cultural resource or alternatives that would avoid significant impacts to a tribal cultural resource."

2.1.4 California Health and Safety Code Section 7050.5

California law protects Native American burials, skeletal remains, and associated grave goods, regardless of their antiquity, and provides for the sensitive treatment and disposition of those remains. California Health and Safety Code Section 7050.5 requires that if human remains are discovered in any place other than a dedicated cemetery, no further disturbance or excavation of the site or nearby area reasonably suspected to contain human remains can occur until the county coroner has examined the remains (Health and Safety Code Section 7050.5(b)). PRC Section 5097.98 also outlines the process to be followed in the event that remains are discovered. If the coroner determines or has reason to believe the remains are those of a Native American, the coroner must contact the NAHC within 24 hours (Health and Safety Code Section 7050.5(c)). The NAHC will notify the "most likely descendant." With the permission of the landowner, the most likely descendant may inspect the site of discovery. The inspection must be completed within 48 hours of notification of the most likely descendant by the

NAHC. The most likely descendant may recommend means of treating or disposing of, with appropriate dignity, the human remains and items associated with Native Americans.

2.2 Local

2.2.1 City of Duarte General Plan

Chapter 7 Historic Preservation Element

The following is taken directly from the Historic Preservation Element of the City of Duarte General Plan:

This section provides draft Goals, Objectives, and Policies for the Historic Preservation Element of the Duarte General Plan. To preserve the historic built environment of the City of Duarte for future generations requires putting commitments into actions. These goals and objectives have been developed to provide direction for the future development of Duarte's historic preservation program. By adopting these goals and objectives as part of the General Plan, Duarte affirms its commitment to historic preservation.

Historic Preservation Goal 1: To make citizens and decision-makers aware of Duarte's history and historic built environment.

Objective 1.1 Create an educational program which focuses on providing information to allow residents and decision-makers to make informed decisions and supportable conclusions about the protection of historic resources.

> Policy HP 1.1.1 Establish and support all appropriate media for reaching all segments of the community to educate residents and decision-makers concerning the protection of historical resources.
> Policy HP 1.1.2 Encourage public outreach and access to historical information.

Objective 1.2 Promote the development of a comprehensive preservation program.

> Policy HP 1.2.1 Utilize creative funding sources to promote the development of a comprehensive historic preservation program for the City.

Objective 1.3 Integrate historic preservation into the operations of the Community Development Department.

> Policy HP1.3.1 Encourage training of City staff related to the development and application of historic preservation.
> Policy HP1.3.2 Develop a database and update maps which identify potentially historical resources and designated resources.

Historic Preservation Goal 2: To maintain and update the City's inventory of historical resources.

Objective 2.1 Preserve Duarte's historical resources by supporting continued research related to the City's historic resources inventory.

> Policy HP 2.1.1 Encourage on-going research regarding the City's history and built environment.

Historic Preservation Goal 3: To promote the preservation of local historical resources.

Objective 3.1 Preserve the City's inventory of historical resources for future generations to enjoy.

> Policy HP 3.1.1 Encourage property owners to preserve the character defining features of historical resources.
> Policy HP 3.1.2 Promote the preservation of historic and cultural resources by providing incentives and technical assistance.

2.2.2 City of Duarte Municipal Code

Section 16.40.020 Definitions

"Historic structure" means any structure that is:

(1) Listed individually in the National Register of Historic Places (a listing maintained by the Department of Interior) or preliminarily determined by the Secretary of the Interior as meeting the requirements for individual listing on the national register;

(2) Certified or preliminarily determined by the Secretary of the Interior as contributing to the historical significance of a registered historic district or a district preliminarily determined by the Secretary to qualify as a registered historic district;

(3) Individually listed on a state inventory of historic places in states with historic preservation programs which have been approved by the Secretary of Interior; or

(4) Individually listed on a local inventory of historic places in communities with historic preservation programs that have been certified either by an approved state program as determined by the Secretary of the Interior or directly by the Secretary of the Interior in states with approved programs.

3 Environmental Setting

The project site is located at the far northeastern edge of the Los Angeles Basin and within the San Gabriel River watershed approximately 2.25 miles west of the San Gabriel River (Simes 2016). The project vicinity is highly urbanized with residential development since the early twentieth century. The project site is generally flat with an elevation of approximately 578 feet above mean sea level (amsl) in (National Geologic Map Database Project [NGDP] 2024).

The project site is located within the Los Angeles Basin physiographic province (Yerkes et al. 1965a). The basin is broken into four major blocks: the central, northwest, southwest, and northeast blocks (Yerkes et al. 1965a). The project is located at the northern edge of the northeastern block, sitting just south (at least 0.25 miles) of the Sierra Madre Fault Zone (Morton and Miller 2006). The topmost geologic unit of the project site is young, Holocene-age alluvial fan deposits originating from the mountains north of the project site (Morton and Miller 2006). Below this layer are older alluvium deposits from the Pleistocene, followed by Miocene era sediments, with Cretaceous era granitic base layer (Yerkes et al. 1965b:Plate 2).

Soils within the project site are identified as Urban Land-Palmview-Tujunga-Soboba. Due the high amount of development in the area, Urban Land soil typology dominates with a composition of non-native, nonagricultural, manmade surfaces at least 50 centimeters deep (Pouyat et al. 2020, University of California, Davis [UCD] and Natural Resources Conservation Service [NRCS]). Palmview, Tujunga, and Soboba soil soils are similar in that they all are found on alluvial fans. They consist of well drained to excessively well drained soils composed of sandy alluvium from granitic sources (National Cooperative Soil Survey [NCSS] 1975, 2017a, 2017b). In this case, the source is the igneous and metamorphic rocks of the San Gabrial Mountains of the Transverse Ranges.

The Los Angeles region possesses a Mediterranean climate with warm, dry summers and cool, wet winters. The average seasonal rainfall is 14.77 inches (Bruno et al. 2000).

4 Cultural Setting

4.1 Prehistoric Context

While many chronological sequences have been developed to describe cultural changes in Southern California, the following builds on Wallace (1955, 1978), who developed a prehistoric chronology for the Southern California coastal region that is still widely used today. Four periods are presented in this sequence: Early Man, Milling Stone, Intermediate, and Late Prehistoric. The summary of prehistoric chronological sequences for Southern California coastal and near-coastal areas presented below is a combination of Wallace (1955) and Warren (1968) as well as more recent studies.

4.1.1 Early Man Horizon (ca. 10,000 – 6,000 B.C.)

Numerous pre-8,000 B.C. sites have been identified along the mainland coast and Channel Islands of Southern California (Moratto 1984; Erlandson 1991; Rick et al. 2001; Johnson et al. 2002; Jones and Klar 2007). The Arlington Springs site on Santa Rosa Island produced human femurs dated to approximately 13,000 years ago (Johnson et al. 2002). The most widely accepted dates for archaeological sites on the southern California coast are from two of the northern Channel Islands, located off the coast of Santa Barbara. On San Miguel Island, Daisy Cave clearly establishes the presence of people in this area about 10,000 years ago (Erlandson 1991:105).

Early Man Horizon sites are generally associated with a greater emphasis on hunting than later horizons. Recent data indicate that the Early Man economy was a diverse mixture of hunting and gathering, including a significant focus on aquatic resources in coastal areas and on inland Pleistocene lakeshores (Moratto 1984).

4.1.2 Milling Stone Horizon (6,000 – 3,000 B.C.)

Set during the Altithermal, which began around 6,000 B.C., the Milling Stone Horizon is characterized by changing subsistence strategies in response to drier climate. This included a greater emphasis on plant foods and small game. Extensive seed processing is evident in the dominance of stone grinding implements in contemporary archaeological assemblages; namely, milling stones (metates) and handstones (manos). The mortar and pestle, associated with acorns or other foods processed through pounding, were first used during the Milling Stone Horizon and increased dramatically in later periods (Wallace 1955, 1978; Warren 1968). Other food resources include small and large terrestrial mammals, sea mammals, birds, shellfish and other littoral and estuarine species, near-shore fishes, yucca, agave, and seeds and other plant products (Kowta 1969). Depending on the environmental setting (coastal or inland), food procurement strategies are found to be highly variable (Byrd and Raab 2007:220).

4.1.3 Intermediate Horizon (3,000 B.C. – A.D. 500)

The Intermediate Horizon is characterized by a shift toward a hunting and maritime subsistence strategy, as well as greater use of plant foods. During the Intermediate Horizon, a noticeable trend occurred towards a greater adaptation to local resources including a broad variety of fish, land mammals, and sea mammals along the coast. This diversity was reflected in tool kits for hunting, fishing, and processing food and materials, with flake scrapers, drills, various projectile points, and shell fishhooks being manufactured. Mortars and pestles became more common during this period, gradually replacing manos and metates as the dominant milling tool. This change in milling stone technology indicates a transition from the processing and consumption of hard seed resources to the increased reliance on acorns (Glassow et al. 1988; True 1993).

4.1.4 Late Prehistoric Horizon (A.D. 500 – Historic Contact)

The Late Prehistoric Horizon is characterized by an increased diversity of plant food resources and land and sea mammal hunting. Material culture became more complex as demonstrated through more diverse classes of artifacts. During this period, the northern Channel Islands populations further developed craft specializations, including shell bead manufacturing, that sustained trade with mainland settlements and with further trading partners to the east, creating a regional economy. Steatite quarried on Santa Catalina Island was used to make stone bowls, pipes, comals, sucking tubes, pendants, beads, and effigies. The lack of pottery in coastal and near-coastal sites within the Los Angeles Basin implies that ceramic technology was not widely used, or that ceramics were obtained by trade with neighboring groups to the south and east. The lack of widespread pottery manufacture may also be due to the utility of tightly woven and watertight basketry that functioned in much the same way as ceramic vessels.

In areas of inland settlement, by the end of the Intermediate Period, mobility and long-distance migration towards the coast from seasonal camps was replaced by the development of permanent settlements. The period between A.D. 500 and historic contact is divided into three regional patterns: Chumash (Santa Barbara and Ventura counties), Takic/Numic (Los Angeles, Orange, and western Riverside counties), and Yuman (San Diego County). Modern Gabrielino/Tongva, Juaneño, and Luiseño people in this region are considered to be the descendants of the Uto-Aztecan, Takic-speaking populations that settled along the California coast during this period (Warren 1968).

4.2 Ethnographic Context

4.2.1 Gabrielino (Gabrieleño)/Tongva

The project area is in the heart of Gabrielino/Tongva territory (Bean and Smith 1978:538; Kroeber 1925: Plate 57), who arrived in the Los Angeles Basin around 500 B.C. Gabrielino/Tongva lands encompass the greater Los Angeles Basin and three Channel Islands: San Clemente, San Nicolas, and Santa

Catalina. Their mainland territory is bound on the west by the Chumash at Topanga Creek, the Tatavium to the north, the Serrano at the San Gabriel Mountains in the east, the Cahuilla to the east, and the Juaneño on the south at Aliso Creek (Bean and Smith 1978:538; Kroeber 1925:636).

The name "Gabrieliño" or "Gabrieleño" takes its name from Mission San Gabriel, where it was the dominate language spoken by Native Americans who were assimilated (Golla 2011). Many modern Gabrieleño identify themselves and their language as the Tongva (King 1994; Golla 2011). Though the names "Tongva" or "Gabrieleño" are the most common names used by Native American groups today, other groups identify themselves differently, such as the Gabrielino Band of Mission Indians - Kizh Nation.

The Gabrielino/Tongva established large, permanent villages in the fertile lowlands along rivers and streams, and in sheltered areas along the coast, stretching from the foothills of the San Gabriel Mountains to the Pacific Ocean. As the population expanded, the larger permanent villages established satellite communities that stayed connected via economic, religious, and social ties. Structures within the village were typically large, circular, domed structures made of willow poles thatched with tule, fern, or carrizo. Other structures found in Gabrielino villages included sweathouses, menstrual huts, and a ceremonial enclosure (Bean and Smith 1978).

The Gabrielino/Tongva subsistence economy was centered on gathering and hunting. The location of known Gabrielino/Tongva villages suggests three principal settlement and subsistence strategies in their mainland territory (McCawley 1996:35–74). In the valley zones located closest to the transverse ranges, including the San Fernando and San Gabriel valleys, acorn exploitation was the basis of subsistence, but foothill resources such as chia and yucca were also seasonally important. Pinyon nuts and juniper berries were also an important resource for communities located near the transverse ranges, either gathered or exchanged from further inland. A second subsistence strategy involved villages on the high ground along the middle or lower (coastward) reaches of major river courses. These communities had access to acorn stands, while the downriver ones had closer access to marine resources (McCawley 1996). The third strategy included both bluff and estuary coastal villages. These appear to have clustered in the Palos Verdes Peninsula and San Pedro shore and estuary areas. Offshore fishing from plank canoes was carried out, along with inshore fishing and shellfish gathering. Both shell hooks and nets were used in obtaining fish which were dried for storage (McCawley 1996:62–71, 122–127). Sea mammals were hunted with harpoons, spear throwers, and clubs (Bean and Smith 1978).

A wide variety of tools and implements were employed by the Gabrielino/Tongva to gather and collect food resources. Fishing involved the use of line and hooks, nets, basketry traps, spears, and bow and arrows. Mammal hunting was accomplished using bow and arrows, deadfalls, snares, traps, throwing sticks (Bean and Smith 1978). Food was processed with a variety of tools, including portable and bedrock mortars, pestles, basket hopper mortars, manos and metates, hammerstones and anvils, woven strainers and winnowers, leaching baskets and bowls, woven parching trays, knives, bone saws,

and wooden drying racks. Food was stored in large, finely woven baskets, and the unprocessed acorns were stored in large granaries woven of willow branches and raised off the ground on platforms. Food was consumed from various woven and carved wood vessels (McCawley 1996).

Registers from Missions San Gabriel and San Juan Capistrano refer to *Puvunga* (located on the campus of Cal State University Long Beach) as a native rancheria. Many (but not all) Gabrielino identified *Puvunga* to the Spanish as the "birthplace of the prophet Chinigchinich and a religious movement led by him" (Byrd and Raab 2007:45). The basis of Gabrielino religious life was the Chinigchinich cult, centered on the last of a series of heroic mythological figures. Chinigchinich gave instruction on laws and institutions, in addition to teaching the people how to dance, the primary religious act for this society. He later withdrew into heaven, where he rewarded the faithful and punished those who disobeyed his laws (Kroeber 1925:637–638). The Chinigchinich religion seems to have been relatively new when the Spanish arrived. It was spreading south into the southern Takic groups even as Christian missions were being built and may represent a mixture of Native and Christian belief and practices (McCawley 1996:143–144).

Deceased Gabrielino were either buried or cremated, with inhumation more common on the Channel Islands and the neighboring mainland coast, and cremation predominating on the remainder of the coast and in the interior (Harrington 1934; McCawley 1996:157).

South Environmental reviewed ethnographic maps covering the project site (Exhibits 1-3). It should be noted that these maps represent generalized/approximate locations of Native American villages, placenames, ethnographic boundaries, and other markers, and should not be considered exact. Although these maps do not indicate the presence of any ethnohistoric village sites within the immediate vicinity of the project site, nearby villages in the San Gabriel Valley include *Asuksangna* (Azusa), a few miles east of the project site across the San Gabriel River, and *Aleupkingna*, at least one or two miles northwest of the project site near the Sawpit or Hondo Wash (Exhibit 2).

Exhibit 1. Detail view of Kirkman-Harriman pictorial and historical map of Los Angeles County, 1860-1937 (Kirkman 1937).

The vicinity of the project site is circled in red. This map provides a representation of the approximate locations of Native American villages, battle sites, mines, and other historical markers.

Exhibit 2. The Gabrielino Indians at the Time of the Portola Expedition (Southwest Museum 1962, reprinted in Johnston 1962)

The vicinity of the project site is circled in red. This map provides a representation of the approximate locations of Native American villages and other features in the Los Angeles area.

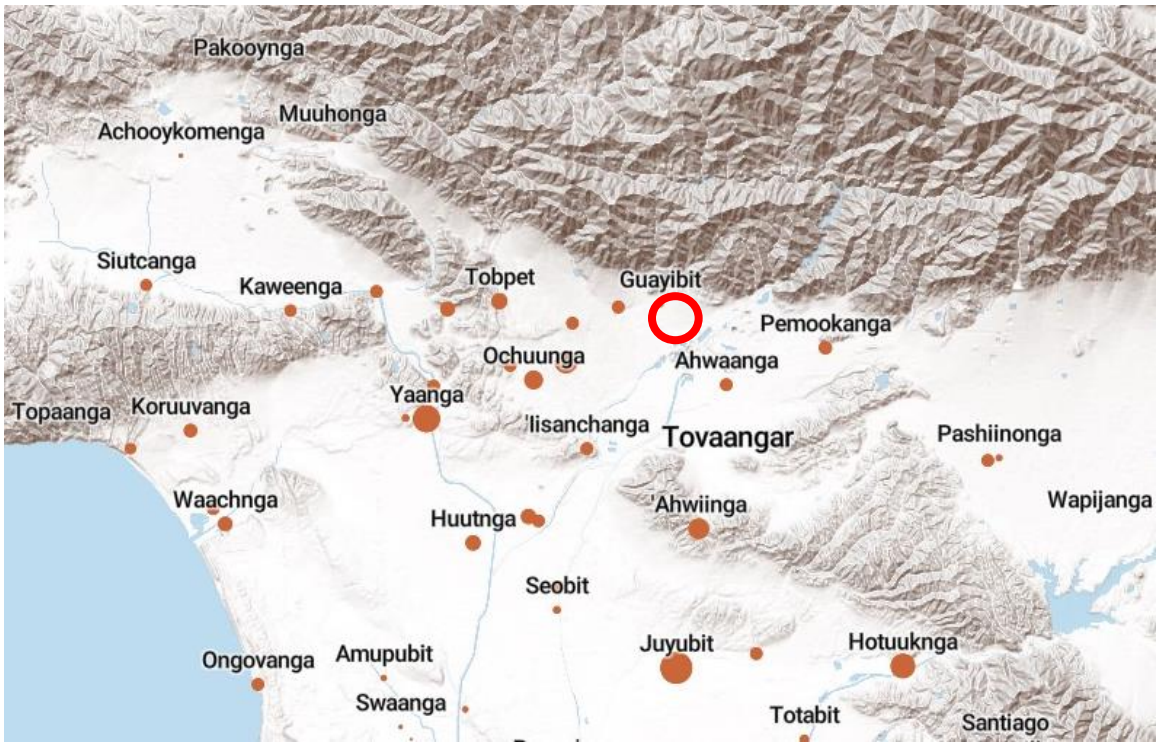


Exhibit 3. Local village locations (Greene and Curwen 2019)
The vicinity of the project site is circled in red. Map from the LA Times *Mapping the Tongva Villages of L.A.'s Past* showing the comparative/approximate size of villages

4.3 Historic Context

Post-Contact history for the state of California is generally divided into three periods: the Spanish Period (1769–1822), Mexican Period (1822–1848), and American Period (1848–present).

4.3.1 Spanish Period (1769–1822)

In search of the legendary Northwest Passage, Spanish explorer Juan Rodríquez Cabríllo stopped in 1542 at present-day San Diego Bay. Cabríllo explored the shorelines of present-day Catalina Island as well as San Pedro and Santa Monica Bays. Much of the present California and Oregon coastline was mapped and recorded in the next half-century by Spanish naval officer Sebastián Vizcaíno. Spain laid claim to California based on the surveys conducted by Cabríllo and Vizcaíno (Bancroft 1885:96–99; Gumprecht 1999:35).

In a race against England and Russia to claim as much of the Americas as possible, Spain implemented a colonization campaign along the coast of Alta California in the late 18th century. Spain's goal was to establish self-sustaining colonies; they did this with a three-pronged approach that focused on religion, commerce, and military (Kimbro and Costello 2009:13). The Missions presided over religious and agricultural affairs; the Pueblos provided residences and a commercial base for trade; and the

presidios housed soldiers that kept regional peace and provided military defense against attack (Kimbro and Costello 2009:13). The success of this strategy is evidenced by the speed at which stable communities were established.

The 1769 overland expedition by Captain Gaspar de Portolá marks the start of California's Historic period. With a band of 64 soldiers, missionaries, Baja (lower) California Native Americans, and Mexican civilians, Portolá established the Presidio of San Diego, a fortified military outpost, as the first Spanish settlement in Alta California. In July of 1769, while Portolá was exploring southern California, Franciscan Fr. Junípero Serra founded Mission San Diego de Alcalá at Presidio Hill, the first of the 21 missions that would be established in Alta California by the Spanish and the Franciscan Order between 1769 and 1823.

The Portolá expedition first reached the present-day boundaries of Los Angeles in August 1769, thereby becoming the first Europeans to visit the area. Father Juan Crespí, a member of the expedition, named "the campsite by the river Nuestra Señora la Reina de los Angeles de la Porciúncula" or "Our Lady the Queen of the Angeles of the Porciúncula." Two years later, Friar Junípero Serra returned to the valley to establish a Catholic mission, the Mission San Gabriel Arcángel, on September 8, 1771 (Kyle 2002:151).

4.3.2 Mexican Period (1822–1848)

After more than a decade of intermittent rebellion and warfare, New Spain (Mexico and the California territory) won independence from Spain in 1821. In 1822, the Mexican legislative body in California ended isolationist policies designed to protect the Spanish monopoly on trade, and decreed California ports open to foreign merchants (Dallas 1955:14).

Extensive land grants were established in the interior during the Mexican Period, in part to increase the population inland from the more settled coastal areas where the Spanish had first concentrated their colonization efforts. The secularization of the missions following Mexico's independence from Spain resulted in the subdivision of former mission lands and establishment of many additional ranchos. During the supremacy of the ranchos (1834–1848), landowners largely focused on the cattle industry and devoted large tracts to grazing. Cattle hides became a primary southern California export, providing a commodity to trade for goods from the east and other areas in the United States and Mexico (Dallas 1955, Cleland 2005). The number of nonnative inhabitants increased during this period because of the influx of explorers, trappers, and ranchers associated with the land grants. The rising California population contributed to the introduction and rise of diseases foreign to the Native American population, who had no associated immunities.

4.3.3 American Period (1848–Present)

The Mexican–American War ended with the Treaty of Guadalupe Hidalgo in 1848, ushering California into its American Period. California officially became a state with the Compromise of 1850, which also designated Utah and New Mexico (with present-day Arizona) as United States (U.S.) territories.

The Gold Rush began in 1848, and with the influx of people seeking gold, cattle were no longer desired mainly for their hides but also as a source of meat and other goods. During the 1850s cattle boom, rancho vaqueros drove large herds from southern to northern California to feed that region's burgeoning mining and commercial boom. The cattle boom ended for southern California as neighbor states and territories drove herds to northern California at reduced prices. Operation of the huge ranchos became increasingly difficult, and droughts severely reduced their productivity (Cleland 2005:102–103).

In 1781, a group of 11 Mexican families traveled from Mission San Gabriel Arcángel to establish a new pueblo called El Pueblo de la Reyna de Los Angeles (The Pueblo of the Queen of the Angels). This settlement consisted of a small group of adobe-brick houses and streets and would eventually be known as the Ciudad de Los Angeles (City of Angels), which incorporated on April 4, 1850.

The County of Los Angeles was established on February 18, 1850, one of 27 counties established in the months prior to California acquiring official statehood in the United States. Many of the ranchos in the area now known as Los Angeles County remained intact after the United States took possession of California; however, a severe drought in the 1860s resulted in many of the ranchos being sold or otherwise acquired by Americans. Most of these ranchos were subdivided into agricultural parcels or towns (Dumke 1944).

Los Angeles maintained its role as a regional business center, and the development of citriculture in the late 1800s and early 1900s further strengthened this status (Caughey and Caughey 1977). These factors, combined with the expansion of port facilities and railroads throughout the region, contributed to the impact of the real estate boom of the 1880s on Los Angeles (Caughey and Caughey 1977; Dumke 1944).

By the late 1800s, government leaders recognized the need for water to sustain the growing population in the Los Angeles area. Irish immigrant William Mulholland personified the city's efforts for a stable water supply (Dumke 1944). By 1913, the City of Los Angeles had purchased large tracts of land in the Owens Valley and Mulholland planned and completed the construction of the 240-mile aqueduct that brought the valley's water to the city (Caughey and Caughey 1977). Los Angeles continued to grow in the twentieth century, in part due to the discovery of oil in the area and its strategic location as a wartime port. The county's mild climate and successful economy continued to attract new residents in the late 1900s, with much of the county transformed from ranches and farms into residential subdivisions surrounding commercial and industrial centers (Caughey and Caughey

1977). Hollywood's development into the entertainment capital of the world and southern California's booming aerospace industry were key factors in the county's growth in the twentieth century.

City of Duarte

Andres Duarte was born at Mission San Juan Capistrano in 1805 (Moore 1976). At the age of sixteen, Andres joined his father in enlisting in the Mexican army, where he was assigned to Mission San Gabriel. He later transferred to protect the Mission in San Bernardino and developed a personal fondness for the area. In 1841, the governor of Alta California, Juan Alvarado, granted former Mexican Corporal Andres Duarte and his wife nearly 7,000 acres of land in the upper San Gabriel Valley, which became known as Rancho Azusa de Duarte (Rancho) (Exhibit 4) (Davis 1957; Moore 1976). Andres built an adobe home for his family on the Rancho and his land soon flourished with crops and herds of livestock. By the mid-1850s, Andres was unable to pay the taxes on his land and was forced to subdivide it. He eventually sold or auctioned off all of his land, marking the end of the Rancho Azusa de Duarte period by the early 1860s (Davis 1957; Margiloff 2009).

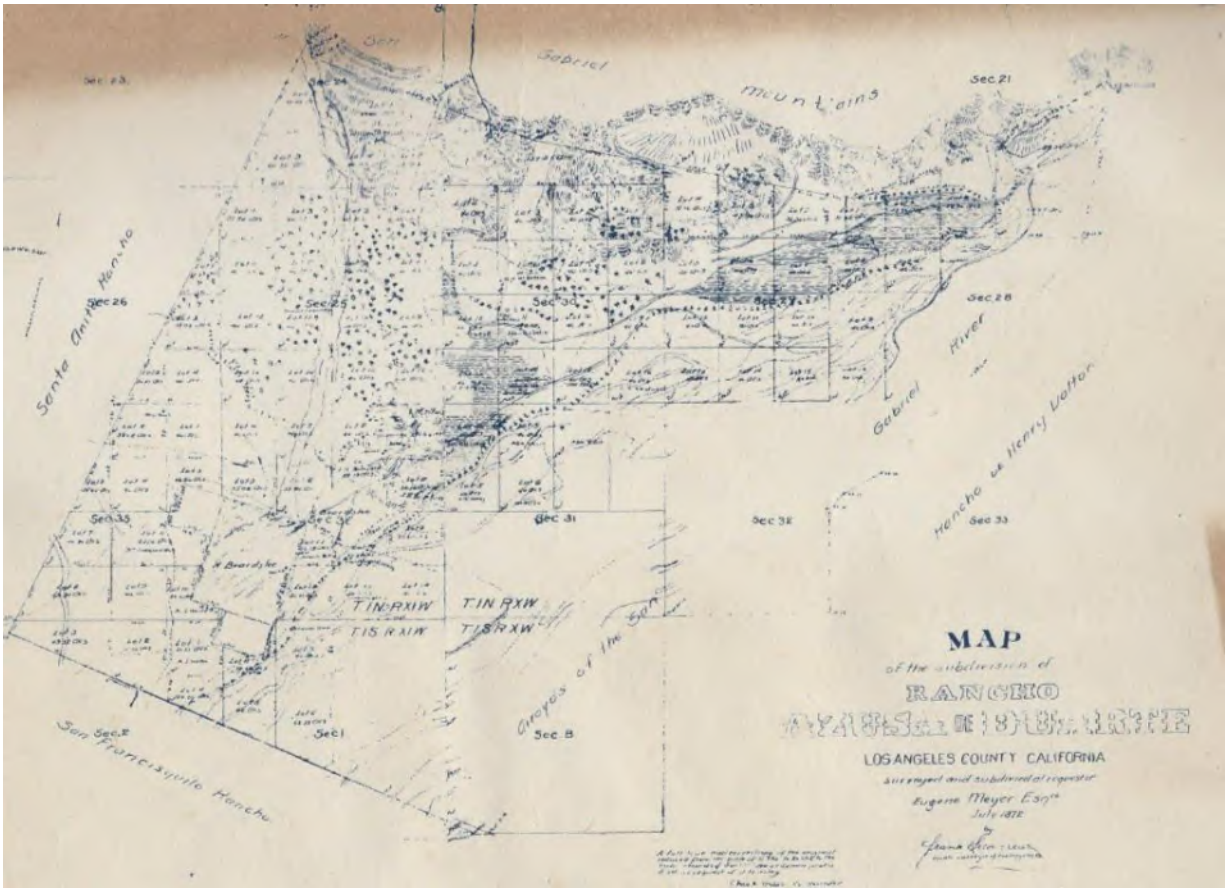


Exhibit 4. 1872 Map of Rancho Azusa de Duarte (Calisphere 2025)

Among the many buyers of the Rancho land was William Wolfskill, one of the first Americans to settle in the area. He purchased approximately 6,370 acres in 1862. Wolfskill then sold the land to financer Alexader Weill, who subdivided it into 40-acre tracts for later development (Davis 1957, Margiloff 2009). By the 1870s, the land tracts were further subdivided and sold to various owners, which resulted in the development of several cities, including Duarte, Monrovia, Azusa, Irwindale, Baldwin Park, and Arcadia. Before it was officially incorporated as a city, the area of Durate was still named and referred to as Duarte. The land in the Duarte area was developed for agricultural purposes. It was particularly successful for citrus crops due to its climate and soil composition, which made the fruit trees in the area much larger and juicier than any other place in the state (Moore 1976). Duarte's first orchard was planted in 1871 by Asa Ellis and by the 1880s numerous successful orchards were established. (Norman 1938).

In 1861, Dr. Nehemiah Beardslee purchased land in Lower Duarte and paved the way for water irrigation through the area. Within Dr. Beardslee's property, he created a water ditch that eventually grew large enough to form side canales. In efforts to preserve the water, Dr. Beardless enlisted other owners in the tract to go in with him to form a company. In 1876, Beardslee along with Charles Soward, I.C. Ingraham, A.J. Horn, W.H. Bowman, J.O. Mathewson, Parson Shrode, and D.V. Hayward formed the Beardslee Water Ditch Company in 1884, with D.S. Shrode as President. At the same time, a second water company was formed to address the needs of Upper Duarte. This second company was based on Andres Duarte's original ditch and was named The Duarte Mutual Irrigation and Canal Company (Durate Mutual) in 1882 with E.M. Wardell as president. By 1883, Duarte Mutual financed the construction of a new water ditch, in exchange for control over one-third of the water managed by the Beardslee Company. This deal ultimately allowed Duarte Mutual to gain two-thirds of the water supply, making it the dominant player in Duarte's local water business. Later, the two companies merged, with Duarte Mutual taking care of domestic water usage and Beardslee managing water for agriculture. These new water companies allowed agricultural crops to thrive in the northern section of the area (Moore 1976).

By 1888, there were 780 acres of deciduous fruits and 420 acres of citrus fruit out of a total of 1,600 cultivated acres in the area (Moore 1976). Around 1890, the Duarte Company "Growers and Shippers of Fine Oranges and Lemons" was organized and located in the foothill section of Duarte until it disbanded. By 1893, as Monrovia orchards were becoming bountiful, growers from both Monrovia and Duarte held a meeting and organized The Duarte-Monrovia Citrus Association with J.A. Foshay of Monrovia as chairman (Davis 1957).

By the start of the twentieth century, Duarte's economy flourished as the agriculture industry continued to grow and railroads transported goods in and out of the City. The successful economy continued to attract more settlers as well. However, in the early 1900s, the Southern Pacific Railroad abandoned its service line from the eastern side of Duarte west to Mountain Avenue in Monrovia. This paved the way for the Pacific Electric Railway to retain Southern Pacific's abandoned tracks from Monrovia to Arcadia and reinstated their services. In addition, the Pacific Electric's (PE) red cars, which provided passenger

transportation, from the Los Angeles area reached Duarte in 1903, further connecting the two areas. The former PE right-of-way is the present-day walking and biking trail adjacent to Royal Oaks Drive (Margiloff 2009). In addition to improved efficient transportation methods, Duarte's pleasant climate made it an attractive location for those seeking a healthier environment. In 1913, the Jewish Relief Association started a tuberculosis sanitarium on 40 acres of land south of Duarte Road. This institution became known as the City of Hope Medical Center, world-renowned for its cancer treatment (City of Duarte 2025). Another notable health organization in the area was a tuberculosis sanitarium for women and girls, opened by the Carmelite Sisters in 1927 (Margiloff 2009).

After World War I, the landscape of Duarte started to change. In conjunction with the introduction of the automobile and returning World War I veterans, this meant better road construction and more infrastructure. In 1925, Huntington Drive was constructed through Duarte, changing the main thoroughfare through town from North Highland Avenue to Huntington Drive. As a result, Huntington Drive developed as a new commercial corridor with various new shops, restaurants, and hotels, as well as juice stands and vegetable vendors. These new attractions drew many tourists and contributed to economic and population growth (Moore 1976). In 1926, the famous Route 66 was constructed and traversed through the foothill area of Duarte en route to Santa Monica, facilitating greater travel through the area (City of Duarte 2025). Duarte also experienced a cultural shift with the arrival of the Swiss community in 1928 and the establishment of the original Swiss Park clubhouse and banquet hall. This landmark not only served as a social hub but reflected the growing diversity in Duarte during the time (Socal Swiss 2025).

By the end of World War II, the agricultural industry in the City began to decline and the agricultural areas transitioned into residential communities. Between 1947 and 1951, the City grew from 3,500 to 10,500 people. Consistent with many towns and cities across the United States, Duarte witnessed returning soldiers in need of moderately priced housing units for their growing families. As a result, the town developed new communities, stores, churches and schools. Initially, new housing developments were constructed on the south side of Duarte near California and Shamrock Avenues, with another concentrated area of housing built by the Turner Brothers near El Camino Real. Most of the homes built during this period consisted of two bedrooms, one bathroom, and a single-car garage. To accommodate the growing population, several new schools were established between 1940 and 1950. These included North View Elementary School, Maxwell, Andres Duarte, Royal Oaks School, Beardslee School, Valley View Elementary School, and Duarte High School (Moore 1976).

By 1957, the City of Duarte was officially incorporated. However, the process of incorporation was met with resistance from residents. In 1956, the City of Azusa voted 4-1 to annex approximately 1,335 acres of land to create a dumpsite west of the San Gabriel River, located within Duarte. This project outraged City residents, leading them to form citizen groups to oppose Azusa's annexation plan and initiate a voter registration drive. They successfully registered 458 people to counter Azusa's move and pushed for the incorporation of Duarte. After two weeks of negotiations over boundary lines, the City

boundaries were approved by the County Board of Supervisors and Duarte became the 57th city in Los Angeles County on August 20, 1957 (Moore 1976).

Upon Duarte's incorporation, suburban housing and public establishments continued to increase, which led to the construction of larger roads and freeways. In 1968 the Foothill Freeway (present-day 210 Freeway) was constructed. The new freeway led to a residential boom and between 1975 and 1985, approximately 2,000 new homes were built in the City. During the 1980s and 1990s, Duarte's landscape continued to grow and develop with commercial and residential buildings, the emergence of manufacturing properties, and the City of Hope medical campus (Margiloff 2009). As of 2023, Duarte had a population of just under 21,000 and over 7,500 dwelling units. (City of Duarte 2025).

4.4 History of the Project Site

4.4.1 Development of 1404 Royal Oaks Drive

The earliest aerial imagery from 1936 shows the subject property was first developed as an orchard. Most of the surrounding area was used for orchards, with some agricultural buildings and houses scattered throughout. West of the property, the City of Monrovia was already developed with residential tracts (UCSB 2025).

The single-family house with attached garage at 1404 Royal Oaks Drive was constructed in 1953 (Permit No. 32521). An aerial image from 1954 shows the house constructed at this time, with a rectangular concrete pad located to the south of the house (Exhibit 5) (UCSB 2025). The house went unchanged for a decade, until 1963 when a permit was filed to construct a new detached garage and convert the existing attached garage to living space (Permit No. 1713). This new garage was located north of the house (UCSB 2025). The conversion of the attached garage into living space resulted in the installation of a new entry door and new windows on the primary (north) elevation.

By the late 1960s, the area surrounding the property began to change from agricultural to residential development (NETR 2025; UCSB 2025).

Exhibit 5. 1954 aerial image with subject property outlined in red (UCSB 2025).

The next change did not occur to the subject property until 1977, when a permit was filed to construct an addition to the existing den and dining room. This addition was constructed on the southwestern corner of the house, extending both the south and west elevations (Exhibit 6) (Permit No. 1011). In 1985, another building permit was filed to construct a detached accessory building to the east of the house. This detached building was labeled as a "new recreation building" in the proposed site plan (Exhibit 7) (Permit No. 31825A).

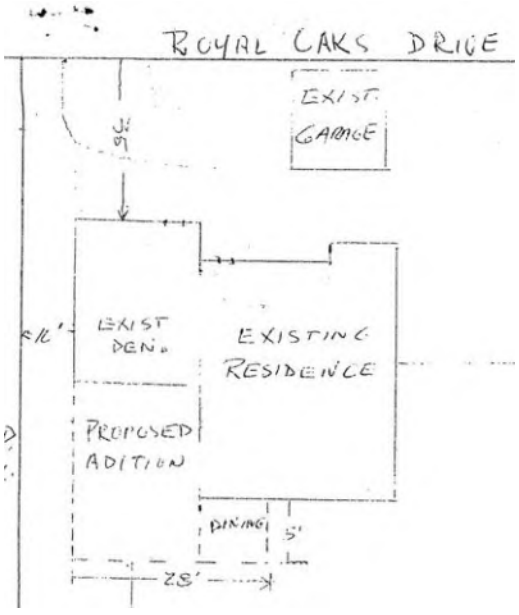


Exhibit 6. 1977 plan for addition on south and west elevations (Permit No. 1011).

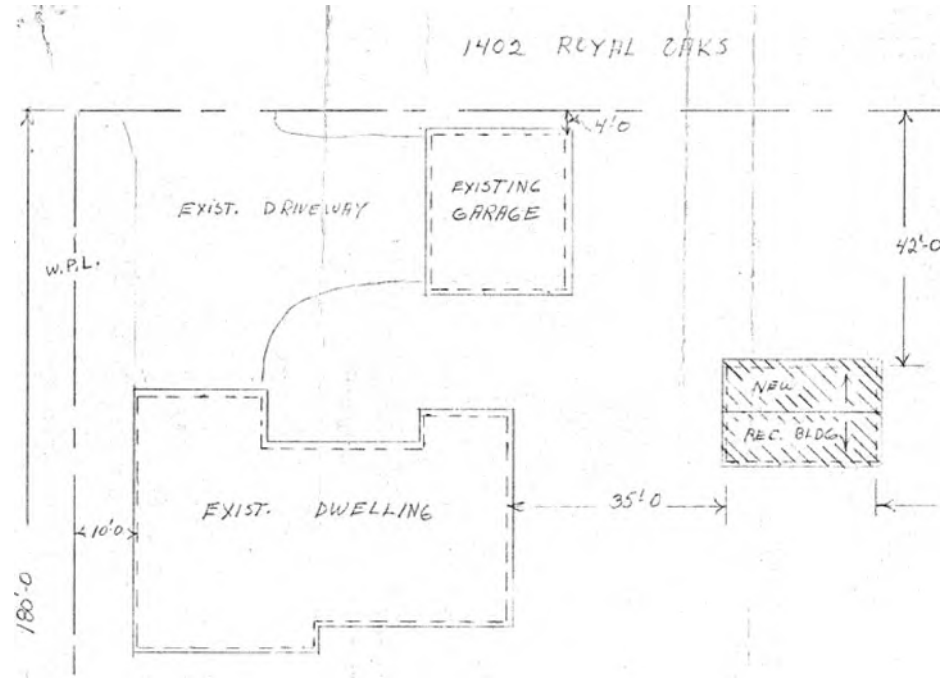


Exhibit 7. 1985 plan for new accessory building (Permit No. 31825A)

In 1996, a building permit was filed to reroof the buildings with new composite shingles (Permit No. 972352). Since this time, there have been observed changes to the subject property, including the replacement of several original windows with modern vinyl windows.

Occupancy History

Based on public records, the Remington family were the first occupants associated with subject property from the time of its construction in 1953 until the mid-2000s (City of Duarte, various; Ancestry.com, various). This included Clarence H. Remington, the head of the household; his wife, Delta Faye Gibson; their daughter, Janice Marie Remington; and grandson, Lance H. Jacobs (Ancestry.com, various).

Clarence Harold Remington was born in Furnas, Nebraska, in 1914, and moved to Monrovia, California in 1930. In 1938, he married Delta Faye Gibson (b. 1919) of Furnas, Nebraska. Upon moving to Monrovia, the couple lived at the residence located at 324 East Lime Avenue, where Clarence worked as a laborer and later a foreman. By 1941, the couple welcomed their daughter, Janice Remington (Ancestry.com, various).

The Remington family's association with the subject property began in 1953, when Clarence Remington filed a building permit to contract E.A. Daniells Co. to construct a dwelling and attached garage on the subject property (Permit No. 32521). Mr. and Mrs. Remington lived at the subject property at the time of its construction in 1953 (Ancestry.com, various; City Directories, various). In 1961, Janice Remington married Wesley Edward Jacobs, and in 1962, they welcomed their son Lance

H. Jacobs, who also lived at the property in 1962 (Ancestry.com, various). Janice continued to live at the subject property until an unknown date during the early 1960s and again between 1988 through 2006. According to the last address directory, Clarence still resided at the property in 1999, but no residency information is available beyond that year. Clarence passed away in 2005 at the age of 91. It is unclear how long Mrs. Remington lived at the property following Clarence's death (Ancestry.com, various). However, she passed away in 2020 in Duarte, California (Legacy 2025). Their daughter Janice continued to live on the property until 2006. Her son, Lance Jacobs, moved into the address in 2004 and remained there until 2020 (Ancestry.com various).

There was no evidence found to indicate that the Remington family or any of its members who resided at the subject property were notable or influential people associated with local, state, or national history.

4.4.2 Architectural Style: Ranch (1930-1975)

The Ranch house is a style of architecture originating in Southern California. It was popular starting in the 1930s and fell out of popularity by the mid-1970s. In the 1930s and early 1940s, the Ranch house was part of the Small House movement that was brought into fashion by the Federal Housing Administration (FHA). After World War II, the Ranch style gained even more popularity as size and building restrictions were lifted and could be found across the country. FHA guidelines continued to exert a strong influence on building Ranch homes. Such as encouraging developers to build entire neighborhoods at once, making Ranch style houses commonplace within large subdivisions.

In the style's early years, and throughout the 1950s and 1960s, the Ranch house could be constructed quickly with modern, mass-produced materials. The style provided a quick and easy construction option both to create new housing to meet the needs of soldiers returning home after the war, and an affordable, yet larger and comfortable option in the later decades post-war.

The smaller Ranch houses of the 1930s and 1940s, and the larger versions from the 1950s and 1960s share many characteristics. "Rambling" Ranch style houses became more popular in the 1950s, due to the nation's increasing use of automobiles. This permitted developers to build larger homes on bigger, wider lots along winding roads in suburban areas, resulting in a sprawling façade with a focus on emphasizing the width. In contrast, the Ranch homes in the streetcar suburbs of the 1940s were constructed on narrower lots, and therefore had less horizontal emphasis. However, many of the other design features they shared remained the same. As such, the affordability and versatility of the Ranch house made it one of the most popular house choices throughout the United States and was purchased and occupied by people at almost all socio-economic levels.

Key characteristics of the Ranch style of architecture are the following (Gottfried and Jennings 2009; Hess 2004; McAlester 2015):

- One story in height
- Low pitch gabled or hipped roofs constructed with moderate overhangs
- Offset entry points and general façade asymmetry
- Focus on horizontal massing and rambling forms
- Focus on informality
- Main entry typically placed under the roof overhang or tucked into the facade
- Use of variety of window types, including large picture-style windows
- Variations on the eave overhang, typically boxed eaves or exposed rafter tails, or the less-common boxed rafters
- Large chimneys made of brick or stone
- Traditional exterior cladding, including brick veneer, wood siding, and stone veneer
- Attached garage or carport, typically incorporated into the façade
- Front and rear yards
- Simple floor plans based on rectangular blocks, usually L, U, or T shaped in plan

5 Background Research

5.1 CHRIS Records Search

On February 10, 2025, South Environmental cultural resources specialist Samantha Jovanovic, MA, MS completed a records search of the California Historical Resources Information System (CHRIS) via the South Central Coastal Information Center (SCCIC), which included the project site and a one-half-mile search radius. This search included their collections of mapped prehistoric and historic archaeological resources and historic built-environment resources, State of California Department of Parks and Recreation Site Records (DPR forms), technical reports, archival resources, and ethnographic references. Additional consulted sources include historical maps of the study area, the NRHP, the CRHR, the lists of California State Historical Landmarks, California Points of Historical Interest, and the Archaeological Determinations of Eligibility. A summary of the results of the records search are presented in Appendix A. The full, confidential records search results are on file with South Environmental.

5.1.1 Previously Conducted Cultural Resource Studies

The SCCIC records search results indicate that no previously conducted cultural resource studies overlap the project site. However, a total of six studies were identified outside the project site within the 0.5-mile records search radius. A list of all previously conducted studies identified within the records search radius is provided in Table 1.

Table 1. Previous Cultural Resources Investigations Within 0.5-Mile of the Project Site

SCCIC Report Number	Author	Year	Report Title	Proximity to Project Site
LA-06695	Wlodarski, Robert J.	2001	A Phase 1 Archaeological Study for a Proposed Senior Housing Project Located at 1716-1721 Huntington Drive (APN# 8530-023-909 and #8530-023-910) City of Duarte, Los Angeles County, California	Outside (Approx. 0.50 miles southeast)
LA-08678	Bonner, Wayne H.	2007	Cultural Resources Records Search and Site Visit Results for T-Mobile Candidate Ie24108c (Montgomery Field), 1565 Central Avenue, Duarte, Los Angeles County, California	Outside (Approx. 0.30 miles south)
LA-09387	Billat, Lorna	2007	SHPO Cover Letter FCC Form 620 (Section 106) Submittal EarthTouch Inc. (Consultants on Behalf of Royal Street Communications, LLC) Duarte High School / LA-2308B Duarte, Los Angeles County, California	Outside (Approx. 0.45 miles southeast)
LA-09473	Schmidt, June A.	2008	DWO 6027-4800; J.I. No. 8-4838: Payne 16 kV Deteriorated Pole Replacement Project, Los Angeles County, California	Outside (Approx. 230 feet east)

Table 1. Previous Cultural Resources Investigations Within 0.5-Mile of the Project Site

SCCIC Report Number	Author	Year	Report Title	Proximity to Project Site
LA-09666	Bonner, Wayne H.	2008	Cultural Resources Records Search and Site Visit Results for T-Mobile Candidate IE24108A (Santa Teresita Medical Building), 931 Buena Vista Street, Duarte, Los Angeles County, California	Outside (Approx. 0.20 miles southwest)
LA-13001	Bonner, Diane F. and Carrie D. Wills	2014	Cultural Resources Records Search and Site Visit Results for AT&T Mobility, LLC Candidate CLV1194 (Duarte High School), 1401 Central Avenue, Duarte, Los Angeles County, California, CASPR No. 3551699487	Outside (Approx. 0.35 miles south)

5.1.2 Previously Recorded Cultural Resources

The SCCIC records search results indicate that no previously recorded cultural resources occur within the project site. Three previously recorded historic built environment resources were identified within the 0.5-mile records search radius (Table 2).

Table 2. Previously Recorded Cultural Resources Within 0.5-Mile of the Project Site

Primary Number	Trinomial	Resource Description	Resource Eligibility	Recorded Year (By Whom)	Proximity to Project Site
P-19-192438	N/A	Historic residence at 1147 E Lemon Ave	6Z: Found ineligible for NR, CR or Local designation through survey evaluation.	2017 (Jeanette A. McKenna et al.)	Outside (Approx. 0.45 miles northwest)
P-19-192583	N/A	Historic Building: City of Duarte North Yard Bldg.	6Z	2016 (Dana E. Supernowicz, Historic Resource Associate)	Outside (Approx. 0.45 miles southeast)
P-19-192584	N/A	Historic Building: Duarte Chamber of Commerce and Montessori School	6Z	2016 (Dana E. Supernowicz, Historic Resource Associate)	Outside (Approx. 0.35 miles southeast)

5.2 Native American Scoping

A Native American Heritage Commission (NAHC) Sacred Lands File search was requested by South Environmental on January 24, 2025. The NAHC responded to the request on February 4, 2025 and reported positive results. The NAHC recommended contacting the Native American tribes listed in Table 3, for additional information or knowledge they may have regarding the presence of cultural

resources that may be impacted by the proposed project. South Environmental sent letters to each contact provided by the NAHC on February 11, 2025, and made a follow-up outreach attempt on March 10, 2025.

As detailed in Table 3, four tribal contacts have responded to the outreach letters to date. The Gabrielino Tongva Indians of California Tribal Council recommended Native American monitoring of project-related ground disturbance. The Gabrieleno Band of Mission Indians - Kizh Nation stated that they would consult directly with the lead agency. Two additional responses deferred to more local tribes (see Table 3 below). All Native American outreach completed by South Environmental is documented in Appendix B.

Table 3. Summary of Native American Outreach

Native American Tribal Contact	Method of Notification/Date	Response Received
Cahuilla Band of Indians Erica Schenk, Chairperson Cultural Affiliation: Cahuilla	Letter sent via email on February 11, 2025 and March 10, 2025.	BobbyRay Esparza responded via email on March 11, 2025 on behalf of Cahuilla Band of Indians. See response below.
Cahuilla Band of Indians BobbyRay Esparza, Cultural Director Cultural Affiliation: Cahuilla	Letter sent via email on February 11, 2025 and March 10, 2025.	Responded via email on March 11, 2025 on behalf of Cahuilla Band of Indians stating that the tribe defers to the local Gabrielino/Tongva tribes.
Cahuilla Band of Indians Anthony Madrigal, Tribal Historic Preservation Officer Cultural Affiliation: Cahuilla	Letter sent via email on February 11, 2025 and March 10, 2025.	BobbyRay Esparza responded via email on March 11, 2025 on behalf of Cahuilla Band of Indians. See response above.
Gabrieleno Band of Mission Indians - Kizh Nation Andrew Salas, Chairperson Cultural Affiliation: Gabrieleno	Letter sent via email on February 11, 2025 and March 10, 2025.	Brandy Salas responded via email on behalf of the Gabrieleno Band of Mission Indians - Kizh Nation on March 10, 2025 that the tribe had reached out directly to the lead agency.
Gabrieleno Band of Mission Indians - Kizh Nation Christina Swindall Martinez, Secretary Cultural Affiliation: Gabrieleno	Letter sent via email on February 11, 2025 and March 10, 2025.	Brandy Salas responded via email on behalf of the Gabrieleno Band of Mission Indians - Kizh Nation on March 10, 2025. See response above.
Gabrieleno/Tongva San Gabriel Band of Mission Indians Anthony Morales, Chairperson Cultural Affiliation: Gabrieleno	Letter sent via email on February 11, 2025 and March 10, 2025.	No response to date.
Gabrielino Tongva Indians of California Tribal Council Robert Dorame, Chairperson Cultural Affiliation: Gabrielino	Letter sent via email on February 11, 2025.	Christina Conley Responded on behalf of the Gabrielino Tongva Indians of California Tribal Council on February 11, 2025. See response below.
Gabrielino Tongva Indians of California Tribal Council Christina Conley, Cultural Resource	Letter sent via email on February 11, 2025.	Responded via email on February 11 stating that the project APE is "positive for

Table 3. Summary of Native American Outreach

Native American Tribal Contact	Method of Notification/Date	Response Received
Administrator Cultural Affiliation: Gabrielino		cultural resources" and recommends monitoring for all ground disturbances.
Gabrielino/Tongva Nation Sandonne Goad, Chairperson Cultural Affiliation: Gabrielino	Letter sent via email on February 11, 2025 and March 10, 2025.	No response to date.
Gabrielino-Tongva Tribe Charles Alvarez, Chairperson Cultural Affiliation: Gabrielino	Letter sent via email on February 11, 2025 and March 10, 2025.	No response to date.
Gabrielino-Tongva Tribe Sam Dunlap, Cultural Resource Director Cultural Affiliation: Gabrielino	Letter sent via email on February 11, 2025 and March 10, 2025.	No response to date.
Santa Rosa Band of Cahuilla Indians Steven Estrada, Tribal Chairman Cultural Affiliation: Cahuilla	Letter sent via email on February 11, 2025.	Vanessa Minott responded on behalf of the Santa Rosa Band of Cahuilla Indians on February 12, 2025. See response below.
Santa Rosa Band of Cahuilla Indians Vanessa Minott, Tribal Administrator Cultural Affiliation: Cahuilla	Letter sent via email on February 11, 2025.	Responded on behalf of the Santa Rosa Band of Cahuilla Indians on February 12, 2025, stating that they "defer any comments to Soboba Band of Luiseno Indians cultural resource department."
Soboba Band of Luiseno Indians Jessica Valdez, Cultural Resource Specialist Cultural Affiliation: Cahuilla, Luiseno	Letter sent via email on February 11, 2025 and March 10, 2025.	No response to date.
Soboba Band of Luiseno Indians Joseph Ontiveros, Tribal Historic Preservation Officer Cultural Affiliation: Cahuilla, Luiseno	Letter sent via email on February 11, 2025 and March 10, 2025.	No response to date.

5.3 Archival Research

The following archival research sources were consulted in the development of the historic context presented in this report.

5.3.1 City of Duarte Building Permit Records

On February 18, 2025, South Environmental requested all permits associated with the subject property through the City Clerk's Office. These documents confirmed previous alterations to the subject property made over time.

5.3.2 Historical Newspaper Search

South Environmental reviewed historical newspapers covering the City of Duarte and the greater Los Angeles area to better understand the development of the project site and surrounding area.

5.3.3 Sanborn Fire Insurance Maps

One Sanborn Fire Insurance Map was available from the Los Angeles Public Library for the City of Duarte. However, the map does not cover the area containing the subject property (Sanborn Maps various).

5.3.4 Historical Aerial Photographs

To assess changes to the subject property and surrounding neighborhood over time, historical aerial photographs from 1928 through 2022 were reviewed. Historic aerial photographs of the project site were available from Nationwide Environmental Title Research (NETR 2024) for the years 1952, 1964, 1965, 1972, 1979, 1980, 1987, 1992-2000, 2002, 2003, 2005, 2009, 2010, 2012, 2014, 2016, 2018, 2020, 2022. Aerial photographs were also available from the University of California, Santa Barbara (UCSB) FrameFinder site (UCSB 2024) for the years 1928, 1936, 1944, 1954, 1965, 1968, 1982, and 1983.

Between 1928 and the 1950s, the entire project site was used as an orchard, typical throughout the greater Duarte area. By 1964, two buildings (the main house and a detached garage) and one concrete patio had been constructed on 1404 Royal Oaks Drive, with 1414 Royal Oaks Drive remaining undeveloped and with mature trees. In the mid-1970s, the roof and structure shape of the main house at 1404 Royal Oaks Drive changed, suggesting significant remodeling. Throughout the 1970s and 1980s, 1404 Royal Oaks Drive remained unchanged. By the mid-1980s, an accessory building was added just east of the main house at 1404 Royal Oaks Drive. During the early 1990s, the site was densely covered with trees. By 1999, 1414 Royal Oaks Drive was cleared of all trees except along the property boundary, and a new building (residence) appears in the 2000 photograph along with a paved driveway. Minimal changes occur between the years of 2000 and the present.

5.3.5 Built Environment Resource Directory (BERD)

The Built Environment Resource Directory (BERD) is an online resource that provides information, organized by county, regarding non-archaeological resources in the California Office of Historic Preservation (OHP) inventory. This includes resources reviewed for eligibility for the NRHP, CRHR, and the California Historical Landmarks programs through federal and state environmental compliance laws, and resources nominated under federal and state registration programs. South Environmental accessed the BERD from OHP on February 15, 2025. No resources within or adjacent to the project site are listed in the BERD for Los Angeles County.

6 Cultural Resources Survey

6.1 Built Environment Survey

6.1.1 Methods

South Environmental Senior Architectural Historian, Laura Carías, MA, conducted an intensive-level pedestrian survey of the project site on February 12, 2025. During the survey Carías walked the entirety of the project site. Fieldwork methods included taking detailed field notes, digital photography, and examination of close-scale field maps and aerial photographs. Photographs were taken with an iPhone 13 Pro.

6.1.2 Results

The project site contains two separate properties: 1404 Royal Oaks Drive (APN 8530-004-059), constructed in 1953; and 1414 Royal Oaks Drive (APN 8530-004-060), constructed in 1999. Details pertaining to 1404 Royal Oaks Drive are presented below.

1404 Royal Oaks Drive

1404 Royal Oaks Drive consists of a one-story, single-family residence built in the Ranch style of architecture with a detached garage and additional accessory building located on the lot. The property faces north and is setback from the street and generally obscured from view by large hedges and fencing (Exhibit 8).

Exhibit 8. Overview of north elevation street view of subject property, facing southeast.

The residence was constructed on a concrete slab foundation. The residence is topped with a low-pitched, cross gabled roof with moderate overhang, and clad in composition shingles. The roof includes two red brick slope chimneys and a ventilation dormer. The exterior is clad in stucco and horizontal wood siding.

The primary (north) elevation of the residence showcases an elongated facade with two entry points (Exhibit 9). The main entry, centrally located, features a recessed wooden door with glass panes flanked by metal sash casement windows on each side. At the eastern end of the primary elevation is a vinyl sash sliding window. The second entryway is located at the western end of the primary elevation. There is also a tripartite window with pebbled glazing located to the west of this entry point (Exhibit 10).

Exhibit 9. Overview of primary (north) elevation, facing south.

Exhibit 10. Overview of secondary entrance of primary (north) elevation, facing south.

The west elevation features a front portion that lacks a roof overhang, while the rear portion includes an overhang. It has one metal sash window with pebbled glazing (Exhibit 11). A second chimney is located at the rear portion of the elevation.

The east elevation includes three vinyl sash, double-pane windows and one attic vent beneath the roof gable. Additionally, the elevation features an exterior water heater with a partial enclosure (Exhibit 12).

The south elevation of the residence includes a sliding glass entry door accessed via a small wooden porch with a shed roof (Exhibits 13 and 14). The elevation also includes three windows; a vinyl sash window and two metal sash casement windows. Located in the back yard adjacent to the south elevation is a concrete pad that serves as a patio area, and a collapsed wooden pergola (Exhibit 15).

Exhibit 11. Overview of west elevation, facing southeast.

Exhibit 12. Overview of east elevation, facing west.

Exhibit 13. Overview of south elevation, facing northwest.

Exhibit 14. Overview of south elevation wooden porch, facing east.

Exhibit 15. Overview of south elevation, backyard concrete pad, and collapsed wooden pergola facing northwest.

The detached garage is roughly square in plan and situated north of the residence. The exterior is clad in stucco and topped with a side-gabled, low-pitched roof clad in composition shingles with moderate overhangs and exposed rafters on the west and east elevations. The west elevation features a double car garage door as well as a single wooden and glass panel door (Exhibit 16). The north elevation has two metal divided-light wooden windows. The east and south elevations are uninterrupted stucco walls with no fenestration.

Exhibit 16. Overview of garage west elevation, facing east.

The one-story accessory building is located to the east of the residence and has a rectangular shaped plan. It has a medium-pitched side gabled roof with wide overhanging eaves and exposed rafter tails. The exterior is clad in stucco. The primary (north) elevation of the accessory building features a set of double doors sheltered by an eave overhang (Exhibit 17). The east and west elevations have various metal window types. The south elevation includes an entrance porch with concrete steps leading to double doors, sheltered by the eave overhang.

Exhibit 17. Overview of the north elevation of the accessory building, facing south.

6.2 Archaeological Survey

6.2.1 Methods

South Environmental Archaeological Principal Investigator Samantha Murray, MA, RPA oversaw the pedestrian survey of the project site on February 12, 2025. Fieldwork included taking field notes, digital photography, and examination of close-scale field maps and aerial photographs. Photographs were taken with an iPhone 15.

South Environmental examined the ground surface for the presence of prehistoric artifacts (e.g., flaked stone tools, tool-making debris, stone milling tools), historical artifacts (e.g., metal, glass, ceramics), sediment discolorations that might indicate the presence of a cultural midden, depressions, and other features that might indicate the former presence of structures or buildings (e.g., post holes, foundations).

6.2.2 Results

No archaeological resources were identified within the project site as a result of the survey.

The project site is largely developed with buildings and paved areas. Ground surface visibility was approximately 10 percent due to the presence of buildings, paving, ornamental landscaping, and duff from the mature trees on the property. (see Exhibits 9-17 above).

7 Property Significance Evaluation

7.1 1404 Royal Oaks Drive

The following presents an evaluation of 1404 Royal Oaks Drive in consideration of CRHR designation criteria.

CRHR Criterion 1. Is associated with events that have made a significant contribution to the broad patterns of California's history and cultural heritage.

The subject property was constructed in 1953 when the City's landscape was transitioning from primarily agricultural to postwar residential development. At the time of the subject property's construction, it was still surrounded by some agricultural development, but this land rapidly infilled with residential construction in the following decade. This was a very common development pattern for cities throughout California in the postwar period, as the economy transitioned, and populations grew rapidly. Therefore, the construction of the subject property simply follows a steady pattern of events across the City and California. Therefore, the subject property is recommended not eligible under CRHR Criteria 1.

CRHR Criterion 2. Is associated with the lives of persons important in our past.

From its time of construction in 1953 through 2020, the subject property was owned and occupied by members of the Remington Family. Archival research did not reveal any significant information regarding any of the Remington family members associated with the property. Therefore, the subject property is recommended not eligible under CRHR Criterion 2.

CRHR Criterion 3. Embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of an important creative individual, or possesses high artistic values.

The subject property was constructed 1953 in the Ranch style of architecture. Since its time of construction, the subject property has been substantially altered. Alterations include the infill of the original detached garage on the primary (north) elevation, with a new exterior wall, entryway, and windows, and construction of a new detached garage in 1963; a large addition constructed on the south and west elevations in 1977; the construction of a detached accessory building to the east of the house in 1985; and observed alterations including the replacement of many original metal windows with modern vinyl ones. These alterations, specifically the infill of the attached garage and addition on the south and west elevations, have significantly altered the original design, craftsmanship, and materials of the subject property. In addition, the construction of several detached buildings on the subject property site has resulted in the loss of a defined front yard, which was typical for Ranch style homes. While the subject property does maintain some elements of the Ranch style, including being one story in height, having a low-pitch side gabled roof with moderate overhangs, asymmetrical

façade, variety of window types, large picture windows, and large chimneys, it lacks many of its original character defining features as a result of the alterations since its construction in 1953. For instance, it no longer has a simple floor plan due to the addition, no longer has an attached garage, and lacks traditional exterior cladding. As such, it is not considered an important or valuable example of the Ranch style of architecture and is not unique or innovative in its design and therefore does not rise to the level of significance required for individual building designation under this criterion. Furthermore, the house was constructed by builder E. A. Daniell Co. Archival research did not reveal this builder to be notable. Therefore, the subject property is recommended not eligible under CRHR Criterion 3.

CRHR Criterion 4. Has yielded, or may be likely to yield, information important in prehistory or history.

The subject property is not significant as a source, or likely source, of important historical information nor does it appear likely to yield important information about historic construction methods, materials or technologies. Therefore, the property is not recommended eligible under CRHR Criterion 4.

Integrity

Location: The subject property retains integrity of location. The property retains its original orientation and remains in its original location.

Design: The subject property does not retain integrity of design. It has been altered significantly with the infill of the original attached garage, a large addition on the south and west elevations, construction of two detached buildings on the site, and replacement of original windows with modern vinyl windows.

Setting: The subject property does not retain integrity of setting. When the property was constructed in 1953, the area surrounding the property was predominately orchards with light residential housing. In the decades following the subject property's construction, the area developed from agricultural land to residential and it is no longer located in a largely agricultural area.

Materials: The subject property lacks integrity of materials. The infill of the original attached garage, a large addition on the south and west elevations, construction of two detached buildings on the site, and replacement of original windows with modern vinyl windows has resulted in a loss of original materials and introduction of new materials that detract from the original house.

Workmanship: The subject property lacks integrity of workmanship. The infill of the original attached garage, a large addition on the south and west elevations, and construction of two detached buildings on the site has resulted in much of the original workmanship being obscured and has significantly impacted the integrity of workmanship.

Feeling: The subject property lacks integrity of feeling. Due to several alterations, construction of detached building on the property, the subject property no longer feels like a 1953 Ranch style house.

Association: The subject property lacks integrity of association. The property has no important associations with events, people, or important patterns of development in the City.

For all of the reasons provided above, 1404 Royal Oaks Drive is recommended not eligible for designation in the CRHR.

8 Findings and Recommendations

8.1 Built Environment

The following built environment resource over 45 years old was identified within the project site:

- 1404 Royal Oaks Drive, (APN 8530-004-059), 1953

The single-family residence at 1404 Royal Oaks Drive was recorded and evaluated for historical significance on the appropriate set of DPR Forms (Appendix C) in consideration of CRHR designation criteria and integrity requirements. The property was found not eligible under all designation criteria due to a lack of significant historical associations and architectural merit.

No historical resources were identified within the project site as a result of this study. Therefore, with respect to historic built environment resources, the proposed project will have a less than significant impact on historical resources under CEQA.

8.2 Archaeology

No archaeological resources were identified within the project site as a result of the CHRIS records search, Native American outreach, or pedestrian survey. Further, most of the project site has been heavily disturbed by the previous construction of buildings and subsurface infrastructure. Therefore, the project site is unlikely to contain intact buried archaeological deposits; however, ground disturbance always presents a possibility of encountering resources. Standard unanticipated discovery procedures for archaeological resources and human remains are provided below. With implementation of these regulatory requirements, the proposed project would have a less than significant impact on archaeological and historical resources.

8.2.1 Unanticipated Discovery of Cultural Resources

Should archaeological resources (sites, features, or artifacts) be exposed during construction activities for the proposed project, all construction work occurring within 100 feet of the find shall immediately stop until a qualified archaeologist, meeting the Secretary of the Interior's Professional Qualification Standards, can evaluate the significance of the find and determine whether or not additional study is warranted. Depending upon the significance of the find, the archaeologist may simply record the find and allow work to continue. If the discovery proves significant under CEQA, additional work such as preparation of an archaeological treatment plan, testing, or data recovery may be warranted.

8.2.2 Unanticipated Discovery of Human Remains

In accordance with Section 7050.5 of the California Health and Safety Code, if human remains are found, the County Coroner shall be notified within 24 hours of the discovery. No further excavation or

disturbance of the site or any nearby area reasonably suspected to overlie adjacent remains shall occur until the County Coroner has determined, within two working days of notification of the discovery, the appropriate treatment and disposition of the human remains. If the remains are determined to be Native American, the Coroner shall notify the NAHC in Sacramento within 24 hours. In accordance with California PRC, Section 5097.98, the NAHC must immediately notify those persons it believes to be the Most Likely Descendant (MLD) from the deceased Native American. The MLD shall complete their inspection within 48 hours of being granted access to the site. The MLD would then determine, in consultation with the property owner, the disposition of the human remains.

In conclusion, no historic built environment or archaeological cultural resources were identified within the project site as a result of this study. Therefore, the proposed project will have a less than significant impact on cultural resources under CEQA. No mitigation is required.

9 Bibliography

Ancestry.com. Various. Family Tree and documents related to the Remington family. Accessed online via https://www.ancestry.com/family-tree/person/tree/25445014/person/362651283434/facts?_phsrc=tqk35&_phstart=successSource.

Bancroft, Hubert Howe. 1885. *History of California, Volume III: 1825-1840*. A.L. Bancroft & Co., San Francisco.

Bean, L.J. and C. Smith. 1978. Gabrielino. In *California*, edited by Robert F. Heizer, pp. 538-549. Handbook of North American Indians, Vol. 8, William G. Sturtevant, general editor, Smithsonian Institution, Washington, D.C.

Bruno, David, Ryan, Gary, Kaplan, Curt and Slemmer, Jonathan. 2000. Climate of Los Angeles, California. NOAA Technical Memorandum NWS WR-261. https://repository.library.noaa.gov/view/noaa/14744#:~:text=Under%20the%20modified%20K%C3%B6ppen%20classification,transitions%20in%20temperature%22%2D%2DIntroduction, accessed January 29, 2025.

Byrd, B.F. and L. Mark Raab. 2007. Prehistory of the Southern Bight: Models for a New Millennium. In *California Prehistory*, edited by Terry L. Jones and Kathryn A. Klar, pp. 215-228. AltaMira Press, New York.

Calisphere. 1871. Map of Rancho Azusa de Duarte 1872. Monrovia Legacy Project. Accessed online via https://calisphere.org/item/47b8b52db37b87826f3353ccbcba1572/

Caughey, John and LaRee Caughey. 1977. *Los Angeles Biography of a City*. University of California Press, Berkeley.

City of Duarte. 2022. Chapter 7 Historic Preservation. Duarte General Plan 2005-2020. Electronic document: https://www.laconservancy.org/wp-content/uploads/2022/10/Duarte-Historic-Preservation-Element.pdf, accessed January 28, 2025.

Various Years. Permits retrieved for 1404 Royal Oaks Drive from Duarte City Clerk office on February 18, 2025.

Cleland, Robert Glass. 2005. *The Cattle on a Thousand Hills: Southern California, 1850-80*, second ed., sixth printing. The Huntington Library Press, San Marino, California.

Dallas, S. F. 1955. *The Hide and Tallow Trade in Alta California 1822–1848*. Ph.D. dissertation, Indiana University, Bloomington, Indiana.

Duarte Historical Society and Museum. 2025. Regional Resource/Local Points of Interest. Accessed on February 20, 2025 via: https://www.ranchodeduarte.org/regional-resource-local-points-of-interest/

Davis, Charles F. 1957. Monrovia Duarte Community Book. Monrovia, California. Arthur H. Crawston. Retrieved from Los Angeles County Public Library

Dumke, Glenn S. 1944. *The Boom of the Eighties in Southern California*. Huntington Library Press, San Marino, California.

Duarte, City of. 2022. Chapter 7 Historic Preservation. *Duarte General Plan 2005-2020*. Electronic document: https://www.laconservancy.org/wp-content/uploads/2022/10/Duarte-Historic-Preservation-Element.pdf, accessed January 28, 2025.

Erlandson, Jon M. 1991. Early Maritime Adaptations on the Northern Channel Islands. In *Hunter-Gatherers of Early Holocene Coastal California*, edited by J. M. Erlandson and R. Colten. Perspectives in California Archaeology, Vol. 1. Institute of Archaeology, University of California, Los Angeles.

Glassow, M.A., L. Wilcoxen, and J. M. Erlandson. 1988. Cultural and Environmental Change during the Early Period of Santa Barbara Channel Prehistory. In *The Archaeology of Prehistoric Coastlines*, edited by G. Bailey and J. Parkington pp. 64–77. Cambridge University Press, Cambridge.

Greene, Sean and Thomas Curwen. 2019. Mapping the Tongva Villages of L.A.'s Past. *Los Angeles Times*. Electronic document: https://www.latimes.com/projects/la-me-tongva-map/, January 29, 2025.

Golla, V. 2011. *California Indian Languages*. University of California Press Los Angeles.

Gumprecht, Blake. 1999. *The Los Angeles River: Its Life, Death, and Possible Rebirth*. The Johns Hopkins University Press, Baltimore, Maryland.

Harrington, John P. 1934. Fieldwork among the Indians of California. In *Explorations and Fieldwork of the Smithsonian Institution in 1934*, pp. 81-84. Smithsonian Institute, Washington, DC.

Johnson, J. R., T. W. Stafford, Jr., H. O. Ajie, and D. P. Morris. 2002. Arlington Springs Revisited. In Proceedings of the Fifth California Islands Symposium, edited by D. Browne, K. Mitchell, and H. Chaney, pp. 541–545.

Johnston, B.E. 1962. Map of California's Gabrielino Indians. By [California – Tongva]. Southwest Museum. Los Angeles, California.

Jones, T.L. and Kathryn A. Klar. 2007. *California Prehistory: Colonization, Culture, and Complexity*. AltaMira Press, Lanham, Maryland.

Kirkman, George W. 1937. Principal historic sites, old highways, also battle fields, Spanish, Mexican, early American, in old Los Angeles County, 1937. TESSA Digital Collections of the Los Angeles Library. https://tessa2.lapl.org/digital/collection/maps/id/29/rec/1, accessed January 29, 2025.

Kimbro, Enda E. and Julia G. Costello. 2009. *The California Missions: History, Art, and Preservation*. Getty Publications, Los Angeles.

King, Chester D. 1994. *Native American Placenames in the Santa Monica Mountains National Recreation Area, Agoura Hills*. Topanga Anthropological Consultants, California.

Kowta, M. 1969. The Sayles Complex, A Late Milling Stone Assemblage from the Cajon Pass and the Ecological Implications of its Scraper Planes. *University of California Publications in Anthropology* 6:35–69. Berkeley, California.

Kroeber, Alfred J. 1925. Handbook of the Indians of California. Bureau of American Ethnology Bulletin 78. Dover Publications, Inc., New York.

Kyle, Douglas E. 2002. Historic Spots in California. 5th ed. Stanford University Press, Stanford, California.

Legacy. Mrs. Delta Faye Remington Obituary, 2020. Retrieved from https://www.legacy.com/us/obituaries/name/delta-remington-obitary?pid=196974836

Margiloff, Irwin, et al. 2009. Images of America Duarte. Arcadia Publishing. Retrieved from Los Angeles County Library.

McAlester, Virginia Savage. 2013. A Field Guide to American Houses (Revised): The Definitive Guide to Identifying and Understanding America's Domestic Architecture. New York City, New York: Alfred A Knopf.

McCawley, W. 1996. *The First Angelinos: The Gabrielino Indians of Los Angeles*. Malki Museum Press, Banning California and Ballena Press, Novato, California.

Moore, Aloysia R, et al. 1976. On The Duarte. Duarte, California. City of Duarte Bicentennial. Accessed online via: https://www.accessduarte.com/home/showpublisheddocument/1460/637777511360700000

Moratto, M. 1984. *California Archaeology*. Academic Press, New York.

Morton, Douglas M and Fred K. Miller. 2006. Geologic Map of the San Bernardino and Santa Ana 30' x 60' quadrangles, California. *United States Geological Survey Open-File Report 2006-1217*. United States Geological Survey. Electronic document: https://pubs.usgs.gov/of/2006/1217/, accessed January 29, 2025.

National Cooperative Soil Survey [NCSS]. 1975. Soboba Series. National Cooperative Soil Survey. Electronic Document: https://soilseries.sc.egov.usda.gov/OSD_Docs/S/SOBOBA.html, accessed January 29, 2025.

National Cooperative Soil Survey [NCSS]. 2017a. Palmview Series. National Cooperative Soil Survey. Electronic Document: https://soilseries.sc.egov.usda.gov/OSD_Docs/P/PALMVIEW.html, accessed January 29, 2025.

National Cooperative Soil Survey [NCSS]. 2017a. Tujunga Series. National Cooperative Soil Survey. Electronic Document: https://soilseries.sc.egov.usda.gov/OSD_Docs/T/TUJUNGA.html, accessed January 29, 2025.

NETR (Nationwide Environmental Title Research, LLC). 2025. Historic aerial photographs of 1404 Royal Oaks Drive, City of Duarte, CA dating from 1952, 1964,1965,1972, 1980, 1987, 1992, 1993, 1994, 1995, 1996, 1997, 1998, 1999, 2000, 2003, 2004, 2005, 2009, 2010, 2012, 2014, 2016,2018, 2020,2022. Accessed online via: https://historicaerials.com/viewer.

National Geologic Map Database Project. 2024. TopoView. United States Geological Survey. https://ngmdb.usgs.gov/topoview/viewer/#13/33.8362/-117.2570, accessed January 29, 2025.

Norman, E.B. 1938. History of Monrovia and Duarte: narrative and biographical. Monrovia, California: A.H. Cawston

ParcelQuest. 2025. Property information on 1404 Royal Oaks Drive. Parcel Quest. Accessed online via: https://pqweb.parcelquest.com/#home

Pouyat, Richard V., Susan D. Day, Sally Brown, Kirsten Schwarz, Richard E. Shaw, Katalin Szlavecz, Tara L. E. Trammell, and Ian D. Yesilonis. 2020. Urban Soils. Forest and Rangeland Soils of the United States Under Changing Conditions. Pp. 127-144. https://www.fs.usda.gov/nrs/pubs/book/soilsBook/soilsBookChapter7UrbanSoils.pdf, accessed January 29, 2025.

Rick, T.C., Jon M. Erlandson, and René Vellanoweth. 2001. Paleocoastal Marine Fishing on the Pacific Coast of the Americas: Perspectives from Daisy Cave, California. In *American Antiquity* 66:595–613.

Sanborn Maps. Sanborn Fire Insurance Company. 1950. Sanborn Fire Insurance Map of Duarte, California. Accessed online via Los Angeles Public Library.

Simes, Jack. 2016. Reclamation: Managing Water in the West, Los Angeles Basin Study Summary Report. United States Department of the Interior Bureau of Reclamation. https://www.usbr.gov/watersmart/bsp/docs/fy2017/LABasinStudySummaryReport.pdf#page20, accessed January 29, 2025.

SocalSwiss. 2025. Swiss Park. Accessed online via: https://www.socalswiss.com/swiss-park

Southwest Museum. 1962. The Gabrienlino Indian at the time of the Portola Expedition. The Autry Museum of the American West.

The McCook Daily Gazette (TMDG).1941. "A Daughter Was Born". The McCook Daily Gazette (McCook, Nebraska). March 29, 1941. Accessed online via: https://www.newspapers.com/image/727917380/

True, D.L. 1993. Bedrock Milling Elements as Indicators of Subsistence and Settlement Patterns in Northern San Diego County, California. In *Pacific Coast Archaeological Society Quarterly* 29(2):1–26.

UCSB FrameFinder (University of California, Santa Barbara). 2025. Historic aerial photographs of 1404 Royal Oaks Drive, City of Duarte, CA dating from 1936,1954,1960,1962,1965, 1981. Map & Imagery Laboratory (MIL) UCSB Library. Accessed online: https://mil.library.ucsb.edu/ap_indexes/FrameFinder/

University of California, Santa Barbara (UCSB). 2024. Historic Aerial Photographs of project area, various years. Map & Imagery Laboratory (MIL) UCSB Library, Electronic Resource. Accessed online: https://mil.library.ucsb.edu/ap_indexes/FrameFinder/

U.S. Geologic Service (USGS). 2024. The National Map Viewer. U.S. Department of the Interior. Washington D.C. Electronic resource, https://apps.nationalmap.giv/viewer/, accessed November 25, 2024.

Wallace, W. 1955. Suggested Chronology for Southern California Coastal Archaeology. In *Southwestern Journal of Anthropology* 11:214–230.

Wallace, W. 1978. Post-Pleistocene Archaeology, 9000 to 2000 B.C. In *California*, edited by Robert F. Heizer, pp. 25–36. Handbook of North American Indians, Vol. 8, William G. Sturtevant, general editor, Smithsonian Institution, Washington D.C.

Warren, C.N. 1968. Cultural Tradition and Ecological Adaptation on the Southern California Coast. In Archaic *Prehistory in the Western United States*, edited by Cynthia Irwin-Williams, pp. 1–14. Eastern New Mexico University Contributions in Anthropology No. 1. Portales.

Yerkes, R.F., McCulloh, T.H., Schoellhamer, J.E., and Vedder, J.G. 1965a. Geology of the Los Angeles Basin California–an Introduction. *Geological Survey Professional Paper 420-A*. https://pubs.usgs.gov/pp/0420a/report.pdf, accessed January 29, 2025.

Yerkes, R.F., McCulloh, T.H., Schoellhamer, J.E., and Vedder, J.G. 1965b. Geology of the Los Angeles Basin California–an Introduction, Plate 2. *Geological Survey Professional Paper 420-A*. https://pubs.usgs.gov/pp/0420a/plate-2.pdf, accessed January 29, 2025.

Appendix A:
Records Search Results Summary

Report List

Duarte

Report No.	Other IDs	Year	Author(s)	Title	Affiliation	Resources
LA-06695		2001	Wlodarski, Robert J.	A Phase 1 Archaeological Study for a Proposed Senior Housing Project Located at 1716-1721 Huntington Drive (APN# 8530-023-909 and #8530-023-910) City of Duarte, Los Angeles County, California	Historical, Environmental, Archaeoloigical, Research, Team	
LA-08678		2007	Bonner, Wayne H.	Cultural Resources Records Search and Site Visit Results for T-mobile Candidate Ie24108c (montgomery Field), 1565 Central Avenue, Duarte, Los Angeles County, California	Michael Brandman Associates	
LA-09387		2007	Billat, Lorna	SHPO Cover Letter FCC Form 620 (Section 106) Submittal EarthTouch Inc. (Consultants on Behalf of Royal Street Communications, LLC) Duarte High School / LA-2308B Duarte, Los Angeles County, California	EarthTouch Inc.	19-000261, 19-002803
LA-09473		2008	Schmidt, June A.	DWO 6027-4800; J.I. No. 8-4838: Payne 16 kV Deteriorated Pole Replacement Project, Los Angeles County, California	Compass Rose	
LA-09666		2008	Bonner, Wayne H.	Cultural Resources Records Search and Site Visit Results for T-Mobile Candidate IE24108A (Santa Teresita Medical Building), 931 Buena Vista Street, Duarte, Los Angeles County, California	Environmental Assessment Specialists, Inc.	
LA-13001		2014	Bonner, Diane F. and Carrie D. Wills	Cultural Resources Records Search and Site Visit Results for AT&T Mobility, LLC Candidate CLV1194 (Duarte High School), 1401 Central Avenue, Duarte, Los Angeles County, California, CASPR No. 3551699487	Environmental Assessment Specialists, Inc.	

Resource List

Duarte

Primary No.	Trinomial	Other IDs	Type	Age	Attribute codes	Recorded by	Reports
P-19-192438		Resource Name - 1147 E Lemon Ave	Building	Historic	HP02		
P-19-192583		Resource Name - City of Duarte North Yard Bldg	Building	Historic	HP06		
P-19-192584		Resource Name - Duarte Chamber of Commerce and Montessori School	Building	Historic	HP13; HP14; HP15		

Appendix B:
Native American Scoping

NATIVE AMERICAN HERITAGE COMMISSION

CHAIRPERSON
Reginald Pagaling
Chumash

VICE-CHAIRPERSON
Buffy McQuillen
Yokayo Pomo, Yuki, Nomlaki

SECRETARY
Sara Dutschke
Miwok

PARLIAMENTARIAN
Wayne Nelson
Luiseño

COMMISSIONER
Isaac Bojorquez
Ohlone-Costanoan

COMMISSIONER
Stanley Rodriguez
Kumeyaay

COMMISSIONER
Laurena Bolden
Serrano

COMMISSIONER
Reid Milanovich
Cahuilla

COMMISSIONER
Bennae Calac
Pauma-Yuima Band of Luiseño Indians

ACTING EXECUTIVE SECRETARY
Steven Quinn

NAHC HEADQUARTERS
1550 Harbor Boulevard
Suite 100
West Sacramento,
California 95691
(916) 373-3710
nahc@nahc.ca.gov

February 4, 2025

Samantha Jovanovic
South Environmental

Via Email to: sjovanovic@southenvironmental.com

Re: Native American Tribal Consultation, Pursuant to the Assembly Bill 52 (AB 52), Amendments to the California Environmental Quality Act (CEQA) (Chapter 532, Statutes of 2014), Public Resources Code Sections 5097.94 (m), 21073, 21074, 21080.3.1, 21080.3.2, 21082.3, 21083.09, 21084.2 and 21084.3, City of Duarte - 1404 Royal Oaks CEQA Project, Los Angeles County

To Whom It May Concern:

Pursuant to Public Resources Code section 21080.3.1 (c), attached is a consultation list of tribes that are traditionally and culturally affiliated with the geographic area of the above-listed project. Please note that the intent of the AB 52 amendments to CEQA is to avoid and/or mitigate impacts to tribal cultural resources, (Pub. Resources Code §21084.3 (a)) ("Public agencies shall, when feasible, avoid damaging effects to any tribal cultural resource.")

Public Resources Code sections 21080.3.1 and 21084.3(c) require CEQA lead agencies to consult with California Native American tribes that have requested notice from such agencies of proposed projects in the geographic area that are traditionally and culturally affiliated with the tribes on projects for which a Notice of Preparation or Notice of Negative Declaration or Mitigated Negative Declaration has been filed on or after July 1, 2015. Specifically, Public Resources Code section 21080.3.1 (d) provides:

Within 14 days of determining that an application for a project is complete or a decision by a public agency to undertake a project, the lead agency shall provide formal notification to the designated contact of, or a tribal representative of, traditionally and culturally affiliated California Native American tribes that have requested notice, which shall be accomplished by means of at least one written notification that includes a brief description of the proposed project and its location, the lead agency contact information, and a notification that the California Native American tribe has 30 days to request consultation pursuant to this section.

The AB 52 amendments to CEQA law does not preclude initiating consultation with the tribes that are culturally and traditionally affiliated within your jurisdiction prior to receiving requests for notification of projects in the tribe's areas of traditional and cultural affiliation. The Native American Heritage Commission (NAHC) recommends, but does not require, early consultation as a best practice to ensure that lead agencies receive sufficient information about cultural resources in a project area to avoid damaging effects to tribal cultural resources.

The NAHC also recommends, but does not require that agencies should also include with their notification letters, information regarding any cultural resources assessment that has been completed on the area of potential effect (APE), such as:

1. The results of any record search that may have been conducted at an Information Center of the California Historical Resources Information System (CHRIS), including, but not limited to:

- A listing of any and all known cultural resources that have already been recorded on or adjacent to the APE, such as known archaeological sites;
- Copies of any and all cultural resource records and study reports that may have been provided by the Information Center as part of the records search response;
- Whether the records search indicates a low, moderate, or high probability that unrecorded cultural resources are located in the APE; and
- If a survey is recommended by the Information Center to determine whether previously unrecorded cultural resources are present.

2. The results of any archaeological inventory survey that was conducted, including:

    - Any report that may contain site forms, site significance, and suggested mitigation measures.

      All information regarding site locations, Native American human remains, and associated funerary objects should be in a separate confidential addendum, and not be made available for public disclosure in accordance with Government Code section 6254.10.

3. The result of the Sacred Lands File (SLF) check conducted through the Native American Heritage Commission was positive. Please contact the Gabrieleno Band of Mission Indians – Kizh Nation on the attached list for more information.

4. Any ethnographic studies conducted for any area including all or part of the APE; and

5. Any geotechnical reports regarding all or part of the APE.

Lead agencies should be aware that records maintained by the NAHC and CHRIS are not exhaustive and a negative response to these searches does not preclude the existence of a tribal cultural resource. A tribe may be the only source of information regarding the existence of a tribal cultural resource.

This information will aid tribes in determining whether to request formal consultation. In the event that they do, having the information beforehand will help to facilitate the consultation process.

If you receive notification of change of addresses and phone numbers from tribes, please notify the NAHC. With your assistance, we can assure that our consultation list remains current.

If you have any questions, please contact me at my email address: Andrew.Green@nahc.ca.gov.

Sincerely,

Andrew Green

Andrew Green
Cultural Resources Analyst

Attachment

Native American Heritage Commission
Native American Contact List
Los Angeles County
2/4/2025

Tribe Name	Fed (F) Non-Fed (N)	Contact Person	Contact Address	Phone #	Fax #	Email Address	Cultural Affiliation	Counties	Last Updated
Cahuilla Band of Indians	F	Erica Schenk, Chairperson	52701 CA Highway 371 Anza, CA, 92539	(951) 590-0942	(951) 763-2808	chair@cahuilla-nsn.gov	Cahuilla	Imperial,Los Angeles,Orange,Riverside,San Bernardino,San Diego	2/1/2024
Cahuilla Band of Indians	F	BobbyRay Esparza, Cultural Director	52701 CA Highway 371 Anza, CA, 92539	(951) 763-5549		besparza@cahuilla-nsn.gov	Cahuilla	Imperial,Los Angeles,Orange,Riverside,San Bernardino,San Diego	6/28/2023
Cahuilla Band of Indians	F	Anthony Madrigal, Tribal Historic Preservation Officer	52701 CA Highway 371 Anza, CA, 92539	(951) 763-5549		anthonymad2002@gmail.com	Cahuilla	Imperial,Los Angeles,Orange,Riverside,San Bernardino,San Diego	6/28/2023
Gabrieleno Band of Mission Indians - Kizh Nation	N	Andrew Salas, Chairperson	P.O. Box 393 Covina, CA, 91723	(844) 390-0787		admin@gabrielenoindians.org	Gabrieleno	Los Angeles,Orange,Riverside,San Bernardino,Santa Barbara,Ventura	8/18/2023
Gabrieleno Band of Mission Indians - Kizh Nation	N	Christina Swindall Martinez, Secretary	P.O. Box 393 Covina, CA, 91723	(844) 390-0787		admin@gabrielenoindians.org	Gabrieleno	Los Angeles,Orange,Riverside,San Bernardino,Santa Barbara,Ventura	8/18/2023
Gabrieleno/Tongva San Gabriel Band of Mission Indians	N	Anthony Morales, Chairperson	P.O. Box 693 San Gabriel, CA, 91778	(626) 483-3564	(626) 286-1262	GTTribalcouncil@aol.com	Gabrieleno	Los Angeles,Orange,Riverside,San Bernardino,Santa Barbara,Ventura	12/4/2023
Gabrielino Tongva Indians of California Tribal Council	N	Robert Dorame, Chairperson	P.O. Box 490 Bellflower, CA, 90707	(562) 761-6417	(562) 761-6417	gtongva@gmail.com	Gabrielino	Los Angeles,Orange,Riverside,San Bernardino,Santa Barbara,Ventura	3/16/2023
Gabrielino Tongva Indians of California Tribal Council	N	Christina Conley, Cultural Resource Administrator	P.O. Box 941078 Simi Valley, CA, 93094	(626) 407-8761		christina.marsden@alumni.usc.edu	Gabrielino	Los Angeles,Orange,Riverside,San Bernardino,Santa Barbara,Ventura	3/16/2023
Gabrielino/Tongva Nation	N	Sandonne Goad, Chairperson	106 1/2 Judge John Aiso St., #231 Los Angeles, CA, 90012	(951) 807-0479		sgoad@gabrielino-tongva.com	Gabrielino	Los Angeles,Orange,Riverside,San Bernardino,Santa Barbara,Ventura	3/28/2023
Gabrielino-Tongva Tribe	N	Charles Alvarez, Chairperson	23454 Vanowen Street West Hills, CA, 91307	(310) 403-6048		Chavez1956metro@gmail.com	Gabrielino	Los Angeles,Orange,Riverside,San Bernardino,Santa Barbara,Ventura	5/30/2023
Gabrielino-Tongva Tribe	N	Sam Dunlap, Cultural Resource Director	P.O. Box 3919 Seal Beach, CA, 90740	(909) 262-9351		tongvatcr@gmail.com	Gabrielino	Los Angeles,Orange,Riverside,San Bernardino,Santa Barbara,Ventura	5/30/2023
Santa Rosa Band of Cahuilla Indians	F	Steven Estrada, Tribal Chairman	P.O. Box 391820 Anza, CA, 92539	(951) 659-2700	(951) 659-2228	sestrada@santarosa-nsn.gov	Cahuilla	Imperial,Los Angeles,Orange,Riverside,San Bernardino,San Diego	4/8/2024
Santa Rosa Band of Cahuilla Indians	F	Vanessa Minott, Tribal Administrator	P.O. Box 391820 Anza, CA, 92539	(951) 659-2700	(951) 659-2228	vminott@santarosa-nsn.gov	Cahuilla	Imperial,Los Angeles,Orange,Riverside,San Bernardino,San Diego	4/8/2024

Soboba Band of Luiseno Indians	F	Jessica Valdez, Cultural Resource Specialist	P.O. Box 487 San Jacinto, CA, 92581	(951) 663-6261	(951) 654-4198	jvaldez@soboba-nsn.gov	Cahuilla Luiseno	Imperial,Los Angeles,Orange,Riverside,San Bernardino,San Diego	7/14/2023
Soboba Band of Luiseno Indians	F	Joseph Ontiveros, Tribal Historic Preservation Officer	P.O. Box 487 San Jacinto, CA, 92581	(951) 663-5279	(951) 654-4198	jontiveros@soboba-nsn.gov	Cahuilla Luiseno	Imperial,Los Angeles,Orange,Riverside,San Bernardino,San Diego	7/14/2023

This list is current only as of the date of this document. Distribution of this list does not relieve any person of statutory responsibility as defined in Section 7050.5 of the Health and Safety Code, Section 5097.94 of the Public Resources Code and Section 5097.98 of the Public Resources Code.

This list is only applicable for consultation with Native American tribes under Public Resources Code Sections 21080.3.1 for the proposed City of Duarte - 1404 Royal Oaks CEQA Project, Los Angeles County.

Record: PROJ-2025-000643
Report Type: AB52 GIS
Counties: Los Angeles
NAHC Group: All

Outlook

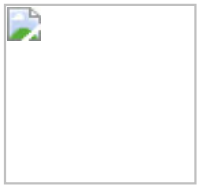
Re: Scoping Letter: City of Duarte - 1404 Royal Oaks Project, Duarte, Los Angeles County

From Gabrieleno Administration <admin@gabrielenoindians.org>
Date Wed 2/12/2025 4:07 PM
To Samantha Jovanovic <sjovanovic@southenvironmental.com>

Thank you Samantha

Best regards,

Gabrieleño Band of Mission Indians - Kizh Nation
PO Box 393
Covina, CA 91723
Office: 844-390-0787
website: www.gabrielenoindians.org



The region where Gabrieleño culture thrived for more than twelve thousand years encompassed most of Los Angeles County, more than half of Orange County and portions of Riverside and San Bernardino counties. It was the labor of the Gabrieleño who built the missions, ranchos and the pueblos of Los Angeles. They were trained in the trades, and they did the construction and maintenance, as well as the farming and managing herds of livestock. The Gabrieleño are the ones who did all this work, and they really are the foundation of the early economy of the Los Angeles area. That's a contribution that Los Angeles has not recognized--the fact that in its early decades, without the Gabrieleño, the community simply would not have survived.

On Wed, Feb 12, 2025 at 3:22 PM Samantha Jovanovic <sjovanovic@southenvironmental.com> wrote:

> Hello Brandy,
>
> The lead agency for this project is the City of Duarte Planning Department.
>
> You can contact the Planning Department here:
>
> **Duarte City Hall**
> **Community Development**
> 1600 Huntington Drive
> Duarte, CA 91010
> Planning | Duarte, CA
>
> Thank you for reaching out. Let me know if you have any questions or require any additional information.

Best wishes,
Samantha Jovanovic, MA, MS
Archaeologist

SOUTH ENVIRONMENTAL

Mobile: 562-900-8816
www.southenvironmental.com

From: Gabrieleno Administration <admin@gabrielenoindians.org>
Sent: Wednesday, February 12, 2025 1:43 PM
To: Samantha Jovanovic <sjovanovic@southenvironmental.com>
Subject: Re: Scoping Letter: City of Duarte - 1404 Royal Oaks Project, Duarte, Los Angeles County

Hello Samantha

Thank you for your email. Can you please provide the lead agencies contact information?

Best regards,

Brandy Salas

Gabrieleño Band of Mission Indians - Kizh Nation
PO Box 393
Covina, CA 91723
Office: 844-390-0787
website: www.gabrielenoindians.org

The region where Gabrieleño culture thrived for more than twelve thousand years encompassed most of Los Angeles County, more than half of Orange County and portions of Riverside and San Bernardino counties. It was the labor of the Gabrieleño who built the missions, ranchos and the pueblos of Los Angeles. They were trained in the trades, and they did the construction and maintenance, as well as the farming and managing herds of livestock. The Gabrieleño are the ones who did all this work, and they really are the foundation of the early economy of the Los Angeles area. That's a contribution that Los Angeles has not recognized--the fact that in its early decades, without the Gabrieleño, the community simply would not have survived.

On Tue, Feb 11, 2025 at 1:28 PM Samantha Jovanovic <sjovanovic@southenvironmental.com> wrote:

> Dear NAHC-listed Tribal Contact,

Attached please find a scoping letter and figure for the above referenced project. Please do not hesitate to contact me if you have any questions or comments regarding the proposed project.

Regards,

Samantha Jovanovic, MA, MS
Archaeologist

Mobile: 562-900-8816
www.southenvironmental.com

Outlook

Re: Scoping Letter: City of Duarte - 1404 Royal Oaks Project, Duarte, Los Angeles County

From Gabrieleno Administration <admin@gabrielenoindians.org>
Date Mon 3/10/2025 2:53 PM
To Samantha Jovanovic <sjovanovic@southenvironmental.com>

Hello Samantha

Thank you for your email. We have got into contact with the lead agency.

Best regards,
Brandy Salas

Tribal Administrative Coordinator
Gabrieleño Band of Mission Indians - Kizh Nation
PO Box 393
Covina, CA 91723
Office: 844-390-0787
Direct: 626- 469- 2655
website: www.gabrielenoindians.org

The region where Gabrieleño culture thrived for more than twelve thousand years encompassed most of Los Angeles County, more than half of Orange County and portions of Riverside and San Bernardino counties. It was the labor of the Gabrieleño who built the missions, ranchos and the pueblos of Los Angeles. They were trained in the trades, and they did the construction and maintenance, as well as the farming and managing herds of livestock. The Gabrieleño are the ones who did all this work, and they really are the foundation of the early economy of the Los Angeles area. That's a contribution that Los Angeles has not recognized--the fact that in its early decades, without the Gabrieleño, the community simply would not have survived.

On Mon, Mar 10, 2025 at 9:50 AM Samantha Jovanovic <sjovanovic@southenvironmental.com> wrote:

> Hello again,
>
> I am following up on my previous email sent February 11 regarding the 1404 Royal Oaks Project in the City of Duarte, CA. Please let me know if you have any comments or information you would like to share concerning cultural resources for this project.
>
> Please note that the request herein is for informational purposes only and does not constitute Assembly Bill 52 notification or initiation of consultation.

Regards,

Samantha Jovanovic, MA, MS
Archaeologist

Mobile: 562-900-8816
www.southenvironmental.com

From: Samantha Jovanovic
Sent: Tuesday, February 11, 2025 1:28 PM
Cc: Kevin Hunt <khunt@southenvironmental.com>
Subject: Scoping Letter: City of Duarte - 1404 Royal Oaks Project, Duarte, Los Angeles County

Dear NAHC-listed Tribal Contact,

Attached please find a scoping letter and figure for the above referenced project. Please do not hesitate to contact me if you have any questions or comments regarding the proposed project.

Regards,

Samantha Jovanovic, MA, MS
Archaeologist

Mobile: 562-900-8816
www.southenvironmental.com

Outlook

Re: Scoping Letter: City of Duarte - 1404 Royal Oaks Project, Duarte, Los Angeles County

From BobbyRay Esparza <besparza@cahuilla-nsn.gov>
Date Tue 3/11/2025 12:05 PM
To Samantha Jovanovic <sjovanovic@southenvironmental.com>

Hello,

The Cahuilla Band has reviewed your project letter, and Cahuilla will defer this project to the Gabrielino/Tongva tribes. The Cahuilla Band requests that you reach out to those tribes tore quest further information regarding the above project. The Cahuilla Band appreciates your assistance in preserving Tribal Cultural Resources in your project.

Respectfully,

BobbyRay Esparza
Cultural Director
Cahuilla Band of Indians
Office: 951-763-5549
Cell: 760-423-2773
Fax: 951-763-2808
Email: besparza@cahuilla-nsn.gov

"NOTICE: This communication may contain information that is proprietary, privileged, confidential, or otherwise legally exempt from disclosure. It is intended exclusively for the use of the individual or entity to which it is addressed. If you are not the intended recipient, you are not authorized to read, print, retain, copy, or disseminate this message or any part of it. If you have received this message in error, please notify the sender immediately by e-mail and delete all copies of the message."

From: Samantha Jovanovic <sjovanovic@southenvironmental.com>
Sent: Monday, March 10, 2025 9:50 AM
Subject: Re: Scoping Letter: City of Duarte - 1404 Royal Oaks Project, Duarte, Los Angeles County

Hello again,

I am following up on my previous email sent February 11 regarding the 1404 Royal Oaks Project in the City of Duarte, CA. Please let me know if you have any comments or information you would like to share concerning cultural resources for this project.

Please note that the request herein is for informational purposes only and does not constitute Assembly Bill 52 notification or initiation of consultation.

Regards,

Samantha Jovanovic, MA, MS
Archaeologist

Mobile: 562-900-8816
www.southenvironmental.com

From: Samantha Jovanovic
Sent: Tuesday, February 11, 2025 1:28 PM
Cc: Kevin Hunt <khunt@southenvironmental.com>
Subject: Scoping Letter: City of Duarte - 1404 Royal Oaks Project, Duarte, Los Angeles County

Dear NAHC-listed Tribal Contact,

Attached please find a scoping letter and figure for the above referenced project. Please do not hesitate to contact me if you have any questions or comments regarding the proposed project.

Regards,

Samantha Jovanovic, MA, MS
Archaeologist

Mobile: 562-900-8816
www.southenvironmental.com

Outlook

Re: Scoping Letter: City of Duarte - 1404 Royal Oaks Project, Duarte, Los Angeles County

From Christina Marsden Conley <christina.marsden@alumni.usc.edu>
Date Tue 2/11/2025 2:10 PM
To Samantha Jovanovic <sjovanovic@southenvironmental.com>
Cc Kimberly Johnson <kimcgu@gmail.com>

1 attachment (2 MB)
NA Scoping_1404 Royal Oaks Duarte Project.pdf;

Good afternoon,
Thank you for reaching out on this project. It is indeed positive for cultural resources. Native American monitoring will need to be implemented for all ground disturbances. I will defer final comment to the San Gabriel Band of Mission Indians (under the leadership of Anthony Morales) for final comment - his secretary is copied here.

Thank you,
Christina

tehoovet taamet
C H R I S T I N A C O N L E Y
•Tribal Cultural Resource Administrator Under Tribal Chair, Robert Dorame
•Native American Heritage Commission contact
•UCLA Scholar-in-Residence
•CSUDH NAGPRA Oversight Committee
•Catalina Tribal Coalition
•Coalition of California of State Tribes, Executive Board
https://file.lacounty.gov/SDSInter/lac/1137966_AREPORTONHARMSCountyofLosAngeles.pdf

GABRIELINO TONGVA INDIANS OF CALIFORNIA
The Gabrielino Tongva Indians of California tribe is a direct descendant, traditionally and culturally recognized in the State of California as the aboriginal tribe to encompass the entire Los Angeles Basin area to Laguna Beach, extending to the Channel Islands of Santa Catalina, San Nicholas and San Clemente Islands

This e-mail transmission and any documents, files or previous e-mail messages attached to it, maybe privileged and confidential and is intended only for the use of the intended recipient of this message. If you are not the intended recipient, or a person responsible for delivering it to the intended recipient, you are hereby notified that any review, disclosure, retention, copying, dissemination, distribution or use of any of the information contained in, or attached to this e-mail transmission is STRICTLY PROHIBITED. If you have received this transmission in error, please immediately notify me by return email or by telephone at the above number and delete the message and its attachments.

On Feb 11, 2025, at 1:28 PM, Samantha Jovanovic <sjovanovic@southenvironmental.com> wrote:

Dear NAHC-listed Tribal Contact,

Attached please find a scoping letter and figure for the above referenced project. Please do not hesitate to contact me if you have any questions or comments regarding the proposed project.

Regards,

Samantha Jovanovic, MA, MS
Archaeologist

Mobile: 562-900-8816
www.southenvironmental.com

Outlook

Re: Scoping Letter: City of Duarte - 1404 Royal Oaks Project, Duarte, Los Angeles County

From Vanessa Minott <vminott@santarosa-nsn.gov>
Date Wed 2/12/2025 12:58 PM
To Samantha Jovanovic <sjovanovic@southenvironmental.com>

Acha'i Tamit,
Thank you for reaching out to Santa Rosa Band of Cahuilla Indians. We defer any comments to Soboba Band of Luiseno Indians cultural resource department.

Respectfully,
Vanessa Minott,
Tribal Administrator

Santa Rosa Band of Cahuilla Indians
P.O. Box 391820
Anza, CA 92539
951-659-2700 ext. 102
760-668-0460 work cell

From: Samantha Jovanovic <sjovanovic@southenvironmental.com>
Sent: Tuesday, February 11, 2025 1:28 PM
Cc: Kevin Hunt <khunt@southenvironmental.com>
Subject: [External] Scoping Letter: City of Duarte - 1404 Royal Oaks Project, Duarte, Los Angeles County

Dear NAHC-listed Tribal Contact,

Attached please find a scoping letter and figure for the above referenced project. Please do not hesitate to contact me if you have any questions or comments regarding the proposed project.

Regards,

Samantha Jovanovic, MA, MS
Archaeologist

SOUTH ENVIRONMENTAL

Mobile: 562-900-8816
www.southenvironmental.com

Appendix C:
DPR Form Set

State of California — The Resources Agency
DEPARTMENT OF PARKS AND RECREATION

PRIMARY RECORD

Primary #
HRI #
Trinomial
NRHP Status Code 6Z

Other Listings
Review Code Reviewer Date

Page 1 **of** 21 ***Resource Name or #:** (Assigned by recorder) 1404 Royal Oaks Drive
P1. Other Identifier:
*P2. **Location:** ☐ **Not for Publication** ■ Unrestricted
***a. County** Los Angeles **and** (P2c, P2e, and P2b or P2d. Attach a Location Map as necessary.)
***b. USGS 7.5' Quad** Azusa **Date** 2025 **T** 01 S ; **R** 10 W ; _ ☐ **of** _ ☐ **of Sec** 20; SB **B.M.**
c. Address 1404 Royal Oaks Drive City Duarte Zip 91010
d. UTM: Zone 11S, 410081.89 mE/ 3778442.71 mN
e. Other Locational Data: (e.g., parcel #, directions to resource, elevation, decimal degrees, etc., as appropriate)
APN 8530-004-059 and 8530-004-060. The subject property is situated at a corner lot bordered by Royal Oaks Drive to the north, 1st Street to the south, an unnamed alleyway to the west, and residential development to the east. The subject property is located on a relatively flat parcel and features a one-story residence with a detached garage and a detached accessory building.

***P3a. Description:**
1404 Royal Oaks Drive consists of a one-story, single-family residence built in the Ranch style of architecture with a detached garage and additional accessory building located on the lot. The property faces north and is setback from the street and generally obscured from view by large hedges and fencing (Photograph 1) (see Continuation Sheet).

***P3b. Resource Attributes:** (List attributes and codes) HP2. Single family property
***P4.Resources Present:** ■ Building ☐ Structure ☐ Object ☐ Site ☐ District ☐ Element of District ☐ Other (Isolates, etc.)
P5b. Description of Photo: (view, date, accession #) Primary (north) elevation, view to south (South Environmental 2025)

***P6. Date Constructed/Age and Source:** ■ Historic ☐ Prehistoric ☐ Both
1953 (Permit No.32521)

***P7. Owner and Address:**
Shuorung Properties LLC
963 Monte Verde Drive
Arcadia, CA 91007

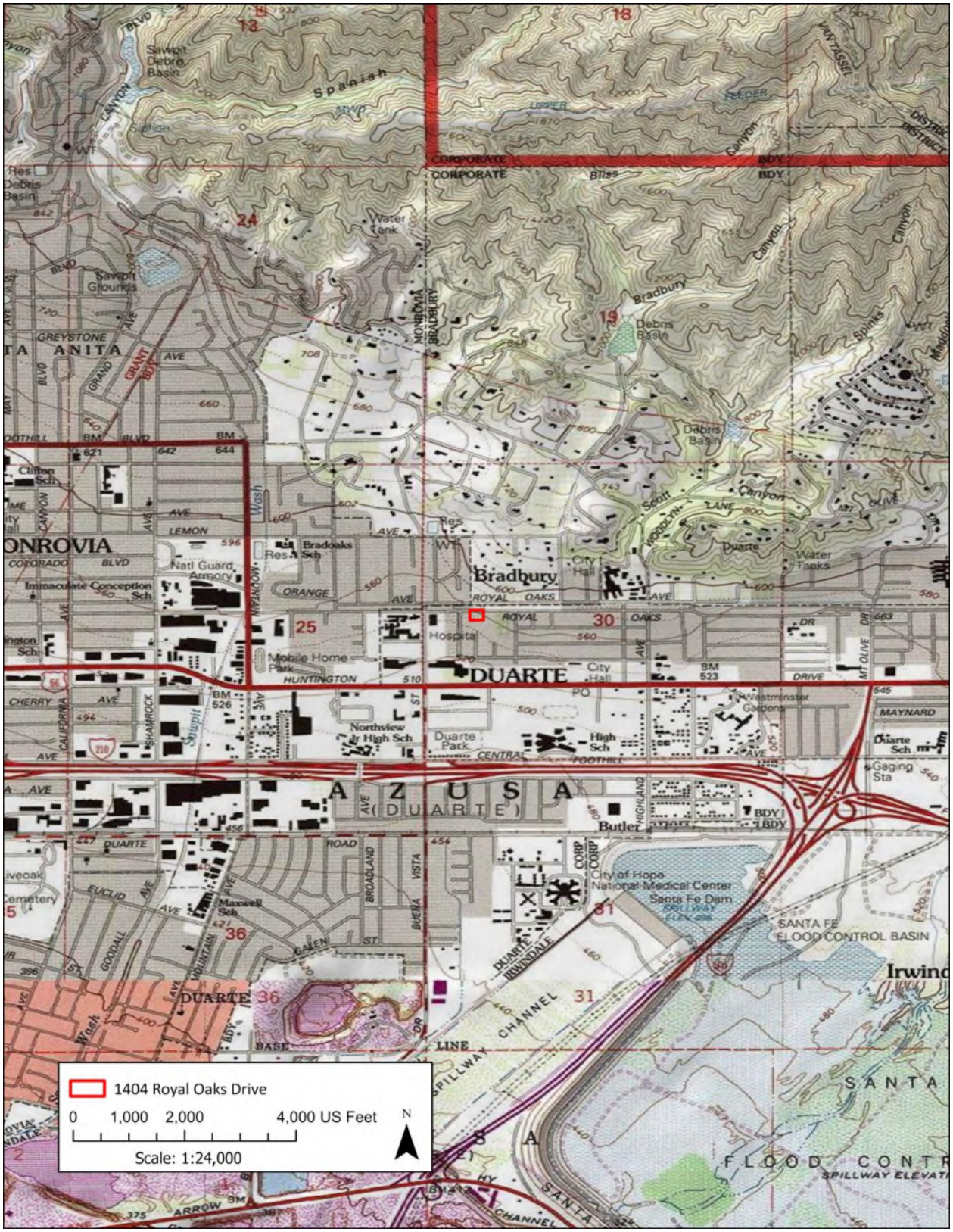
***P8. Recorded by:**
Laura Carías
South Environmental
2061 N. Los Robles Ave., Ste. 205
Pasadena, CA 91104

***P9. Date Recorded:** 2/12/2025

***P10. Survey Type:** Intensive

***P11. Report Citation:**
Cultural Resources Technical Report for the Royal Paks Project, City of Durate, County of Los Angeles, California (2025)

***Attachments:** ☐NONE ■Location Map ■Continuation Sheet ■Building, Structure, and Object Record
☐Archaeological Record ☐District Record ☐Linear Feature Record ☐Milling Station Record ☐Rock Art Record
☐Artifact Record ☐Photograph Record ☐ Other (List):


1404 Royal Oaks Drive
0 1,000 2,000 4,000 US Feet
Scale: 1:24,000
N
Bradbury
DUARTE
AZUSA
ONROVIA
Spaniard
Hospital
City Hall
Mobile Home Park
Northview High Sch
Duarte High Sch
Maxwell Sch
Bradoaks Sch
Natl Guard Armory
Immaculate Conception Sch
Debris Basin
Water Tank
Water Tanks
Westminster Gardens
City of Hope National Medical Center
Santa Fe Dam
SANTA FE FLOOD CONTROL BASIN
Butler
Gaging Sta
Duarte Sch
Clifton Sch
Res Debris Basin
Sawpit Debris Basin
Sawpit Grounds
Sawpit Wash
Duarte Wash
Scott Canyon
Spinks Canyon
Woodlyn Lane
Mt Olive Dr
Maynard
Foothill Blvd
Huntington Dr
Duarte Rd
Arrow Hwy
Santa Fe Channel
Irwindale
SANTA FE FLOOD CONTROL BASIN
SPILLWAY ELEVATION

BUILDING, STRUCTURE, AND OBJECT RECORD

***Resource Name or #** (Assigned by recorder) 1404 Royal Oaks Drive ***NRHP Status Code** 6Z
Page 3 **of** 21

B1. Historic Name: n/a
B2. Common Name: n/a
B3. Original Use: Single-family home B4. Present Use: Single-family home
*** B5. Architectural Style:** Ranch
***B6. Construction History:** (Construction date, alterations, and date of alterations)

The single-family house was constructed in 1953 (Permit No.32521). The following alterations were identified since the building's original construction:

- 1963: New garage constructed and existing attached garage converted into living space (Permit No. 1713)
- 1977: Addition to existing den and dining room (Permit No. 1011)
- 1985: Construct detached accessory building (recreation room/living space) (Permit No. 31825A)
- 1996: Reroof with new composite shingles (Permit No. 972352)
- Unknown date: Several original metal windows replaced with vinyl windows

v***B7. Moved?** ■**No** □**Yes** □**Unknown** **Date:** **Original Location:**
***B8. Related Features:** n/a
B9a. Architect: n/a b. Builder: E. A. Daniell Co.
***B10. Significance: Theme** n/a **Area** n/a
Period of Significance n/a **Property Type** n/a **Applicable Criteria** n/a

The subject property is not eligible under all City of Durate and CRHR designation criteria due to a lack of important historical associations and architectural merit.

Historic Context

Andres Duarte was born at Mission San Juan Capistrano in 1805 (Moore 1976). At the age of sixteen, Andres joined his father in enlisting in the Mexican army, where he was assigned to Mission San Gabriel. He later transferred to protect the Mission in San Bernardino and developed a personal fondness for the area. In 1841, the governor of Alta California, Juan Alvarado, granted former Mexican Corporal Andres Duarte and his wife nearly 7,000 acres of land in the upper San Gabriel Valley, which became known as Rancho Azusa de Duarte (Rancho) (Exhibit 1) (Davis 1957; Moore 1976).

(See Continuation Sheet)

B11. Additional Resource Attributes: (List attributes and codes)
***B12. References:** See Continuation Sheet
B13. Remarks:

***B14. Evaluator:** Drulena Haller and Marlena Krcelich, South Environmental
***Date of Evaluation:** 2/28/2025

(Sketch Map with north arrow required.)

(This space reserved for official comments.)

***P3a. Description (Continued):**

Photograph 1. Overview of north elevation street view of subject property, facing southeast.

The residence was constructed on a concrete slab foundation. The residence is topped with a low-pitched, cross gabled roof with moderate overhang, and clad in composition shingles. The roof includes two red brick slope chimneys and a ventilation dormer. The exterior is clad in stucco and horizontal wood siding.

The primary (north) elevation of the residence showcases an elongated facade with two entry points (Photograph 2). The main entry, centrally located, features a recessed wooden door with glass panes flanked by metal sash casement windows on each side. At the eastern end of the primary elevation is a vinyl sash sliding window. The second entryway is located at the western end of the primary elevation. There is also a tripartite window with pebbled glazing located to the west of this entry point (Photograph 3).

Photograph 2. Overview of primary (north) elevation, facing south.

Photograph 3. Overview of secondary entrance of primary (north) elevation, facing south.

The west elevation features a front portion that lacks a roof overhang, while the rear portion includes an overhang. It has one metal sash window with pebbled glazing (Photograph 4). A second chimney is located at the rear portion of the elevation.

The east elevation includes three vinyl sash, double-pane windows and one attic vent beneath the roof gable. Additionally, the elevation features an exterior water heater with a partial enclosure (Photograph 5).

The south elevation of the residence includes a sliding glass entry door accessed via a small wooden porch with a shed roof (Photographs 6 and 7). The elevation also includes three windows; a vinyl sash window and two metal sash casement windows. Located in the back yard adjacent to the south elevation is a concrete pad that serves as a patio area, and a collapsed wooden pergola (Photograph 8).

Photograph 4. Overview of west elevation, facing southeast.

Photograph 5. Overview of east elevation, facing west.

Photograph 6. Overview of south elevation, facing northwest.

Photograph 7. Overview of south elevation wooden porch, facing east.

Photograph 8. Overview of south elevation, backyard concrete pad, and collapsed wooden pergola facing northwest.

The detached garage is roughly square in plan and situated north of the residence. The exterior is clad in stucco and topped with a side-gabled, low-pitched roof clad in

composition shingles with moderate overhangs and exposed rafters on the west and east elevations. The west elevation features a double car garage door as well as a single wooden and glass panel door (Photograph 9). The north elevation has two metal divided-light wooden windows. The east and south elevations are uninterrupted stucco walls with no fenestration.

Photogrpah 9. Overview of garage west elevation, facing east.

The one-story accessory building is located to the east of the residence and has a rectangular shaped plan. It has a medium-pitched side gabled roof with wide overhanging eaves and exposed rafter tails. The exterior is clad in stucco. The primary (north) elevation of the accessory building features a set of double doors sheltered by an eave overhang (Photogrpah 10). The east and west elevations have various metal window types. The south elevation includes an entrance porch with concrete steps leading to double doors, sheltered by the eave overhang.

Photograph 10. Overview of the north elevation of the accessory building, facing south.

***B10. Significance (Continued):**

Andres built an adobe home for his family on the Rancho and his land soon flourished with crops and herds of livestock. By the mid-1850s, Andres was unable to pay the taxes on his land and was forced to subdivide it. He eventually sold or auctioned off all of his land, marking the end of the Rancho Azusa de Duarte period by the early 1860s (Davis 1957; Margiloff 2009).

Exhibit 1. 1872 Map of Rancho Azusa de Duarte (Calisphere 2025)

Among the many buyers of the Rancho land was William Wolfskill, one of the first Americans to settle in the area. He purchased approximately 6,370 acres in 1862. Wolfskill then sold the land to financer Alexader Weill, who subdivided it into 40-acre tracts for later development (Davis 1957, Margiloff 2009). By the 1870s, the land tracts were further subdivided and sold to various owners, which resulted in the development of several cities, including Duarte, Monrovia, Azusa, Irwindale, Baldwin Park, and Arcadia. Before it was officially incorporated as a city, the area of Durate was still named and referred to as Duarte. The land in the Duarte area was developed for agricultural purposes. It was particularly successful for citrus crops due to its climate and soil composition, which made the fruit trees in the area much larger and juicier than any other place in the state (Moore 1976). Duarte's first orchard was planted in 1871 by Asa Ellis and by the 1880s numerous successful orchards were established. (Norman 1938).

In 1861, Dr. Nehemiah Beardslee purchased land in Lower Duarte and paved the way for water irrigation through the area. Within Dr. Beardslee's property, he created a water ditch that eventually grew large enough to form side canales. In efforts to preserve the water, Dr. Beardless enlisted other owners in the tract to go in with him to form a company. In 1876, Beardslee along with Charles Soward, I.C. Ingraham, A.J. Horn, W.H. Bowman, J.O. Mathewson, Parson Shrode, and D.V. Hayward formed the Beardslee Water Ditch Company in 1884, with D.S. Shrode as President. At the same time, a second water company was formed to address the needs of Upper Duarte. This second company was based on Andres Duarte's original ditch and was named The Duarte Mutual Irrigation and Canal Company (Durate Mutual) in 1882 with E.M. Wardell as president. By 1883, Duarte Mutual financed the construction of a new water ditch, in exchange for control over one-third of the

water managed by the Beardslee Company. This deal ultimately allowed Duarte Mutual to gain two-thirds of the water supply, making it the dominant player in Duarte's local water business. Later, the two companies merged, with Duarte Mutual taking care of domestic water usage and Beardslee managing water for agriculture. These new water companies allowed agricultural crops to thrive in the northern section of the area (Moore 1976).

By 1888, there were 780 acres of deciduous fruits and 420 acres of citrus fruit out of a total of 1,600 cultivated acres in the area (Moore 1976). Around 1890, the Duarte Company "Growers and Shippers of Fine Oranges and Lemons" was organized and located in the foothill section of Duarte until it disbanded. By 1893, as Monrovia orchards were becoming bountiful, growers from both Monrovia and Duarte held a meeting and organized The Duarte-Monrovia Citrus Association with J.A. Foshay of Monrovia as chairman (Davis 1957).

By the start of the twentieth century, Duarte's economy flourished as the agriculture industry continued to grow and railroads transported goods in and out of the City. The successful economy continued to attract more settlers as well. However, in the early 1900s, the Southern Pacific Railroad abandoned its service line from the eastern side of Duarte west to Mountain Avenue in Monrovia. This paved the way for the Pacific Electric Railway to retain Southern Pacific's abandoned tracks from Monrovia to Arcadia and reinstated their services. In addition, the Pacific Electric's (PE) red cars, which provided passenger transportation, from the Los Angeles area reached Duarte in 1903, further connecting the two areas. The former PE right-of-way is the present-day walking and biking trail adjacent to Royal Oaks Drive (Margiloff 2009). In addition to improved efficient transportation methods, Duarte's pleasant climate made it an attractive location for those seeking a healthier environment. In 1913, the Jewish Relief Association started a tuberculosis sanitarium on 40 acres of land south of Duarte Road. This institution became known as the City of Hope Medical Center, world-renowned for its cancer treatment (City of Duarte 2025). Another notable health organization in the area was a tuberculosis sanitarium for women and girls, opened by the Carmelite Sisters in 1927 (Margiloff 2009).

After World War I, the landscape of Duarte started to change. In conjunction with the introduction of the automobile and returning World War I veterans, this meant better road construction and more infrastructure. In 1925, Huntington Drive was constructed through Duarte, changing the main thoroughfare through town from North Highland Avenue to Huntington Drive. As a result, Huntington Drive developed as a new commercial corridor with various new shops, restaurants, and hotels, as well as juice stands and vegetable vendors. These new attractions drew many tourists and contributed to economic and population growth (Moore 1976). In 1926, the famous Route 66 was constructed and traversed through the foothill area of Duarte en route to Santa Monica, facilitating greater travel through the area (City of Duarte 2025). Duarte also experienced a cultural shift with the arrival of the Swiss community in 1928 and the establishment of the original Swiss Park clubhouse and banquet hall. This landmark not only served as a social hub but reflected the growing diversity in Duarte during the time (Socal Swiss 2025).

By the end of World War II, the agricultural industry in the City began to decline and the agricultural areas transitioned into residential communities. Between 1947 and 1951, the City grew from 3,500 to 10,500 people. Consistent with many towns and cities across the United States, Duarte witnessed returning soldiers in need of moderately priced housing units for their growing families. As a result, the town developed new communities, stores, churches and schools. Initially, new housing developments were constructed on the south side of Duarte near California and Shamrock Avenues, with another concentrated area of housing built by the Turner Brothers near El Camino Real. Most of the homes built during this period consisted of two bedrooms, one bathroom, and a single-car garage. To accommodate the growing population, several new schools were established between 1940 and 1950. These included North View Elementary School, Maxwell, Andres Duarte, Royal Oaks School, Beardslee School, Valley View Elementary School, and Duarte High School (Moore 1976).

By 1957, the City of Duarte was officially incorporated. However, the process of incorporation was met with resistance from residents. In 1956, the City of Azusa voted 4-1 to annex approximately 1,335 acres of land to create a dumpsite west of the San Gabriel River, located within Duarte. This project outraged City residents, leading them to form citizen groups to oppose Azusa's annexation plan and initiate a voter registration drive. They successfully registered 458 people to counter Azusa's move and pushed for the incorporation of Duarte. After two weeks of negotiations over boundary lines, the City boundaries were approved by the County Board of Supervisors and Duarte became the 57th city in Los Angeles County on August 20, 1957 (Moore 1976).

Upon Duarte's incorporation, suburban housing and public establishments continued to increase, which led to the construction of larger roads and freeways. In 1968 the Foothill Freeway (present-day 210 Freeway) was constructed. The new freeway led to a residential boom and between 1975 and 1985, approximately 2,000 new homes were built in the City. During the 1980s and 1990s, Duarte's landscape continued to grow and develop with commercial and residential buildings, the emergence of manufacturing properties, and the City of Hope medical campus (Margiloff 2009). As of 2023, Duarte had a population of just under 21,000 and over 7,500 dwelling units. (City of Duarte 2025).

Property Development History

The earliest aerial imagery from 1936 shows the subject property was first developed as an orchard. Most of the surrounding area was used for orchards, with some agricultural buildings and houses scattered throughout. West of the property, the City of Monrovia was already developed with residential tracts (UCSB 2025).

The single-family house with attached garage at 1404 Royal Oaks Drive was constructed in 1953 (Permit No. 32521). An aerial image from 1954 shows the house constructed at this time, with a rectangular concrete pad located to the south of the house (Exhibit 2) (UCSB 2025). The house went unchanged for a decade, until 1963 when a permit was filed to construct a new detached garage and convert the existing attached garage to living space (Permit No. 1713). This new garage was located north of the house (UCSB 2025). The conversion of the attached garage into living space resulted in the installation of a new entry door and new windows on the primary (north) elevation.

By the late 1960s, the area surrounding the property began to change from agricultural to residential development (NETR 2025; UCSB 2025).

Exhibit 2. 1954 aerial image with subject property outlined in red (UCSB 2025).

The next change did not occur to the subject property until 1977, when a permit was filed to construct an addition to the existing den and dining room. This addition was constructed on the southwestern corner of the house, extending both the south and west elevations (Exhibit 3) (Permit No. 1011). In 1985, another building permit was filed to construct a detached accessory building to the east of the house. This detached building was labeled as a "new recreation building" in the proposed site plan (Exhibit 4) (Permit No. 31825A).

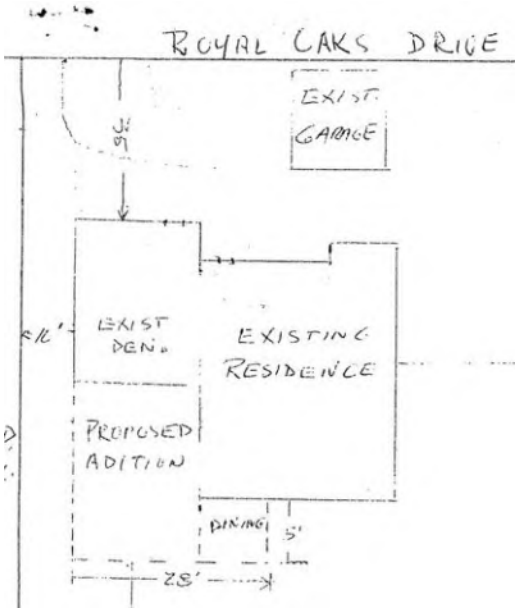


Exhibit 3. 1977 plan for addition on south and west elevations (Permit No. 1011).

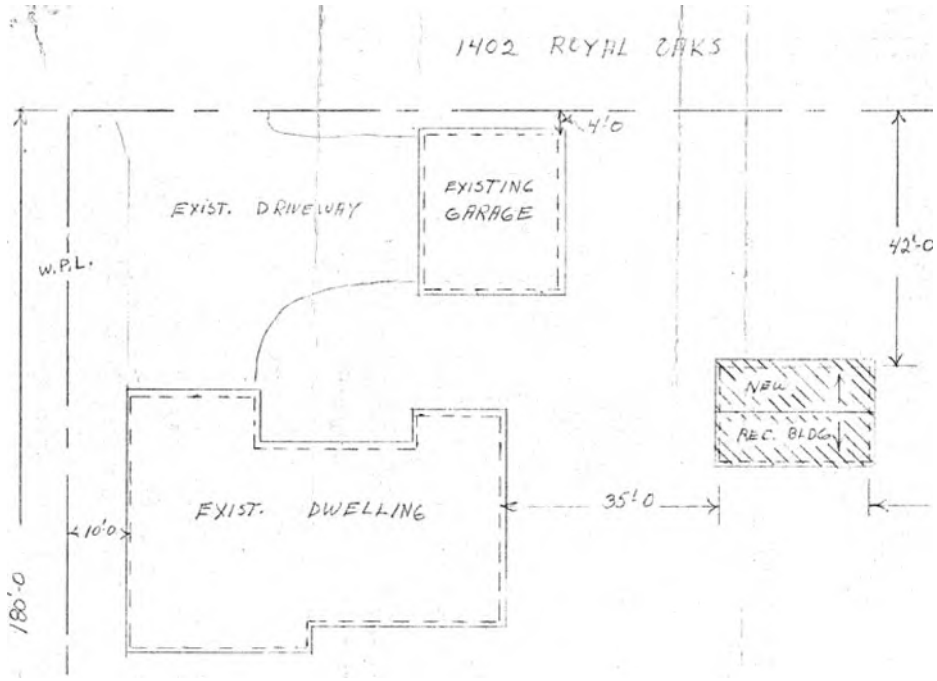


Exhibit 4. 1985 plan for new accessory building (Permit No. 31825A)

In 1996, a building permit was filed to reroof the buildings with new composite shingles (Permit No. 972352). Since this time, there have been observed changes to the subject property, including the replacement of several original windows with modern vinyl windows.

Occupancy History

Based on public records, the Remington family were the first occupants associated with subject property from the time of its construction in 1953 until the mid-2000s (City of Duarte, various; Ancestry.com, various). This included Clarence H. Remington, the head of the household; his wife, Delta Faye Gibson; their daughter, Janice Marie Remington; and grandson, Lance H. Jacobs (Ancestry.com, various).

Clarence Harold Remington was born in Furnas, Nebraska, in 1914, and moved to Monrovia, California in 1930. In 1938, he married Delta Faye Gibson (b. 1919) of Furnas, Nebraska. Upon moving to Monrovia, the couple lived at the residence located at 324 East Lime Avenue, where Clarence worked as a laborer and later a foreman. By 1941, the couple welcomed their daughter, Janice Remington (Ancestry.com, various).

The Remington family's association with the subject property began in 1953, when Clarence Remington filed a building permit to contract E.A. Daniells Co. to construct a dwelling and attached garage on the subject property (Permit No. 32521). Mr. and Mrs. Remington lived at the subject property at the time of its construction in 1953 (Ancestry.com, various; City Directories, various). In 1961, Janice Remington married Wesley Edward Jacobs, and in 1962, they welcomed their son Lance H. Jacobs, who also lived at the property in 1962 (Ancestry.com, various). Janice continued to live at the subject property until an unknown date during the early 1960s and again between 1988 through 2006. According to the last address directory, Clarence still resided at the property in 1999, but no residency information is available beyond that year. Clarence passed away in 2005 at the age of 91. It is unclear how long Mrs. Remington lived at the property following Clarence's death (Ancestry.com, various). However, she passed away in 2020 in Duarte, California (Legacy 2025). Their daughter Janice continued to live on the property until 2006. Her son, Lance Jacobs, moved into the address in 2004 and remained there until 2020 (Ancestry.com various).

There was no evidence found to indicate that the Remington family or any of its members who resided at the subject property were notable or influential people associated with local, state, or national history.

Architectural Style

Ranch (1930-1975)

The Ranch house is a style of architecture originating in Southern California. It was popular starting in the 1930s and fell out of popularity by the mid-1970s. In the 1930s and early 1940s, the Ranch house was part of the Small House movement that was brought into fashion by the Federal Housing Administration (FHA). After World War II, the Ranch style gained even more popularity as size and building restrictions were lifted and could be found across the country. FHA guidelines continued to exert a strong influence on building Ranch homes. Such as encouraging developers to build entire neighborhoods at once, making Ranch style houses commonplace within large subdivisions.

In the style's early years, and throughout the 1950s and 1960s, the Ranch house could be constructed quickly with modern, mass-produced materials. The style provided a quick and

easy construction option both to create new housing to meet the needs of soldiers returning home after the war, and an affordable, yet larger and comfortable option in the later decades post-war.

The smaller Ranch houses of the 1930s and 1940s, and the larger versions from the 1950s and 1960s share many characteristics. "Rambling" Ranch style houses became more popular in the 1950s, due to the nation's increasing use of automobiles. This permitted developers to build larger homes on bigger, wider lots along winding roads in suburban areas, resulting in a sprawling façade with a focus on emphasizing the width. In contrast, the Ranch homes in the streetcar suburbs of the 1940s were constructed on narrower lots, and therefore had less horizontal emphasis. However, many of the other design features they shared remained the same. As such, the affordability and versatility of the Ranch house made it one of the most popular house choices throughout the United States and was purchased and occupied by people at almost all socio-economic levels.

Key characteristics of the Ranch style of architecture are the following (Gottfried and Jennings 2009; Hess 2004; McAlester 2015):

- One story in height
- Low pitch gabled or hipped roofs constructed with moderate overhangs
- Offset entry points and general façade asymmetry
- Focus on horizontal massing and rambling forms
- Focus on informality
- Main entry typically placed under the roof overhang or tucked into the facade
- Use of variety of window types, including large picture-style windows
- Variations on the eave overhang, typically boxed eaves or exposed rafter tails, or the less-common boxed rafters
- Large chimneys made of brick or stone
- Traditional exterior cladding, including brick veneer, wood siding, and stone veneer
- Attached garage or carport, typically incorporated into the façade
- Front and rear yards
- Simple floor plans based on rectangular blocks, usually L, U, or T shaped in plan

Significance Evaluation

The following presents an evaluation of the subject property in consideration of CRHR designation criteria.

CRHR Criterion 1. Is associated with events that have made a significant contribution to the broad patterns of California's history and cultural heritage.

The subject property was constructed in 1953 when the City's landscape was transitioning from primarily agricultural to postwar residential development. At the time of the subject property's construction, it was still surrounded by some agricultural development, but this land rapidly infilled with residential construction in the following decade. This was a very common development pattern for cities throughout California in the postwar period, as the economy transitioned, and populations grew rapidly. Therefore, the construction of the subject property simply follows a steady pattern of events across the City and California. Therefore, the subject property is recommended not eligible under CRHR Criteria 1.

CRHR Criterion 2. Is associated with the lives of persons important in our past.

From its time of construction in 1953 through 2020, the subject property was owned and occupied by members of the Remington Family. Archival research did not reveal any significant information regarding any of the Remington family members associated with the property. Therefore, the subject property is recommended not eligible under CRHR Criterion 2.

CRHR Criterion 3. Embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of an important creative individual, or possesses high artistic values.

The subject property was constructed 1953 in the Ranch style of architecture. Since its time of construction, the subject property has been substantially altered. Alterations include the infill of the original detached garage on the primary (north) elevation, with a new exterior wall, entryway, and windows, and construction of a new detached garage in 1963; a large addition constructed on the south and west elevations in 1977; the construction of a detached accessory building to the east of the house in 1985; and observed alterations including the replacement of many original metal windows with modern vinyl ones. These alterations, specifically the infill of the attached garage and addition on the south and west elevations, have significantly altered the original design, craftsmanship, and materials of the subject property. In addition, the construction of several detached buildings on the subject property site has resulted in the loss of a defined front yard, which was typical for Ranch style homes. While the subject property does maintain some elements of the Ranch style, including being one story in height, having a low-pitch side gabled roof with moderate overhangs, asymmetrical façade, variety of window types, large picture windows, and large chimneys, it lacks many of its original character defining features as a result of the alterations since its construction in 1953. For instance, it no longer has a simple floor plan due to the addition, no longer has an attached garage, and lacks traditional exterior cladding. As such, it is not considered an important or valuable example of the Ranch style of architecture and is not unique or innovative in its design and therefore does not rise to the level of significance required for individual building designation under this criterion. Furthermore, the house was constructed by builder E. A. Daniell Co. Archival research did not reveal this builder to be notable. Therefore, the subject property is recommended not eligible under CRHR

Criterion 3.

CRHR Criterion 4. Has yielded, or may be likely to yield, information important in prehistory or history.

The subject property is not significant as a source, or likely source, of important historical information nor does it appear likely to yield important information about historic construction methods, materials or technologies. Therefore, the property is not recommended eligible under CRHR Criterion 4.

Integrity

Location: The subject property retains integrity of location. The property is sited in the original location it was constructed in its original orientation.

Design: The subject property does not retain integrity of design. It has been altered significantly with the infill of the original attached garage, a large addition on the south and west elevations, construction of two detached buildings on the site, and replacement of original windows with modern vinyl windows.

Setting: The subject property does not retain integrity of setting. When the property was constructed in 1953, the area surrounding the property was predominately orchards with light residential housing. In the decades following the subject property's construction, the area developed from agricultural land to residential tract home use.

Materials: The subject property lacks integrity of materials. The infill of the original attached garage, a large addition on the south and west elevations, construction of two detached buildings on the site, and replacement of original windows with modern vinyl windows has resulted in a loss of original materials and introduction of new materials that detract from the original house.

Workmanship: The subject property lacks integrity of workmanship. The infill of the original attached garage, a large addition on the south and west elevations, and construction of two detached buildings on the site has resulted in much of the original workmanship being obscured, and has

Feeling: The subject property lacks integrity of feeling. Due to several alterations, construction of detached building on the property, the subject property no longer feels like a 1953 Ranch style house.

Association: The subject property lacks integrity of association. The property has no important associations with events, people, or important patterns of development in the City.

For all of the reasons provided above, the property at 1404 Royal Oaks Drive is recommended not eligible for CRHR designation.

References

Ancestry.com. Various. Family Tree and documents related to the Remington family. Accessed online via https://www.ancestry.com/family-

tree/person/tree/25445014/person/362651283434/facts?_phsrc=tqk35&_phstart=successSource.

Calisphere. 1871. Map of Rancho Azusa de Duarte 1872. Monrovia Legacy Project. Accessed online via https://calisphere.org/item/47b8b52db37b87826f3353ccbcba1572/

City of Durate. Building and Safety Permits, various years. Retrieved from Duarte City Hall on February 18, 2025.

Davis, Charles F. 1957. Monrovia Duarte Community Book. Monrovia, California. Arthur H. Crawston. Retrieved from Los Angeles County Public Library

Duarte Historical Society and Museum. 2025. Regional Resource/Local Points of Interest. Accessed on February 20, 2025 via: https://www.ranchodeduarte.org/regional-resource-local-points-of-interest/

Legacy. Mrs. Delta Faye Remington Obituary, 2020. Retrieved from https://www.legacy.com/us/obituaries/name/delta-remington-obitary?pid=196974836

Margiloff, Irwin, et al. 2009. Images of America Duarte. Arcadia Publishing. Retrieved from Los Angeles County Library.

McAlester, Virginia Savage. 2013.A Field Guide to American Houses (Revised): The Definitive Guide to Identifying and Understanding America's Domestic Architecture. New York City, New York: Alfred A Knopf.

Moore, Aloysia R, et al. 1976. On The Duarte. Duarte, California. City of Duarte Bicentennial. Accessed online via: https://www.accessduarte.com/home/showpublisheddocument/1460/637777511360700000

NETR (Nationwide Environmental Title Research, LLC). 2025. Historic aerial photographs of 1404 Royal Oaks Drive, City of Duarte, CA dating from 1952, 1964,1965,1972, 1980, 1987, 1992, 1993, 1994, 1995, 1996, 1997, 1998, 1999, 2000, 2003, 2004, 2005, 2009, 2010, 2012, 2014, 2016,2018, 2020,2022. Accessed online via: https://historicaerials.com/viewer.

Norman, E.B.1938. History of Monrovia and Duarte: narrative and biographical. Monrovia, California: A.H. Cawston

ParcelQuest.2025. Property information on 1404 Royal Oaks Drive. Parcel Quest. Accessed online via: https://pqweb.parcelquest.com/#home

SocalSwiss.2025. Swiss Park. Accessed online via: https://www.socalswiss.com/swiss-park

The McCook Daily Gazette (TMDG).1941. "A Daughter Was Born". The McCook Daily Gazette (McCook, Nebraska). March 29, 1941. Accessed online via: https://www.newspapers.com/image/727917380/

UCSB FrameFinder (University of California, Santa Barbara).

2025. Historic aerial photographs of 1404 Royal Oaks Drive, City of Duarte, CA dating from 1936,1954,1960,1962,1965, 1981. Map & Imagery Laboratory (MIL) UCSB Library. Accessed online: https://mil.library.ucsb.edu/ap_indexes/FrameFinder/

Appendix D
Geotechnical Investigation

Cal Land Engineering & Associates, Inc.
Land Surveying, Geotechnical, Environmental, and Civil Engineering

December 12, 2023

Mr. Qing Zhang
936 Monte Verde Drive
Arcadia, California 91007

Subject: Report of Geotechnical Investigation, Proposed Residential Development, 1404 & 1414 Royal Oaks Drive, APN: 8530-004-059 & -060, Duarte, California
CLE Project No.: 23-010-073GE

Dear Mr. Zhang:

In accordance with your request, CalLand Engineering (CLE) is pleased to submit this Geotechnical Investigation Report for the subject site. The purpose of this report was to evaluate the subsurface conditions and provide recommendations for grading, foundation design and other relevant parameters for the proposed construction.

Based on the findings of CLE's investigation, it is concluded that the proposed development of the subject lot is feasible from a geotechnical viewpoint, provided that recommendations presented herein are incorporated into design, grading and construction.

This opportunity to be of service is sincerely appreciated. If you have any questions pertaining to this report, please contact the undersigned at your convenience.

Respectfully submitted,
CalLand Engineering & Associates, Inc. (CLE)

Jack C. Lee, GE 2153
Principal Engineer

Abe Kazemzadeh
Project Engineer

Dist: (4) Addressee

REPORT OF GEOTECHNICAL ENGINEERING INVESTIGATION

Proposed Residential Development

At

1404 & 1414 Royal Oaks Drive
APN: 8530-004-059 & -060
Duarte, California

Prepared by

CALLAND ENGINEERING (CLE)

Project No.: 23-010-073GE

December 12, 2023

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1.0 INTRODUCTION

1.1 Purpose

This report presents a summary of our preliminary geotechnical engineering investigation for the proposed construction at the subject site. The purposes of this investigation were to evaluate the subsurface conditions at the area of construction and to provide recommendations pertinent to grading, foundation design and other relevant parameters of the proposed development.

1.2 Scope of Services

CLE scope of services included:

- Review of available soil and geologic data of the area.
- Subsurface exploration consisting of logging and sampling of two 6-inch diameter hand auger borings. The borings were extended to a maximum depth of 11 feet. Boring logs are presented in Appendix A.
- Laboratory testing of representative samples to establish engineering characteristics of the on-site soil. The laboratory test results are presented in Appendices A and B.
- Engineering analyses of the geotechnical data obtained from our background studies, field investigation, and laboratory testing.
- Preparation of this report presenting our findings, conclusions, and recommendations for the proposed construction.

1.3 Proposed Construction

Based on our review of the architectural plan by Feng Xiao Architect, Inc., dated November 13, 2023, it is our understanding that the proposed construction is to construct 15 two-story townhouse with attached garage and one two-story single family residence with attached garage and associated driveway and parking spaces.

It is anticipated that the structures will be wood-frame structure with concrete slab-on-grade. Column loads are unknown at this time, but are expected to be light to medium. Minor cut and fill grading operation is anticipated to reach the desired grades.

1.4 Site Conditions

The subject lot is located on the south side of Royal Oaks Drive, a relatively short distance east of Junipero Drive, in the existing developed residential area of the City of Duarte, California. Approximate regional location is shown on the attached Site Location Map (Figure 1). The site is currently occupied by a single-family residential buildings and associated structures. Based on our visual observation, it appears that the site is relatively flat with difference in elevation over the entire site less than 5 feet. No major surface erosions were observed during our subsurface investigation. Detailed configuration of the site is shown on the attached site plan, Plate 1

2.0 SUBSURFACE EXPLORATION AND LABORATORY TESTING

2.1 Subsurface Exploration

Subsurface exploration consisted of drilling of two 6-inch diameter hand auger borings. The borings were extended to a maximum depth of 11 feet below the existing ground surface at the location shown on the attached Site Plan, Plate 1. The drilling of the borings was supervised and logged by an engineer of this office. Relatively undisturbed and bulk samples were collected for laboratory testing. Boring logs are presented in Appendix A.

2.2 Laboratory Testing

Representative samples were tested for the following parameters: in-situ moisture content and density, consolidation, direct shear strength, percent of fines, expansion index, and corrosion potential. Results of our laboratory testing along with a summary of the testing procedures are presented in Appendix B. In-situ moisture and density test results are presented on the trench logs in Appendix A.

3.0 SOIL CONDITIONS

3.1 Site Geology

Based on our review of the regional geology map of Mt. Wilson and Azusa quadrangles, Los Angeles County, by T.W. Dibblee, 1998 (Figure 4) and our subsurface exploration, it is concluded that the site is underlain by the previously placed fill and alluvium of gravel and sand of major stream channels and alluvial fan outwash from major canyons. Description of the subsurface materials is provided as follows:

3.1.1 Fill (Map Symbol, Af)

The project site is underlain by a layer of fill. The fill where encountered is approximately 3 feet in thickness. Fill materials consist of silty sand (SM), light brown, slightly moist, loose within the upper 12 inches. Fill materials are not suitable for structural support and are subjected to be removed.

3.1.2 Alluvium (Map Symbol, Qg)

Based on our subsurface exploration, the encountered natural soil is fine to medium grained silty sand (SM) and sand/silty sand mixtures (SP-SM) with gravel and exists in the slightly moist and medium dense to dense conditions. The encountered soil conditions are relatively similar throughout the site. This type of soil contains low apparent cohesion. Caving and/or slough may occur during deep vertical trench excavation. Suitable construction method and/or procedures should be followed during onsite construction.

3.2 Groundwater

No groundwater or seepage was encountered in the borings to the depths explored (11.0 feet below the existing ground surface). Based on our review of the "Historically Highest Ground Water Contours and Borehole Log Data Locations, Mount Wilson Quadrangle", by CGS (previously CDMG), shown in the attached Site Locational Map (Figure 3), it is estimated that the highest historical ground water level is about 200 feet below the existing grade. Groundwater is not expected during the proposed construction. It should be noted that the CGS ground water map is obtained by evaluating technical publications, geotechnical borehole data, and water-well logs dating back to the "turn-of-the-century". No specific date was provided pertaining to the historically highest ground water level.

4.0 SEISMICITY

4.1 Faulting and Seismicity

The subject site is not included within any Earthquake Fault Zones as created by the Alquist-Priolo Earthquake Fault Zoning Act (CGS, 2018). Our review of geologic literature pertaining to the site area indicates that there are no known active or potentially active faults located within or immediately adjacent to the subject property. As indicated in Table 1, the Sierra Madre Connected Fault is considered to have the most significant effect to the site from a design standpoint.

TABLE 1

Characteristics and Estimated Earthquakes for Regional Faults

Fault Name	Approximate Distance to Site (mile)	Maximum Magnitude Earthquake (Mw)
Sierra Madre Connected	1.0	7.3
Sierra Madre	1.0	7.2
Raymond	1.6	6.8
Clamshell-Sawpit	2.7	6.7
Elysian Park (Upper)	8.8	6.7
San Jose	9.0	6.7
Verdugo	10.3	6.9
Elsinore: W+GI	11.0	7.3
Cucamonga	14.1	6.7
Hollywood	14.7	6.7
Puente Hills (Santa Fe Springs)	14.8	6.7
Puente Hills (LA)	14.8	7.0
Chino alt 2	15.1	6.8
Chino alt 1	15.2	6.7
Puente Hills (Coyote Hills)	17.6	6.7
Santa Monica connected alt 2	17.9	7.4
Sierra Madre (San Fernando)	20.6	6.7

References: 2008 National Seismic Hazard Maps-Source Parameters

4.2 Estimated Earthquake Ground Motions

In order to estimate the seismic ground motions at the subject site, CLE has utilized the seismic hazard map published by California Geological Survey. According to this report, the peak ground alluvium acceleration at the subject site for a 2% and 10% probability of exceedance in 50 years is about 0.810g and 0.469g (2014 USGS Interactive Deaggregation). Site modified Peak ground acceleration (PGAM), corresponding to USGS Design Map Summary Report, ASCE 7-16 Standard is 0.94g.

4.3 Seismic Design Criteria

Based on our studies on seismicity, there are no known active faults crossing the property. However, the subject site is located in southern California, which is a tectonically active area.

However, the subject site is located in southern California, which is a tectonically active area. Based on ASCE 7 –16 Standard, CBC 2022, the following seismic related values may be used:

Seismic Parameters (Latitude: 34.1429846 Longitude:-117.9752609)	Site Class "D"
Mapped 0.2 Sec Period Spectral Acceleration **S_S**	1.81g
Mapped 1.0 Sec Period Spectral Acceleration **S_1**	0.685g
Site Coefficient for Site Class "D", **F_a**	1.2
Site Coefficient for Site Class "D", **F_v**	1.7
Maximum Considered Earthquake Spectral Response Acceleration Parameter at 0.2 Second, **S_{MS}**	2.172g
Maximum Considered Earthquake Spectral Response Acceleration Parameter at 1.0 Second, **S_{M1}**	1.165g
Design Spectral Response Acceleration Parameters for 0.2 sec, **S_{DS}**	1.448g
Design Spectral Response Acceleration Parameters for 1.0 Sec, **S_{D1}**	0.777g

The Project Structural Engineer should be aware of the information provided above to determine if any additional structural strengthening is warranted.

5.0 SEISMIC HAZARDS

5.0 Liquefaction

Based on our review of the "Earthquake Zones of Required Investigation" by the California Geological Services, CGS, and review of the "Seismic Hazard Zones, California Geological Survey (Figure 2), it is concluded that the site is not located in the mapped potential liquefaction areas.

5.1 Landsliding

A potential for landsliding is often suggested in areas of moderate to steep terrain that is underlain by weak or un-favorably oriented geological conditions. Neither of these conditions exists at the site. Due to the relatively flat nature of the site, it is our opinion that the potential for landslide is remote.

5.2 Lurching

Soil lurching refers to the rolling motion on the surface due to the passage of seismic surface waves. Effects of this nature are not considered significant on the subject site where the thickness of alluvium does not vary appreciably under structures.

5.3 Surface Rupture

Surface rupture is a break in the ground surface during or as a consequence of seismic activity. The potential for surface rupture on the subject site is considered low due to the absence of known active faults at the site.

5.4 Ground Shaking

Throughout southern California, ground shaking, as a result of earthquakes, is a constant potential hazard. The relative potential for damage from this hazard is a function of the type and magnitude of earthquake events and the distance of the subject site from the event. Accordingly, proposed structures should be designed and constructed in accordance with applicable portions of the building code.

5.5 Other Secondary Hazard

5.5.1 Fault Rupture

There are no known active faults crossing the site and the site is not located within the Alquist-Priolo Earthquake fault zone. The nearest fault zone is the Sierra Madre Connected Fault which is located approximately 1.0 mile from the property. Therefore, the likelihood of a fault surface rupture is considered low.

5.5.2 Seiches and Tsunamis

Seiches are large waves generated in enclosed bodies of water as the results of major ground shaking. The site is located within the residential area in the City of Duarte. No water retaining structures are located immediately adjacent to site. Earthquake induced flooding, tsunamis and seiches is considered unlikely at the site.

5.5.3 Expansive Soils

Soil expansion is the tendency of the soil to expand when the soil contacts with water. Based on our laboratory test of the onsite soils, it is concluded that onsite soils are very low in expansion potential. Foundation design and construction should be designed in accordance with the current building code report to reduce the potential of any adverse effect as the results of the expansive soils.

5.5.4 Oil Field and Historical Oil Wells

Based on our review of the Munger Map Book of the California Oil and Gas Field, no oil wells are located on the subject property or any adjacent properties. It is our opinion that the potential of the presence of the methane zone at the site is considered low. However, should it be determined that the methane study is required, a qualified consultant should be retained for the study.

5.5.5 Subsidence

Land subsidence occurs when large amounts of groundwater, oil or gas have been withdrawn from fine-grained soils. It is our understanding that large scale extraction of groundwater, oil or gas is not planned at the site. The land subsidence at site appears to be unlikely.

6.0 CONCLUSIONS

Based on our subsurface investigation, it is our opinion that the proposed construction is feasible from a geotechnical standpoint, provided the recommendations contained herein are incorporated in the design and construction. The following is a summary of the geotechnical design and construction factors that may affect the development of the site:

6.1 Seismicity

Based on our studies on seismicity, there are no known active faults crossing the property. However, the site is located in a seismically active region and is subject to seismically induced ground shaking from nearby and distant faults, which is a characteristic of Southern California.

6.2 Excavatability

Based on our subsurface investigation, excavation of the subsurface materials should be accomplished with conventional earthwork equipment. It should be noted cobble or boulder size large rock might be encountered during the site excavations.

6.3 Groundwater

Groundwater was not encountered during our field exploration. In our opinion, groundwater will not be a problem during construction.

7.0 RECOMMENDATIONS

The following recommendations should be incorporated into the design or construction phases.

7.1 Site Grading

7.1.1 Site Preparation

Prior to initiating grading operations, any existing vegetation, trash, debris, over-sized materials (greater than 8 inches), and other deleterious materials within construction areas should be removed from the subject site.

7.1.2 Surficial Soil Removals

Based on our field exploration and laboratory data obtained to date, it is recommended that the existing surficial soils be removed to a minimum depth of 4 feet below the existing grade or two feet below the bottom of the footing, whichever is deeper. The recommended removal should be extended at least 4 feet beyond building lines. The existing near surface soils should also be removed to a depth of about 18-inches within the proposed driveway and concrete flatwork areas.

Locally deeper removals may be necessary to expose competent natural ground. The actual removal depths should be determined in the field as conditions are exposed. Visual inspection and/or testing may be used to define removal requirements.

7.1.3 Treatment of Removal Bottoms

Soils exposed within areas approved for fill placement should be scarified to a depth of 6 inches, conditioned to near optimum moisture content, then compacted in-place to minimum project standards.

7.1.4 Structural Backfill

The onsite soils may be used as compacted fill provided they are free of organic materials and debris. Fills should be placed in relatively thin lifts (6 to 8 inches), brought to near optimum moisture content, then compacted to at least 90 percent relative compaction based on laboratory standard ASTM D-1557-12.

7.2 Foundation Design

7.2.1 Bearing Value

An allowable bearing value of 2000 pounds per square foot (psf) may be used for design of continuous and pad footings with a minimum of 12 and 24 inches in width, respectively. All footings should be a minimum of 24 inches deep. This value may be increased by one third (1/3) when considering short duration seismic or wind loads.

7.2.2 Settlement

Settlement of the footings placed as recommended, and subject to no more than allowable loads is not anticipated to exceed 3/4 inch. Differential settlement between adjacent columns is not anticipated to exceed 1/2 inch for the adjacent column spaced at a distance of about 30 feet.

7.2.3 Lateral Pressure

The active earth pressure to be utilized for cantilever retaining wall designs may be computed as an equivalent fluid having a density of 35 pounds per cubic.

Resistance to lateral loads can be provided by the friction acting at the base of the foundation and by the passive earth pressure for the portion of the foundation embedded within the competent soils. Passive earth pressure may be computed as an equivalent fluid pressure of 300 pounds per cubic foot, with a maximum earth pressure of 2000 pounds per square foot. An allowable coefficient of friction between soil and concrete of 0.30 may be used with the dead load forces. When combining passive pressure and frictional resistance, the passive pressure component should be reduced by one-third.

7.2.4 Foundation Construction

It is anticipated that the entire structure will be underlain by onsite soils of very low expansion potential. All footings should be founded at a minimum depth of 24 inches below the lowest adjacent grade and founded on compacted soils. All continuous footings should have at least two No. 4 reinforcing bar placed both at the top and two No. 4 reinforcing bar placed at the bottom of the footings.

7.2.5 Concrete Slab and Flatwork

Concrete slabs and flatworks should be a minimum of 4 inches thick and reinforced with a minimum of No. 4 reinforcing bar spaced 16-inch each way or its equivalent. All slab reinforcement should be supported to ensure proper positioning during placement of concrete.

In order to comply with the requirements of the 2022 CalGreen Section 4.505.2.1 within the moisture sensitive concrete slabs, a minimum of 4-inch thick base of ½ inch or larger clean aggregate should be provided with a vapor barrier in direct contact with concrete. A 10-mil Polyethylene vapor retarder, with joints lapped not less than 6 inches, should be placed above the aggregate and in direct contact with the concrete slab.

As an alternate method, 2 inches of sand then 10-mil polyethylene membrane and another 2 inches of sand over the membrane and under the concrete may be used, provided this request for an alternative method is approved by City Building Officials.

7.2.6 Temporary Trench Excavation and Backfill

All trench excavations should conform to CAL-OSHA and local safety codes. All utility trenches backfill should be brought to near optimum moisture content and then compacted to obtain a minimum relative compaction of 90 percent of ASTM D-1557-12.

8.0 INSPECTION

As a necessary requisite to the use of this report, the following inspection is recommended:

- Temporary excavations.
- Removal of surficial and unsuitable soils.
- Backfill placement and compaction.
- Utility trenches backfill.

The geotechnical engineer should be notified at least 1 day in advance of the start of construction. A joint meeting between the client, the contractor, and the geotechnical engineer is recommended prior to the start of construction to discuss specific procedures and scheduling.

9.0 CORROSION POTENTIAL

Chemical laboratory tests were conducted on the existing onsite near surface materials sampled during CLE's field investigation to aid in evaluation of soil corrosion potential and the attack on concrete by sulfate soils. The testing results are presented in Appendix B.

According to 2022 CBC and ACI 318-19 (Reapproved 22), Section 19.3, Table 19.3.1.1, exposure category is Sulfate (S) and exposure class is (S0). A "low" exposure to sulfate can be expected for concrete placed in contact with the onsite soils. Therefore, Type II cement or its equivalent may be used for this project and minimum compressive strength of concrete should be 2,500 psi. Based on the resistivity test results, it is estimated that the subsurface soils are moderately corrosive to buried metal pipe. It is recommended that any underground steel utilities be blasted and given protective coating. Should additional protective measures be warranted, a corrosion specialist should be consulted.

10.0 PERCOLATION/INFILTRATION RATE

Percolation rate and permeability of the subsurface material encountered in Boring P-1: Boring P-1 was drilled to the depth of 6.0 feet (12 inches below proposed invert of infiltration) and a 2-inch diameter perforated PVC pipe casing with a solid end cap was installed in the boring after the completion of the drilling. Gravelly filter materials were placed between the PVC pipe and the drill hole.

The test boring was pre-soaked prior to percolation testing, for at least 1 hour to ensure the sand around the perforated pipe is fully saturated. After the presoak, the time interval for recording the water drop was determined between the readings for P-1 hole. The hole was filled with water 12 inches above the bottom of the excavated hole and PVC end cap. Water drop was observed for 30 minutes. The water completely drained out after 12 minutes; therefore, the time interval between the readings was determined to be 12 minutes. Rate of surface water drop was measured every 12 minutes and testing stopped after a minimum of 3 hours or after noticing a stabilized rate of drop was achieved. Upon completion of test, the boring was backfilled with the soil cuttings.

Numerous measurements recorded within the test period indicated an average raw percolation rate of 18.00 in./hr. for P-1. The results of percolation test for boring P-1 provided in the attached Appendix C. The percolation rate was reduced and readjusted to account for the discharge of water from both the sides and bottom of boring (i.e., non-vertical flow).

Based on **(GS200.1) guideline, Item 9 page 10, dated June 30, 2021**, **the raw percolation rate** is calculated by dividing the volume of water discharged by the surface area of the test section (including sides of the boring plus the bottom of the boring).

Boring P-1

Depth of Initial Water Depth (d_1) = 12 in.

Diameter of Boring (d) = 6 in. = 0.5 ft.

Time Interval (Δt) = 12 minutes = 0.20 hr.

Discharge Height in 12 minutes (ΔH) = 6.30 in. = 0.525 ft.

Average interval reading of water height (H_w) = (12.0+5.7)/2) = 8.85 in. = 0.7375 ft.

Falling head calculation rate

= ΔH ($\pi/4$)(d^2)/ Δt= 0.5154 ft^3/hr.

Volume of Water Discharged in 18 min = (3.1416/4 x 0.5^2) 0.5 = 0.0981 ft^3

Volume of Water Discharged in 1 hour = 0.2804 ft^3/hr.

Wet Surface Area = Average wetted Side Area + Bottom of Boring

= $A_{ws(1)} + A_{ws(2)} = (\pi)(d)(H_w)+(\pi/4)(d^2)$

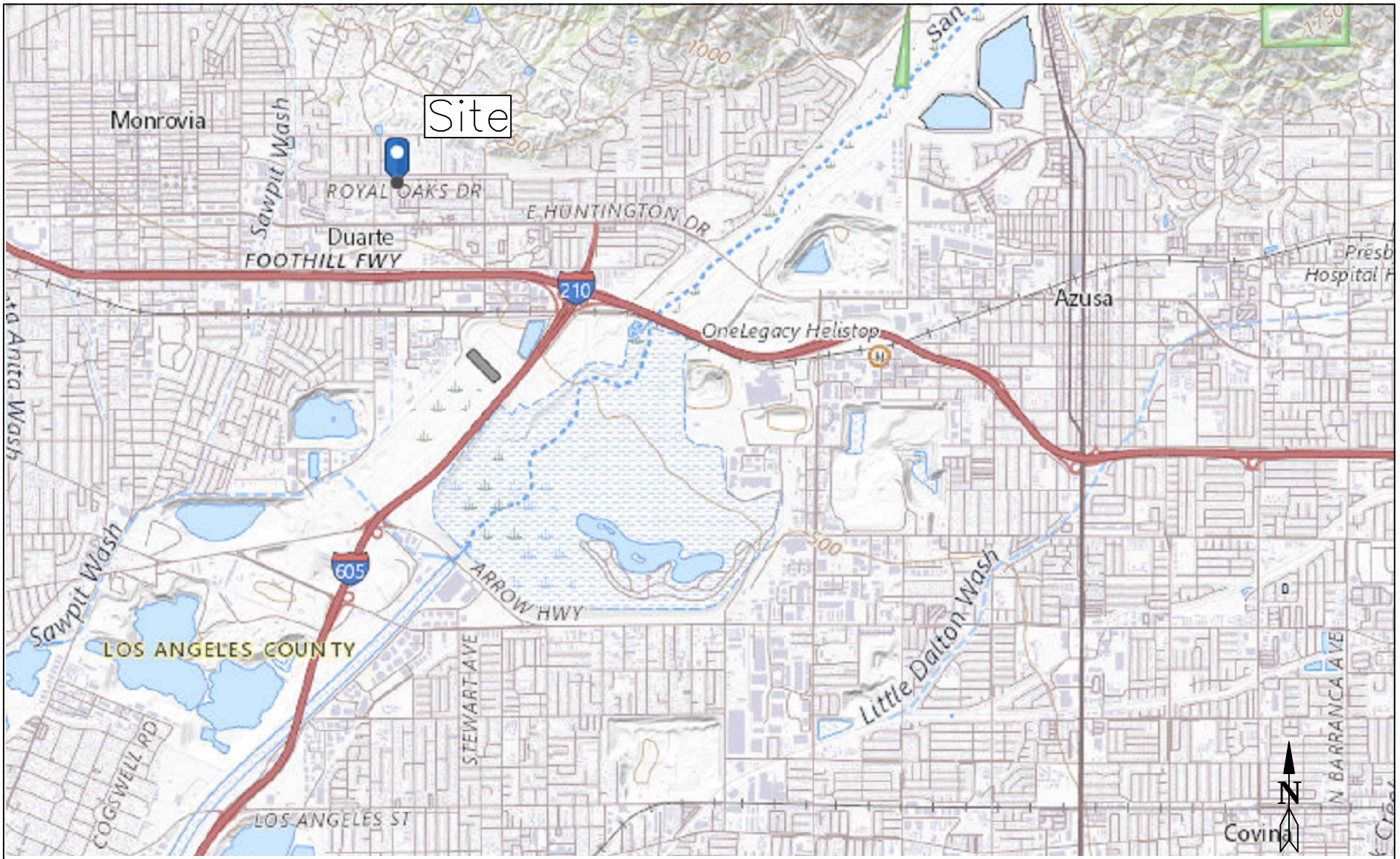
= 3.1416 x 0.5 x 0.7375 + 3.1416/4x 0.5^2 = 1.15846 + 0.1963= 1.3548 ft^2

Infiltration rate: (0.5154 ft^3/hr.)/ 1.3548 ft^2 = 0.3804 ft/hr. = **4.565 in/hr**

Safety Factor= 3 **4.565/3 = 1.52 in/hr.**

10.0 INVESTIGATION LIMITATIONS

The materials encountered on the subject site and utilized in our laboratory testing program are believed to be representative of the area. However, soil materials may vary in characteristics between excavations. Since our investigation is based on the site materials observed, selected laboratory testing, and engineering analyses, the conclusions and recommendations are professional opinion. These opinions have been derived in accordance with current standard of practice, and no warranty is expressed or implied.



Maps modified from "The National Map" by USGS

SCALE AS SHOWN

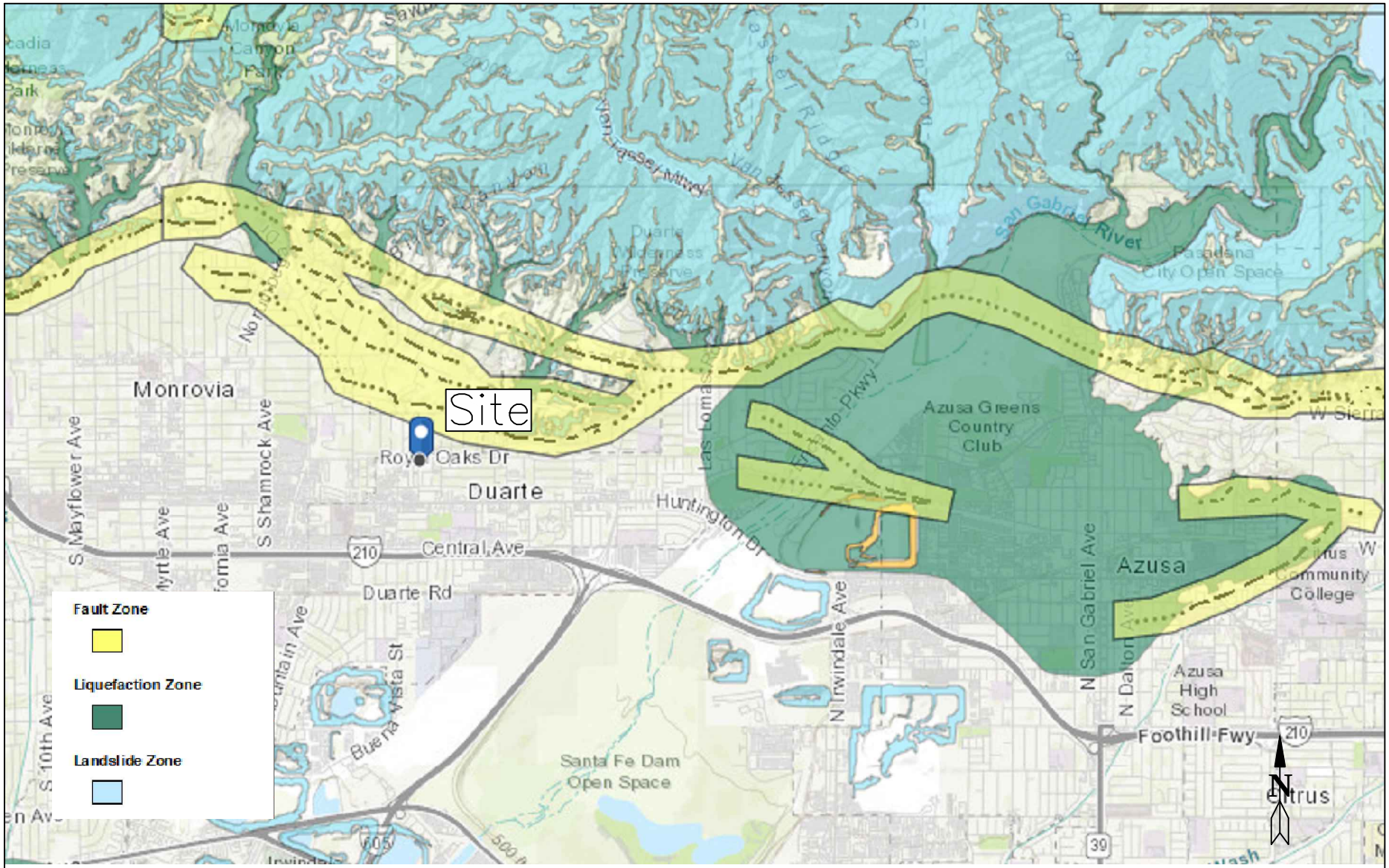
CAL LAND
ENGINEERING & ASSOCIATES, Inc.

Site Location Map

1404 & 1414 Royal Oaks Drive, Duarte, California

Project No.: 23-010-073

FIGURE 1



Maps modified from "Seismic Hazard Zone" by California Geological Survey

SCALE AS SHOWN

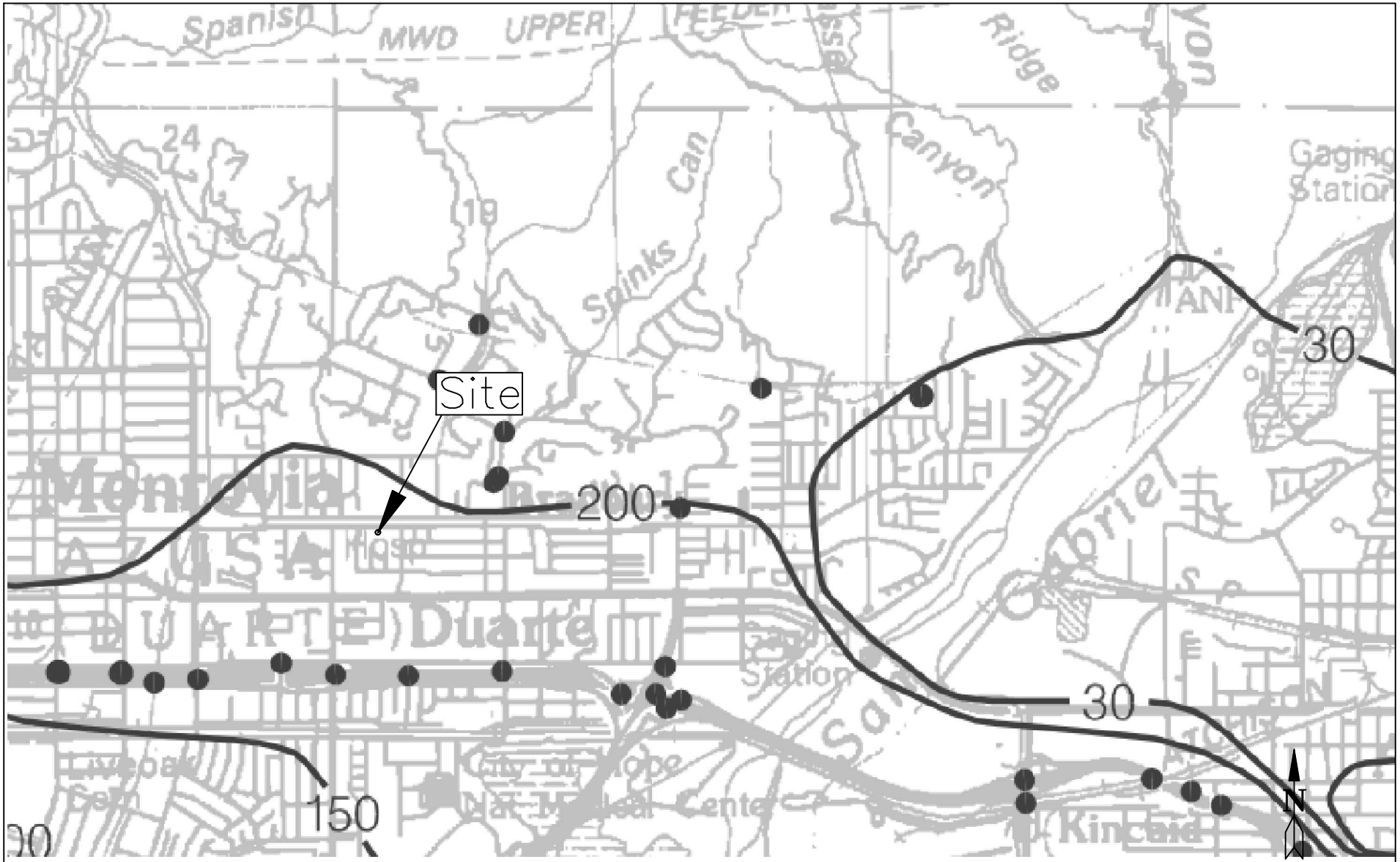
CAL LAND ENGINEERING & ASSOCIATES, Inc.

Seismic Hazard Map

1404 & 1414 Royal Oaks Drive, Duarte, California

Project No.: 23-010-073

FIGURE 2



Maps modified from "Historically Highest Ground Water Contours and Borehole Log Data Locations, Azusa Quadrangle" by CGS

SCALE AS SHOWN

CAL LAND
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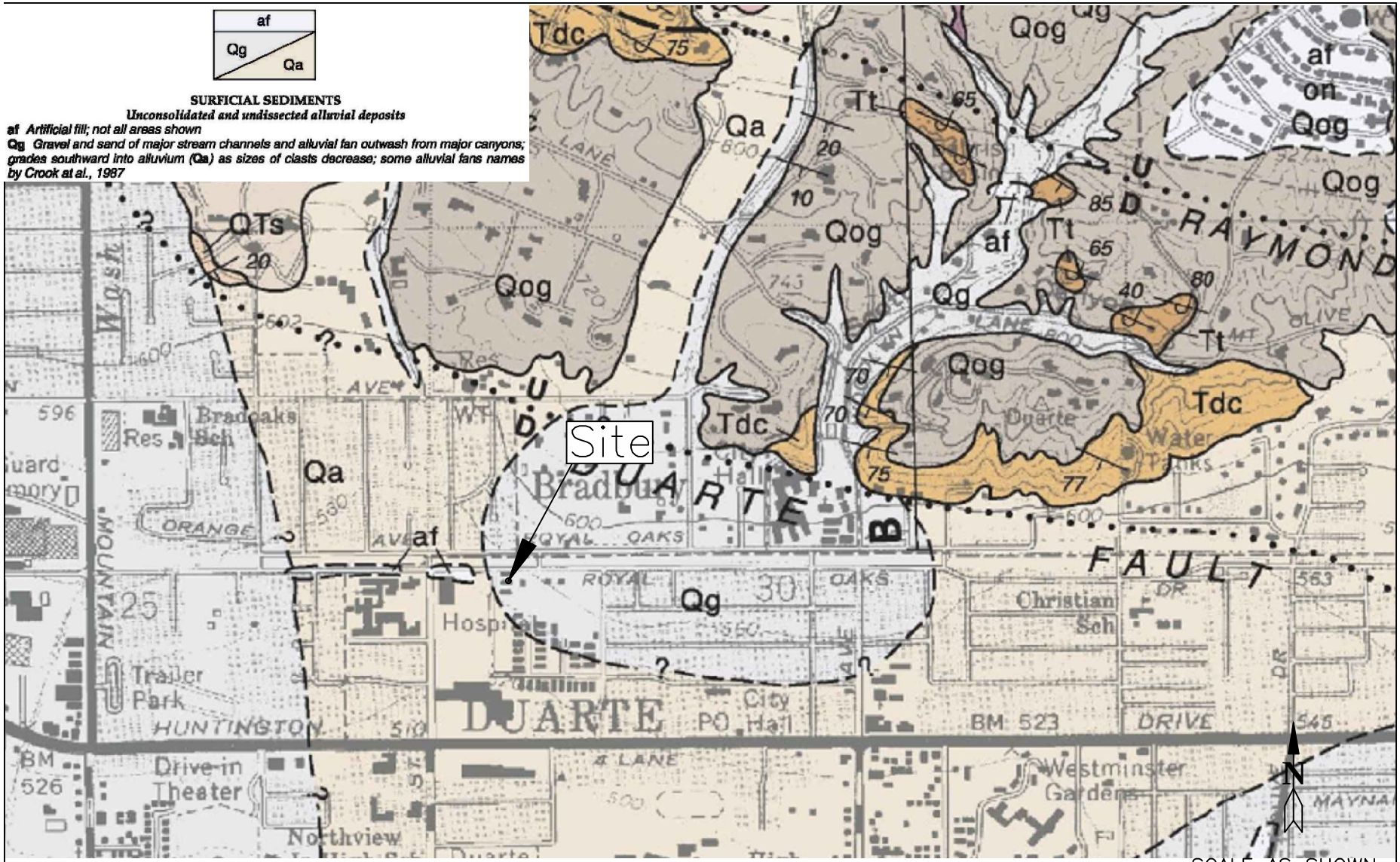
Site Locational Map
Historical Highest Groundwater Level
1404 & 1414 Royal Oaks Drive, Duarte, California

Project No.: 23-010-073

FIGURE 3



SCALE AS SHOWN

Maps modified from "Geologic map of the Mt. Wilson and Azusa quadrangles, Los Angeles County, California by Dibblee, T.W., and Ehrenspeck, H.E.., 1998

CAL LAND
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Regional Geology Map

1404 & 1414 Royal Oaks Drive, Duarte, California

Project No.: 23-010-073

FIGURE 4

ROYAL OAKS DRIVE

LEGEND

B–1 Approximate boring location

P–1 Approximate percolation location

N

SCALE: 1" = 40'

CAL LAND
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SITE PLAN

1404 & 1414 Royal Oaks Drive, Duarte, California

Project No.: 23–010–073

PLATE 1

APPENDIX A
FIELD INVESTIGATION

Subsurface conditions were explored by drilling of two 6-inch diameter hand auger borings to a maximum depth of 11.0 feet below the existing ground surface at approximate locations shown on the enclosed Site Plan (Plate 1). Upon completion of excavation, the borings were backfilled with onsite soils that were removed from the excavations.

The drilling of the borings was supervised by an engineer, who continuously logged the boring and visually classified the soils in accordance with the Unified Soil Classification System. Ring and bag samples were taken at frequent intervals. These samples taken at the test trench were obtained by driving a ring sampler with successive blows of 32-pound hammer dropping from a height of 48 inches.

Representative undisturbed samples of the subsurface soils were retained in a series of brass rings, each having an inside diameter of 2.42 inches and a height of 1.00 inch. All ring samples were transported to our laboratory. Bulk surface soil samples were also collected for additional classification and testing.

CalLand Engineering and Associates, Inc.

BORING LOG B-1

PROJECT LOCATION: 1404 & 1414 Royal Oaks Drive, Duarte, California
PROJECT NO.: 23-010-073

DATE DRILLED: 11/13/2023
SAMPLE METHOD: Hand Auger
ELEVATION: N/A
LOGGED BY: HF, AM

B: Bulk Bag
S: Standard Penetration Test
R: Ring Sample

Depth (ft)	Sample: Bulk	Sample: Undisturbed	Sample: Blows/12"	USCS Symbol	Dry Unit Wt. (pcf)	Moisture (%)	Description of Material
	B			SM		5.2	**Fill:** Silty sand with trace gravels, medium grained, light brown, slightly moist, loose to medium dense. Percent of Fines: 15.7
2		R	21	SM	103.6	4.2	Silty sand, medium grained, light brown, slightly moist, medium dense
5		R	42	SM	107.2	4.4	**Natural:** Silty sand, medium grained, medium brown, slightly moist, medium dense Silty sand with trace gravels, medium grained, light brown, slightly moist Percent of Fines: 14.2
10		R	53	SP/ SM	110.5	3.6	Gravelly sand and silty sand, medium grained, medium brown, slightly moist, dense. Percent of fines: 10.4
15							Total Depth: 11.0 feet No Groundwater Hole Backfilled
20							Hammer Driving Weight: 32 lbs Hammer Driving Height: 48 inches
25							
30							
35							

PLATE A-1

CalLand Engineering and Associates, Inc.

BORING LOG B-2

PROJECT LOCATION: 1404 & 1414 Royal Oaks Drive, Duarte, California
PROJECT NO.: 23-010-073

DATE DRILLED: 11/13/2023
SAMPLE METHOD: Hand Auger
ELEVATION: N/A
LOGGED BY: HF, AM

B: Bulk Bag
S: Standard Penetration Test
R: Ring Sample

Depth (ft)	Sample: Bulk	Sample: Undisturbed	Sample: Blows/12"	USCS Symbol	Dry Unit Wt. (pcf)	Moisture (%)	Description of Material
	B			SM		2.3	**Fill:** Silty sand with trace gravels, medium grained, light brown, slightly moist, loose to medium dense
2		R	23	SM	105.1	3.8	Silty sand, medium grained, light brown, slightly moist, medium dense
5		R	55	SM	108.9	2.3	**Natural:** Silty sand, fine grained, medium brown, slightly moist, dense Percent of Fines: 15.3
10							Total Depth: 6.0 feet No Groundwater Hole Backfilled Hammer Driving Weight: 32 lbs Hammer Driving Height: 48 inches
15							
20							
25							
30							
35							

PLATE A-2

APPENDIX B
LABORATORY TESTING

During the subsurface exploration, CLE personnel collected relatively undisturbed ring samples and bulk samples. The following tests were performed on selected soil samples:

Moisture-Density

The moisture content and dry unit weight were determined for each relatively undisturbed soil sample obtained in the test borings in accordance with ASTM D2937 standard. The results of these tests are shown on the boring logs in Appendix A.

Shear Tests

Shear tests were performed in a direct shear machine of strain-control type in accordance with ASTM D3080 standard. The rates of deformation were 0.010 inch per minute. Selected samples were sheared under varying confining loads in order to determine the Coulomb shear strength parameters: internal friction angle and cohesion. The shear test results are presented in the attached Figures.

Consolidation

Consolidation tests were performed on selected undisturbed soil samples in accordance with ASTM D2435 standard. The consolidation apparatus is designed for a one-inch-high soil filled brass ring. Loads are applied in several increments in a geometric progression and the resulting deformations are recorded at selected time intervals. Porous stones are placed in contact with the top and bottom of each specimen to permit addition and release of pore fluid. The samples were inundated with water at a load of two kilo-pounds (kips) per square foot, and the test results are shown on the attached Figures.

Corrosion Potential

Chemical laboratory tests were conducted on the existing onsite near surface materials sampled during CLE's field investigation to aid in evaluation of soil corrosion potential and the attack on concrete by sulfate soils. These tests are performed in accordance with California Test Method 417, 422, 532, and 643. The testing results are presented below:

Sample Location	pH	Chloride (ppm)	Sulfate (% by weight)	Min. Resistivity (ohm-cm)
B-1 @ 0-3'	8.15	250	0.050	5,800

Expansion Index

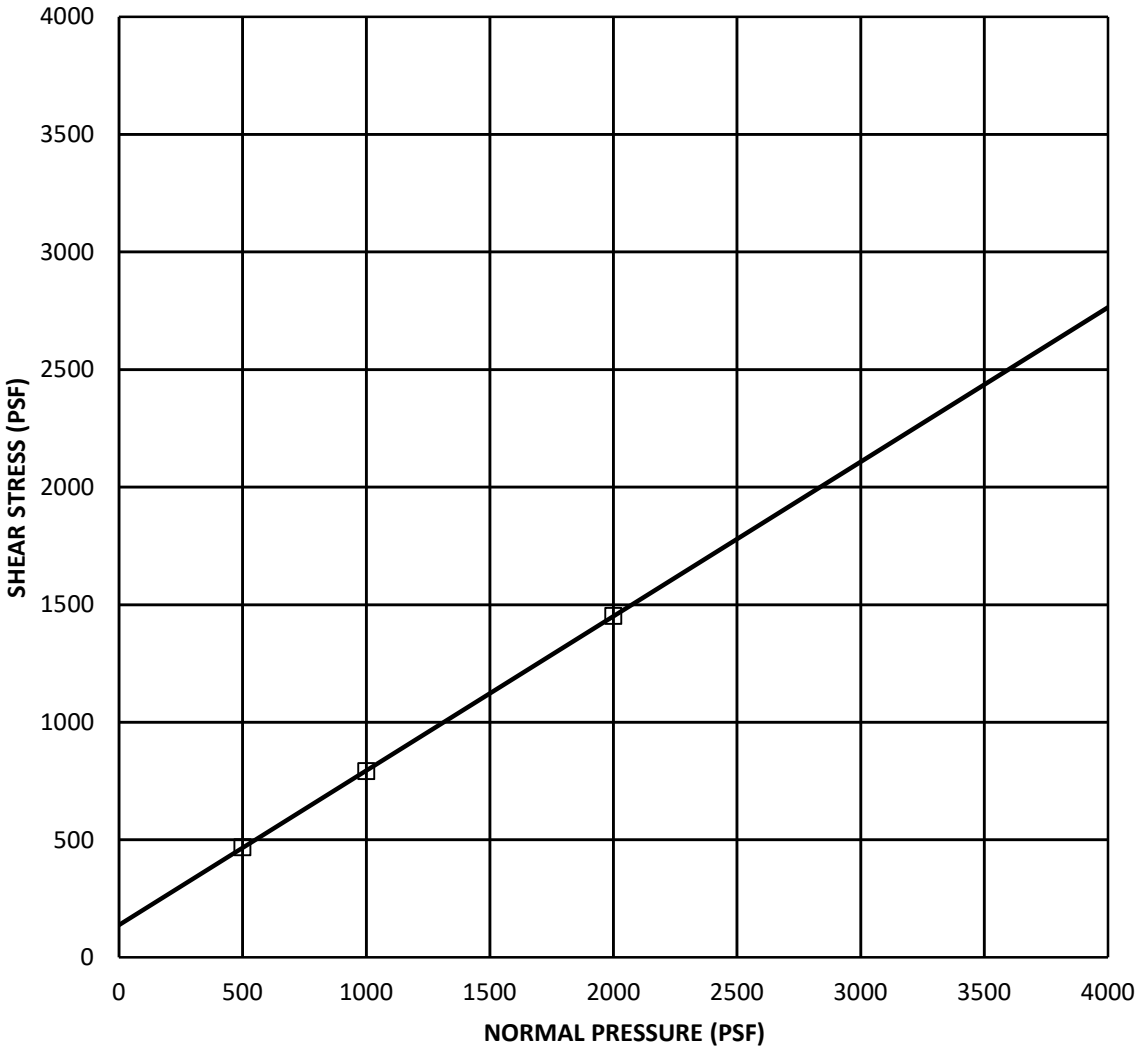
Expansion Index tests were conducted on the existing onsite near surface materials sampled during CLE's field investigation. These tests are performed in accordance with ASTM D-4829. The testing results are presented below:

Sample Location	Expansion Index	Expansion Potential
B-1 @ 0-3'	3	Very Low

Percent Passing #200 Sieve

Percent of soil passing #200 sieve was determined for selected soil samples in accordance with ASTM D1140 standard. The test results are presented in the following table:

Sample Location	% Passing #200
B-1 @ 0-3'	15.7
B-1 @ 5'	14.2
B-1 @ 10'	10.4
B-2 @ 5'	15.3



SYMBOL	BORING NO.	SAMPLE NO.	DEPTH (FT)	SAMPLE TYPE	SOIL TYPE	COHESION (PSF)	FRICTION ANGLE (DEG)
□	b-1	N/A	2.0	RING	SM	130	33

Vertical Loads (PSF)	Moisture Content Before Test (%)	Moisture Content After Test (%)
500	4.2	22.9
1000	4.2	22.5
2000	4.2	22.3

CalLand Engineering and Associates, Inc.
Land Surveying, Geotechnical, Environmental & Civil Engineering

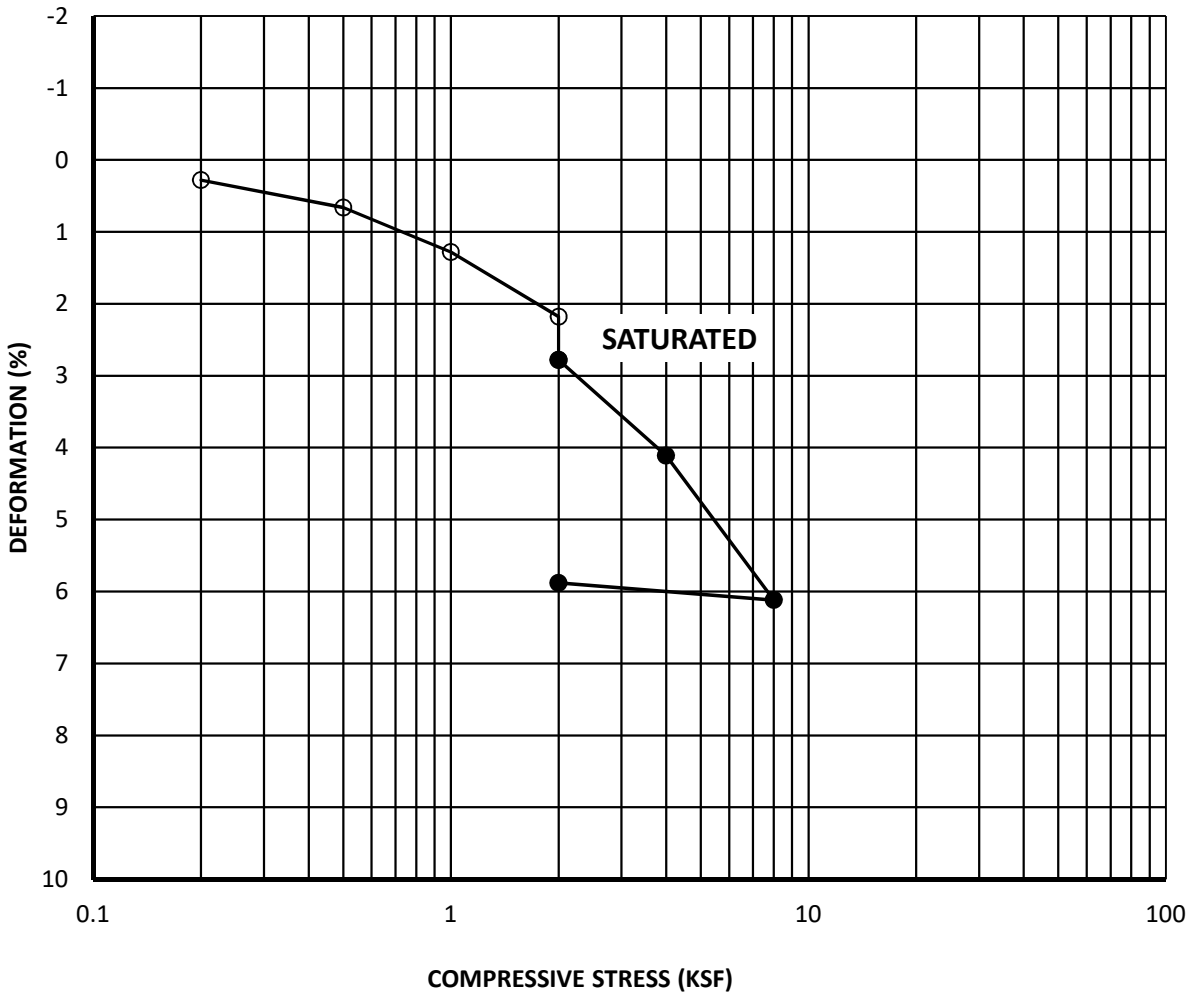
Project Address:
APN: 8530-004-059, & -060
1404 & 1414 Royal Oaks
Duartte, California

DIRECT SHEAR

(ASTM D3080)

12/23

FIGURE 5



SYMBOL	BORING NO.	SAMPLE NO.	DEPTH (FT)	SOIL TYPE	INIT. MOISTURE CONTENT (%)	INIT. DRY DENSITY (PCF)	INIT. VOID RATIO
○	B-1	N/A	5	SM	4.4	107.2	0.572

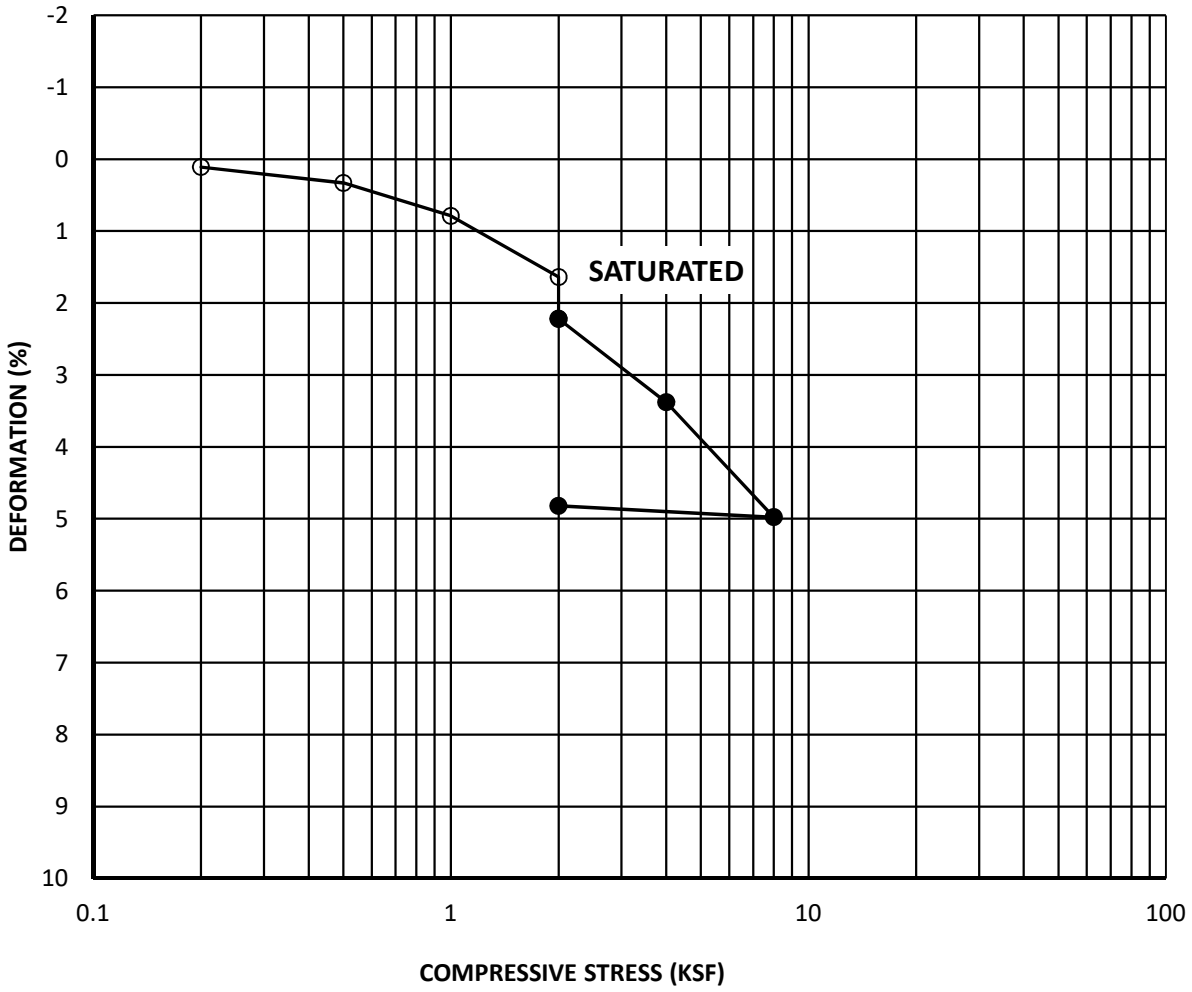
CalLand Engineering and Associates, Inc. Land Surveying, Geotechnical, Environmental & Civil Engineering	Project Address: APN: 8530-004-059 & -060 1404 & 1414 Royal Oaks Drive Duarte, California

CONSOLIDATION

(ASTM D2435)

12/23

FIGURE 6



SYMBOL	BORING NO.	SAMPLE NO.	DEPTH (FT)	SOIL TYPE	INIT. MOISTURE CONTENT (%)	INIT. DRY DENSITY (PCF)	INIT. VOID RATIO
○	B-1	N/A	10	SP-SM	3.6	110.5	0.525

CalLand Engineering and Associates, Inc. Land Surveying, Geotechnical, Environmental & Civil Engineering	Project Address: APN: 8530-004-059 & -060 1404 & 1414 Royal Oaks Drive Duarte, California

CONSOLIDATION

(ASTM D2435)

12/23

FIGURE 7

APPENDIX C

PERCOLATION TEST RESUTLS

Boring/ Excavation Percolation Test Field Log

Date 11/13/2023

1401 & 1414 Royal Oaks Drive

Project Location:	Duarte, california	Boring/ Test Number	P-1		
Earth Description	Alluvium	Diameter of Boring	6"	Diameter of Casing	2"
Test By	HF	Depth of Boring	6'		
Liquid Description	Tap Water	Depth of Invert of BMP	5'		
Measurement Method	Sounder	Depth of Water Table	N/A		
		Depth of Initial Water Depth (d1)	12"		
Time Interval Standard					
Start Time for Pre-Soak	8:48 AM	Water Remaining In Boring (Y/N)	No		
Start Time for Standard	10:10 AM	Standard Time Interval Between Readings	12 Mins		

Reading Number	Time Start/ End (hh:mm)	Elapsed Time Δtime (mins)	Water Drop During Standard Time Interval Δd (inches)	Percolation Rate for Reading (in/hr)	Soil Description / Notes / Comments
1	10:10 AM 10:22 AM	12	11.90	34.00	Medium brown, silty sand (SM)
2	10:24 AM 10:36 AM	12	11.00	31.43	Hydrologic Soil Group A
3	10:38 AM 10:50 AM	12	10.20	29.14	
4	10:52 AM 11:04 AM	12	9.00	25.71	
5	11:06 AM 11:18 AM	12	8.40	24.00	
6	11:20 AM 11:32 AM	12	7.20	20.57	
7	11:34 AM 11:46 AM	12	6.30	18.00	
8	11:48 AM 12:00 PM	12	6.30	18.00	
9	12:02 PM 12:14 PM	12	6.30	18.00	Stabilized Rate Achieved

Appendix E
Paleontological Resources Assessment

Paleontological Resources Assessment

1404 Royal Oaks Duarte Project,
City of Duarte, Los Angeles County, California

Prepared for:

Erik Anderson, AICP, Associate Planner
De Novo Planning Group
180 East Main Street, No. 108
Tustin, California 92780

and

City of Duarte
Craig Hensley, Community Development Director
1600 Huntington Drive
Duarte, California 91010

Prepared By:

South Environmental LLC
2061 N. Los Robles Avenue, Ste. 205
Pasadena, California 91104

Author: Justin Strauss, MS

March 2025

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Appendices

Appendix A: Paleontological Resource Potential Classifications
Appendix B: Natural History Museum of Los Angeles County Records Search
Appendix C: Preparer's Qualifications

Executive Summary

South Environmental conducted a paleontological resources assessment for the 1404 Royal Oaks Duarte Project in the City of Duarte, Los Angeles County, California (project). The purpose of this assessment is to describe the results of a paleontological resources literature review and records search, summarize the paleontological sensitivity of the geologic units within the project site, assess the potential for the project to impact scientifically significant paleontological resources, and provide management recommendations for avoiding or reducing project-related impacts to paleontological resources. This study was completed in compliance with the California Environmental Quality Act (CEQA) and following the guidelines regarding mitigation of adverse impacts to paleontological resources provided by the Society of Vertebrate Paleontology (SVP).

The proposes a General Plan Amendment for density, and a Zone Change from R-1 to R-3, for the development of 11 townhouses on a 40,540 square foot (approximately 0.84 acre) property. Two existing single-family homes are within the project site at 1404 and 1414 Royal Oaks Drive and are proposed for demolition as part of the project.

The geologic units found at the surface of the project site are Holocene-age alluvial deposits that are directly underlain by Pleistocene-age older alluvial deposits that have a High potential to contain paleontological resources. Additionally, three scientifically significant fossil localities have been identified within one mile of the project site. Therefore, full-time paleontological monitoring should be conducted on all ground-disturbing activities that take place during the course of the project. The full recommendations are presented in Section 3.2.

1 Introduction

South Environmental was retained to complete a paleontological resources assessment for the 1404 Royal Oaks Duarte Project located in the City of Duarte, Los Angeles County, California. The purpose of this assessment is to describe the results of a paleontological resources literature review and records search, summarize the paleontological sensitivity of the geologic units within the project site, assess the potential for the project to impact scientifically significant paleontological resources, and provide management recommendations for avoiding or reducing project-related impacts to paleontological resources.

This report was prepared in conformance with the California Environmental Quality Act (CEQA) by South Environmental Principal Paleontologist Justin Strauss, MS. Resumes for key staff are provided in Appendix C.

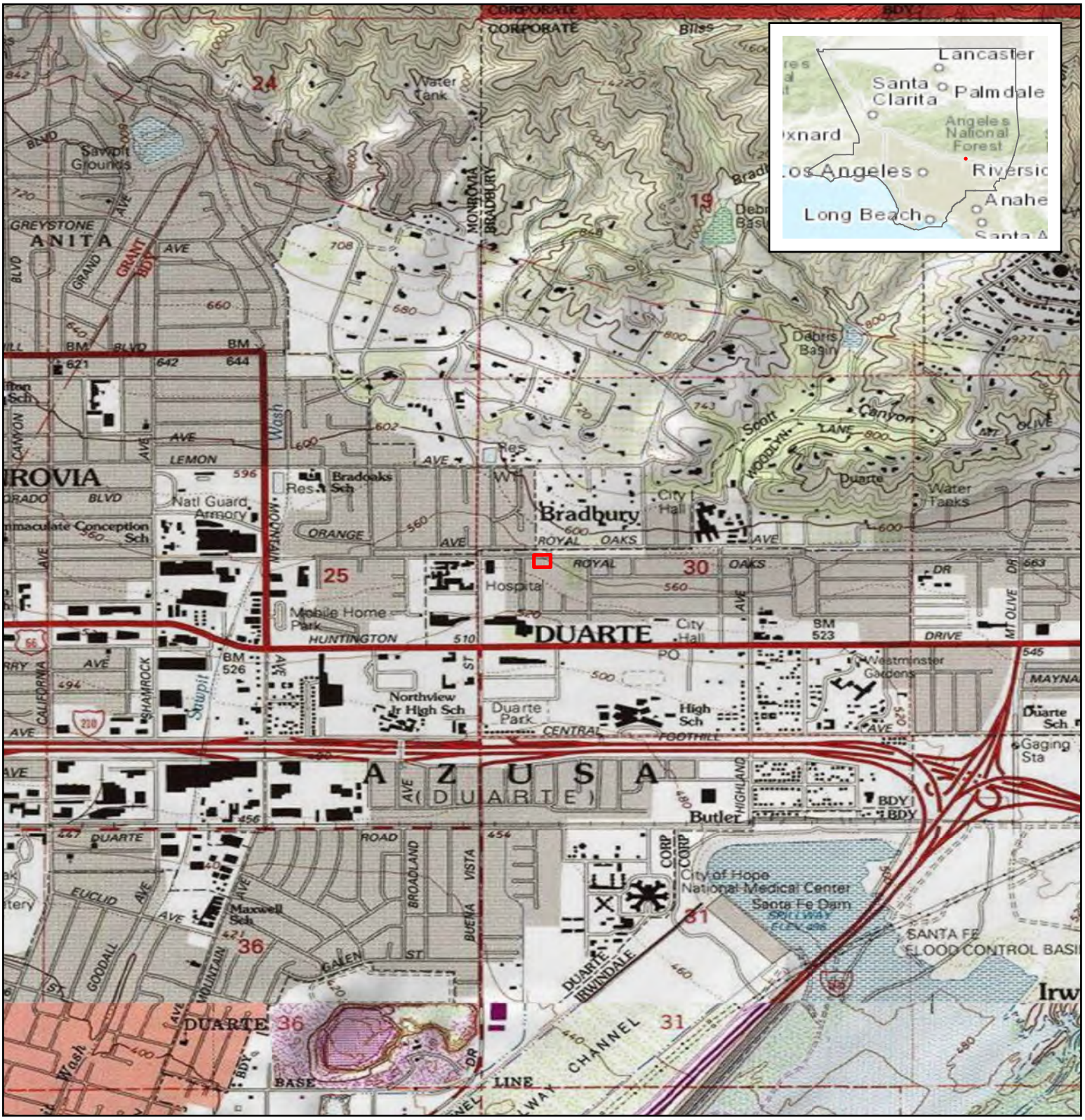
1.1 Project Location

The project site comprises the addresses and Assessor's Parcel Numbers (APNs) 1404 Royal Oaks Drive (APN8530-004-059) and 1414 Royal Oaks Drive (APN 8530-004-060). The site is bound by Royal Oaks Drive to the north, 1st Street to the south, an unnamed alley to the west, and a residence to the east. It is located approximately 0.2-mile north of Historic Route 66/Huntington Drive and approximately 0.5-mile north of Interstate 210.

The project site is depicted on the U.S. Geological Survey (USGS) *Azusa, California* 7.5-minute topographic quadrangle map, and within Section 30 of Township 01 North, Range 10 West, San Bernardino base and meridian (Figure 1).

1.2 Project Description

The project proposes a General Plan Amendment for density, and a Zone Change from R-1 to R-3, for the development of 11 townhouses on a 40,540 square foot (approximately 0.84 acre) property. Two existing single-family homes are within the project site at 1404 and 1414 Royal Oaks Drive and are proposed for demolition as part of the project.



Source: ESRI USA Topo Maps and World Topo Map 2025

City of Duarte - 1404 Royal Oaks CEQA Project

Figure 1. Project Location Map

Project Site

Project Site is within Duarte, California, in Los Angeles County
on the USGS Azusa 7.5-minute quadrangle map
in Section 30 of Township 01 North and Range 10 West

Center Coordinate (Decimal Degrees):
Latitude: 34.1429354N Longitude: -117.9750467W

0 1,000 2,000 Feet

Scale: 1:24,000

N

SOUTH ENVIRONMENTAL

1.3 Regulatory Setting

Paleontological resources are generally considered non-renewable scientific resources because they cannot be replaced once damaged or destroyed, and considerable scientific information can be lost should they be disturbed or displaced from their original location and geologic context without a proper record of their original placement and arrangement in their natural sediments. For this reason, fossils are typically protected under a variety of federal, state, and local laws and regulations to ensure that these basic scientific considerations are made and carried out whenever paleontological resources are going to be disturbed. The pertinent laws and regulations governing paleontological resources are discussed in this section.

1.3.1 State

California Environmental Quality Act (CEQA)

CEQA requires that public agencies and private interests identify the potential environmental impacts of their projects on any object or site of significance to the scientific annals of California (Division I, California Public Resources Code [PRC] Section 5020.1 [j]). Appendix G in California Code of Regulations (CCR) Section 15023 provides an Environmental Checklist (Section 15023, Appendix G, Section XIV, Part A) that includes the following: "Would the project directly or indirectly destroy a unique paleontological resource or site or unique geological feature?"

California Public Resources Code (PRC)

Section 5097.5 of the PRC states:

> No person shall knowingly and willfully excavate upon, or remove, destroy, injure, or deface any historic or prehistoric ruins, burial grounds, archaeological or vertebrate paleontological site, including fossilized footprints, inscriptions made by human agency, or any other archaeological, paleontological, or historical feature, situated on public lands, except with the express permission of the public agency having jurisdiction over such lands. Violation of this section is a misdemeanor. As used in this PRC section, 'public lands' means lands owned by, or under the jurisdiction of, the state or any city, county, district, authority, or public corporation, or any agency thereof.

Therefore, public agencies are required to comply with PRC Section 5097.5 for their activities including construction and maintenance as well as for permit actions (e.g., encroachment permits) undertaken by others.

1.3.2 Local

City of Duarte Comprehensive General Plan

The Comprehensive General Plan of the City of Duarte does not directly reference paleontological resources. However, it does recognize the significance of CEQA and direct local efforts to meet its requirements. In Chapter 7 *Historic Preservation,* it states "The California Environmental Quality Act (CEQA) is a state law enacted in 1971. It requires state and local governmental agencies to consider the impact proposed projects have on the environment" (City of Duarte, 2007).

1.3.3 Paleontological Resource Definitions

SVP Paleontological Resource Significance Determination

Toward the goal of providing guidance to federal, state, and local agencies in carrying out environmental assessments, the Society of Vertebrate Paleontology (SVP) has created a set of definitions to determine the significance of paleontological resources. Significant paleontological resources are defined as follows:

> Fossils and fossiliferous deposits consisting of identifiable vertebrate fossils, large or small, uncommon invertebrate, plant, and trace fossils, and other data that provide taphonomic, taxonomic, phylogenetic, paleoecologic, stratigraphic, and/or biochronologic information. Paleontological resources are considered to be older than recorded human history and/or older than middle Holocene (i.e., older than about 5,000 radiocarbon years). (SVP, 2010)

By this definition, significant paleontological resources are fossils (or fossil assemblages) that are unique, unusual, rare, diagnostically important, or even common with the potential to provide additional scientific information about evolutionary patterns or the paleoenvironmental conditions of a site. This includes fossils that may enhance our understanding of depositional histories, evolutionary trends and patterns within lineages, information regarding palaeoecological environments, that can be used to identify the sedimentary rock units that they are within, or fossils that are unique to a particular geologic region. For this reason, even common or unidentifiable invertebrate and vertebrate fossil remains may be considered scientifically significant, particularly within the larger context of a geologic area from which many specimens have previously been collected and examined.

Because CEQA does not define a "unique paleontological resource or site", the definitions set forth by the SVP are used for all paleontological projects that are subject to CEQA.

For additional information relating to the determination of the potential significance of paleontological resources based on SVP guidelines, please see Appendix A: Paleontological Resource Potential

Classifications. These definitions have been used to determine the potential paleontological sensitivity of the project site.

2 Paleontological Sensitivity Determination Methods

To assess the paleontological sensitivity of the project site and determine its placement within the definitions provided by the SVP, several sources of recorded data were examined:

1) Published geologic maps of the project site and surrounding vicinity.
2) A collections record search was performed by the Natural History Museum of Los Angeles County (NHMLA) to identify previously identified localities within one mile of the project site.
3) Searches of the following on-line databases were performed to determine additional fossil sites recorded within one mile of the project site and within similar rocks in the vicinity:
    a. University of California Museum of Paleontology (UCMP) Collections
    b. The Paleobiology Database
    c. iDigBio
4) Additional published and unpublished paleontological literature pertaining to the project site and the surrounding vicinity.

2.1.1 Geologic Context

Geologic Setting

The project site sits within the Peninsular Ranges Geomorphic Province. The Peninsular Ranges is a region that is approximately 125 miles in length and bound to the north by the Transverse Ranges, stretching to Baja California in the south. It contains northwest trending valleys and is bordered on the east by the Colorado Desert (California Geological Survey, 2002).

Specifically, the project site is located within the Los Angeles Basin, an area that is approximately 20 miles wide and 50 miles long. It is bound to the north by the Santa Monica Mountains, to the east by the Elysian, Puente and Repetto Hills, to the southeast by the San Joaquin Hills and Santa Ana Mountains, to the northeast by the Coyote Hills, and to the southwest by the Palos Verdes Peninsula. The basin is broken into four major blocks: the central, northwest, southwest and northeast blocks (Yerkes et al., 1965). The project is located on the northern edge of the northeastern block, less than half a mile from the Sierra Madre fault zone, at the foot of the San Gabriel Mountains.

The San Andres transformation zone has played a large part in the formation of the Los Angeles Basin, affecting it tectonically (Hauksson, 1990; Wright, 1991), resulting in discontinuous deposition starting in the Late Cretaceous. In the late Miocene to the early Pliocene, the basin went through a period of subsidence that led to extensive deposition of sediments. These sediments were primarily derived from turbidity currents, resulting in the basin filling more rapidly than it was subsiding. This is where much of the present-day marine and fluvial sediments that can be observed on the surface originated from

(Hauksson, 1990). There have been at least three cycles of marine transgression and regression that have created embayments and flood plains along the ancient coastline (Yerkes et al., 1965). This was just one of several basins formed during the Miocene and Plioecene as a result of the San Andres transformation taking place along the western margin of North America (Fuis et al., 2001; Hauksson, 1990). Today, the Los Angeles Basin consists mostly of marine and fluvial sediments that are known to be up to 10 kilometers thick (Hauksson, 1990).

Site Specific Geology and Paleontology

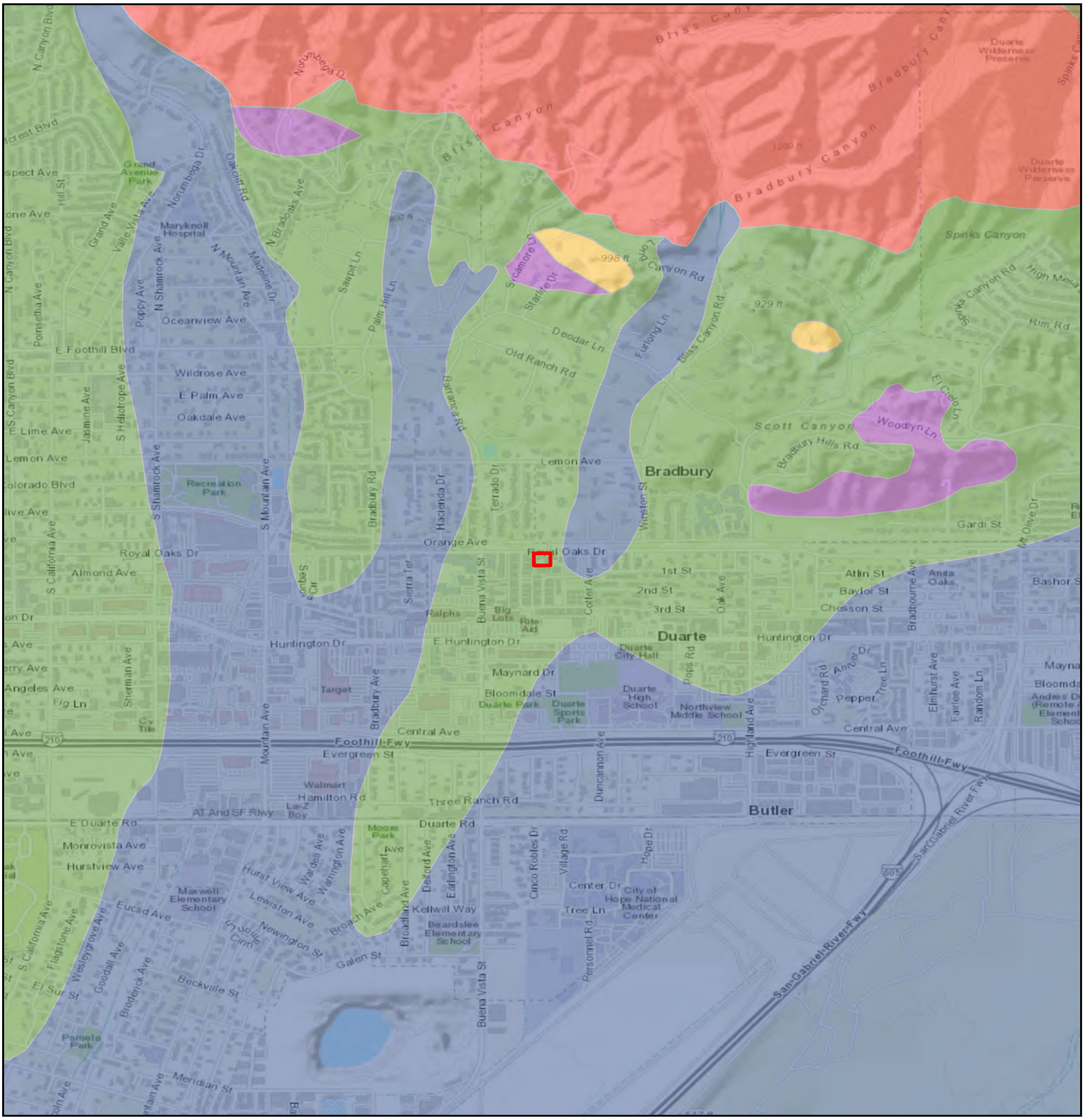
The geology of the project site has been mapped as Holocene-aged alluvial fan deposits (Qg / Qal3a) (Dibblee and Ehrenspeck, 1998; Morton, 1973) consisting of Holocene-aged alluvial gravel, sand and clay that is largely derived from the canyons of the San Gabriel Mountains located to the immediate north. Pleistocene-aged alluvial deposits (Qof / Qc) directly underlay these younger sediments and may even be present in the project site (Bortugno and Spittler, 1986; Rogers, 1967). Holocene-aged sediments are typically considered to be of Low potential for scientifically significant paleontological resources, while Pleistocene-age deposits are well known to contain scientifically significant vertebrate fossils (Miller, 1971) and are of High Potential to contain paleontological resources.

The following table lists the geologic units that have been mapped within the project site as well as those found in the immediate vicinity.

Summary of Geologic Units in the Vicinity of the Project Site and their Sensitivity

Geologic Units	Map Abbr.[1]	Age	Fossils[2]	Sensitivity	In Project Site?
Alluvium (gravel and sand)	Qf / Qg / Qal3a / Qal	Holocene	None	Low	Yes
Older alluvium	Qof / QTs / Qsd / Qc	Pleistocene	Mammoth (*Mammuthus*), horse (*Equus*), fish (*Gasterosteus*), snake (*Colubridae*), rodents (*Thomomys, Microtus, Reithrodontomys*), rabbit (*Sylvilagus*)	High	Yes
Duarte Conglomerate	Tdc	Pliocene	None	Low	No
Granitic rocks (tonalite and diorite)	Kqd / grt	Mesozoic (Cretaceous)	None	Low	No

[1]Bortugno and Spittler, 1986; Dibblee and Ehrenspeck, 1998; Morton, 1973; Rogers, 1967.
[2]Bell, 2025; iDigBio, 2024; PBDB, 2024; UCMP, 2024



Source: BING Aerial Map 2025

City of Duarte - 1404 Royal Oaks CEQA Project

Figure 2. Project Geology Map

0 1,000 2,000 Feet

Scale: 1:24,000

N

SOUTH ENVIRONMENTAL

Rogers, T.H. 1967.
Geologic Map of California, Olaf P. Jenkins Edition, San Bernardino Sheet

Records Search Results

The NHMLA searched its paleontological records (Bell, 2025) for all fossil localities recorded within one mile of the project site, finding three within its records. South Environmental also performed a records search for all fossil localities recorded within one mile of the project site on the Paleobiology Database (PBDP) and iDigBio database, and for all fossils found in similar deposits within the county recorded in the University of California Museum of Paleontology (UCMP) collections. The results of the records and online database searches are summarized below:

Source	Localities	Age/Formation	Taxa	Depth	Distance
NHMLA	LACM VP 2027	Unknown (Pleistocene)	Mammoth (*Mammuthus*)	Unknown	1-mile
	LACM VP 3363	Unknown (Pleistocene)	Horse (*Equus*)	Unknown	1-mile
	LACM VP 7702	Unknown (Pleistocene)	Fish (*Gasterosteus*), snake (*Colubridae*), rodents (*Thomomys, Microtus, Reithrodontomys*), rabbit (*Sylvilagus*)	30-feet bgs	1-mile
PBDB	None	-	-	-	-
iDigBio	None	-	-	-	-
UCMP	579	Pleistocene	510 invertebrate (unspecified), 54 invertebrate (Foraminifera), 4 Plant, 11 vertebrate	Not specified	Not specified

*NHMLA=Natural History Museum of Los Angeles County; UCMP = University of California Museum of Paleontology Collections Online Database; PBDB = Paleobiology Online Database; iDigBio = iDigBio Online Database

3 Findings and Recommendations

3.1 Findings

No scientifically significant fossil materials have been discovered within the project site based on the records searches of previously recorded fossil localities completed by the NHMLA. However, scientifically significant fossil sites have been recorded within one mile of the project site, and many more are known from similar sediments throughout the area. The sediments mapped at the surface are Holocene-aged and have a Low potential to contain paleontological resources. However, these deposits are directly underlain by Pleistocene-age sediments that have a High potential for yielding scientifically significant fossils. This conclusion is based on the records search performed by the NHMLA (Bell, 2025) and the literature and map reviews performed by South Environmental. The project proposes to demolish the two current single-family residences and construct eleven semi-detached townhomes with two-car garages, landscaped green space, a trash enclosure, and five additional parking spaces. These activities have the potential to affect Pleistocene-aged sediments, which would result in significant impacts under CEQA including destruction, damage, or loss of scientifically significant paleontological resources. A Qualified Paleontologist (SVP, 2010) should be retained to develop and implement the recommended measures below to reduce impacts to paleontological resources below a level of significance. The proposed measures have been developed in accordance with SVP guidelines and, if implemented, would meet the requirements of CEQA.

3.2 Recommendations

In accordance with the requirements of CEQA, a qualified paleontological monitor is required during all excavations. The following sections (Sections 3.2.1 through 3.2.6) provide specific recommendations to conduct paleontological monitoring in accordance with CEQA and following the guidelines of the SVP.

3.2.1 Paleontological Resource Impact Mitigation Plan

In accordance with CEQA and following the guidelines provided by the SVP, when a paleontological assessment determines that a project site is underlain by soils or geologic units with a medium to high potential for containing paleontological resources, a qualified paleontologist shall prepare a paleontological resource impact mitigation plan (PRIMP) and worker environmental awareness program (WEAP).

3.2.2 Pre-Construction Personnel Training

Prior to the beginning of any ground disturbing activities, the qualified paleontologist shall conduct a WEAP for all personnel. The program should include descriptions of potential fossil resources that may be encountered in the project site during earth-moving activities, a discussion of the pertinent laws

and regulations relating to said paleontological resources in the area, and a review of the steps that should be taken if a fossil discovery is made. The program shall be developed by the qualified paleontologist and delivered simultaneously with trainings on cultural and biological resources (if applicable), safety reviews, and other matters of concern.

3.2.3 Paleontological Monitoring

Due to the high potential for the discovery of scientifically significant fossil materials during ground disturbance activities, full-time paleontological resource monitoring should be performed by a paleontological monitor under the direction of a qualified paleontologist during said activities. Monitoring should involve the visual inspection of all earth-moving activities, graded areas, trench sidewalls, and spoils piles. If the qualified paleontologist determines that full-time monitoring is no longer required based on the geologic conditions of the site, the paleontologist may recommend that monitoring be reduced or stopped entirely.

Paleontological monitors should prepare daily logs describing the activities of the construction crew, the types of excavation work being done, the equipment being used, recordings of the geology observed during these activities, and records of any fossil discoveries made, whether they be determined to be significant or not. Paleontological monitors should also attempt to record the stratigraphy of the rock that is exposed by construction activities, whether or not fossils were discovered within the exposed sediments.

If the paleontological monitor determines that full-time monitoring is no longer warranted, he or she may recommend that monitoring be reduced to periodic spot-checking or cease entirely. Monitoring shall be reinstated if any new or unforeseen deeper ground disturbances are required.

3.2.4 Fossil Discoveries

Should fossil materials be discovered, either by the paleontological monitor or the construction field crew, the paleontological monitor shall have the authority to temporarily halt or divert construction activities and equipment in a 50-foot radius around the site to further assess the discovery. Should the fossils be determined to be of scientific significance, they should be collected as soon as possible. Standard field procedures should be used in the collection of the fossils to ensure that no scientific data is lost in the recovery process. Fossil specimens discovered during construction can typically be collected by a single qualified paleontologist within a single day, usually in less than one hour. Occasionally, more extensive efforts may be required to properly salvage a fossil specimen, particularly for larger skeletal elements, entire skeletons, or large collections of smaller fossil remains. Should this be the case, the paleontological monitor should have the authority to temporarily halt, divert, or redirect construction activities to ensure that the fossil can be salvaged in a safe and timely manner. The paleontological monitor should work directly with the field crew to clearly communicate their intentions and determine the best way to safely protect and recover the fossils, with minimal disruption to construction efforts.

3.2.5 Fossil Preparation and Curation

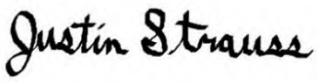
The NHMLA should be identified for the long-term storage and care of any fossil specimens discovered during paleontological monitoring. Upon completion of the project, collected fossil specimens should be prepared to the standards required by the NHMLA and delivered as soon as is feasible upon completion of the preparatory work. Preparatory work should include the removal of excess sedimentary matrix, as well as any steps necessary for the repair and stabilization of the specimens. The specimens should be identified to the lowest taxonomic level possible, and copies of all field notes and information related to the fossil should be kept and provided to the repository as well upon delivery of the specimen. The cost of curation will be determined by the repository, and the costs of preparation and curation will be the responsibility of the client.

3.2.6 Final Paleontological Mitigation Report

Upon completion of paleontological monitoring, the qualified paleontologist shall prepare a final monitoring and mitigation report to be submitted to all interested parties. This report should detail the monitoring activities and methods used during construction, a description of the construction activities that took place, stratigraphic sections created during monitoring, a review of any fossils discovered (whether or not they were deemed significant and collected), a detailed description of the fossils that were collected including their scientific significance, and information relating to the repository where the fossils will be curated.

4 Certification

I hereby certify that the statements furnished above and in the attachments present the data and information required for this paleontological resources assessment, and that the facts, statements, and information presented are true and correct to the best of my knowledge and belief.

Signed:  Date: March 31, 2025

Justin J. Strauss, MS
Principal Paleontologist

Attachments:
Attachment A. Paleontological Resource Potential Classifications
Attachment B. Natural History Museum of Los Angeles County Records Search
Attachment C. Preparer's Qualifications

5 References

Bell, A., 2025. Paleontological Resources Records Search for the 1404 Royal Oaks Duarte Project (24-199) letter. Natural History Museum of Los Angeles County, Los Angeles, California. On file at South Environmental, Pasadena, California.

Bortugno, E.J. and T.E. Spittler, 1986. Geologic Map of the San Bernardino Quadrangle, California. California Division of Mines and Geology, Regional Geologic Map Series, Map No. 3A (Geology), scale 1:250,000.

California Geological Survey, 2002. CGS Note 36: California Geomorphic Provinces, Electronic document, https://www.conservation.ca.gov/cgs/documents/publications/cgs-notes/CGS-Note-36.pdf (accessed December 2024).

City of Duarte, 2007. City of Duarte Comprehensive General Plan 2005-2020. Duarte, California. https://www.accessduarte.com/government/departments/community-development/planning/general-plan/-folder-41#docan1161_2443_352 (accessed February 2025).

Dibblee, T.W. and H.E. Ehrenspeck, 1998. Geologic map of the Mt. Wilson and Azusa quadrangles, Los Angeles County, California. Dibblee Geological Foundation, Dibblee Foundation Map DF-67, scale 1:24,000.

Fuis, G.S., Ryberg, T. Godfrey, N.J., Okaya, D.A., and Murphy, J.M., 2001. *Crustal structure and tectonics from the Los Angeles basin to the Mojave Desert, southern California: Geology*, v. 29, no. 1, p. 15-18.

Hauksson, E., 1990. Earthquakes, Faulting and Stress in the Los Angeles Basin, *Journal of Geophysical Research.* Volume 95, Issue B10, p. 15365-15394.

iDigBio, 2025. iDigBio: Integrated Digitized Biocollections: iDigBio Specimen Portal, http://portal.idigbio.org/portal (accessed February 2025).

Miller, W.E., 1971. Pleistocene Vertebrates of the Los Angeles Basin and Vicinity (Exclusive of Rancho La Brea): *Bulletin of the Los Angeles County Museum of Natural History* No. 10, p. 43-47.

Morton, D.M., 1973. Geology of the south half of the Azusa 7.5" Quadrangle, Los Angeles County, California. California Department of Conservation, Division of Mines and Geology, Special Report SR-105, scale 1:12,000.

Paleobiology Database (PBDB), 2025. The Paleobiology Database: About the PBDB, https://paleobiodb.org/#/ (accessed February 2025).

Rogers, T.H., 1967. Geologic Map of California San Bernardino Sheet, Olaf P. Jenkins Edition. California Department of Conservation, Division of Mines and Geology, scale 1:250,000.

Society of Vertebrate Paleontology (SVP), 2010. Standard Procedures for the Assessment and Mitigation of Adverse Impacts to Paleontological Resources: Society of Vertebrate Paleontology, Impact Mitigation Guidelines Revision Committee, https://vertpaleo.org/wp-content/uploads/2021/01/SVP_Impact_Mitigation_Guidelines-1.pdf (accessed December 2024).

University of California Museum of Paleontology (UCMP), 2025. UCMP Specimen Search: University of California Museum of Paleontology, https://ucmpdb.berkeley.edu/ (accessed February 2025).

Wright, T.L., 1991. Structural Geology and Tectonic Evolution of the Los Angeles Basin, California. *Active Margin Basins: AAPG Memoir 52*, p. 135-184.

Yerkes, R.F., McCulloh, T.H., Schoelhamer, J.E., and Vedder, J.G., 1965. Geology of the Los Angeles Basin, California – An Introduction. *Geological Survey Professional Paper 420-A*, 57p.

Appendix A:
Paleontological Resource Potential Classifications

Paleontological Resource Potential Classifications

When specific agency guidelines are not provided regarding the protection and preservation of paleontological resources, professional paleontologists in California will refer to the guidelines set forth by the Society of Vertebrate Paleontology (SVP) in order to determine the level of mitigation activities necessary for a particular project. These assessments are made by examining the geologic units in the area, known paleontological sites and localities recorded in the vicinity, and references made to the area by published literature. Based on the results of these analyses, the paleontological resource potential of the geology in the area can be classified into one of four categories: High Potential, Low Potential, Undetermined Potential, and No Potential.

Although these guidelines were created specifically for vertebrate fossil remains, they have generally been adopted for use in all fields of paleontology. The definitions for these categories are listed below:

High Potential

Rock units from which vertebrate or significant invertebrate, plant, or trace fossils have been recovered are considered to have a high potential for containing additional significant paleontological resources. Rocks units classified as having high potential for producing paleontological resources include, but are not limited to, sedimentary formations and some volcaniclastic formations (e. g., ashes or tephras), and some low-grade metamorphic rocks which contain significant paleontological resources anywhere within their geographical extent, and sedimentary rock units temporally or lithologically suitable for the preservation of fossils (e. g., middle Holocene and older, fine-grained fluvial sandstones, argillaceous and carbonate-rich paleosols, cross-bedded point bar sandstones, fine-grained marine sandstones, etc.). Paleontological potential consists of both (a) the potential for yielding abundant or significant vertebrate fossils or for yielding a few significant fossils, large or small, vertebrate, invertebrate, plant, or trace fossils and (b) the importance of recovered evidence for new and significant taxonomic, phylogenetic, paleoecologic, taphonomic, biochronologic, or stratigraphic data. Rock units which contain potentially datable organic remains older than late Holocene, including deposits associated with animal nests or middens, and rock units which may contain new vertebrate deposits, traces, or trackways are also classified as having high potential.

Low Potential

Reports in the paleontological literature or field surveys by a qualified professional paleontologist may allow determination that some rock units have low potential for yielding significant fossils. Such rock units will be poorly represented by fossil specimens in institutional collections, or based on general scientific consensus only preserve fossils in rare circumstances and the presence of fossils is the exception not the rule, e. g. basalt flows or Recent colluvium. Rock units with low potential typically will not require impact mitigation measures to protect fossils.

Undetermined Potential

Rock units for which little information is available concerning their paleontological content, geologic age, and depositional environment are considered to have undetermined potential. Further study is necessary to determine if these rock units have high or low potential to contain significant paleontological resources. A field survey by a qualified professional paleontologist to specifically determine the paleontological resource potential of these rock units is required before a paleontological resource impact mitigation program can be developed. In cases where no subsurface data are available, paleontological potential can sometimes be determined by strategically located excavations into subsurface stratigraphy.

No Potential

Some rock units have no potential to contain significant paleontological resources, for instance high-grade metamorphic rocks (such as gneisses and schists) and plutonic igneous rocks (such as granites and diorites). Rock units with no potential require no protection nor impact mitigation measures relative to paleontological resources.

Reference:

Society of Vertebrate Paleontology [SVP], 2010. Standard Procedures for the Assessment and Mitigation of Adverse Impacts to Paleontological Resources: Society of Vertebrate Paleontology, Impact Mitigation Guidelines Revision Committee, https://vertpaleo.org/wp-content/uploads/2021/01/SVP_Impact_Mitigation_Guidelines-1.pdf (accessed May 2024).

Appendix B:
Natural History Museum of Los Angeles County Museum Records Search

Natural History Museum
of Los Angeles County
900 Exposition Boulevard
Los Angeles, CA 90007
tel 213.763.DINO
www.nhm.org

Research & Collections

e-mail: paleorecords@nhm.org

February 2, 2025

South Environmental LLC
Attn: Justin Strauss

re: Paleontological resources records search for the 1404 Royal Oaks Duarte Project (24-199)

Dear Justin:

I have conducted a thorough search of our paleontology collection records for the locality and specimen data for proposed development at the Royal Oaks Duarte project area as outlined on the portion of the Azusa USGS topographic quadrangle map that you sent to me via e-mail on January 31, 2025. We do not have any fossil localities that lie directly within the proposed project area, but we do have fossil localities nearby from the same sedimentary deposits that may occur in the proposed project area, either at the surface or at depth.

The following table shows the closest known localities in the collection of the Natural History Museum of Los Angeles County (NHMLA).

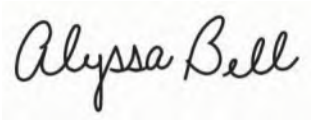
Locality Number	Location	Formation	Taxa	Depth
LACM VP 2027	Bridgen Rd., Pasadena	Unknown formation (Pleistocene)	Mammoth (*Mammuthus*)	Unknown
LACM VP 3363	W of Monterey Pass Road in Coyote Pass; E of the Long Beach Freeway; Monterey Park	Unknown formation (Pleistocene; sand and silt)	Horse (*Equus*)	Unknown
LACM VP 7702	Intersection of 26th St and Atlantic Blvd, Bell Gardens	Unknown formation (Pleistocene; silt)	Fish (*Gasterosteus*); Snake (Colubridae), Rodents (*Thomomys, Microtus, Reithrodontomys)*; Rabbit (*Sylvilagus*)	30 feet bgs

VP, Vertebrate Paleontology; IP, Invertebrate Paleontology; bgs, below ground surface

This records search covers only the records of the NHMLA. It is not intended as a paleontological assessment of the project area for the purposes of CEQA or NEPA. Potentially fossil-bearing units are present in the project area, either at the surface or in the subsurface. As such, NHMLA recommends that a full paleontological assessment of the project area be conducted by a paleontologist meeting Federal (43 Code of Federal Regulations Part 49.110) or

Society of Vertebrate Paleontology standards.

Sincerely,



Alyssa Bell, Ph.D.
Natural History Museum of Los Angeles County

Appendix C:
Preparer's Qualifications

Email: jstrauss@southenvironmental.com
Mobile: 661-755-6090

Justin Strauss, M.S.

PRINCIPAL PALEONTOLOGIST

EDUCATION

M.S., Evolutionary Biology, San Diego State University, 2008

B.S., Geology, emphasis in Paleontology, South Dakota School of Mines and Technology, 2005

PROFESSIONAL AFFILIATIONS

Society of Vertebrate Paleontology (2001–present)

Geological Society of America (2010-present)

American Association for the Advancement of Science (2012-present)

Justin Strauss is a paleontological resources professional with more than 23 years of experience in the fields of paleontology and biology. He meets the Society of Vertebrate Paleontology's definition of a Qualified Professional Paleontologist. Mr. Strauss has been involved in paleontological surveys and excavations in California, Colorado, Montana, Nevada, South Dakota, Utah, and Wyoming. He has specific expertise in the paleontological resources requirements of the California Environmental Quality Act (CEQA), Paleontological Resources Preservation Act of 2009 (PRPA), and National Environmental Policy Act (NEPA). His responsibilities include the management and reporting of paleontological resource survey, salvage, and monitoring programs, as well as training paleontological monitors on proper recording, excavation, and handling of fossil materials.

Mr. Strauss has a strong understanding of geology and is knowledgeable in animal anatomy (both invertebrate and vertebrate), and can identify many different elements, rock types and fossil remains in the field. He has extensive experience in monitoring of geologically and paleontologically significant sites and is capable of both the interpretation and creation of geologic and topographic maps. He can read and interpret aerial photographs and has extensive experience using GIS data to develop databases that store paleontological locality information, in addition to using GPS equipment to locate and document fossil localities and other paleontologically and geologically significant sites.

Mr. Strauss has had extensive involvement in the collection and excavation of fossil materials in the field from a variety of rock types, including mudstone, sandstone, and shale. He has excavated a variety of fossil materials, including invertebrate, vertebrate and plant remains. He practices the most up to date excavation techniques to ensure safe and efficient collection of fossil materials in the field. He has collected, handled, and cared for specimens of all kinds and sizes, from tiny rodent teeth to large dinosaur bones.

EXPERTISE

- CEQA, PRPA, and NEPA compliance documentation in consideration of impacts to paleontological resources.
- The identification of rock materials, interpretation of geologic events, and collection, preparation, and preservation of fossil materials.
- Design, management, and reporting of paleontological resource survey, salvage, and monitoring programs.

SELECT PROJECT EXPERIENCE

825 Hampton Court Project, Los Angeles, Los Angeles County, California (2024). Mr. Strauss prepared a paleontological resources assessment for this residential and commercial development project that included a paleontological resources records search at the Natural History Museum of Los Angeles County and preparation of a paleontological assessment in compliance with CEQA. Role: Principal Paleontologist.

Beach Avenue/La Colina Drive Development Project, Inglewood, Los Angeles County, California (2024). Mr. Strauss prepared a paleontological resources assessment for this residential and industrial development project that included a paleontological resources records search at the Natural History Museum of Los Angeles County and preparation of a paleontological assessment in compliance with CEQA. Role: Principal Paleontologist.

Jackson Street Improvement Project, Indio, Riverside County, California (2024-2025). Mr. Strauss prepared a Paleontological Resource Impact Mitigation Program and Worker's Environmental Awareness Program that met the standards of CEQA and Riverside County for this road enhancement project. This involved the review of fossil materials discovered during previous paleontological studies in the area and the creation of a mitigation and salvage plan to properly protect any that may be encountered during the project. Mr. Strauss also performed the environmental awareness training of the construction crew, took part in the initial paleontological monitoring activities, and oversaw the continued paleontological monitoring of the project through to completion. At the conclusion of the project, Mr. Strauss prepared a summary report detailing the mitigation efforts performed including a review of the geology exposed and the fossil materials encountered. Role: Principal Paleontologist.

Haskel Canyon Switching Station, Santa Clarita, Los Angeles County, California (2014). During previous employment with Paleo Solutions, Inc., Mr. Strauss conducted paleontological monitoring of construction of switching station foundation. Collection of arthropod and mollusk specimens including gastropods and bivalves. Role: Paleontological Specialist.

Solar Millennium Project – Palen and Blythe, Riverside County, California (2009). During previous employment with SWCA Environmental Consultants, Mr. Strauss conducted paleontological block survey on federal lands. His work included the collection and minor preparation of Pleistocene fossils, primarily tortoise remains and petrified wood fragments. Work on final report for survey. Role: Paleontological Field Lead.

Knoll Hill Project, San Diego County, California (2008). During previous employment with SWCA Environmental Consultants, Mr. Strauss conducted preparation and curation of fossil materials collected during paleontological monitoring of the project (invertebrate and vertebrate materials). He also assisted in writing of geology and paleontology sections of the project report. Role: Paleontological Specialist.

Chow Property, Orange County, California (2005). During previous employment with SWCA Environmental Consultants, Mr. Strauss conducted paleontological monitoring of shale and siltstone deposits. His work included the collection and minor preparation of invertebrate (mollusk) and vertebrate (fish) fossils. Role: Paleontological Specialist.

Appendix F
Preliminary Hydrology/LID Study

PRELIMINARY HYDROLOGY/DRAINAGE/LID STUDY

For:
VTTM #084375
Duarte, CA 91010

Submitted to:
City of Duarte
1600 Huntington Drive
Duarte, CA 91010

Prepared for:
Shuorung Properties LLC
2157 E. Mountain Street
Pasadena, CA 91104

Project Site Location:
1404 & 1414 Royal Oaks Drive
Duarte, CA 91010

Prepared by:
Victor Salazar, P.E.
Land Design Consultants, Inc.
800 Royal Oaks Drive, Suite 104
Monrovia, CA 91016

LDC Project No. 22013-001

Report Preparation Date:
August 22, 2024 (Revised)

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1.0 Introduction

1.1 Project Background

VTTM #084375 encompasses two (2) existing lots which includes the demolition of existing single-family residential building and garage in each lot. The project proposes the construction of 11 units residential development buildings including eleven (11) 2-story townhomes with attached garages.

The project is located at 1404 and 1414 Royal Oaks Drive, Duarte, CA 91010. (APN 8530-004-059 & 8530-004-060). The 0.84-acre site is located to the south of Royal Oaks Drive and approximately 660 feet east of Buena Vista Street. The site is located within a well-developed area served by public infrastructure including public schools, restaurants, healthcare centers, and churches.

2.0 Site Characterization

Current Property Use: The project site currently consists of 2 lots with single-family residential buildings and garages.

The existing surface drainage composes of only one drainage area. Tributary area A1 drains to the southwest corner of the lots towards the existing concrete gutter system on 1st Street. There is an approximate sixteen (16) feet elevation difference from the highest point (Royal Oaks Drive) to the lowest point in the property (1st Street).

Proposed Property Use: The proposed project encompasses 11 single-family residential townhomes. The proposed site layout conforms to the natural landform and drainage patterns.

The project will feature several sustainable and green building elements. In addition, the project will provide Low Impact Development (LID) BMPs such as, underground infiltration chambers, to treat, capture, infiltrate into the subsoil of the calculated Storm Water Quality Design Volume (SWQDV) generated by the proposed development.

3.0 Hydrology

3.1 General Approach

The site watershed of the project is identified as 0.84 net acres. Computer modeling was used to estimate the Peak Flow rate in cubic feet/second (CFS) for the 50-year storm frequency. The Los Angeles County Department of Public Works (LACDPW) HydroCalc.xls Computer program was utilized to determine the hydrology parameters of the Pre-Development and Post-Development conditions. The LID volume at 0.75-inch storm (first flush) and the 85th percentile storm scenarios were determined, and the project selected the greater of calculated stormwater LID volumes to retain on-site.

3.2 Data Resources

The primary sources of hydrology data were obtained from the LACDPW-Low Impact Development Manual (February 2014 Edition) and the LACDPW-Hydrology Manual. These references were utilized to determine the site hydrology parameters, drainage peak flow, and LID volume to retain on-site.

3.3 Watershed Characteristics

Rainfall and soil characteristics for the VTTM #084375 project site are obtained in the LACDPW Azusa Quadrant-Hydrologic Map Figure 1-H1.31 (See Appendix 2). The 50-Year (24-hour) Rainfall Isohyet nearest the project area is approximately 7.35 inches. As per the Isohyet Map, the Soil Classification of the project site falls into Soil Type 7. The project site area to be analyzed is 0.84 acres.

For this study and due to the property lot size, one (1) hydrologic tributary area is considered for the existing condition, and two (2) hydrologic tributary areas are considered for the proposed condition. See Table 1 and Table 2 for existing and proposed hydrologic conditions, respectively.

The LACDPW HydroCalc program was used to calculate the Time of Concentration (Tc) and Peak Flow rates and stormwater volumes for the existing and proposed designated tributary areas. See Appendix 2 for the hydrology calculations printout.

3.4 Existing Condition Results

The existing site hydrologic analysis was based on the Existing Condition – Site Hydrology Plan included in Appendix 3. The calculated area of imperviousness for the project's tributary area A1 is 40%. The existing condition hydrology results for the 50-year storm event are summarized in Table 1 below:

Table 1: Existing Hydrology, 50-year Storm Event

DRAINAGE-AREA	AREA (ACRE)	TC (MIN)	% IMP	Q50 (cfs)
A1	0.84	5	40	3.02

3.5 Proposed Condition Results

The proposed project hydrologic analysis was based on the proposed Developed Condition - Site Hydrology Plan included in Appendix 3.

As stated above, the proposed site hydrologic drainage areas are divided into two (2) tributary areas: Tributary Area A2 and Tributary Area B2.

The calculated impervious areas for the proposed project were determined to be 70% for both drainage areas. The proposed developed condition results for the 50-year storm event are summarized in Table 2 below.

Table 2: Proposed Hydrology, 50-year Storm Event

DRAINAGE-AREA	AREA (ACRE)	TC (MIN)	% IMP	Q50 (cfs)
A2	0.322	5	70	1.21
B2	0.518	5	70	1.95

3.6 Baseline Hydrology Comparison

A comparison of existing versus proposed peak flow rates is provided in Table 3 below.

Table 3: Existing vs. Proposed Condition Hydrology Comparison Summary

50-YEAR STORM EVENT					
DRAINAGE AREA		AREA (AC)		Q50 (cfs)	
EXISTING	PROPOSED	EXISTING	PROPOSED	EXISTING	PROPOSED
A1	A2, B2	0.84	0.84	3.02	3.16

As shown, the proposed development peak flow rate for the entire project site is slightly greater than the existing condition. Therefore, since the proposed project flow and volume are greater than the pre-development condition generated runoff, the incremental flow and volume will be directed and capture by the proposed BMP LID underground infiltration chambers system for treatment prior releasing the pre-developed peak rate via a controllable chamber pipe outlet to the south of the property and eventually to the public street or public storm drain street system.

4.0 Best Management Practices (BMPs)

Detailed operation and maintenance plans for structural BMPs will be developed in accordance with the concepts set forth in Appendix 5.

4.1 Non-Structural BMPs

4.1.1 Hardscape Areas and Planting Areas

A. Regular housekeeping cleaning (i.e. sweeping) of all open hardscape areas, at a minimum, on a weekly basis to prevent dispersal of pollutants that may collect on those surfaces.
B. Regular pruning of the trees and shrubs in the planting areas to avoid formation of dried leaves and twigs, which are normally blown by the wind during windy days. These dried leaves will likely clog the surface inlets of the proposed drainage system when rain comes, which would result in flooding of the surrounding areas due to reduced flow capacities of the inlets.
C. Trash and recycling containers will be used such that, if they are to be located outside or apart from the residential structure, are fully enclosed and watertight to prevent contact of stormwater with waste matter, which can be a potential source of bacteria and other pollutants in runoff. These containers shall be emptied, and the waste disposed of properly on a scheduled basis.

4.1.2 Education and Training

The proposed project Structural BMP Operation and Maintenace Manual will be provided to each Homeowner which will include education and training standards to ensure the proper maintenance of on-site BMPs. Such training will include information on the proper methods of handling and disposal of waste.

4.1.3 Monitoring and Maintenance

The proposed BMPs will be operated, monitored, and maintained for the life of the proposed project development and at a minimum, all structural BMPs shall be inspected, cleaned out, and where necessary, repaired at the following minimum frequencies prior to October 15th each year. Debris and other water pollutants removed from structural BMPs during cleanout shall be contained and disposed of in a proper manner.

The drainage system and the associated BMP structures will be maintained according to Manufacturer’s specification to ensure maximum pollutant removal efficiencies (see Appendix 4 for detailed Operation and Maintenance of Underground Infiltration Chambers).

4.2 Structural BMPs

4.2.1 Anticipated Potential Pollutants

The construction of the proposed 11-lots subdivision project has the potential for suspended sediments, floatable trash, minimal pesticides, and nutrients entering the on-site storm runoff system. As mentioned, the generated on-site stormwater runoff will discharge to and be treated by the underground infiltration chamber systems which will be properly maintained for adequate stormwater treatment.

4.2.2 Storm Drain Stenciling

The proposed catch basins will be stenciled to indicate that no substance other than stormwater is to be collected by the storm drain system. The legibility of the stencils is to be maintained by the Development's Homeowners Association (HOA). Stencils shall be redrawn as necessary. See Appendix C.

4.3 Treatment Control BMPs

4.3.1 Mitigation Design (Volumetric or Flow Based)

Volume-based or flow-based design standards can be used separately or in combination for the proper sizing of the BMPs LID devices. Volume-based criteria is used in the sizing of underground infiltration structures while flow-based criteria is used for the proposed swales, inlet/outlet pipes, storm drain pipes, catch basin sizing, and grates devices. The LID requirements, approved by the Regional Water Quality Control Board, call for the treatment of the mitigation of the peak flow rate or volume of runoff produced by the 85th percentile rainfall event.

The LACDPW HydroCalc LID calculation was utilized to determine the required volume to mitigate the LID requirements for the proposed two (2) tributary areas (Drainage Area A2 and B2) within the project site. The runoff coefficient curve for Soil Type 7, the LACDPW Intensity-Duration Data Chart, and LID calculations are included in Appendix 2. The results are summarized in Table 4 below.

Table 4: Peak Mitigation Flow and Volume Comparison Summary

TREATMENT REQUIRED					TREATMENT PROVIDED			
DRAINAGE-AREA	**AREA (AC)**	**IMPERVIOUS %**	**QPM [cfs]**	**VM [ft3]**	**AREA [ft2]**	**QPM [cfs]**	**VM [ft3]**	**TREATMENT TYPE**
A2	0.322	70	0.11	995	0.322	0.11	3,057	Underground Infiltration Chambers
B2	0.518	70	0.17	1,600	0.518	0.17	4,963	Underground Infiltration Chambers

The LID Site Plan, included in Appendix 3, shows the proposed post-development LID BMPs for Tributary Drainage-Areas A2 and B2.

4.3.2 Underground Infiltration Chamber System.

The LID Site Plan in Appendix 3 shows the location of the proposed underground infiltration chamber system. The chambers are designed to capture/retain the required LID mitigation volume (CF). The chamber systems provide an overflow pipe to allow stormwater discharges, in the event of subsoil saturation, to the downstream existing alley concrete gutter system, and eventually discharging into the public system located on 1st Street. Per Geotechnical Report by Cal Land Engineering & Associates, Inc., dated December 12, 2023, groundwater was not encountered in the soil borings up to a depth of 11 feet below existing grade. Based on a Seismic Hazard Zone Report 021, the California Geological Survey (CGS) has estimated the historically highest groundwater level at the site was on the order of 200 feet below grade surface. The results of the subsoil In-Situ Percolation Test indicate that the older alluvium below the proposed residential project exhibits relatively low percolation characteristics (1.52 inch per hour). See Appendix 6 for the Excerpt from the Approved Geotechnical Report.

Therefore, based on the In-Situ percolation test results, the proposed underground infiltration chamber systems will treat, capture, and infiltrate the required LID volume generated by Drainage Areas A2 and B2. The proposed underground chamber system is also designed to meet water quality requirements. See Appendix 4 for Manufacturer's calculations of the underground chamber system.

5.0 Limitations

This report was prepared to comply with the guidelines established by the County of Los Angeles Department of Public Works (LACDPW) and the City of Duarte, California LID Ordinance. Evaluation of the appropriateness of the guidelines and the accuracy of the County and City data were beyond the scope of work.

The usage of this report is limited to addressing the purpose and scope of work for the proposed project as defined in this report. Land Design Consultants, Inc. shall not be held responsible for any unauthorized application of this report and the contents therein.

The opinions represented in this report have been derived in accordance with current Codes, Standards, and civil engineering practices. No other warranty is expressed or implied.

6.0 Conclusion

In conclusion, this report presents the preliminary NPDES and LID analysis for the proposed Tentative Tract Map No. 84375. The proposed LID measures meet or exceed the NPDES and County of Los Angeles requirements for stormwater treatment and mitigation.

Based on the above, it is the opinion of this office that the proposed Tentative Tract Map No. 84375 would not have a negative impact on the existing drainage conditions of the subject site, tributary areas, and downslope improved areas, and would result in reduced sedimentation and pollutants conveyed to the existing LA County storm drain systems.

7.0 References

City of Duarte – LID Ordinance and Requirements.

Los Angeles County Department of Public Works, LACDPW Hydrology/Sedimentation Manual and Appendices (1991, 1992, 1993, 2002, 2006)

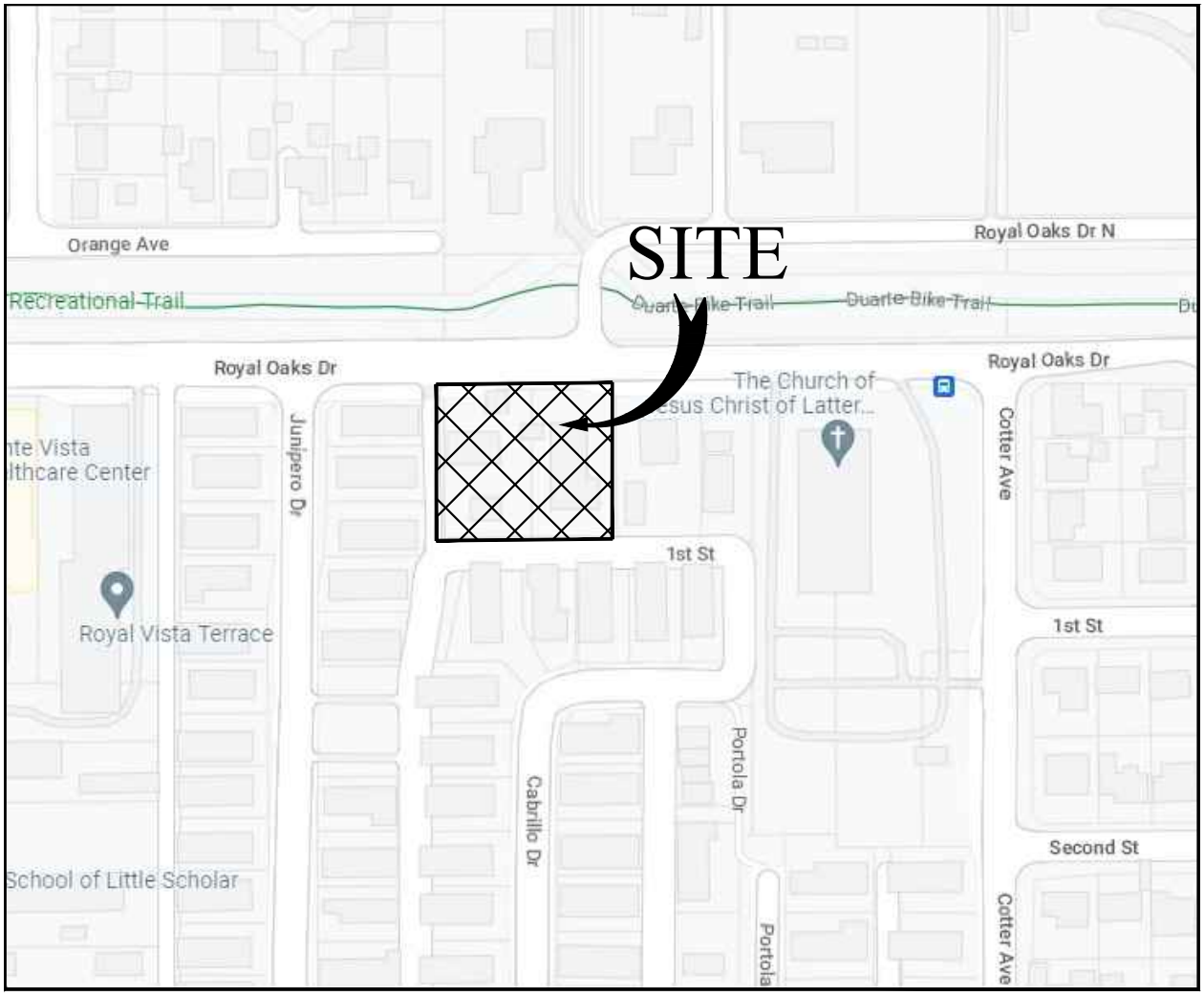
Los Angeles County Department of Public Works, LACDPW HydroCalc (August 2015)

Los Angeles County Department of Public Works, Low Impact Development Standards Manual (February 2014)

8.0 Appendices

APPENDIX 1

VICINITY MAP AND SITE LOCATION



VICINITY MAP

NOT TO SCALE

APPENDIX 2

LACDPW HYDROLOGY DATA

ISOHYET AND HYDROLOGIC SOIL CLASSIFICATION MAP

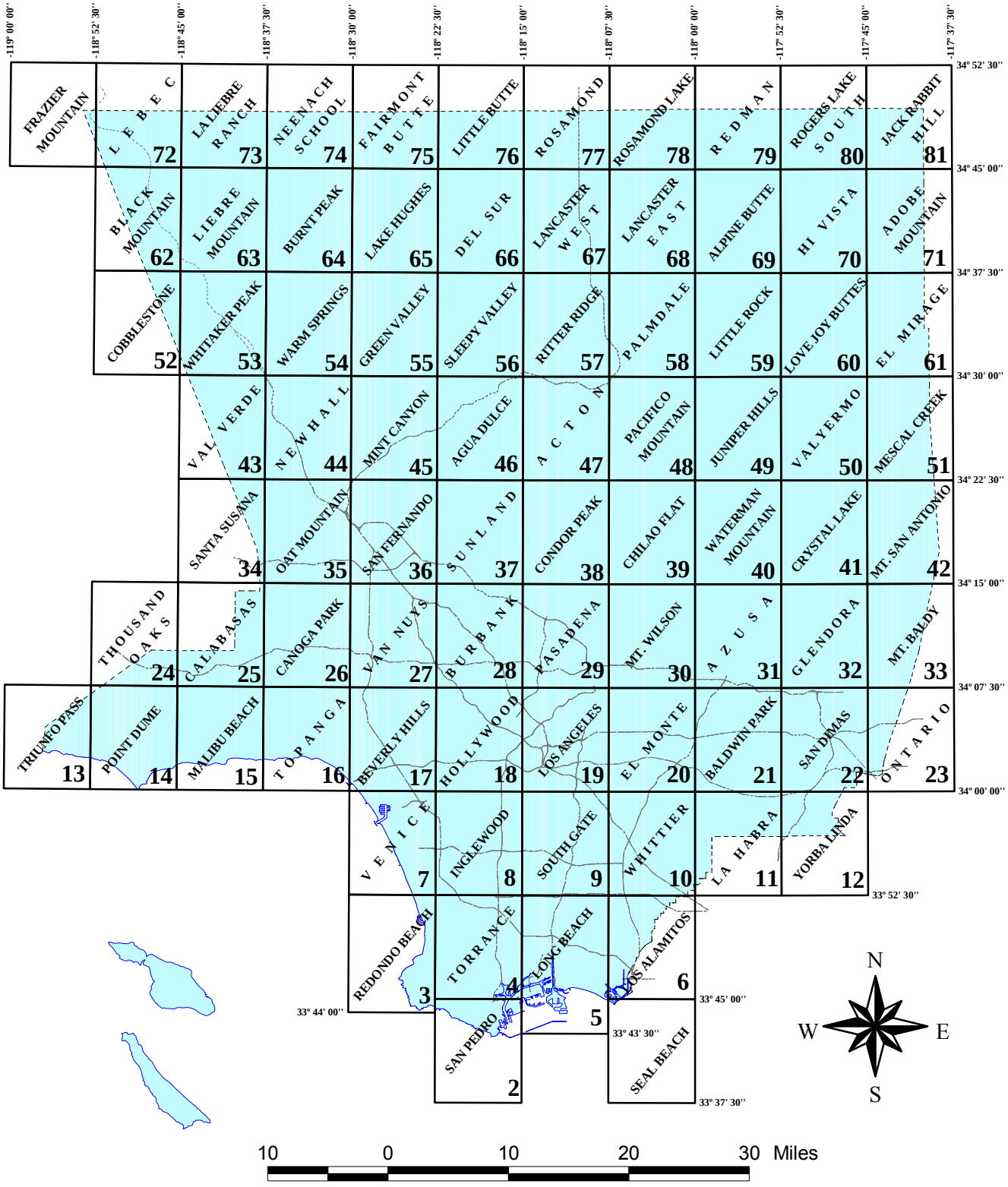
Los Angeles County Department of Public Works

HYDROLOGY MANUAL

Water Resources Division
January 2006

Donald L. Wolfe, Director

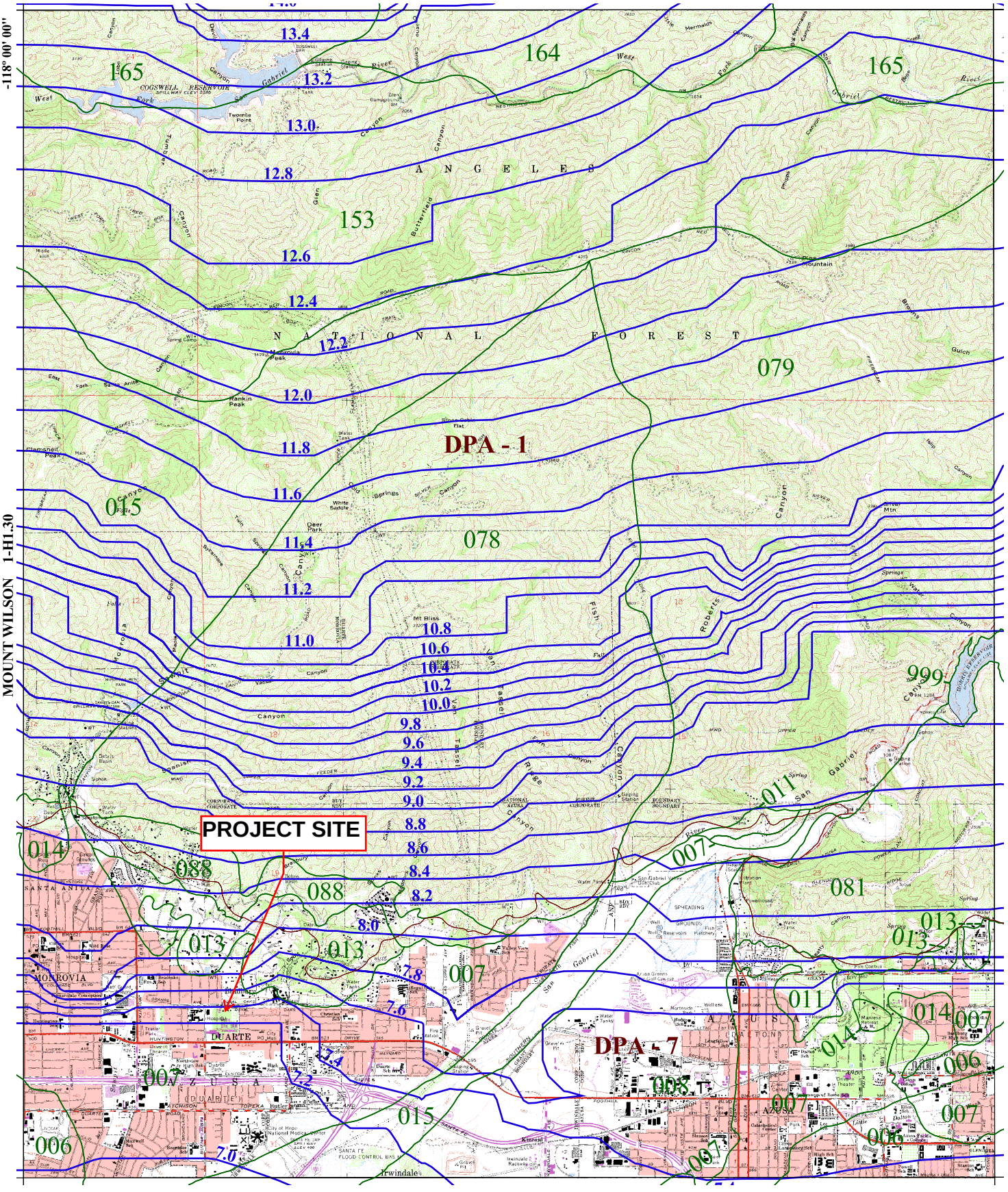
900 South Fremont Avenue
Alhambra, California 91803



INDEX ISOHYETAL MAP

50-YEAR 24-HOUR ISOHYET

BASED ON USGS QUADRANGLE


34° 15' 00"
WATERMAN MOUNTAIN 1-H1.40
-118° 00' 00"
MOUNT WILSON 1-H1.30
GLENDORA 1-H1.32
-117° 52' 30"
BALDWIN PARK 1-H1.21
34° 07' 30"
PROJECT SITE
DPA - 1
DPA - 7
13.4
13.2
13.0
12.8
12.6
12.4
12.2
12.0
11.8
11.6
11.4
11.2
11.0
10.8
10.6
10.4
10.2
10.0
9.8
9.6
9.4
9.2
9.0
8.8
8.6
8.4
8.2
8.0
7.8
7.6
7.4
7.2
7.0
164
165
153
079
078
088
081
007
011
013
014
015
006
008
999
A N G E L E S
N A T I O N A L F O R E S T
SANTA ANITA
MONROVIA
DUARTE
AZUSA
Irwindale
1 0 1 2 Miles
N
W
E
S
016 SOIL CLASSIFICATION AREA
7.2 INCHES OF RAINFALL
DPA - 6 DEBRIS POTENTIAL AREA
25-YEAR 24-HOUR ISOHYET REDUCTION FACTOR: 0.878
10-YEAR 24-HOUR ISOHYET REDUCTION FACTOR: 0.714
A Z U S A
50-YEAR 24-HOUR ISOHYET
1-H1.31
LOS ANGELES COUNTY PUBLIC WORKS Public Service That Works

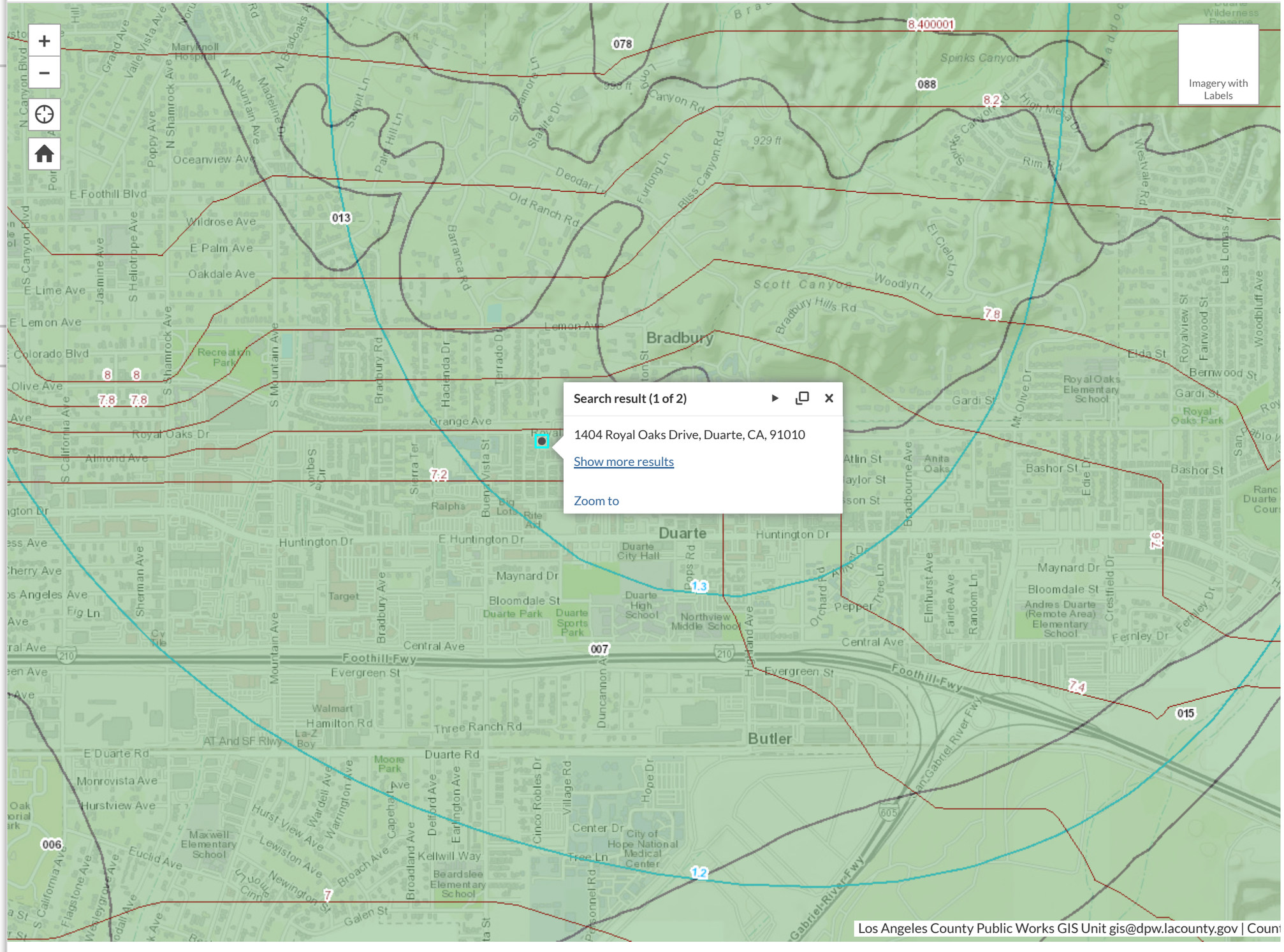
About | Legend | Layers

Layers

- [x] Hydrology GIS
  - [x] 50yr Two Tenths (Rainfall)
  - [ ] DPA Zones
  - [x] Soils 2004
  - [x] Final 85th Percentile, 24-hr Rainfall
  - [ ] 1-year, 1-hour Rainfall Intensity
  - [ ] Final 95th Percentile, 24-hr Rainfall
- [ ] LA County Parcels

LA County Hydrology Map

1404 royal oaks dr



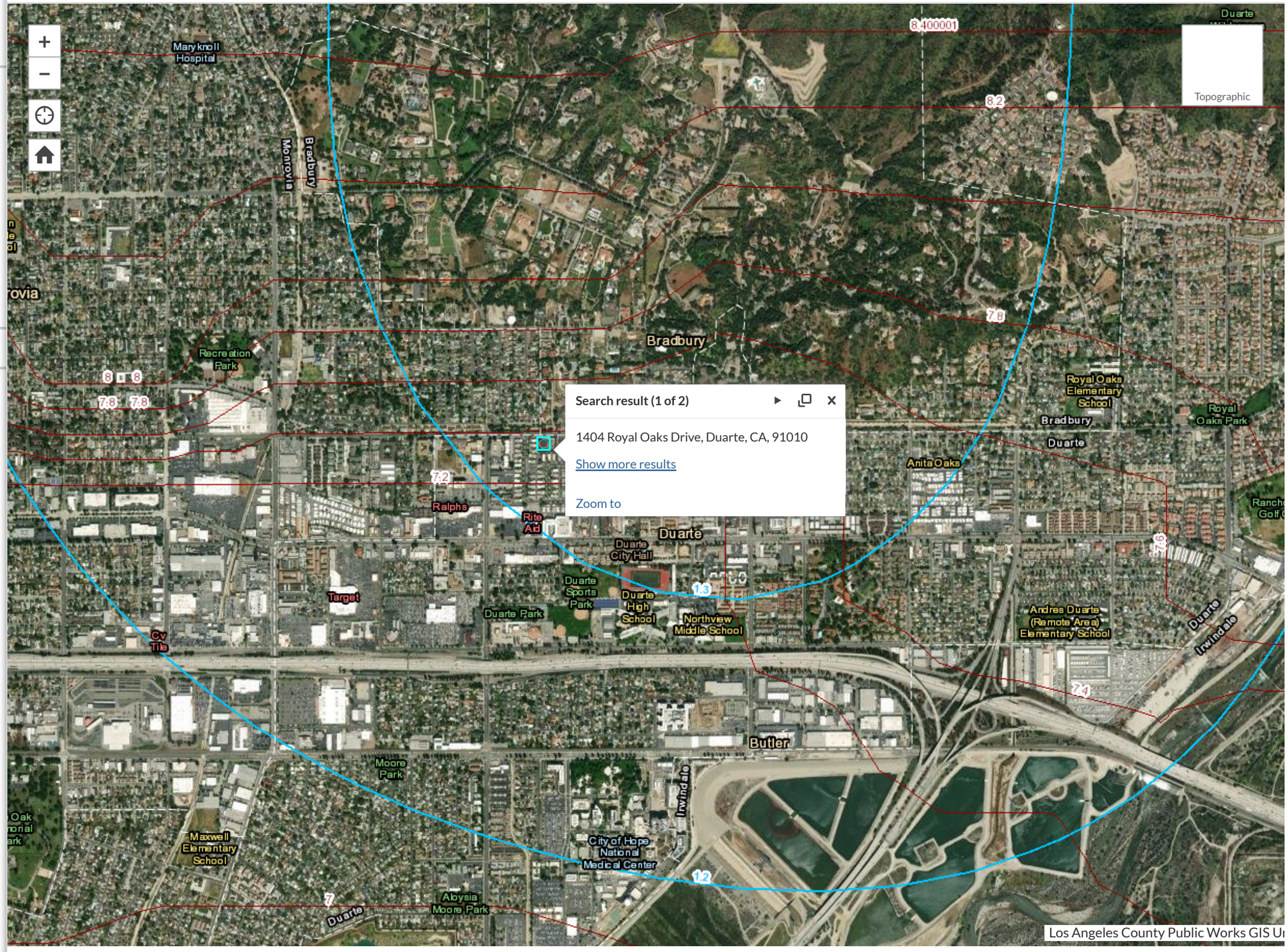
About | Legend | Layers

Layers

- [x] Hydrology GIS
  - [x] 50yr Two Tenths (Rainfall)
  - [ ] DPA Zones
  - [ ] Soils 2004
  - [x] Final 85th Percentile, 24-hr Rainfall
  - [ ] 1-year, 1-hour Rainfall Intensity
  - [ ] Final 95th Percentile, 24-hr Rainfall
- [ ] LA County Parcels

LA County Hydrology Map

1404 royal oaks dr



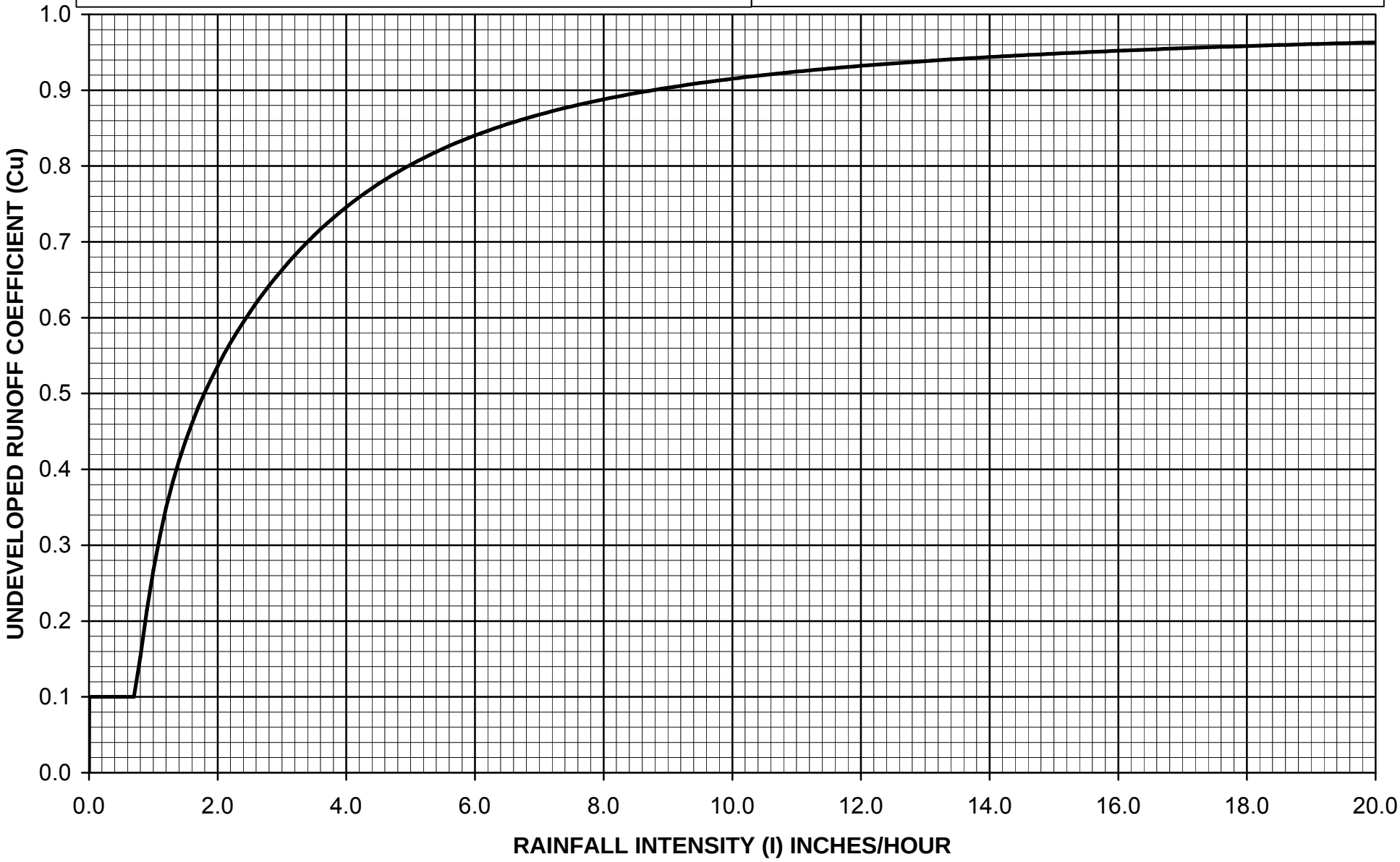
Los Angeles County Public Works GIS U

$C_D = (0.9 * IMP) + (1.0 - IMP) * C_U$

Where: C_D = Developed Runoff Coefficient
IMP = Proportion Impervious
C_U = Undeveloped runoff coefficient

Los Angeles County Department of Public Works

RUNOFF COEFFICIENT CURVE
SOIL TYPE NO. 007



APPENDIX 3

HYDROLOGY AND LID CALCULATIONS

- **EXISTING CONDITION SITE HYDROLOGY**
- **PROPOSED CONDITION SITE HYDROLOGY**
- **LID SITE PLAN**

Peak Flow Hydrologic Analysis

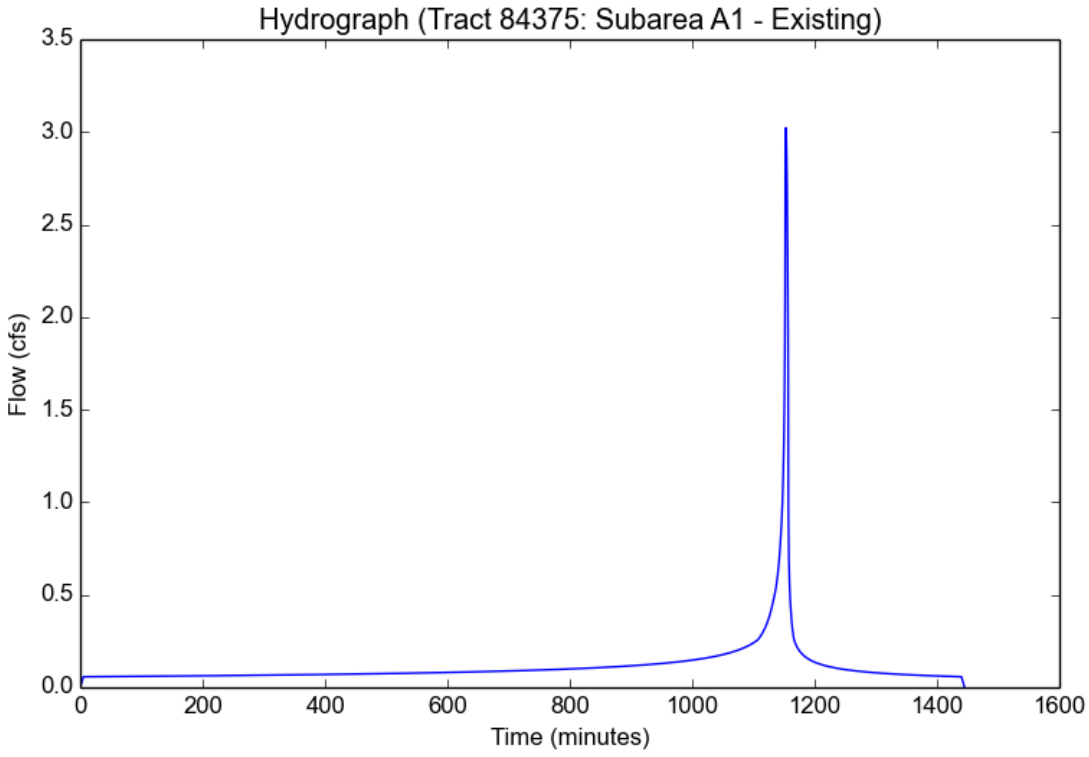
File location: J:/Civil 3D Projects/22013001/Sheet Sets/Hydrology/APPENDIX 03/Tract 84375 - Subarea A1 - Existing.pdf
Version: HydroCalc 1.0.3

Input Parameters

Project Name	Tract 84375
Subarea ID	Subarea A1 - Existing
Area (ac)	0.84
Flow Path Length (ft)	273.0
Flow Path Slope (vft/hft)	0.0403
50-yr Rainfall Depth (in)	7.35
Percent Impervious	0.4
Soil Type	7
Design Storm Frequency	50-yr
Fire Factor	0
LID	False

Output Results

Modeled (50-yr) Rainfall Depth (in)	7.35
Peak Intensity (in/hr)	4.3852
Undeveloped Runoff Coefficient (Cu)	0.7674
Developed Runoff Coefficient (Cd)	0.8204
Time of Concentration (min)	5.0
Clear Peak Flow Rate (cfs)	3.0221
Burned Peak Flow Rate (cfs)	3.0221
24-Hr Clear Runoff Volume (ac-ft)	0.2329
24-Hr Clear Runoff Volume (cu-ft)	10144.6164



Peak Flow Hydrologic Analysis

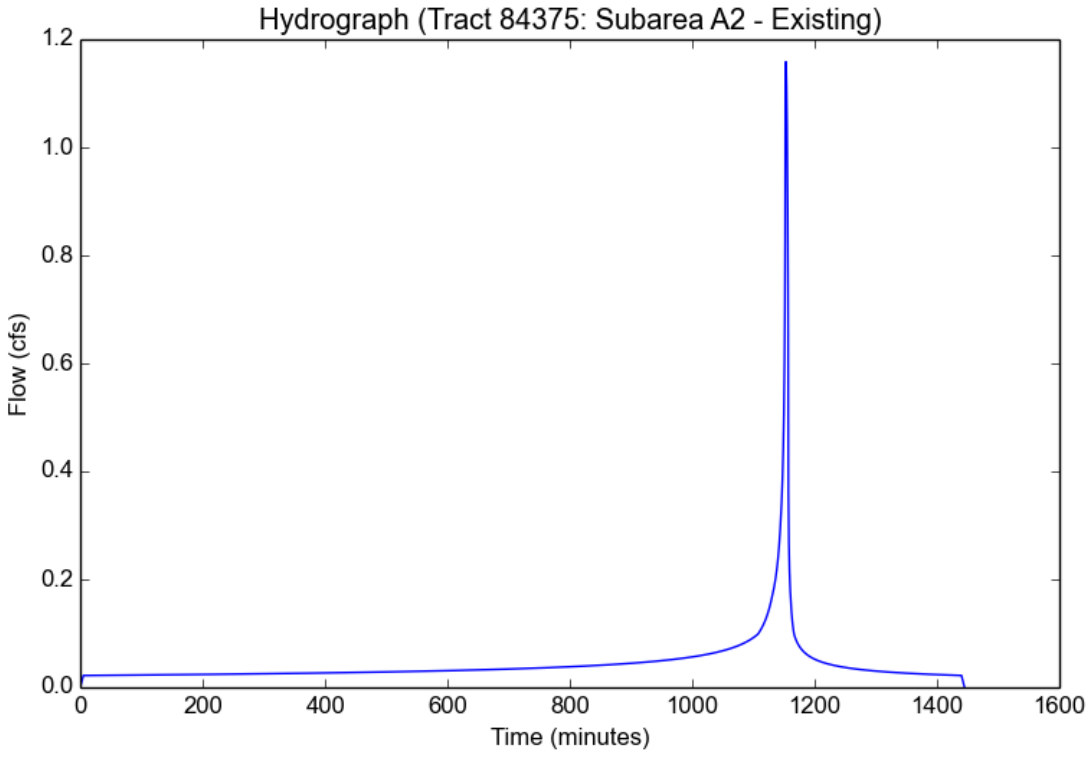
File location: J:/Civil 3D Projects/22013001/Sheet Sets/Hydrology/APPENDIX 03/Tract 84375 - Subarea A2 - Existing.pdf
Version: HydroCalc 1.0.3

Input Parameters

Project Name	Tract 84375
Subarea ID	Subarea A2 - Existing
Area (ac)	0.322
Flow Path Length (ft)	150.0
Flow Path Slope (vft/hft)	0.01
50-yr Rainfall Depth (in)	7.35
Percent Impervious	0.4
Soil Type	7
Design Storm Frequency	50-yr
Fire Factor	0
LID	False

Output Results

Modeled (50-yr) Rainfall Depth (in)	7.35
Peak Intensity (in/hr)	4.3852
Undeveloped Runoff Coefficient (Cu)	0.7674
Developed Runoff Coefficient (Cd)	0.8204
Time of Concentration (min)	5.0
Clear Peak Flow Rate (cfs)	1.1585
Burned Peak Flow Rate (cfs)	1.1585
24-Hr Clear Runoff Volume (ac-ft)	0.0893
24-Hr Clear Runoff Volume (cu-ft)	3888.7696



Peak Flow Hydrologic Analysis

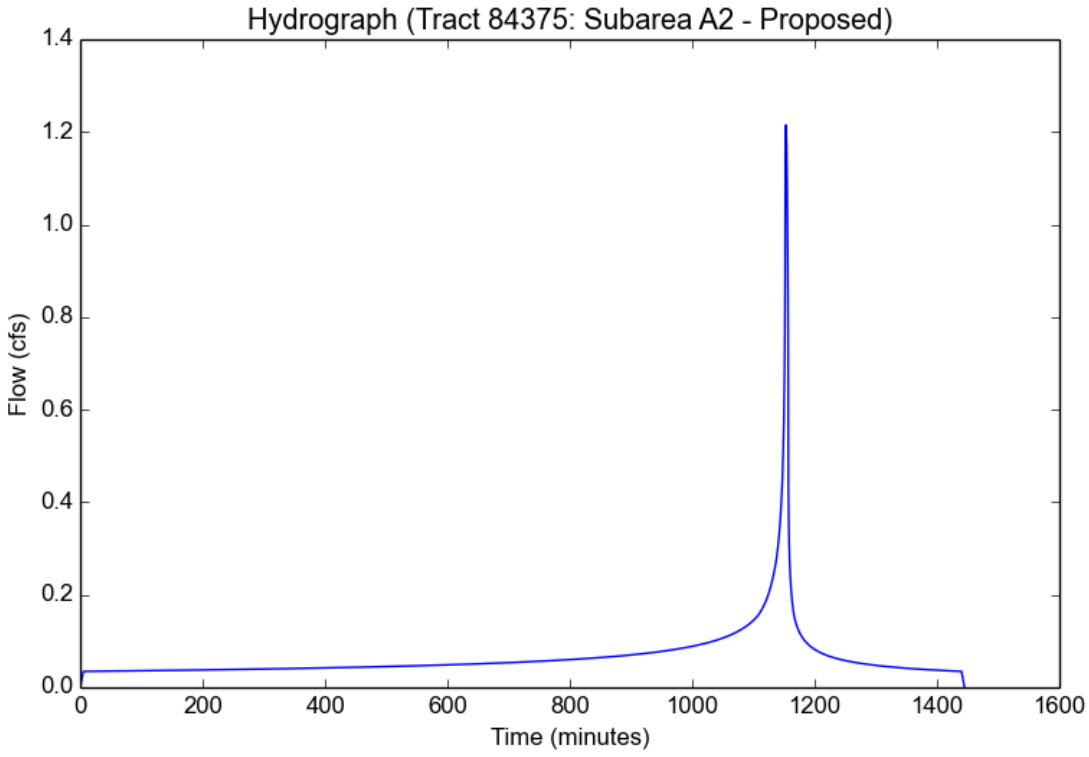
File location: J:/Civil 3D Projects/22013001/Sheet Sets/Hydrology/APPENDIX 03/Tract 84375 - Subarea A2 - Proposed.pdf
Version: HydroCalc 1.0.3

Input Parameters

Project Name	Tract 84375
Subarea ID	Subarea A2 - Proposed
Area (ac)	0.322
Flow Path Length (ft)	150.0
Flow Path Slope (vft/hft)	0.01
50-yr Rainfall Depth (in)	7.35
Percent Impervious	0.7
Soil Type	7
Design Storm Frequency	50-yr
Fire Factor	0
LID	False

Output Results

Modeled (50-yr) Rainfall Depth (in)	7.35
Peak Intensity (in/hr)	4.3852
Undeveloped Runoff Coefficient (Cu)	0.7674
Developed Runoff Coefficient (Cd)	0.8602
Time of Concentration (min)	5.0
Clear Peak Flow Rate (cfs)	1.2147
Burned Peak Flow Rate (cfs)	1.2147
24-Hr Clear Runoff Volume (ac-ft)	0.1327
24-Hr Clear Runoff Volume (cu-ft)	5778.44



Peak Flow Hydrologic Analysis

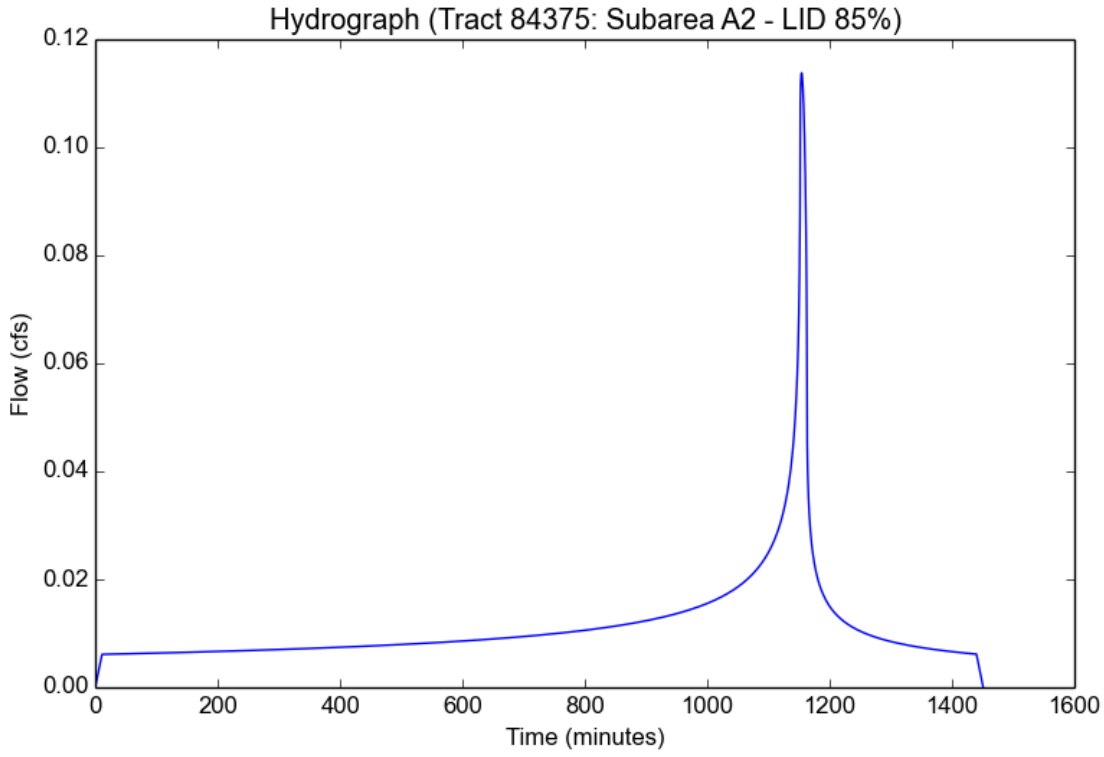
File location: J:/Civil 3D Projects/22013001/Sheet Sets/Hydrology/APPENDIX 03/Tract 84375 - Subarea A2 - LID 85%(2).pdf
Version: HydroCalc 1.0.3

Input Parameters

Project Name	Tract 84375
Subarea ID	Subarea A2 - LID 85%
Area (ac)	0.322
Flow Path Length (ft)	150.0
Flow Path Slope (vft/hft)	0.01
85th Percentile Rainfall Depth (in)	1.3
Percent Impervious	0.7
Soil Type	7
Design Storm Frequency	85th percentile storm
Fire Factor	0
LID	True

Output Results

Modeled (85th percentile storm) Rainfall Depth (in)	1.3
Peak Intensity (in/hr)	0.5354
Undeveloped Runoff Coefficient (Cu)	0.1
Developed Runoff Coefficient (Cd)	0.66
Time of Concentration (min)	11.0
Clear Peak Flow Rate (cfs)	0.1138
Burned Peak Flow Rate (cfs)	0.1138
24-Hr Clear Runoff Volume (ac-ft)	0.0228
24-Hr Clear Runoff Volume (cu-ft)	994.5951



Peak Flow Hydrologic Analysis

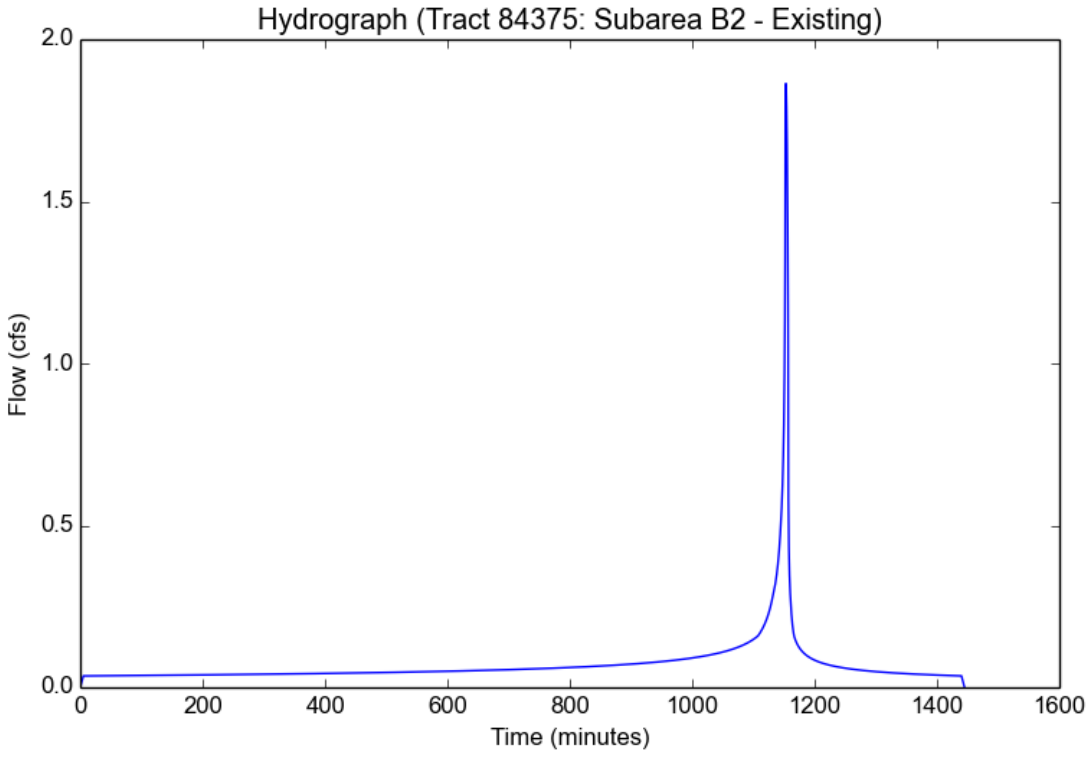
File location: J:/Civil 3D Projects/22013001/Sheet Sets/Hydrology/APPENDIX 03/Tract 84375 - Subarea B2 - Existing.pdf
Version: HydroCalc 1.0.3

Input Parameters

Project Name	Tract 84375
Subarea ID	Subarea B2 - Existing
Area (ac)	0.518
Flow Path Length (ft)	250.0
Flow Path Slope (vft/hft)	0.026
50-yr Rainfall Depth (in)	7.35
Percent Impervious	0.4
Soil Type	7
Design Storm Frequency	50-yr
Fire Factor	0
LID	False

Output Results

Modeled (50-yr) Rainfall Depth (in)	7.35
Peak Intensity (in/hr)	4.3852
Undeveloped Runoff Coefficient (Cu)	0.7674
Developed Runoff Coefficient (Cd)	0.8204
Time of Concentration (min)	5.0
Clear Peak Flow Rate (cfs)	1.8637
Burned Peak Flow Rate (cfs)	1.8637
24-Hr Clear Runoff Volume (ac-ft)	0.1436
24-Hr Clear Runoff Volume (cu-ft)	6255.8468



Peak Flow Hydrologic Analysis

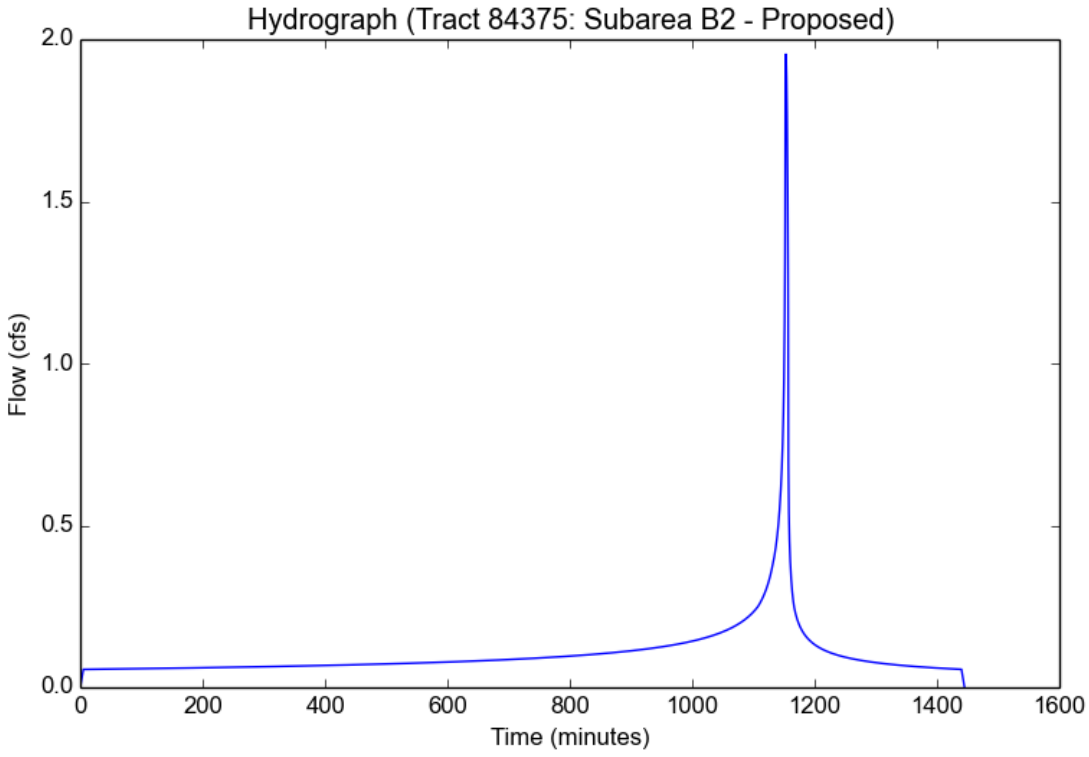
File location: J:/Civil 3D Projects/22013001/Sheet Sets/Hydrology/APPENDIX 03/Tract 84375 - Subarea B2 - Proposed.pdf
Version: HydroCalc 1.0.3

Input Parameters

Project Name	Tract 84375
Subarea ID	Subarea B2 - Proposed
Area (ac)	0.518
Flow Path Length (ft)	250.0
Flow Path Slope (vft/hft)	0.026
50-yr Rainfall Depth (in)	7.35
Percent Impervious	0.7
Soil Type	7
Design Storm Frequency	50-yr
Fire Factor	0
LID	False

Output Results

Modeled (50-yr) Rainfall Depth (in)	7.35
Peak Intensity (in/hr)	4.3852
Undeveloped Runoff Coefficient (Cu)	0.7674
Developed Runoff Coefficient (Cd)	0.8602
Time of Concentration (min)	5.0
Clear Peak Flow Rate (cfs)	1.954
Burned Peak Flow Rate (cfs)	1.954
24-Hr Clear Runoff Volume (ac-ft)	0.2134
24-Hr Clear Runoff Volume (cu-ft)	9295.7513



Peak Flow Hydrologic Analysis

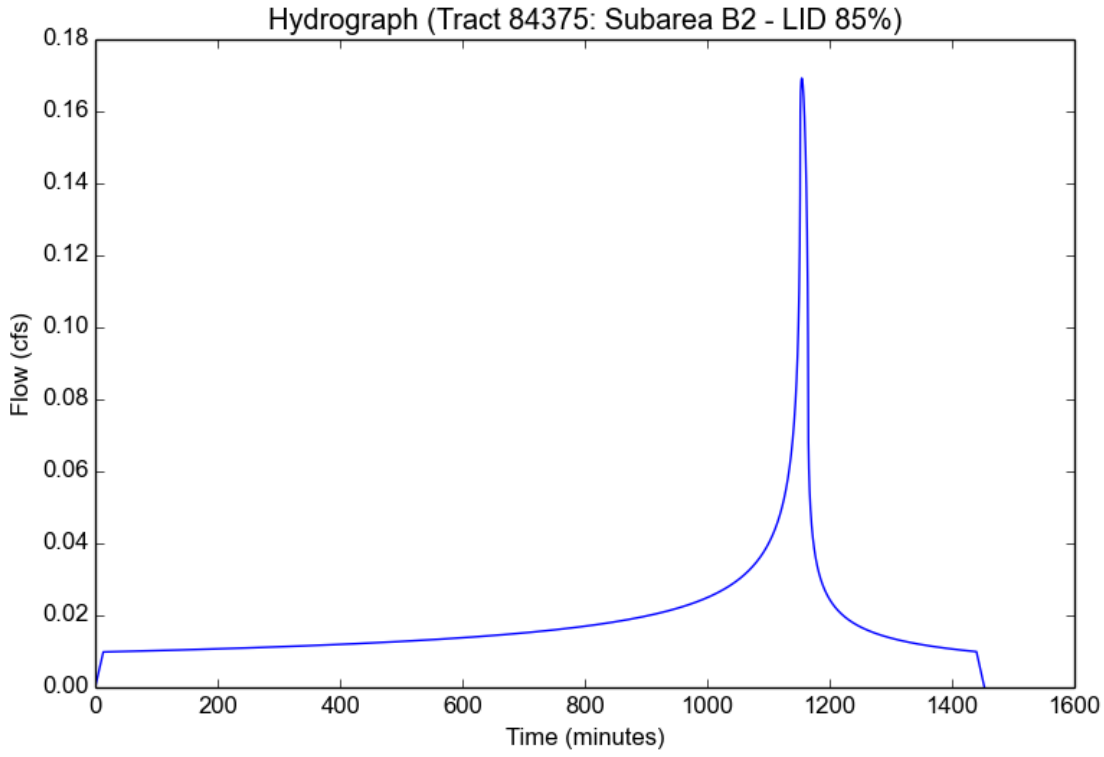
File location: J:/Civil 3D Projects/22013001/Sheet Sets/Hydrology/APPENDIX 03/Tract 84375 - Subarea B2 - LID 85%.pdf
Version: HydroCalc 1.0.3

Input Parameters

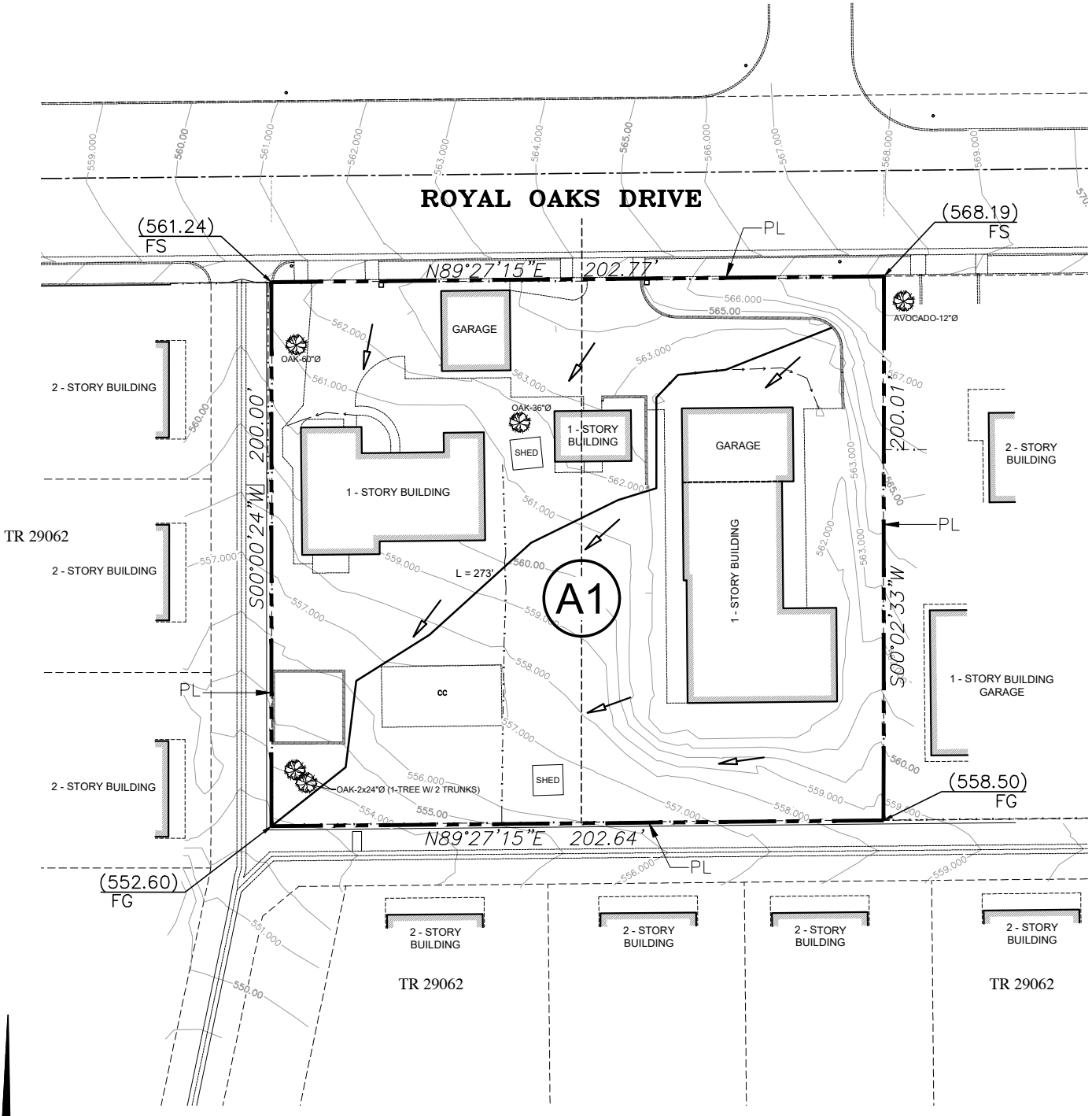
Project Name	Tract 84375
Subarea ID	Subarea B2 - LID 85%
Area (ac)	0.518
Flow Path Length (ft)	250.0
Flow Path Slope (vft/hft)	0.026
85th Percentile Rainfall Depth (in)	1.3
Percent Impervious	0.7
Soil Type	7
Design Storm Frequency	85th percentile storm
Fire Factor	0
LID	True

Output Results

Modeled (85th percentile storm) Rainfall Depth (in)	1.3
Peak Intensity (in/hr)	0.495
Undeveloped Runoff Coefficient (Cu)	0.1
Developed Runoff Coefficient (Cd)	0.66
Time of Concentration (min)	13.0
Clear Peak Flow Rate (cfs)	0.1692
Burned Peak Flow Rate (cfs)	0.1692
24-Hr Clear Runoff Volume (ac-ft)	0.0367
24-Hr Clear Runoff Volume (cu-ft)	1600.0018



EXISTING CONDITION - TRACT NO. 84375
SITE HYDROLOGY



1"=50'

LEGEND

- FLOW DIRECTION
- PROPERTY LINE (PL)
- DRAINAGE AREA (A1)
- BUILDING LINE
- WATER FLOW

FS - FINISHED SURFACE
FG - FINISHED GRADE

Subarea	Area (ac)	Flow Length (ft)	Flow Path Slope	Time of Concentration (min)	50-yr isohyet (in)	% Imp	Soil Type	Q 50 (cfs)	V 50 (cfs)
A1	0.84	273	4.03%	5	7.35	40%	7	3.02	10145

SITE ADDRESS:

1404 & 1414 ROYAL OAKS DRIVE
DUARTE, CA 91010
APN: 8530-004-059, 8530-004-060

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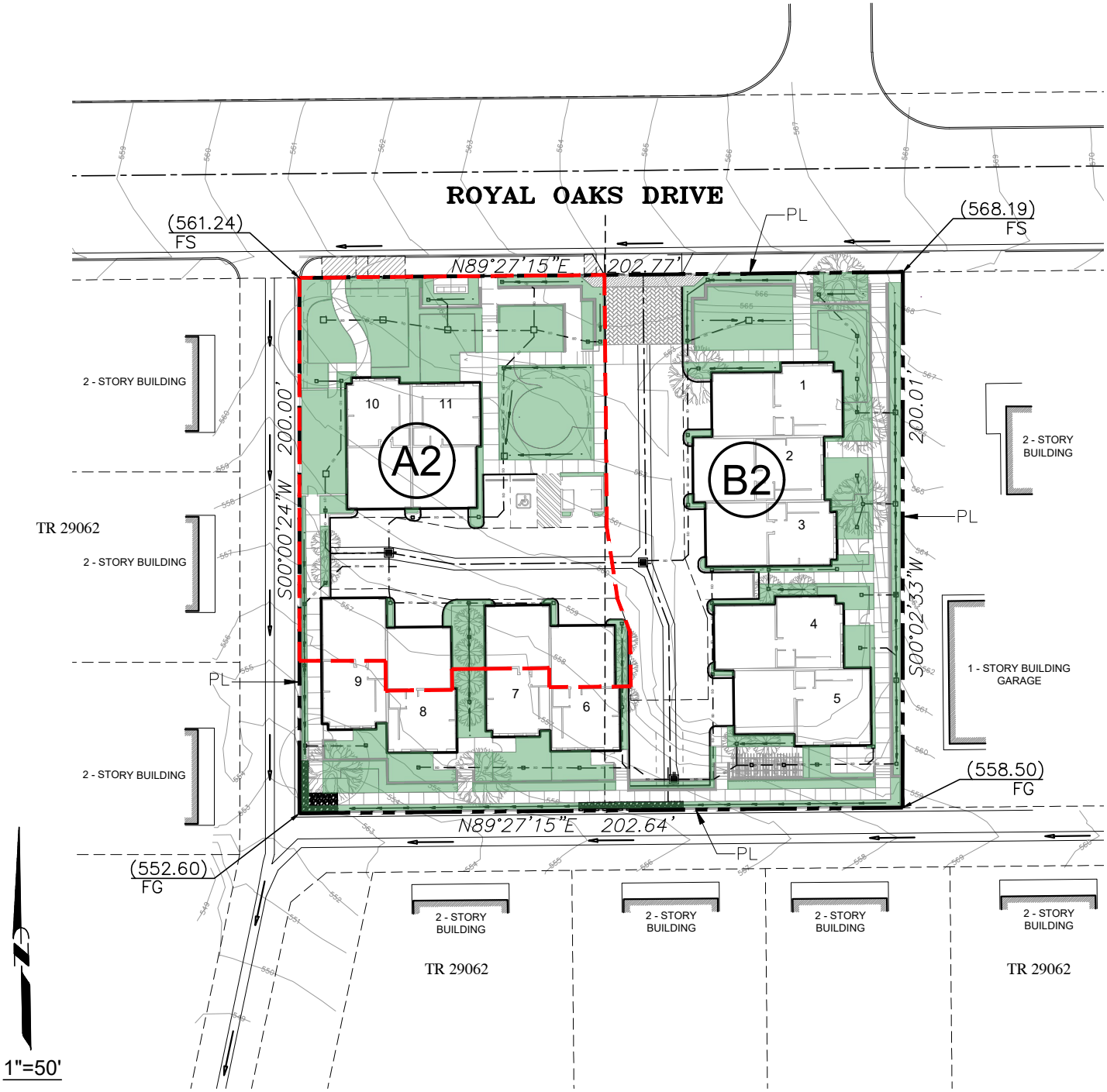
LDC

PROPOSED CONDITION - TRACT NO. 84375
SITE HYDROLOGY



LEGEND

- FLOW DIRECTION
- PROPERTY LINE — PL
- DRAINAGE AREA — A2
- STORM DRAIN — SD
- IMPERMEABLE
- PERMEABLE
- TRIBUTARY AREA

Subarea	Area (ac)	Flow Length (ft)	Flow Path Slope	Time of Concentration (min)	50-yr isohyet (in)	% Imp	Soil Type	Q 50 (cfs)	V 50 (cfs)
A2	0.322	150	1.00%	5	7.35	70%	7	1.21	5778
B2	0.518	250	2.60%	5	7.35	70%	7	1.95	9295
Total:	0.840							3.16	15073

FS - FINISHED SURFACE
FG - FINISHED GRADE

SITE ADDRESS:

1404 & 1414 ROYAL OAKS DRIVE
DUARTE, CA 91010
APN: 8530-004-059, 8530-004-060

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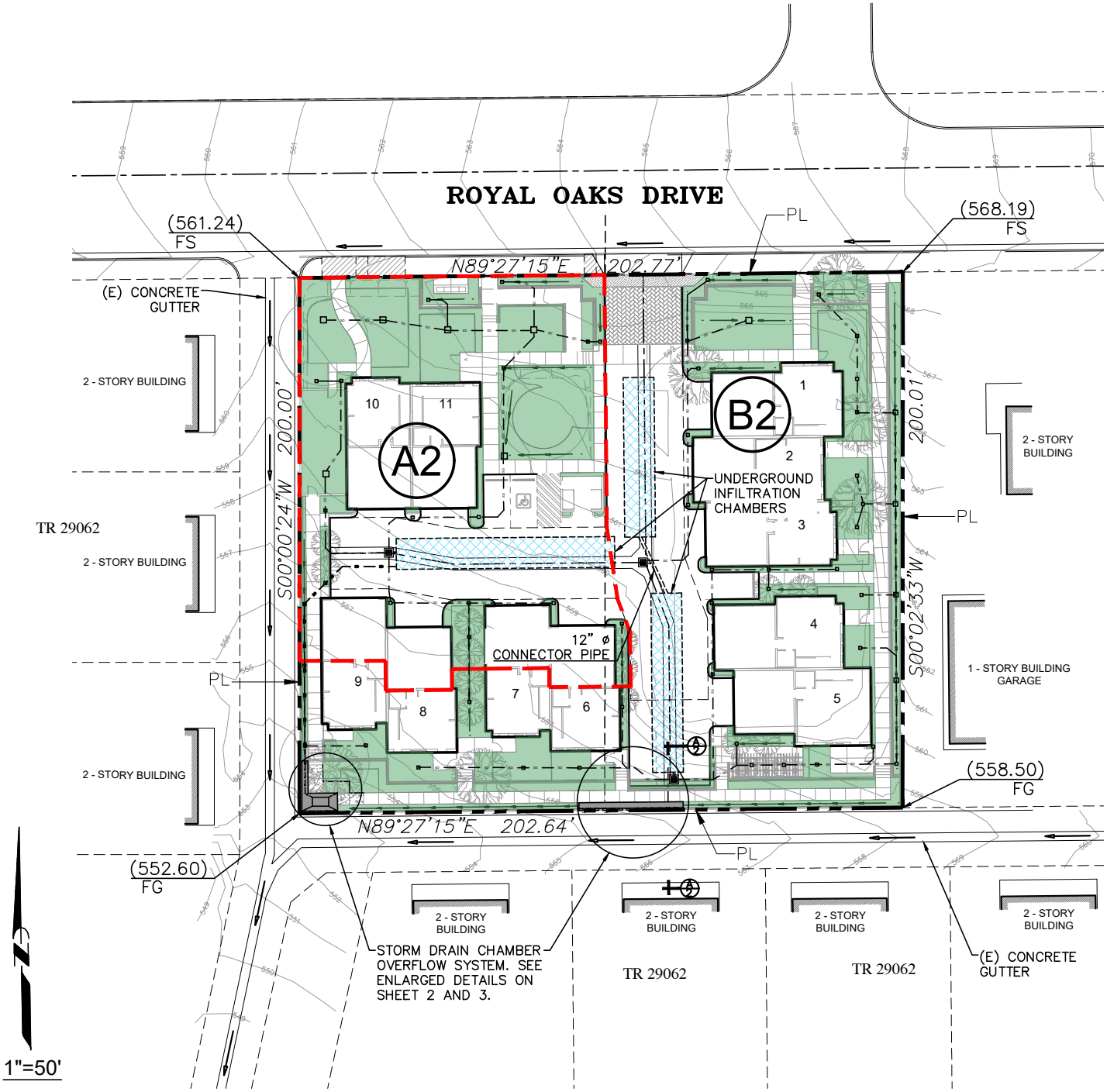
LOW IMPACT DEVELOPMENT (LID) - TRACT NO. 84375
SITE PLAN



1"=50'

LEGEND

- FLOW DIRECTION
- PROPERTY LINE — PL
- DRAINAGE AREA — A2
- STORM DRAIN — SD
- IMPERMEABLE
- PERMEABLE
- UNDERGROUND INFILTRATION CHAMBER
- TRIBUTARY AREA

Subarea	Area (ac)	Flow Length (ft)	Flow Path Slope	Time of Concentration (min)	50-yr isohyet (in)	% Imp	Soil Type	Q 50 (cfs)	V 50 (cfs)
A2	0.322	150	1.00%	5	1.3	70%	7	0.11	995
B2	0.518	241	2.60%	5	1.3	70%	7	0.17	1600
Total:	0.840							0.28	2595

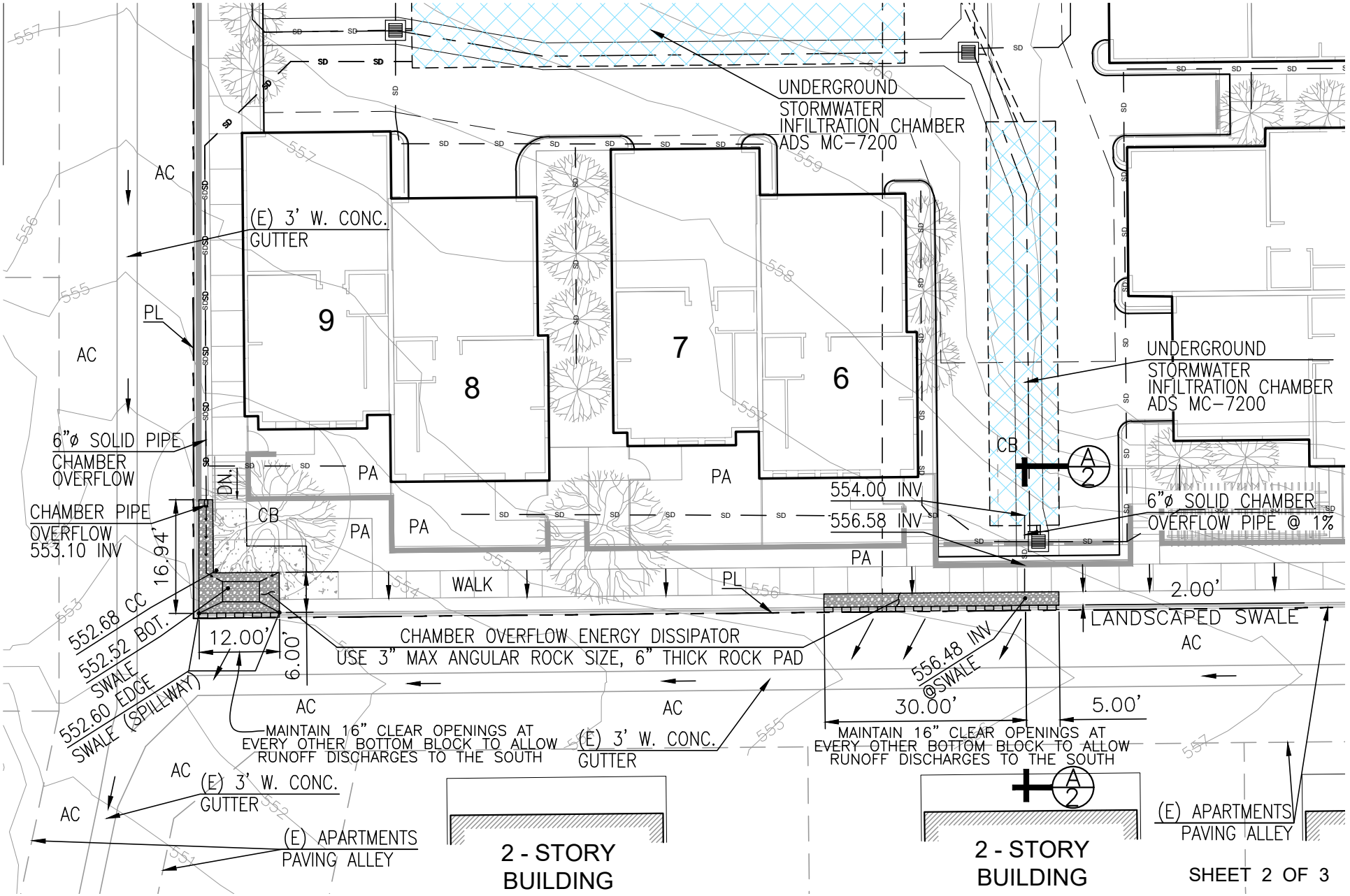
FS - FINISHED SURFACE
FG - FINISHED GRADE

SITE ADDRESS:

1404 & 1414 ROYAL OAKS DRIVE
DUARTE, CA 91010
APN: 8530-004-059, 8530-004-060

J:\Civil 3D Projects\22013001\Sheet Sets\Exhibits\TR84375-LID Site Plan.dwg Aug 21, 2024 5:06 pm BNGUYEN

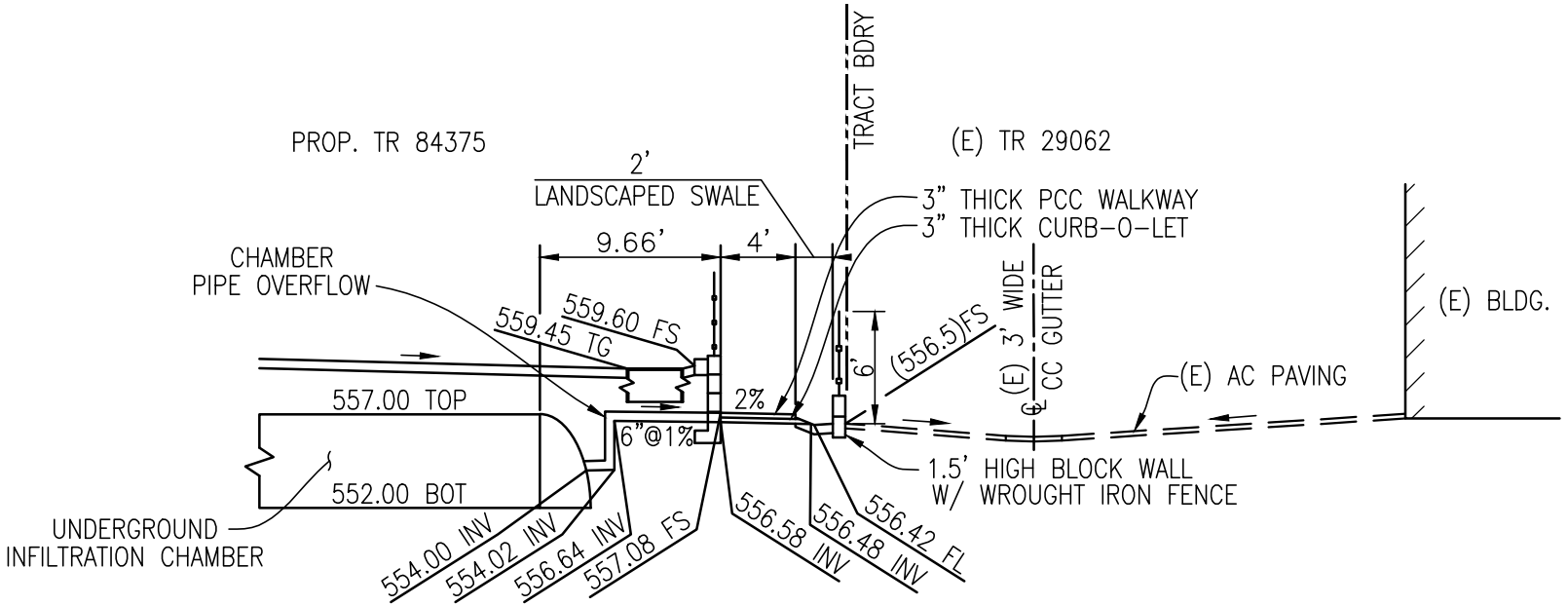
LOW IMPACT DEVELOPMENT (LID) - TRACT NO. 84375
UNDERGROUND INFILTRATION CHAMBERS
PIPE OVERFLOW AND FLOW ENERGY DISSIPATOR



SHEET 2 OF 3

J:\Civil 3D Projects\2201300\Sheet Sets\Exhibits\TR84375-LID Site Plan.dwg Aug 21, 2024 5:33 pm BNGUYEN

LOW IMPACT DEVELOPMENT (LID) - TRACT NO. 84375
SECTION A-A



CHAMBER OVERFLOW PIPE DRAINAGE

1"=10'

J:\Civil 3D Projects\2201300\Sheet Sets\Exhibits\TR84375-LID Site Plan.dwg Aug 21, 2024 6:21 pm BNGUYEN

APPENDIX 4

UNDERGROUND STORMWATER INFILTRATION CHAMBERS SYSTEM

User Inputs

Chamber Model:	MC-7200
Outlet Control Structure:	No
Project Name:	TTM 84375
Engineer:	Brandon Nguyen
Project Location:	California
Measurement Type:	Imperial
Required Storage Volume:	2885 cubic ft.
Stone Porosity:	40%
Stone Foundation Depth:	9 in.
Stone Above Chambers:	12 in.
Design Constraint Dimensions:	(15 ft. x 100 ft.)

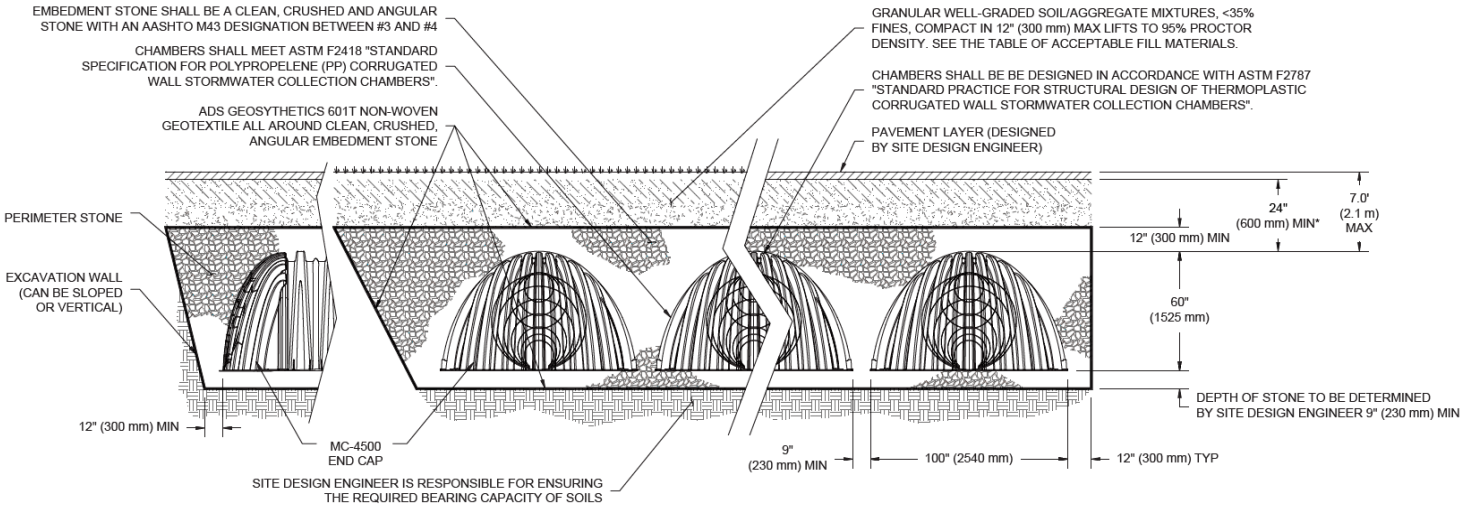
Results

System Volume and Bed Size

Installed Storage Volume:	3150.20 cubic ft.
Storage Volume Per Chamber:	175.90 cubic ft.
Number Of Chambers Required:	10
Number Of End Caps Required:	2
Chamber Rows:	1
Maximum Length:	73.38 ft.
Maximum Width:	10.33 ft.
Approx. Bed Size Required:	758.29 square ft.
Average Cover Over Chambers:	N/A .

System Components

Amount Of Stone Required:	122 cubic yards
Volume Of Excavation (Not Including Fill):	190 cubic yards
Total Non-woven Geotextile Required:	353 square yards
Woven Geotextile Required (excluding Isolator Row):	0 square yards
Woven Geotextile Required (Isolator Row):	167 square yards
Total Woven Geotextile Required:	167 square yards
Impervious Liner Required:	0 square yards



*MINIMUM COVER TO BOTTOM OF FLEXIBLE PAVEMENT. FOR UNPAVED INSTALLATIONS WHERE RUTTING FROM VEHICLES MAY OCCUR, INCREASE COVER TO 30" (750 mm).

User Inputs

Chamber Model:	MC-7200
Outlet Control Structure:	No
Project Name:	TTM 84375
Engineer:	Brandon Nguyen
Project Location:	California
Measurement Type:	Imperial
Required Storage Volume:	4639.90 cubic ft.
Stone Porosity:	40%
Stone Foundation Depth:	9 in.
Stone Above Chambers:	12 in.
Design Constraint Dimensions:	(15 ft. x 200 ft.)

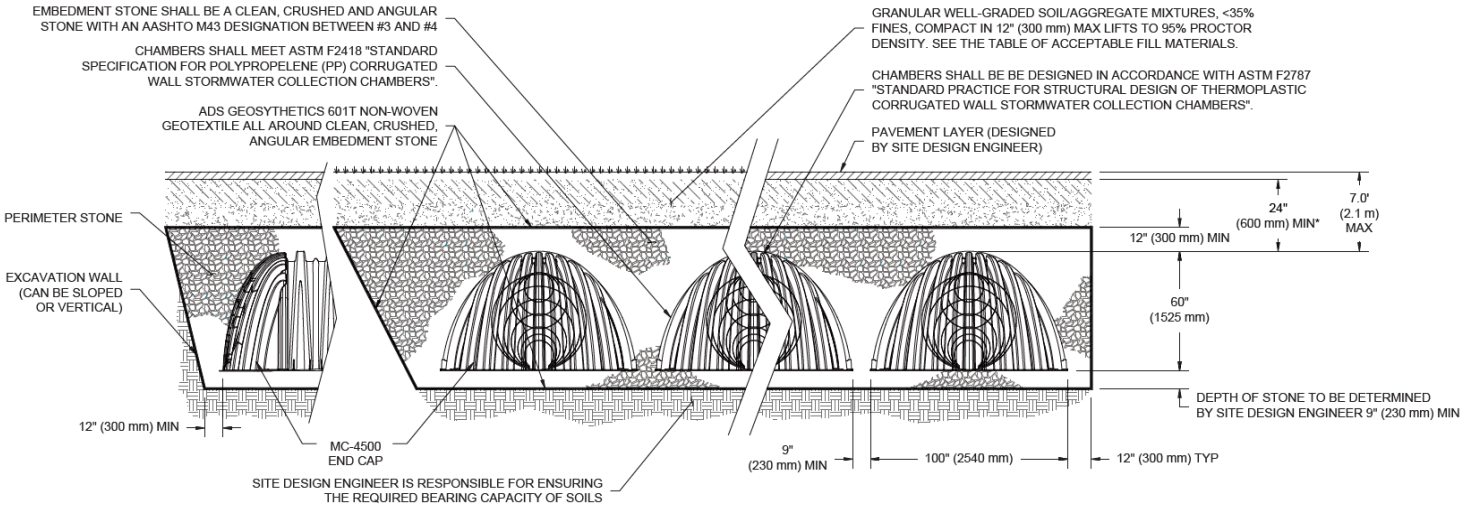
Results

System Volume and Bed Size

Installed Storage Volume:	4886.88 cubic ft.
Storage Volume Per Chamber:	175.90 cubic ft.
Number Of Chambers Required:	16
Number Of End Caps Required:	2
Chamber Rows:	1
Maximum Length:	112.93 ft.
Maximum Width:	10.33 ft.
Approx. Bed Size Required:	1166.98 square ft.
Average Cover Over Chambers:	N/A .

System Components

Amount Of Stone Required:	185 cubic yards
Volume Of Excavation (Not Including Fill):	292 cubic yards
Total Non-woven Geotextile Required:	534 square yards
Woven Geotextile Required (excluding Isolator Row):	0 square yards
Woven Geotextile Required (Isolator Row):	259 square yards
Total Woven Geotextile Required:	259 square yards
Impervious Liner Required:	0 square yards



*MINIMUM COVER TO BOTTOM OF FLEXIBLE PAVEMENT. FOR UNPAVED INSTALLATIONS WHERE RUTTING FROM VEHICLES MAY OCCUR, INCREASE COVER TO 30" (750 mm).

Advanced Drainage Systems, Inc.

SiteASSIST™
FOR STORMTECH INSTRUCTIONS, DOWNLOAD THE INSTALLATION APP

MC-7200 STORMTECH CHAMBER SPECIFICATIONS

1. CHAMBERS SHALL BE STORMTECH MC-7200.
2. CHAMBERS SHALL BE ARCH-SHAPED AND SHALL BE MANUFACTURED FROM VIRGIN, IMPACT-MODIFIED POLYPROPYLENE COPOLYMERS.
3. CHAMBERS SHALL MEET THE REQUIREMENTS OF ASTM F2418-16a, "STANDARD SPECIFICATION FOR POLYPROPYLENE (PP) CORRUGATED WALL STORMWATER COLLECTION CHAMBERS" CHAMBER CLASSIFICATION 60x101.
4. CHAMBER ROWS SHALL PROVIDE CONTINUOUS, UNOBSTRUCTED INTERNAL SPACE WITH NO INTERNAL SUPPORTS THAT WOULD IMPEDE FLOW OR LIMIT ACCESS FOR INSPECTION.
5. THE STRUCTURAL DESIGN OF THE CHAMBERS, THE STRUCTURAL BACKFILL, AND THE INSTALLATION REQUIREMENTS SHALL ENSURE THAT THE LOAD FACTORS SPECIFIED IN THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, SECTION 12.12, ARE MET FOR: 1) LONG-DURATION DEAD LOADS AND 2) SHORT-DURATION LIVE LOADS, BASED ON THE AASHTO DESIGN TRUCK WITH CONSIDERATION FOR IMPACT AND MULTIPLE VEHICLE PRESENCES.
6. CHAMBERS SHALL BE DESIGNED, TESTED AND ALLOWABLE LOAD CONFIGURATIONS DETERMINED IN ACCORDANCE WITH ASTM F2787, "STANDARD PRACTICE FOR STRUCTURAL DESIGN OF THERMOPLASTIC CORRUGATED WALL STORMWATER COLLECTION CHAMBERS". LOAD CONFIGURATIONS SHALL INCLUDE: 1) INSTANTANEOUS (<1 MIN) AASHTO DESIGN TRUCK LIVE LOAD ON MINIMUM COVER 2) MAXIMUM PERMANENT (75-YR) COVER LOAD AND 3) ALLOWABLE COVER WITH PARKED (1-WEEK) AASHTO DESIGN TRUCK.
7. REQUIREMENTS FOR HANDLING AND INSTALLATION:
   - TO MAINTAIN THE WIDTH OF CHAMBERS DURING SHIPPING AND HANDLING, CHAMBERS SHALL HAVE INTEGRAL, INTERLOCKING STACKING LUGS.
   - TO ENSURE A SECURE JOINT DURING INSTALLATION AND BACKFILL, THE HEIGHT OF THE CHAMBER JOINT SHALL NOT BE LESS THAN 3".
   - TO ENSURE THE INTEGRITY OF THE ARCH SHAPE DURING INSTALLATION, a) THE ARCH STIFFNESS CONSTANT SHALL BE GREATER THAN OR EQUAL TO 450 LBS/IN/IN. THE ASC IS DEFINED IN SECTION 6.2.8 OF ASTM F2418 AND b) TO RESIST CHAMBER DEFORMATION DURING INSTALLATION AT ELEVATED TEMPERATURES (ABOVE 73° F / 23° C), CHAMBERS SHALL BE PRODUCED FROM REFLECTIVE GOLD OR YELLOW COLORS.
8. ONLY CHAMBERS THAT ARE APPROVED BY THE SITE DESIGN ENGINEER WILL BE ALLOWED. UPON REQUEST BY THE SITE DESIGN ENGINEER OR OWNER, THE CHAMBER MANUFACTURER SHALL SUBMIT A STRUCTURAL EVALUATION FOR APPROVAL BEFORE DELIVERING CHAMBERS TO THE PROJECT SITE AS FOLLOWS:
   - THE STRUCTURAL EVALUATION SHALL BE SEALED BY A REGISTERED PROFESSIONAL ENGINEER.
   - THE STRUCTURAL EVALUATION SHALL DEMONSTRATE THAT THE SAFETY FACTORS ARE GREATER THAN OR EQUAL TO 1.95 FOR DEAD LOAD AND 1.75 FOR LIVE LOAD, THE MINIMUM REQUIRED BY ASTM F2787 AND BY SECTIONS 3 AND 12.12 OF THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS FOR THERMOPLASTIC PIPE.
   - THE TEST DERIVED CREEP MODULUS AS SPECIFIED IN ASTM F2418 SHALL BE USED FOR PERMANENT DEAD LOAD DESIGN EXCEPT THAT IT SHALL BE THE 75-YEAR MODULUS USED FOR DESIGN.
9. CHAMBERS AND END CAPS SHALL BE PRODUCED AT AN ISO 9001 CERTIFIED MANUFACTURING FACILITY.

IMPORTANT - NOTES FOR THE BIDDING AND INSTALLATION OF MC-7200 CHAMBER SYSTEM

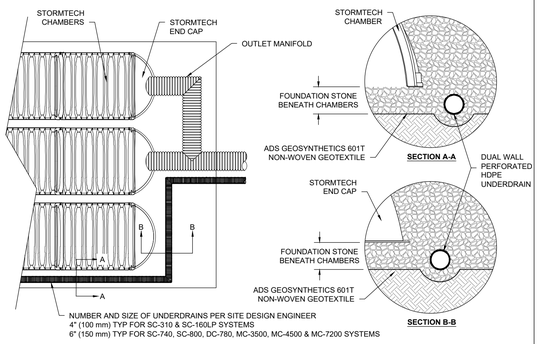
1. STORMTECH MC-7200 CHAMBERS SHALL NOT BE INSTALLED UNTIL THE MANUFACTURER'S REPRESENTATIVE HAS COMPLETED A PRE-CONSTRUCTION MEETING WITH THE INSTALLERS.
2. STORMTECH MC-7200 CHAMBERS SHALL BE INSTALLED IN ACCORDANCE WITH THE "STORMTECH MC-7200 CONSTRUCTION GUIDE".
3. CHAMBERS ARE NOT TO BE BACKFILLED WITH A DOZER OR EXCAVATOR SITUATED OVER THE CHAMBERS. STORMTECH RECOMMENDS 3 BACKFILL METHODS:
   - STONESHOOTER LOCATED OFF THE CHAMBER BED.
   - BACKFILL AS ROWS ARE BUILT USING AN EXCAVATOR ON THE FOUNDATION STONE OR SUBGRADE.
   - BACKFILL FROM OUTSIDE THE EXCAVATION USING A LONG BOOM HOE OR EXCAVATOR.
4. THE FOUNDATION STONE SHALL BE LEVELED AND COMPACTED PRIOR TO PLACING CHAMBERS.
5. JOINTS BETWEEN CHAMBERS SHALL BE PROPERLY SEATED PRIOR TO PLACING STONE.
6. MAINTAIN MINIMUM - 9" (230 mm) SPACING BETWEEN THE CHAMBER ROWS.
7. INLET AND OUTLET MANIFOLDS MUST BE INSERTED A MINIMUM OF 12" (300 mm) INTO CHAMBER END CAPS.
8. EMBEDMENT STONE SURROUNDING CHAMBERS MUST BE A CLEAN, CRUSHED, ANGULAR STONE MEETING THE AASHTO M43 DESIGNATION OF #3 OR #4.
9. STONE SHALL BE BROUGHT UP EVENLY AROUND CHAMBERS SO AS NOT TO DISTORT THE CHAMBER SHAPE. STONE DEPTHS SHOULD NEVER DIFFER BY MORE THAN 12" (300 mm) BETWEEN ADJACENT CHAMBER ROWS.
10. STONE MUST BE PLACED ON THE TOP CENTER OF THE CHAMBER TO ANCHOR THE CHAMBERS IN PLACE AND PRESERVE ROW SPACING.
11. THE CONTRACTOR MUST REPORT ANY DISCREPANCIES WITH CHAMBER FOUNDATION MATERIAL BEARING CAPACITIES TO THE SITE DESIGN ENGINEER.
12. ADS RECOMMENDS THE USE OF "FLEXSTORM CATCH IT" INSERTS DURING CONSTRUCTION FOR ALL INLETS TO PROTECT THE SUBSURFACE STORMWATER MANAGEMENT SYSTEM FROM CONSTRUCTION SITE RUNOFF.

NOTES FOR CONSTRUCTION EQUIPMENT

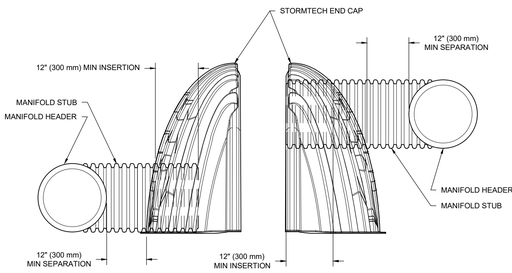
1. STORMTECH MC-7200 CHAMBERS SHALL BE INSTALLED IN ACCORDANCE WITH THE "STORMTECH MC-7200 CONSTRUCTION GUIDE".
2. THE USE OF EQUIPMENT OVER MC-7200 CHAMBERS IS LIMITED:
   - NO EQUIPMENT IS ALLOWED ON BARE CHAMBERS.
   - NO RUBBER TIRED LOADER, DUMP TRUCK, OR EXCAVATORS ARE ALLOWED UNTIL PROPER FILL DEPTHS ARE REACHED IN ACCORDANCE WITH THE "STORMTECH MC-7200 CONSTRUCTION GUIDE".
   - WEIGHT LIMITS FOR CONSTRUCTION EQUIPMENT CAN BE FOUND IN THE "STORMTECH MC-7200 CONSTRUCTION GUIDE".
3. FULL 36" (900 mm) OF STABILIZED COVER MATERIALS OVER THE CHAMBERS IS REQUIRED FOR DUMP TRUCK TRAVEL OR DUMPING.

USE OF A DOZER TO PUSH EMBEDMENT STONE BETWEEN THE ROWS OF CHAMBERS MAY CAUSE DAMAGE TO CHAMBERS AND IS NOT AN ACCEPTABLE BACKFILL METHOD. ANY CHAMBERS DAMAGED BY USING THE "DUMP AND PUSH" METHOD ARE NOT COVERED UNDER THE STORMTECH STANDARD WARRANTY.

CONTACT STORMTECH AT 1-888-892-2694 WITH ANY QUESTIONS ON INSTALLATION REQUIREMENTS OR WEIGHT LIMITS FOR CONSTRUCTION EQUIPMENT.

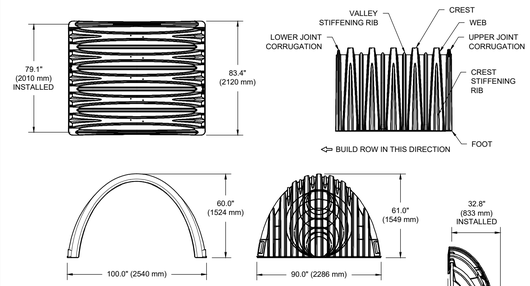


5 UNDERDRAIN DETAIL



NOTE: MANIFOLD STUB MUST BE LAID HORIZONTAL FOR A PROPER FIT IN END CAP OPENING.

6 MC-SERIES END CAP INSERTION DETAIL



NOMINAL CHAMBER SPECIFICATIONS

SIZE (W X H X INSTALLED LENGTH)	100.0" X 60.0" X 79.1"	(2540 mm X 1524 mm X 2010 mm)
CHAMBER STORAGE	175.9 CUBIC FEET	(4.98 m³)
MINIMUM INSTALLED STORAGE*	267.3 CUBIC FEET	(7.56 m³)
WEIGHT (NOMINAL)	205 lbs.	(92.9 kg)

NOMINAL END CAP SPECIFICATIONS

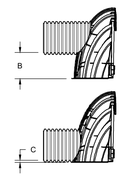
SIZE (W X H X INSTALLED LENGTH)	90.0" X 61.0" X 32.8"	(2286 mm X 1549 mm X 833 mm)
END CAP STORAGE	39.5 CUBIC FEET	(1.12 m³)
MINIMUM INSTALLED STORAGE*	115.3 CUBIC FEET	(3.26 m³)
WEIGHT (NOMINAL)	90 lbs.	(40.8 kg)

*ASSUMES 12" (305 mm) STONE ABOVE, 9" (229 mm) STONE FOUNDATION AND BETWEEN CHAMBERS, 12" (305 mm) STONE PERIMETER IN FRONT OF END CAPS AND 40% STONE POROSITY.

PARTIAL CUT HOLES AT BOTTOM OF END CAP FOR PART NUMBERS ENDING WITH "B"
PARTIAL CUT HOLES AT TOP OF END CAP FOR PART NUMBERS ENDING WITH "T"
END CAPS WITH A PREFABRICATED WELDED STUB END WITH "W"

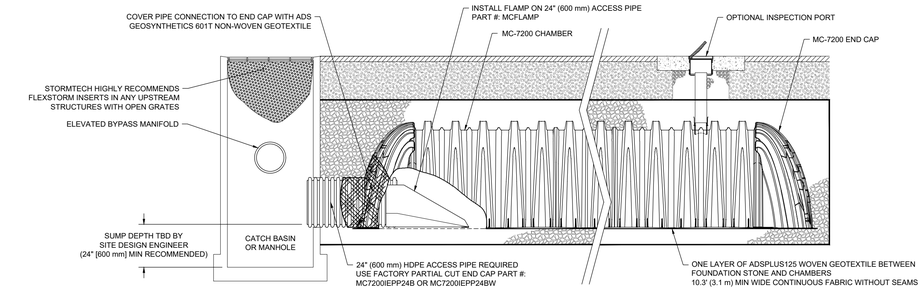
PART #	STUB	B	C
MC7200IEPP06T	6" (150 mm)	42.54" (1081 mm)	---
MC7200IEPP06B		---	0.86" (22 mm)
MC7200IEPP08T	8" (200 mm)	40.50" (1029 mm)	---
MC7200IEPP08B		---	1.01" (26 mm)
MC7200IEPP10T	10" (250 mm)	38.37" (975 mm)	---
MC7200IEPP10B		---	1.33" (34 mm)
MC7200IEPP12T	12" (300 mm)	35.69" (907 mm)	---
MC7200IEPP12B		---	1.55" (39 mm)
MC7200IEPP15T	15" (375 mm)	32.72" (831 mm)	---
MC7200IEPP15B		---	1.70" (43 mm)
MC7200IEPP18T	18" (450 mm)	29.36" (746 mm)	---
MC7200IEPP18TW			
MC7200IEPP18B		---	1.97" (50 mm)
MC7200IEPP18BW			
MC7200IEPP24T	24" (600 mm)	23.05" (585 mm)	---
MC7200IEPP24TW			
MC7200IEPP24B		---	2.26" (57 mm)
MC7200IEPP24BW			
MC7200IEPP30BW	30" (750 mm)	---	2.95" (75 mm)
MC7200IEPP36BW	36" (900 mm)	---	3.25" (83 mm)
MC7200IEPP42BW	42" (1050 mm)	---	3.55" (90 mm)

NOTE: ALL DIMENSIONS ARE NOMINAL

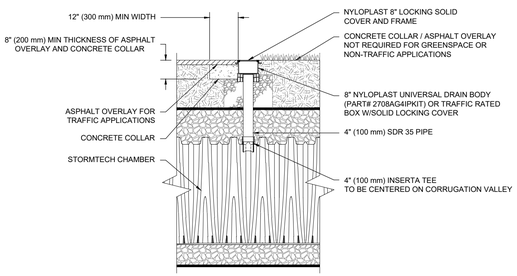


CUSTOM PREFABRICATED INVERTS ARE AVAILABLE UPON REQUEST. INVENTORIED MANIFOLDS INCLUDE 12-24" (300-600 mm) SIZE ON SIZE AND 15-48" (375-1200 mm) ECCENTRIC MANIFOLDS. CUSTOM INVERT LOCATIONS ON THE MC-7200 END CAP CUT IN THE FIELD ARE NOT RECOMMENDED FOR PIPE SIZES GREATER THAN 10" (250 mm). THE INVERT LOCATION IN COLUMN 'B' ARE THE HIGHEST POSSIBLE FOR THE PIPE SIZE.

2 MC-7200 TECHNICAL SPECIFICATIONS



3 MC-7200 ISOLATOR ROW PLUS DETAIL



NOTE:
INSPECTION PORTS MAY BE CONNECTED THROUGH ANY CHAMBER CORRUGATION VALLEY.

INSPECTION & MAINTENANCE

STEP 1) INSPECT ISOLATOR ROW PLUS FOR SEDIMENT
- A. INSPECTION PORTS (IF PRESENT)
  - A.1. REMOVE/OPEN LID ON NYLOPLAST INLINE DRAIN
  - A.2. REMOVE AND CLEAN FLEXSTORM FILTER IF INSTALLED
  - A.3. USING A FLASHLIGHT AND STADIA ROD, MEASURE DEPTH OF SEDIMENT AND RECORD ON MAINTENANCE LOG
  - A.4. LOWER A CAMERA INTO ISOLATOR ROW PLUS FOR VISUAL INSPECTION OF SEDIMENT LEVELS (OPTIONAL)
  - A.5. IF SEDIMENT IS AT, OR ABOVE, 3" (80 mm) PROCEED TO STEP 2. IF NOT, PROCEED TO STEP 3.
- B. ALL ISOLATOR PLUS ROWS
  - B.1. REMOVE COVER FROM STRUCTURE AT UPSTREAM END OF ISOLATOR ROW PLUS
  - B.2. USING A FLASHLIGHT, INSPECT DOWN THE ISOLATOR ROW PLUS THROUGH OUTLET PIPE
    - i) MIRRORS ON POLES OR CAMERAS MAY BE USED TO AVOID A CONFINED SPACE ENTRY
    - ii) FOLLOW OSHA REGULATIONS FOR CONFINED SPACE ENTRY IF ENTERING MANHOLE
  - B.3. IF SEDIMENT IS AT, OR ABOVE, 3" (80 mm) PROCEED TO STEP 2. IF NOT, PROCEED TO STEP 3.

STEP 2) CLEAN OUT ISOLATOR ROW PLUS USING THE JETVAC PROCESS
- A. A FIXED CULVERT CLEANING NOZZLE WITH REAR FACING SPREAD OF 45° (1.1 m) OR MORE IS PREFERRED
- B. APPLY MULTIPLE PASSES OF JETVAC UNTIL BACKFLUSH WATER IS CLEAN
- C. VACUUM STRUCTURE SUMP AS REQUIRED

STEP 3) REPLACE ALL COVERS, GRATES, FILTERS, AND LIDS; RECORD OBSERVATIONS AND ACTIONS.

STEP 4) INSPECT AND CLEAN BASINS AND MANHOLES UPSTREAM OF THE STORMTECH SYSTEM.

NOTES

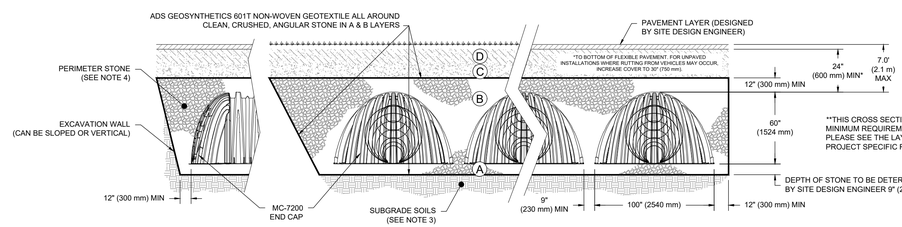
1. INSPECT EVERY 6 MONTHS DURING THE FIRST YEAR OF OPERATION. ADJUST THE INSPECTION INTERVAL BASED ON PREVIOUS OBSERVATIONS OF SEDIMENT ACCUMULATION AND HIGH WATER ELEVATIONS.
2. CONDUCT JETTING AND VACTORING ANNUALLY OR WHEN INSPECTION SHOWS THAT MAINTENANCE IS NECESSARY.

4 4" PVC INSPECTION PORT DETAIL (MC SERIES CHAMBER)

ACCEPTABLE FILL MATERIALS: STORMTECH MC-7200 CHAMBER SYSTEMS

	MATERIAL LOCATION	DESCRIPTION	AASHTO MATERIAL CLASSIFICATIONS	COMPACTION / DENSITY REQUIREMENT
D	**FINAL FILL:** FILL MATERIAL FOR LAYER 'D' STARTS FROM THE TOP OF THE 'C' LAYER TO THE BOTTOM OF FLEXIBLE PAVEMENT OR UNPAVED FINISHED GRADE ABOVE. NOTE THAT PAVEMENT SUBBASE MAY BE PART OF THE 'D' LAYER	ANY SOIL/ROCK MATERIALS, NATIVE SOILS, OR PER ENGINEER'S PLANS. CHECK PLANS FOR PAVEMENT SUBGRADE REQUIREMENTS.	N/A	PREPARE PER SITE DESIGN ENGINEER'S PLANS. PAVED INSTALLATIONS MAY HAVE STRINGENT MATERIAL AND PREPARATION REQUIREMENTS.
C	**INITIAL FILL:** FILL MATERIAL FOR LAYER 'C' STARTS FROM THE TOP OF THE EMBEDMENT STONE ('B' LAYER) TO 24" (600 mm) ABOVE THE TOP OF THE CHAMBER. NOTE THAT PAVEMENT SUBBASE MAY BE A PART OF THE 'C' LAYER.	GRANULAR WELL-GRADED SOIL/AGGREGATE MIXTURES, <35% FINES OR PROCESSED AGGREGATE. MOST PAVEMENT SUBBASE MATERIALS CAN BE USED IN LIEU OF THIS LAYER.	AASHTO M145[4] A-1, A-2-4, A-3 OR AASHTO M43[4] 3, 357, 4, 467, 5, 56, 57, 6, 67, 68, 7, 78, 8, 89, 9, 10	BEGIN COMPACTIONS AFTER 24" (600 mm) OF MATERIAL OVER THE CHAMBERS IS REACHED. COMPACT ADDITIONAL LAYERS IN 12" (300 mm) MAX LIFTS TO A MIN. 95% PROCTOR DENSITY FOR WELL GRADED MATERIAL AND 95% RELATIVE DENSITY FOR PROCESSED AGGREGATE MATERIALS.
B	**EMBEDMENT STONE:** FILL SURROUNDING THE CHAMBERS FROM THE FOUNDATION STONE ('A' LAYER) TO THE 'C' LAYER ABOVE.	CLEAN, CRUSHED, ANGULAR STONE OR RECYCLED CONCRETE[5]	AASHTO M43[4] 3, 357, 4, 467, 5, 56, 57	NO COMPACTION REQUIRED.
A	**FOUNDATION STONE:** FILL BELOW CHAMBERS FROM THE SUBGRADE UP TO THE FOOT (BOTTOM) OF THE CHAMBER.	CLEAN, CRUSHED, ANGULAR STONE OR RECYCLED CONCRETE[5]	AASHTO M43[4] 3, 357, 4, 467, 5, 56, 57	PLATE COMPACT OR ROLL TO ACHIEVE A FLAT SURFACE[2,3]

PLEASE NOTE:
1. THE LISTED AASHTO DESIGNATIONS ARE FOR GRADATIONS ONLY. THE STONE MUST ALSO BE CLEAN, CRUSHED, ANGULAR. FOR EXAMPLE, A SPECIFICATION FOR #4 STONE WOULD STATE: "CLEAN, CRUSHED, ANGULAR NO. 4 (AASHTO M43) STONE".
2. STORMTECH COMPACTION REQUIREMENTS ARE MET FOR 'A' LOCATION MATERIALS WHEN PLACED AND COMPACTED IN 9" (230 mm) (MAX) LIFTS USING TWO FULL COVERAGES WITH A VIBRATORY COMPACTOR.
3. WHERE INFILTRATION SURFACES MAY BE COMPROMISED BY COMPACTION, FOR STANDARD DESIGN LOAD CONDITIONS, A FLAT SURFACE MAY BE ACHIEVED BY RAKING OR DRAGGING WITHOUT COMPACTION EQUIPMENT. FOR SPECIAL LOAD DESIGNS, CONTACT STORMTECH FOR COMPACTION REQUIREMENTS.
4. ONCE LAYER 'C' IS PLACED, ANY SOIL/MATERIAL CAN BE PLACED IN LAYER 'D' UP TO THE FINISHED GRADE. MOST PAVEMENT SUBBASE SOILS CAN BE USED TO REPLACE THE MATERIAL REQUIREMENTS OF LAYER 'C' OR 'D' AT THE SITE DESIGN ENGINEER'S DISCRETION.
5. WHERE RECYCLED CONCRETE AGGREGATE IS USED IN LAYERS 'A' OR 'B' THE MATERIAL SHOULD ALSO MEET THE ACCEPTABILITY CRITERIA OUTLINED IN TECHNICAL NOTE 6.20 "RECYCLED CONCRETE STRUCTURAL BACKFILL".



NOTES:

1. CHAMBERS SHALL MEET THE REQUIREMENTS OF ASTM F2418, "STANDARD SPECIFICATION FOR POLYPROPYLENE (PP) CORRUGATED WALL STORMWATER COLLECTION CHAMBERS" CHAMBER CLASSIFICATION 60x101
2. MC-7200 CHAMBERS SHALL BE DESIGNED IN ACCORDANCE WITH ASTM F2787 "STANDARD PRACTICE FOR STRUCTURAL DESIGN OF THERMOPLASTIC CORRUGATED WALL STORMWATER COLLECTION CHAMBERS".
3. THE SITE DESIGN ENGINEER IS RESPONSIBLE FOR ASSESSING THE BEARING RESISTANCE (ALLOWABLE BEARING CAPACITY) OF THE SUBGRADE SOILS AND THE DEPTH OF FOUNDATION STONE WITH CONSIDERATION FOR THE RANGE OF EXPECTED SOIL MOISTURE CONDITIONS.
4. PERIMETER STONE MUST BE EXTENDED HORIZONTALLY TO THE EXCAVATION WALL FOR BOTH VERTICAL AND SLOPED EXCAVATION WALLS.
5. REQUIREMENTS FOR HANDLING AND INSTALLATION:
   - TO MAINTAIN THE WIDTH OF CHAMBERS DURING SHIPPING AND HANDLING, CHAMBERS SHALL HAVE INTEGRAL, INTERLOCKING STACKING LUGS.
   - TO ENSURE A SECURE JOINT DURING INSTALLATION AND BACKFILL, THE HEIGHT OF THE CHAMBER JOINT SHALL NOT BE LESS THAN 3".
   - TO ENSURE THE INTEGRITY OF THE ARCH SHAPE DURING INSTALLATION, a) THE ARCH STIFFNESS CONSTANT AS DEFINED IN SECTION 6.2.8 OF ASTM F2418 SHALL BE GREATER THAN OR EQUAL TO 500 LBS/FT/%, AND b) TO RESIST CHAMBER DEFORMATION DURING INSTALLATION AT ELEVATED TEMPERATURES (ABOVE 73° F / 23° C), CHAMBERS SHALL BE PRODUCED FROM REFLECTIVE GOLD OR YELLOW COLORS.

1 MC-7200 CROSS SECTION DETAIL

DRAWN: JLM | DATE: 01/10/24
REVIEWED: JLM | PROJECT NO:
REV: | NOT TO SCALE

MC-7200 STANDARD DETAILS

StormTech® Chamber System
888-892-2694 | WWW.STORMTECH.COM

4640 TRUEMAN BLVD
HILLIARD, OH 43026

Advanced Drainage Systems, Inc.

SHEET 1

ADVANCED DRAINAGE SYSTEMS, INC. ("ADS") HAS PREPARED THIS DETAIL BASED ON REFERENCED STANDARDS. ADS HAS NOT PERFORMED ANY ENGINEERING OR DESIGN SERVICES FOR THIS PROJECT, NOR HAS ADS INDEPENDENTLY VERIFIED THE INFORMATION SUPPLIED. THE INSTALLATION DETAILS PROVIDED HEREIN ARE GENERAL RECOMMENDATIONS AND ARE NOT SPECIFIC FOR THIS PROJECT. UNLESS THE PLANS ARE SIGNED AND SEALED BY THE SITE DESIGN ENGINEER, THE SITE DESIGN ENGINEER'S RESPONSIBILITY TO ENSURE THE DETAILS PROVIDED HEREIN MEETS OR EXCEEDS THE APPLICABLE NATIONAL, STATE, OR LOCAL REQUIREMENTS AND TO ENSURE THAT THE DETAILS PROVIDED HEREIN ARE ACCEPTABLE FOR THIS PROJECT.

APPENDIX 5

MASTER COVENANT & AGREEMENT

- **SITE DIAGRAM (EXHIBIT 1)**
- **OPERATION AND MAINTENANCE PLAN (EXHIBIT 2)**

RECORDING REQUESTED BY
AND MAIL TO:

Space above this line is for Recorder's use

COVENANT AND AGREEMENT
REGARDING THE MAINTENANCE OF LOW IMPACT DEVELOPMENT (LID) & NATIONAL POLLUTANTS DISCHARGE ELIMINATION SYSTEM (NPDES) BMPs

The undersigned, **SHUORUNG PROPERTIES LLC** ("Owner"), hereby certifies that it owns the real property described as follows ("Subject Property"), located in the County of Los Angeles, State of California:

LEGAL DESCRIPTION

ASSESSOR'S ID # **8530-004-059, 8530-004-060** TRACT NO._____ LOT NO._____

ADDRESS: **1404 & 1414 Royal Oaks Drive, Duarte, CA 91010**

Owner is aware of the requirements of County of Los Angeles' Green Building Standards Code, Title 31 Section 4.106.5 (LID), and Title 12, Chapter 12.84 – Low Impact Development Standards. The following post-construction BMP features have been installed on the Subject Property:

- □ Porous pavement
- □ Cistern/rain barrel
- □ Infiltration trench/pit
- □ Bioretention or biofiltration
- □ Rain garden/planter box
- □ Disconnect impervious surfaces
- □ Dry Well
- □ Storage containers
- □ Landscape and landscape irrigation
- □ Green roof
- ☒ Other **UNDERGROUND STORMWATER CHAMBERS**

The location, including GPS x-y coordinates, and type of each post-construction BMP feature installed on the Subject Property is identified on the site diagram attached hereto as Exhibit 1.

Owner hereby covenants and agrees to maintain the above-described post-construction BMP features in a good and operable condition at all times, and in accordance with the LID/NPDES Maintenance Guidelines, attached hereto as Exhibit 2.

Owner further covenants and agrees that the above-described post-construction BMP features shall not be removed from the Subject Property unless and until they have been replaced with other post-construction BMP features in accordance with County of Los Angeles' Title 12, Chapter 12.84 – Low Impact Development Standards.

Owner further covenants and agrees to maintain all drainage devices located within his/her property in good condition and operable condition at all times.

Owner further covenants and agrees that if Owner hereafter sells the Subject Property, Owner shall provide printed educational materials to the buyer regarding the post-construction BMP features that are located on the Subject Property, including the type(s) and location(s) of all such features, and instructions for properly maintaining all such features.

Owner makes this Covenant and Agreement on behalf of itself and its successors and assigns. This Covenant and Agreement shall run with the Subject Property and shall inure to the benefit of the County of Los Angeles and be binding upon Owner, future owners, and their heirs, successors and assignees, and shall continue in effect until the release of this Covenant and Agreement by the County of Los Angeles, in its sole discretion.

Owner(s):

By:_____ Date:_____

By:_____ Date:_____

A notary public or other officer completing the attached certificate verifies only the identity of the individual who signed the document to which the certificate is attached, and not the truthfulness, accuracy, or validity of that document.

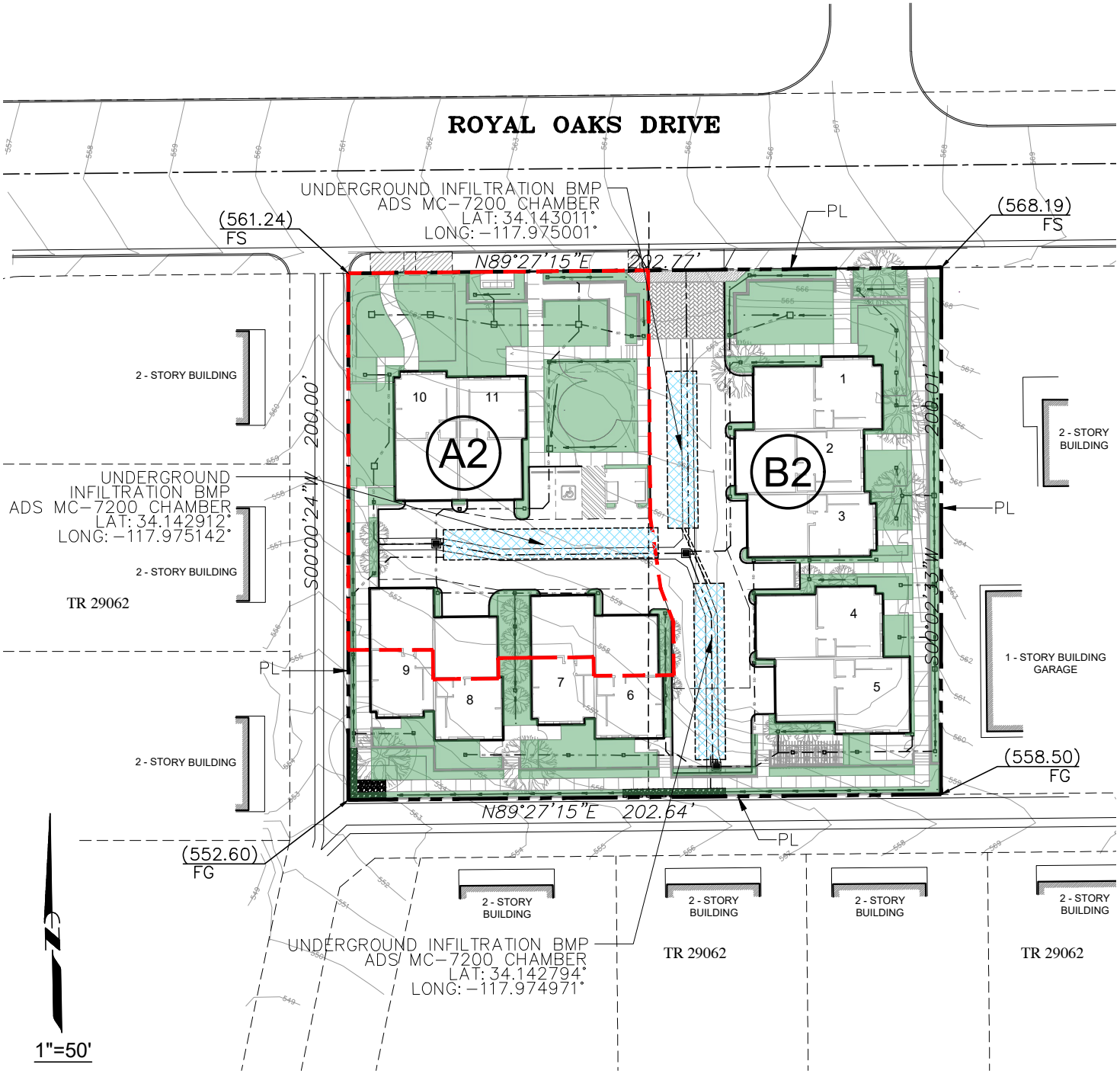
(PLEASE ATTACH NOTARY)

FOR DEPARTMENT USE ONLY:

MUST BE APPROVED BY CITY OF DUARTE ENGINEERING DEPARTMENT PRIOR TO RECORDING.

APPROVED BY:_____ _____ Date _____ Permit No._____
(Print Name) (Signature)

TRACT NO. 84375
EXHIBIT 1



LEGEND

- FLOW DIRECTION
- PROPERTY LINE — PL
- DRAINAGE AREA — A2
- STORM DRAIN — SD
- IMPERMEABLE
- PERMEABLE
- TRIBUTARY AREA

Subarea	Area (ac)	Flow Length (ft)	Flow Path Slope	Time of Concentration (min)	50-yr isohyet (in)	% Imp	Soil Type	Q 50 (cfs)	V 50 (cfs)
A2	0.322	150	1.00%	5	1.3	70%	7	0.11	995
B2	0.518	241	2.60%	5	1.3	70%	7	0.17	1600
Total:	0.840							0.28	2595

FS - FINISHED SURFACE
FG - FINISHED GRADE

SITE ADDRESS:
1404 & 1414 ROYAL OAKS DRIVE
DUARTE, CA 91010
APN: 8530-004-059, 8530-004-060

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LDC

EXHIBIT 2

Isolator® Row Plus
O&M Manual

ADS StormTech™

The Isolator® Row Plus

Introduction

An important component of any Stormwater Pollution Prevention Plan is inspection and maintenance. The StormTech Isolator Row Plus is a technique to inexpensively enhance Total Suspended Solids (TSS), Total Phosphorus (TP), Total Petroluem Hydrocarbons (TPH) and Total Nitrogen (TN) removal with easy access for inspection and maintenance.

The Isolator Row Plus

The Isolator Row Plus is a row of StormTech chambers, either SC-160, SC-310, SC-310-3, SC-740, DC-780, SC-800, MC-3500, MC-4500 or MC-7200 models, are lined with filter fabric and connected to a closely located manhole for easy access. The fabric lined chambers provide for sediment settling and filtration as stormwater rises in the Isolator Row Plus and passes through the filter fabric. The open bottom chambers allow stormwater to flow vertically out of the chambers. Sediments are captured in the Isolator Row Plus protecting the adjacent stone and chambers storage areas from sediment accumulation.

ADS Isolator Row and Plus fabric are placed between the stone and the Isolator Row Plus chambers. The woven geotextile provides a media for stormwater filtration, a durable surface for maintenance, prevents scour of the underlying stone and remains intact during high pressure jetting.

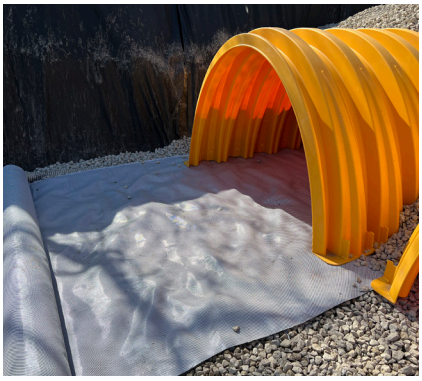
The Isolator Row Plus is designed to capture the “first flush” runoff and offers the versatility to be sized on a volume basis or a flow-rate basis. An upstream manhole provides access to the Isolator Row Plus and includes a high/low concept such that stormwater flow rates or volumes that exceed the capacity of the Isolator Row Plus bypass through a manifold to the other chambers. This is achieved with an elevated bypass manifold or a high-flow weir. This creates a differential between the Isolator Row Plus row of chambers and the manifold to the rest of the system, thus allowing for settlement time in the Isolator Row Plus. After Stormwater flows through the Isolator Row Plus and into the rest of the chamber system it is either exfiltrated into the soils below or passed at a controlled rate through an outlet manifold and outlet control structure.

The Isolator Row Plus Flamp™ is a flared end ramp apparatus attached to the inlet pipe on the inside of the chamber end cap. The FLAMP provides a smooth transition from pipe invert to fabric bottom. It is configured to improve chamber function performance by enhancing outflow of solid debris that would otherwise collect at the chamber's end, or more difficult to remove and require confined space entry into the chamber area. It also serves to improve the fluid and solid flow into the access pipe during maintenance and cleaning and to guide cleaning and inspection equipment back into the inlet pipe when complete.

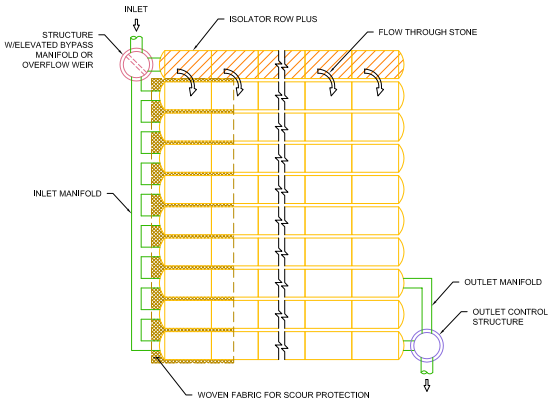
The Isolator Row Plus may be part of a treatment train system. The treatment train design and pretreatment device selection by the design engineer is often driven by regulatory requirements. Whether pretreatment is used or not, StormTech recommend using the Isolator Row Plus to minimize maintenance requirements and maintenance costs.

Note: *See the StormTech Design Manual for detailed information on designing inlets for a StormTech system, including the Isolator Row Plus.*

Looking down the Isolator Row Plus from the manhole opening, ADS Plus Fabric is shown between the chamber and stone base.



StormTech Isolator Row Plus with Overflow Structure (not to scale)



Isolator Row Plus Inspection/Maintenance

Inspection

The frequency of inspection and maintenance varies by location. A routine inspection schedule needs to be established for each individual location based upon site specific variables. The type of land use (i.e. industrial, commercial, residential), anticipated pollutant load, percent imperviousness, climate, etc. all play a critical role in determining the actual frequency of inspection and maintenance practices.

At a minimum, StormTech recommends annual inspections. Initially, the Isolator Row Plus should be inspected every 6 months for the first year of operation. For subsequent years, the inspection should be adjusted based upon previous observation of sediment deposition.

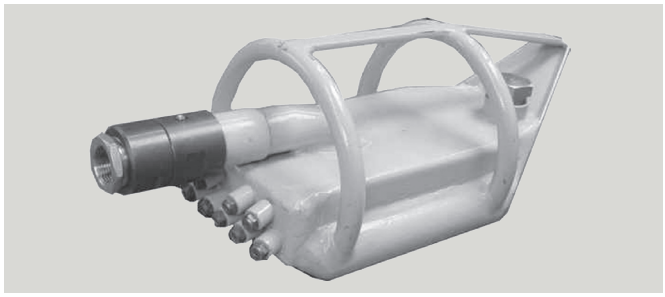
The Isolator Row Plus incorporates a combination of standard manhole(s) and strategically located inspection ports (as needed). The inspection ports allow for easy access to the system from the surface, eliminating the need to perform a confined space entry for inspection purposes.

If upon visual inspection it is found that sediment has accumulated, a stadia rod should be inserted to determine the depth of sediment. When the average depth of sediment exceeds 3" (75 mm) throughout the length of the Isolator Row Plus, clean-out should be performed.

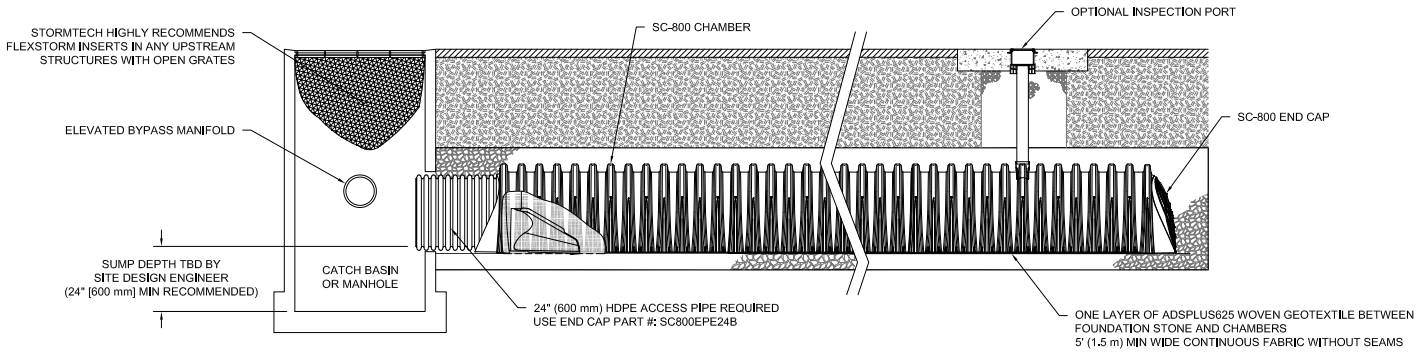
Maintenance

The Isolator Row Plus was designed to reduce the cost of periodic maintenance. By “isolating” sediments to just one row, costs are dramatically reduced by eliminating the need to clean out each row of the entire storage bed. If inspection indicates the potential need for maintenance, access is provided via a manhole(s) located on the end(s) of the row for cleanout. If entry into the manhole is required, please follow local and OSHA rules for a confined space entry.

Maintenance is accomplished with the JetVac process. The JetVac process utilizes a high pressure water nozzle to propel itself down the Isolator Row Plus while scouring and suspending sediments. As the nozzle is retrieved, the captured pollutants are flushed back into the manhole for vacuuming. Most sewer and pipe maintenance companies have vacuum/JetVac combination vehicles. Selection of an appropriate JetVac nozzle will improve maintenance efficiency. Fixed nozzles designed for culverts or large diameter pipe cleaning are preferable. Rear facing jets with an effective spread of at least 45” are best. StormTech recommends a maximum nozzle pressure of 2000 psi be utilized during cleaning. JetVac reels can vary in length. For ease of maintenance, ADS recommends Isolator Row Plus lengths up to 200' (61 m). **The JetVac process shall only be performed on StormTech Isolator Row Plus that have ADS Plus Fabric (as specified by StormTech) over their angular base stone.**



StormTech Isolator Row Plus (*not to scale*)



Isolator Row Plus Step By Step Maintenance Procedures

Step 1

Inspect Isolator Row Plus for sediment.

A) Inspection ports (if present)
   i. Remove lid from floor box frame
   ii. Remove cap from inspection riser
   iii. Using a flashlight and stadia rod,measure depth of sediment and record results on maintenance log.
   iv. If sediment is at or above 3 inch depth, proceed to Step 2. If not, proceed to Step 3.

B) All Isolator Row Plus
   i. Remove cover from manhole at upstream end of Isolator Row Plus
   ii. Using a flashlight, inspect down Isolator Row Plus through outlet pipe
      1. Mirrors on poles or cameras may be used to avoid a confined space entry
      2. Follow OSHA regulations for confined space entry if entering manhole
   iii. If sediment is at or above the lower row of sidewall holes (approximately 3 inches), proceed to Step 2.
   If not, proceed to Step 3.

Step 2

Clean out Isolator Row Plus using the JetVac process.

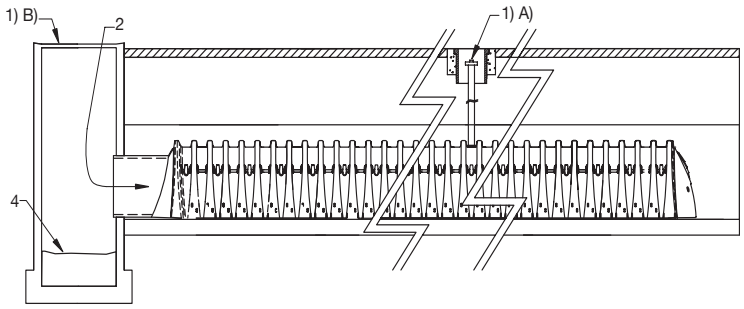
A) A fixed floor cleaning nozzle with rear facing nozzle spread of 45 inches or more is preferable
B) Apply multiple passes of JetVac until backflush water is clean
C) Vacuum manhole sump as required

Step 3

Replace all caps, lids and covers, record observations and actions.

Step 4

Inspect & clean catch basins and manholes upstream of the StormTech system.



Sample Maintenance Log

Date	Stadia Rod Readings		Sediment Depth (1)–(2)	Observations/Actions	Inspector
	Fixed point to chamber bottom (1)	Fixed point to top of sediment (2)			
3/15/11	6.3 ft	none		New installation. Fixed point is CI frame at grade	DJM
9/24/11		6.2	0.1 ft	Some grit felt	SM
6/20/13		5.8	0.5 ft	Mucky feel, debris visible in manhole and in Isolator Row Plus, maintenance due	NV
7/7/13	6.3 ft		0	System jetted and vacuumed	DJM

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adspipe.com
800-821-6710

APPENDIX 6

SOILS REPORT EXCERPT

December 12, 2023

Mr. Qing Zhang
936 Monte Verde Drive
Arcadia, California 91007

Subject: Report of Geotechnical Investigation, Proposed Residential Development, 1404 & 1414 Royal Oaks Drive, APN: 8530-004-059 & -060, Duarte, California
CLE Project No.: 23-010-073GE

Dear Mr. Zhang:

In accordance with your request, CalLand Engineering (CLE) is pleased to submit this Geotechnical Investigation Report for the subject site. The purpose of this report was to evaluate the subsurface conditions and provide recommendations for grading, foundation design and other relevant parameters for the proposed construction.

Based on the findings of CLE's investigation, it is concluded that the proposed development of the subject lot is feasible from a geotechnical viewpoint, provided that recommendations presented herein are incorporated into design, grading and construction.

This opportunity to be of service is sincerely appreciated. If you have any questions pertaining to this report, please contact the undersigned at your convenience.

Respectfully submitted,
CalLand Engineering & Associates, Inc. (CLE)

Jack C. Lee, GE 2153
Principal Engineer

Abe Kazemzadeh
Project Engineer

Dist: (4) Addressee

REPORT OF GEOTECHNICAL ENGINEERING INVESTIGATION

Proposed Residential Development

At

1404 & 1414 Royal Oaks Drive
APN: 8530-004-059 & -060
Duarte, California

Prepared by

CALLAND ENGINEERING (CLE)

Project No.: 23-010-073GE

December 12, 2023

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FIGURE 2 – Seismic Hazard Map
FIGURE 3 – Seismic Hazard Map
FIGURE 4 – Regional Geology Map
PLATE 1 – Site Plan
APPENDIX A – FIELD INVESTIGATION

BORING LOGS

APPENDIX B – LABORATORY TESTING

FIGURE 5 – Direct Shear Test Results

FIGURE 7 – Consolidation Test Results

APPENDIX C

Percolation/Infiltration Field Data

3.1.1 Fill (Map Symbol, Af)

The project site is underlain by a layer of fill. The fill where encountered is approximately 3 feet in thickness. Fill materials consist of silty sand (SM), light brown, slightly moist, loose within the upper 12 inches. Fill materials are not suitable for structural support and are subjected to be removed.

3.1.2 Alluvium (Map Symbol, Qg)

Based on our subsurface exploration, the encountered natural soil is fine to medium grained silty sand (SM) and sand/silty sand mixtures (SP-SM) with gravel and exists in the slightly moist and medium dense to dense conditions. The encountered soil conditions are relatively similar throughout the site. This type of soil contains low apparent cohesion. Caving and/or slough may occur during deep vertical trench excavation. Suitable construction method and/or procedures should be followed during onsite construction.

3.2 Groundwater

No groundwater or seepage was encountered in the borings to the depths explored (11.0 feet below the existing ground surface). Based on our review of the "Historically Highest Ground Water Contours and Borehole Log Data Locations, Mount Wilson Quadrangle", by CGS (previously CDMG), shown in the attached Site Locational Map (Figure 3), it is estimated that the highest historical ground water level is about 200 feet below the existing grade. Groundwater is not expected during the proposed construction. It should be noted that the CGS ground water map is obtained by evaluating technical publications, geotechnical borehole data, and water-well logs dating back to the "turn-of-the-century". No specific date was provided pertaining to the historically highest ground water level.

4.0 SEISMICITY

4.1 Faulting and Seismicity

The subject site is not included within any Earthquake Fault Zones as created by the Alquist-Priolo Earthquake Fault Zoning Act (CGS, 2018). Our review of geologic literature pertaining to the site area indicates that there are no known active or potentially active faults located within or immediately adjacent to the subject property. As indicated in Table 1, the Sierra Madre Connected Fault is considered to have the most significant effect to the site from a design standpoint.

9.0 CORROSION POTENTIAL

Chemical laboratory tests were conducted on the existing onsite near surface materials sampled during CLE's field investigation to aid in evaluation of soil corrosion potential and the attack on concrete by sulfate soils. The testing results are presented in Appendix B.

According to 2022 CBC and ACI 318-19 (Reapproved 22), Section 19.3, Table 19.3.1.1, exposure category is Sulfate (S) and exposure class is (S0). A "low" exposure to sulfate can be expected for concrete placed in contact with the onsite soils. Therefore, Type II cement or its equivalent may be used for this project and minimum compressive strength of concrete should be 2,500 psi. Based on the resistivity test results, it is estimated that the subsurface soils are moderately corrosive to buried metal pipe. It is recommended that any underground steel utilities be blasted and given protective coating. Should additional protective measures be warranted, a corrosion specialist should be consulted.

10.0 PERCOLATION/INFILTRATION RATE

Percolation rate and permeability of the subsurface material encountered in Boring P-1: Boring P-1 was drilled to the depth of 6.0 feet (12 inches below proposed invert of infiltration) and a 2-inch diameter perforated PVC pipe casing with a solid end cap was installed in the boring after the completion of the drilling. Gravelly filter materials were placed between the PVC pipe and the drill hole.

The test boring was pre-soaked prior to percolation testing, for at least 1 hour to ensure the sand around the perforated pipe is fully saturated. After the presoak, the time interval for recording the water drop was determined between the readings for P-1 hole. The hole was filled with water 12 inches above the bottom of the excavated hole and PVC end cap. Water drop was observed for 30 minutes. The water completely drained out after 12 minutes; therefore, the time interval between the readings was determined to be 12 minutes. Rate of surface water drop was measured every 12 minutes and testing stopped after a minimum of 3 hours or after noticing a stabilized rate of drop was achieved. Upon completion of test, the boring was backfilled with the soil cuttings.

Numerous measurements recorded within the test period indicated an average raw percolation rate of 18.00 in./hr. for P-1. The results of percolation test for boring P-1 provided in the attached Appendix C. The percolation rate was reduced and readjusted to account for the discharge of water from both the sides and bottom of boring (i.e., non-vertical flow).

Based on **(GS200.1) guideline, Item 9 page 10, dated June 30, 2021**, **the raw percolation rate** is calculated by dividing the volume of water discharged by the surface area of the test section (including sides of the boring plus the bottom of the boring).

Boring P-1

Depth of Initial Water Depth (d_1) = 12 in.

Diameter of Boring (d) = 6 in. = 0.5 ft.

Time Interval (Δt) = 12 minutes = 0.20 hr.

Discharge Height in 12 minutes (ΔH) = 6.30 in. = 0.525 ft.

Average interval reading of water height (H_w) = (12.0+5.7)/2) = 8.85 in. = 0.7375 ft.

Falling head calculation rate

= $\Delta H\ (\pi/4)(d^2)/\ \Delta t$= 0.5154 ft^3/hr.

Volume of Water Discharged in 18 min = (3.1416/4 x 0.5^2) 0.5 = 0.0981 ft^3

Volume of Water Discharged in 1 hour = 0.2804 ft^3/hr.

Wet Surface Area = Average wetted Side Area + Bottom of Boring

= $A_{ws(1)} + A_{ws(2)} = (\pi)(d)(H_w)+(\pi/4)(d^2)$

= 3.1416 x 0.5 x 0.7375 + 3.1416/4x 0.5^2 = 1.15846 + 0.1963= 1.3548 ft^2

Infiltration rate: (0.5154 ft^3/hr.)/ 1.3548 ft^2 = 0.3804 ft/hr. = **4.565 in/hr**

Safety Factor= 3 **4.565/3 = 1.52 in/hr.**

10.0 INVESTIGATION LIMITATIONS

The materials encountered on the subject site and utilized in our laboratory testing program are believed to be representative of the area. However, soil materials may vary in characteristics between excavations. Since our investigation is based on the site materials observed, selected laboratory testing, and engineering analyses, the conclusions and recommendations are professional opinion. These opinions have been derived in accordance with current standard of practice, and no warranty is expressed or implied.

Boring/ Excavation Percolation Test Field Log

Date 11/13/2023

1401 & 1414 Royal Oaks Drive

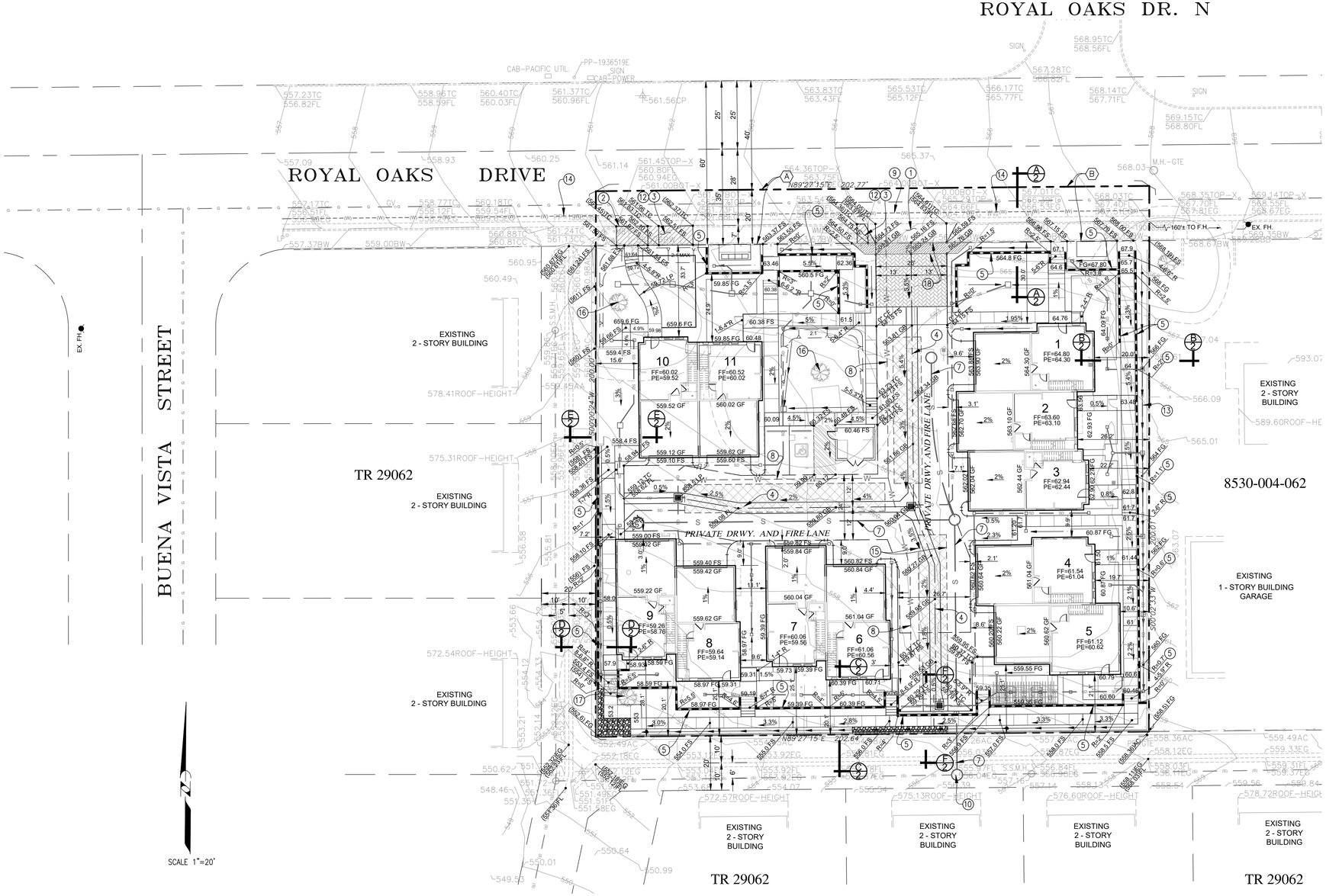
Project Location:	Duarte, california	Boring/ Test Number	P-1		
Earth Description	Alluvium	Diameter of Boring	6"	Diameter of Casing	2"
Test By	HF	Depth of Boring	6'		
Liquid Description	Tap Water	Depth of Invert of BMP	5'		
Measurement Method	Sounder	Depth of Water Table	N/A		
		Depth of Initial Water Depth (d1)	12"		
Time Interval Standard					
Start Time for Pre-Soak	8:48 AM	Water Remaining In Boring (Y/N)	No		
Start Time for Standard	10:10 AM	Standard Time Interval Between Readings	12 Mins		

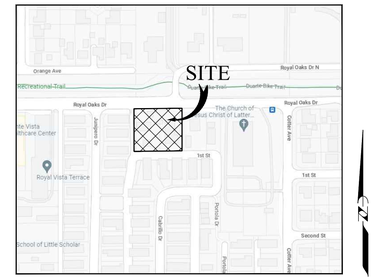
Reading Number	Time Start/ End (hh:mm)	Elapsed Time Δtime (mins)	Water Drop During Standard Time Interval Δd (inches)	Percolation Rate for Reading (in/hr)	Soil Description / Notes / Comments
1	10:10 AM 10:22 AM	12	11.90	34.00	Medium brown, silty sand (SM)
2	10:24 AM 10:36 AM	12	11.00	31.43	Hydrologic Soil Group A
3	10:38 AM 10:50 AM	12	10.20	29.14	
4	10:52 AM 11:04 AM	12	9.00	25.71	
5	11:06 AM 11:18 AM	12	8.40	24.00	
6	11:20 AM 11:32 AM	12	7.20	20.57	
7	11:34 AM 11:46 AM	12	6.30	18.00	
8	11:48 AM 12:00 PM	12	6.30	18.00	
9	12:02 PM 12:14 PM	12	6.30	18.00	Stabilized Rate Achieved

APPENDIX 7

REFERENCES, PROJECT PLANS

- **PROJECT GRADING PLAN**
- **STORM DRAIN PLAN**
- **LANDSCAPE PLAN**





VICINITY MAP
NOT TO SCALE

GENERAL NOTES:

1. EXISTING GENERAL PLAN DESIGNATION ____ LDR LOW DENSITY RESIDENTIAL
2. PROPOSED GENERAL PLAN DESIGNATION_MDR MEDIUM DENSITY RESIDENTIAL
3. EXISTING ZONING ____ R-1 SINGLE FAMILY RESIDENTIAL
4. PROPOSED ZONING ___ R-3 MULTIPLE FAMILY RESIDENTIAL MEDIUM DENSITY
5. AREA _____ 40,541 SF.± (0.93 AC) GROSS, 36,486 SF. 0.84 AC.± NET
6. GROSS DENSITY ____ 11.8 D.U./AC.
7. NET DENSITY ____ 13.1 D.U./AC.
8. EXISTING LAND USE ____ SINGLE FAMILY RESIDENTIAL
9. PROPOSED LAND USE ____ MULTY FAMILY TOWNHOME RESIDENTIAL
10. TOTAL NUMBER OF LOTS____ 1
11. TOTAL NUMBER OF RESIDENTIAL UNITS____ 11
12. BOUNDARY LINE DIMENSIONS ARE TAKEN FROM RECORD DATA.
13. SUBDIVIDER RESERVES THE RIGHT TO FILE MULTIPLE FINAL MAPS PER SECTION 66456.1 OF THE GOVERNMENT CODE.
14. THE APPLICANT IS REQUESTING THE RIGHT TO ADJUST STREET AND BUILDING PAD ELEVATIONS UP TO 1 FEET ON THE FINAL GRADING PLAN.
15. TOPS AND TOES OF SLOPES ARE SUBJECT TO CHANGE IN FINAL ENGINEERING.
16. MAXIMUM SLOPE GRADE IS 2:1.
17. PRELIMINARY EARTHWORK QUANTITIES
    CUT: 960 C.Y., FILL: 760 C.Y.
18. NUMBER OF PARKING TOTAL: (6 STANDARD-5, DISABLED-1)

LEGAL DESCRIPTION:

THE LAND REFERRED TO HEREIN BELOW IS SITUATED IN THE CITY OF DUARTE, COUNTY OF LOS ANGELES, STATE OF CALIFORNIA, AND IS DESCRIBED AS FOLLOWS:

PARCEL 1:

THE NORTH 215 FEET OF THE EAST HALF OF LOT 12 IN SECTION 30 OF THE SUBDIVISION OF THE RANCHO AZUSA DE DUARTE, IN THE CITY OF DUARTE, COUNTY OF LOS ANGELES, STATE OF CALIFORNIA, AS PER MAP RECORDED IN BOOK 6, PAGES 80 TO 82, INCLUSIVE, OF MISCELLANEOUS RECORDS, IN THE OFFICE OF THE COUNTY RECORDER OF LOS ANGELES COUNTY.

EXCEPT THE EAST 560 FEET THEREOF;

ALSO EXCEPT THE NORTH 15 FEET OF SAID LAND, AS CONVEYED TO THE COUNTY OF LOS ANGELES, BY DEED RECORDED IN BOOK 4593, PAGE 18 OF DEEDS.

APN: 8530-004-059

PARCEL 2:

THE NORTH 215 FEET OF THE WEST 100 FEET OF THE EAST 560 FEET OF LOT 12 IN SECTION 30 OF THE SUBDIVISION OF THE RANCHO AZUSA DE DUARTE, IN THE CITY OF DUARTE, COUNTY OF LOS ANGELES, STATE OF CALIFORNIA, AS PER MAP RECORDED IN BOOK 6, PAGES 80 TO 82, INCLUSIVE, OF MISCELLANEOUS RECORDS, IN THE OFFICE OF THE COUNTY RECORDER OF LOS ANGELES COUNTY.

EXCEPT THE NORTH 15 FEET THEREOF AS CONVEYED TO THE COUNTY OF LOS ANGELES, BY DEED RECORDED IN BOOK 4593, PAGE 18 OF DEEDS.

APN: 8530-004-060

BASIS OF BEARINGS

THE BEARING OF NORTH 89°27'15" EAST OF THE CENTERLINE OF ROYAL OAKS DRIVE AS SHOWN ON TRACT NO. 29062, M.B. 809/30-36, WAS USED AS THE BASIS OF BEARINGS FOR THIS SURVEY.

NOTES:

1. PROPOSED 26' WIDE DRIVEWAY APPROACH PER S.P.P.W.C. STD 110-2, TYPE A
2. PROPOSED 8" CURB AND GUTTER PER S.P.P.W.C. STD 120-3, TYPE A2-8
3. PROPOSED SIDEWALK PER S.P.P.W.C. STD. PLAN 113-2
4. PROPOSED 4' WIDE LONGITUDINAL GUTTER
5. PROPOSED RETAINING WALL
6. PROPOSED 4' WIDE WALKWAY
7. PROPOSED 8" VCP SEWER
8. PROPOSED 8" PVC WATER
9. JOIN EXISTING 8" WATER MAIN (CALIFORNIA AMERICAN WATER)
10. JOIN EXISTING 8" VCP SEWER MAIN WITH MANHOLE (TR 29062 PRVT. CONTRACT NO. 71-1)
11. PROPOSED 36"x36" CATCH BASIN PER BROOKS PRODUCT #3636
12. EXISTING DRWY./GATE TO BE REMOVED
13. RAISED PLANTERS PER LANDSCAPE PLANS
14. EXISTING 8" WATER MAIN PER CALIFORNIA AMERICAN WATER
15. PROPOSED STORM WATER INFILTRATION CHAMBER (STORMTECH MC-7200) SEE DET. ON SHT. 3
16. EXISTING OAK TREE TO REMAIN AND PROTECTED IN PLACE
17. EXISTING OAK TREE TO BE REMOVED
18. PROPOSED 4' WIDE SIDEWALK EASEMENT

UTILITIES AND SERVICES:

1. WATER.....CALIFORNIA AMERICAN WATER
2. SEWER.....L.A. COUNTY SANITATION DISTRICT
3. GAS.....GAS COMPANY
4. ELECTRIC.....S.C.E.
5. CABLE TV.....SPECTRUM
6. SCHOOL.....DUARTE UNIFIED SCHOOL DISTRICT

EASEMENTS

(A.) AN EASEMENT FOR PUBLIC STREET PURPOSES AND ALL USES APPURTENANT THERETO. PER FINAL ORDER AND JUDGEMENT IN CONDEMNATION, RECORDED FEBRUARY 14, 1974 AS INSTRUMENT #2852 IN OFFICIAL RECORDS OF LOS ANGELES COUNTY.

(B.) AN EASEMENT FOR PUBLIC STREET PURPOSES AND ALL USES APPURTENANT THERETO. PER FINAL ORDER AND JUDGEMENT IN CONDEMNATION, RECORDED FEBRUARY 14, 1974 AS INSTRUMENT #2853 IN OFFICIAL RECORDS OF LOS ANGELES COUNTY.

SHEET INDEX

SHEET	DESCRIPTION
1	TTM TR 084375, NOTES
2	EXISTING IMPROVEMENTS SECTIONS, NOTES
3	TENTATIVE DRAINAGE PLAN AND DETAILS

BENCH MARK

L.A.C.D.P.W. B.M. 4G2346 ELEV. 512.493 FEET

CSBM MON 3.3FT C/O S CF 8.2FT E/O BCR @ SE COR BUENA VISTA ST & HUNTINGTON DR 65FT E/O & 44FT S/O C/L INT MKD (BM 11-14A 1956)

OWNER/DEVELOPER:
SHUORUNG PROPERTIES LLC
2157 E. Mountain St.
Pasadena, California 91104

LDC
LAND DESIGN CONSULTANTS INC.
Land Planning, Civil Engineering, Surveying & Environmental Services
800 Royal Oaks Drive, Suite 104
Monrovia, California 91016
PH (626) 578-7000 FAX (626) 578-7373

TENTATIVE
TRACT MAP NO. 084375
1404 & 1414 Royal Oaks Drive. City of Duarte, Ca 91710
APN. 8530-004-059, 8530-004-060

DESIGNED BY:	DATE:	SCALE:	REVIEWED BY:	22013-001
LDC	08/22/2024	AS-SHOWN	S. HUNTER	SHEET 1 OF 3

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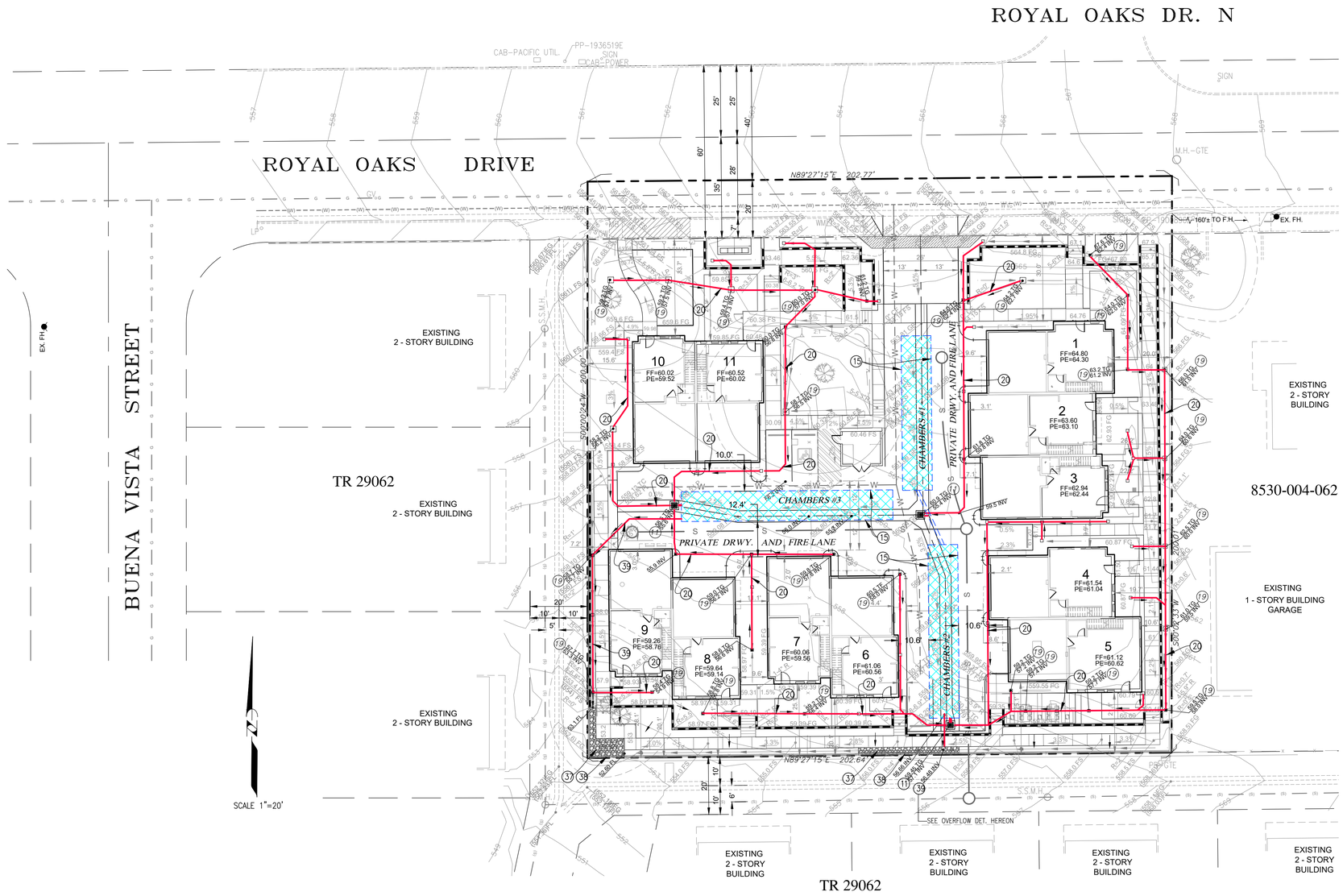
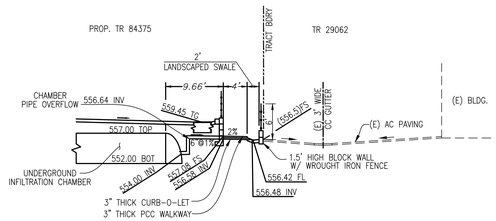


NOTES:

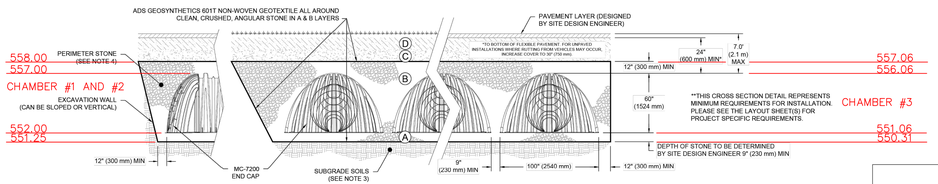
(11) PROPOSED 36"x36" CATCH BASIN PER BROOKS PRODUCT #3636
(15) PROPOSED STORM WATER INFILTRATION CHAMBER (STORMTECH MC-7200) SEE DET. HEREON
(19) PROPOSED AREA DRAIN
(20) PROPOSED STORM DRAIN LINE
(37) CHAMBER OVERFLOW ENERGY DISSIPATER, 3" MAX. ANGULAR ROCK SIZE 6" THICK ROCK PAD
(38) MAINTAIN 16" CLEAR OPENINGS AT EVERY OTHER BOTTOM BLOCK TO ALLOW RUNOFF DISCHARGES TO THE SOUTH
(39) PROPOSED 6" CHAMBER OVERFLOW

UTILITIES AND SERVICES:

1. WATER.....CALIFORNIA AMERICAN WATER
2. SEWER.....L.A. COUNTY SANITATION DISTRICT
3. GAS.....GAS COMPANY
4. ELECTRIC.....S.C.E.
5. CABLE TV.....SPECTRUM
6. SCHOOL.....DUARTE UNIFIED SCHOOL DISTRICT



CHAMBER OVERFLOW OUTLET DETAIL
N.T.S.



NOTES:

1. CHAMBERS SHALL MEET THE REQUIREMENTS OF ASTM F2418, "STANDARD SPECIFICATION FOR POLYPROPYLENE (PP) CORRUGATED WALL STORMWATER COLLECTION CHAMBERS" CHAMBER CLASSIFICATION 60x101
2. MC-7200 CHAMBERS SHALL BE DESIGNED IN ACCORDANCE WITH ASTM F2787 "STANDARD PRACTICE FOR STRUCTURAL DESIGN OF THERMOPLASTIC CORRUGATED WALL STORMWATER COLLECTION CHAMBERS".
3. THE SITE DESIGN ENGINEER IS RESPONSIBLE FOR ASSESSING THE BEARING RESISTANCE (ALLOWABLE BEARING CAPACITY) OF THE SUBGRADE SOILS AND THE DEPTH OF FOUNDATION STONE WITH CONSIDERATION FOR THE RANGE OF EXPECTED SOIL MOISTURE CONDITIONS.
4. PERIMETER STONE MUST BE EXTENDED HORIZONTALLY TO THE EXCAVATION WALL FOR BOTH VERTICAL AND SLOPED EXCAVATION WALLS.
5. REQUIREMENTS FOR HANDLING AND INSTALLATION:
   - TO MAINTAIN THE WIDTH OF CHAMBERS DURING SHIPPING AND HANDLING, CHAMBERS SHALL HAVE INTEGRAL, INTERLOCKING STACKING LUGS.
   - TO ENSURE A SECURE JOINT DURING INSTALLATION AND BACKFILL, THE HEIGHT OF THE CHAMBER JOINT SHALL NOT BE LESS THAN 3".
   - TO ENSURE THE INTEGRITY OF THE ARCH SHAPE DURING INSTALLATION, a) THE ARCH STIFFNESS CONSTANT AS DEFINED IN SECTION 6.2.8 OF ASTM F2418 SHALL BE GREATER THAN OR EQUAL TO 500 LBS/FT/%. AND b) TO RESIST CHAMBER DEFORMATION DURING INSTALLATION AT ELEVATED TEMPERATURES (ABOVE 73° F / 23° C), CHAMBERS SHALL BE PRODUCED FROM REFLECTIVE GOLD OR YELLOW COLORS.

1 MC-7200 CROSS SECTION DETAIL

ACCEPTABLE FILL MATERIALS: STORMTECH MC-7200 CHAMBER SYSTEMS

	MATERIAL LOCATION	DESCRIPTION	AASHTO MATERIAL CLASSIFICATIONS	COMPACTION / DENSITY REQUIREMENT
D	**FINAL FILL:** FILL MATERIAL FOR LAYER 'D' STARTS FROM THE TOP OF THE 'C' LAYER TO THE BOTTOM OF FLEXIBLE PAVEMENT OR UNPAVED FINISHED GRADE ABOVE. NOTE THAT PAVEMENT SUBBASE MAY BE PART OF THE 'D' LAYER	ANY SOIL/ROCK MATERIALS, NATIVE SOILS, OR PER ENGINEER'S PLANS. CHECK PLANS FOR PAVEMENT SUBGRADE REQUIREMENTS.	N/A	PREPARE PER SITE DESIGN ENGINEER'S PLANS. PAVED INSTALLATIONS MAY HAVE STRINGENT MATERIAL AND PREPARATION REQUIREMENTS.
C	**INITIAL FILL:** FILL MATERIAL FOR LAYER 'C' STARTS FROM THE TOP OF THE EMBEDMENT STONE ('B' LAYER) TO 24" (600 mm) ABOVE THE TOP OF THE CHAMBER. NOTE THAT PAVEMENT SUBBASE MAY BE A PART OF THE 'C' LAYER.	GRANULAR WELL-GRADED SOIL/AGGREGATE MIXTURES, <35% FINES OR PROCESSED AGGREGATE. MOST PAVEMENT SUBBASE MATERIALS CAN BE USED IN LIEU OF THIS LAYER.	AASHTO M145[3] A-1, A-2-4, A-3 OR AASHTO M43[3] 3, 357, 4, 467, 5, 56, 57, 6, 67, 68, 7, 78, 8, 89, 9, 10	BEGIN COMPACTIONS AFTER 24" (600 mm) OF MATERIAL OVER THE CHAMBERS IS REACHED. COMPACT ADDITIONAL LAYERS IN 12" (300 mm) MAX LIFTS TO A MIN. 95% PROCTOR DENSITY FOR WELL GRADED MATERIAL AND 95% RELATIVE DENSITY FOR PROCESSED AGGREGATE MATERIALS.
B	**EMBEDMENT STONE:** FILL SURROUNDING THE CHAMBERS FROM THE FOUNDATION STONE ('A' LAYER) TO THE 'C' LAYER ABOVE.	CLEAN, CRUSHED, ANGULAR STONE OR RECYCLED CONCRETE[5]	AASHTO M43[3] 3, 357, 4, 467, 5, 56, 57	NO COMPACTION REQUIRED.
A	**FOUNDATION STONE:** FILL BELOW CHAMBERS FROM THE SUBGRADE UP TO THE FOOT (BOTTOM) OF THE CHAMBER.	CLEAN, CRUSHED, ANGULAR STONE OR RECYCLED CONCRETE[5]	AASHTO M43[3] 3, 357, 4, 467, 5, 56, 57	PLATE COMPACT OR ROLL TO ACHIEVE A FLAT SURFACE.[2,3]

PLEASE NOTE:
1. THE LISTED AASHTO DESIGNATIONS ARE FOR GRADATIONS ONLY. THE STONE MUST ALSO BE CLEAN, CRUSHED, ANGULAR. FOR EXAMPLE, A SPECIFICATION FOR #4 STONE WOULD STATE: "CLEAN, CRUSHED, ANGULAR NO. 4 (AASHTO M43) STONE".
2. STORMTECH COMPACTION REQUIREMENTS ARE MET FOR 'A' LOCATION MATERIALS WHEN PLACED AND COMPACTED IN 9" (230 mm) (MAX) LIFTS USING TWO FULL COVERAGES WITH A VIBRATORY COMPACTOR.
3. WHERE INFILTRATION SURFACES MAY BE COMPROMISED BY COMPACTION, FOR STANDARD DESIGN LOAD CONDITIONS, A FLAT SURFACE MAY BE ACHIEVED BY RAKING OR DRAGGING WITHOUT COMPACTION EQUIPMENT. FOR SPECIAL LOAD DESIGNS, CONTACT STORMTECH FOR COMPACTION REQUIREMENTS.
4. ONCE LAYER 'C' IS PLACED, ANY SOIL/MATERIAL CAN BE PLACED IN LAYER 'D' UP TO THE FINISHED GRADE. MOST PAVEMENT SUBBASE SOILS CAN BE USED TO REPLACE THE MATERIAL REQUIREMENTS OF LAYER 'C' OR 'D' AT THE SITE DESIGN ENGINEER'S DISCRETION.
5. WHERE RECYCLED CONCRETE AGGREGATE IS USED IN LAYERS 'A' OR 'B' THE MATERIAL SHOULD ALSO MEET THE ACCEPTABILITY CRITERIA OUTLINED IN TECHNICAL NOTE 6.20 "RECYCLED CONCRETE STRUCTURAL BACKFILL".

DRAINAGE DETAILS

OWNER/DEVELOPER:
SHUORUNG PROPERTIES LLC
2157 E. Mountain St.
Pasadena, California 91104

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LAND DESIGN CONSULTANTS INC.
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PH (626) 578-7000 FAX (626) 578-7373

TENTATIVE
TRACT MAP NO. 084375
1404 & 1414 Royal Oaks Drive. City of Duarte, Ca 91710
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DESIGNED BY:	DATE:	SCALE:	REVIEWED BY:	22013-001
LDC	08/22/2024	AS-SHOWN	S. HUNTER	SHEET 3 OF 3

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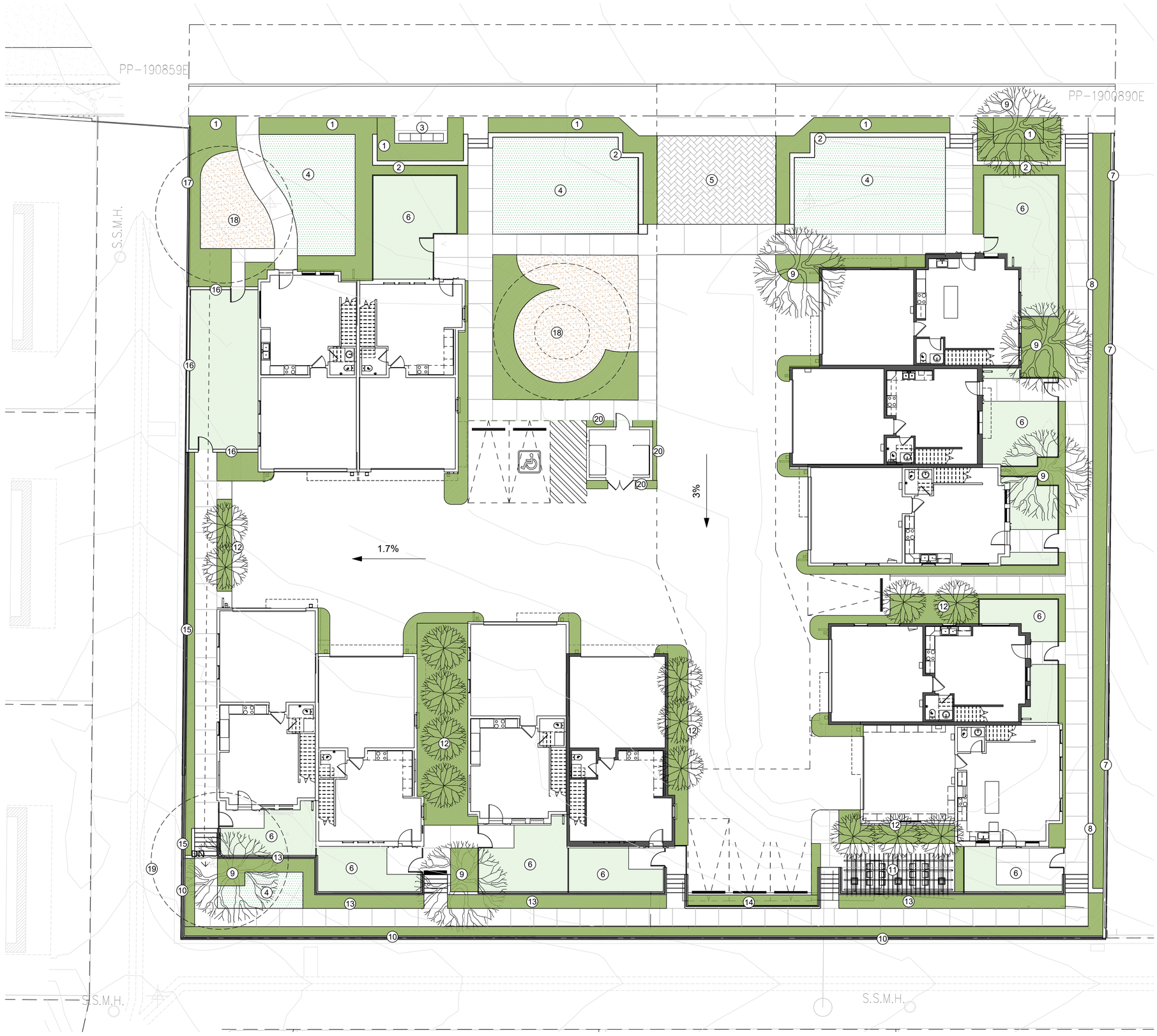

1. CARPET ROSES ALONG STREET FRONTAGE TO MATCH ADJACENT NEIGHBORS
2. SLOPE OR SMALL RETAINING WALL ALONG STREET EDGE
3. COMMON MAIL BOX AREA TO BE REVIEWED BY USPS
4. COMMON OPEN SPACE LAWN AREA
5. DECORATIVE PAVERS AT ENTRY
6. LOW 42" FENCE/RAILING AROUND PRIVATE PATIO YARDS, WITH LANDSCAPE PLANTING IN FRONT OF FENCE/RAILING
7. 6FT HIGH STANDARD PERIMETER PROPERTY LINE WALL, HEDGE OR VINES TO GROW IN FRONT OR ON WALL, SEE GRADING PLAN SECTION A-A'
8. LOW RETAINING WALL WITH SPILLING PLANTS, SEE GRADING PLAN SECTION A-A'
9. SMALL ACCENT FLOWERING TREES
10. SOUTH PERIMETER EDGE, LOW WALL WITH RAILING FENCE ON TOP. HEDGE OR VINES TO BE PLANTED IN FRONT OF SOUTHERN FENCE ON PROPERTY. VINES OR HEDGE CAN BE ACCESSED FOR MAINTENANCE FROM PROPERTY, SEE GRADING PLAN SECTION B-B'
11. BBQ AREA AND SHADE PERGOLA
12. VERTICAL TREES
13. RETAINING WALL WITH PRIVATE PATIO YARD RAILING FENCE ON TOP. HEDGE IN FRONT OF RETAINING WALL. SEE GRADING PLAN SECTION B-B'
14. LOW RETAINING WALL WITH RAILING ON TOP WITH SPILLING VINES AT PARKING SPACES
15. PERIMETER RETAINING WALL WITH +/-5FT HIGH RAILING OR FENCE ON TOP OF WALL. PLANT WITH VINES OR HEDGES ON PROPERTY LINE SIDE. SEE GRADING PLAN SECTION C-C'
16. CMU BLOCK WALL FOR PATIO YARD PRIVACY AT UNIT 10 SEE GRADING PLAN SECTION D-D'
17. PICKET OR WOOD FENCE FROM CMU WALL TO PROPERTY LINE FOR OAK TREE ROOT PROTECTION.
18. EXISTING OAK TREE TO REMAIN. NATIVE OAK GARDEN BELOW, DECOMPOSED GRANITE, RIVER COBBLE, OR COMBINATION
19. OAK TREE TO BE REMOVED
20. SELF-CLINGING VINES OR LANDSCAPING ON TRASH ENCLOSURE

0 10' 20' 30'

Graphic Scale In Feet

North

FXA
FENG XIAO ARCHITECT, INC.

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EMAIL: D.SCHNEIDER@FHSP.NET

PLANNING SUBMISSION 04/24/2024

NO.	DESCRIPTION	DATE

ROYAL OAKS

1404 & 1414 ROYAL OAKS DR,
DUARTE, CA 91010

© 2023 Feng Xiao Architect, Inc.

1404 ROYAL OAKS LANDSCAPE STUDY

Drawing No.

Project number:	Date:	11/13/23
22013	Scale:	AS SHOWN

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Appendix G
Noise Study

Royal Oaks Townhomes

Noise Impact Study

City of Duarte, CA

Prepared for:

Ms. Starla Barker
De Novo Planning Group
Ste 180 East Main St #108
Tustin, CA 92780

Prepared by:

MD Acoustics, LLC
Sarah Ostergaard, INCE-USA
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1197 Los Angeles Ave, Ste C-256
Simi Valley, CA 93065

Date: 4/7/2025

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1.0 Introduction

1.1 Purpose of Analysis and Study Objectives

This noise assessment was prepared to evaluate the potential noise impacts for the project study area and to recommend noise mitigation measures, if necessary, to minimize the potential noise impacts. The assessment was conducted and compared to the noise standards set forth by the Federal, State, and Local agencies. Consistent with the City's Noise Guidelines, the project must demonstrate compliance to the applicable noise criterion as outlined within the City's Noise Element and Municipal Code.

The following is provided in this report:

- A description of the study area and the proposed project
- Information regarding the fundamentals of noise
- A description of the local noise guidelines and standards
- An analysis of traffic noise impacts to and from the project site
- An analysis of operational noise impacts
- An analysis of construction noise impacts

1.2 Site Location and Study Area

The project site is located at 1404 and 1414 Royal Oaks Drive, in the City of Duarte, California, as shown in Exhibit A. The site is currently zoned as Single Family Residential (R-1). Designated zoning directly surrounding the site includes Open Space (O) zoning to the north, Single Family Residential (R-1) zoning to the east, and Multiple Family Residential (R-3) zoning to the south and west. Other sensitive uses near the project site include residential uses further north, a church to the east, and a hospital to the west. Royal Oaks Drive is to the north of the project site, and 1st Street is to the south.

1.3 Proposed Project Description

The project proposes the development of five (5) buildings consisting of eleven (11) two-story attached townhomes. Each townhome will include an attached garage and private outdoor patio yard. The townhomes will range from 1,341 to 1,594 square feet (excluding the garage and patio area). The project will include a total of 28 parking spaces, including 22 private garage spaces and six (6) additional outdoor parking spaces.

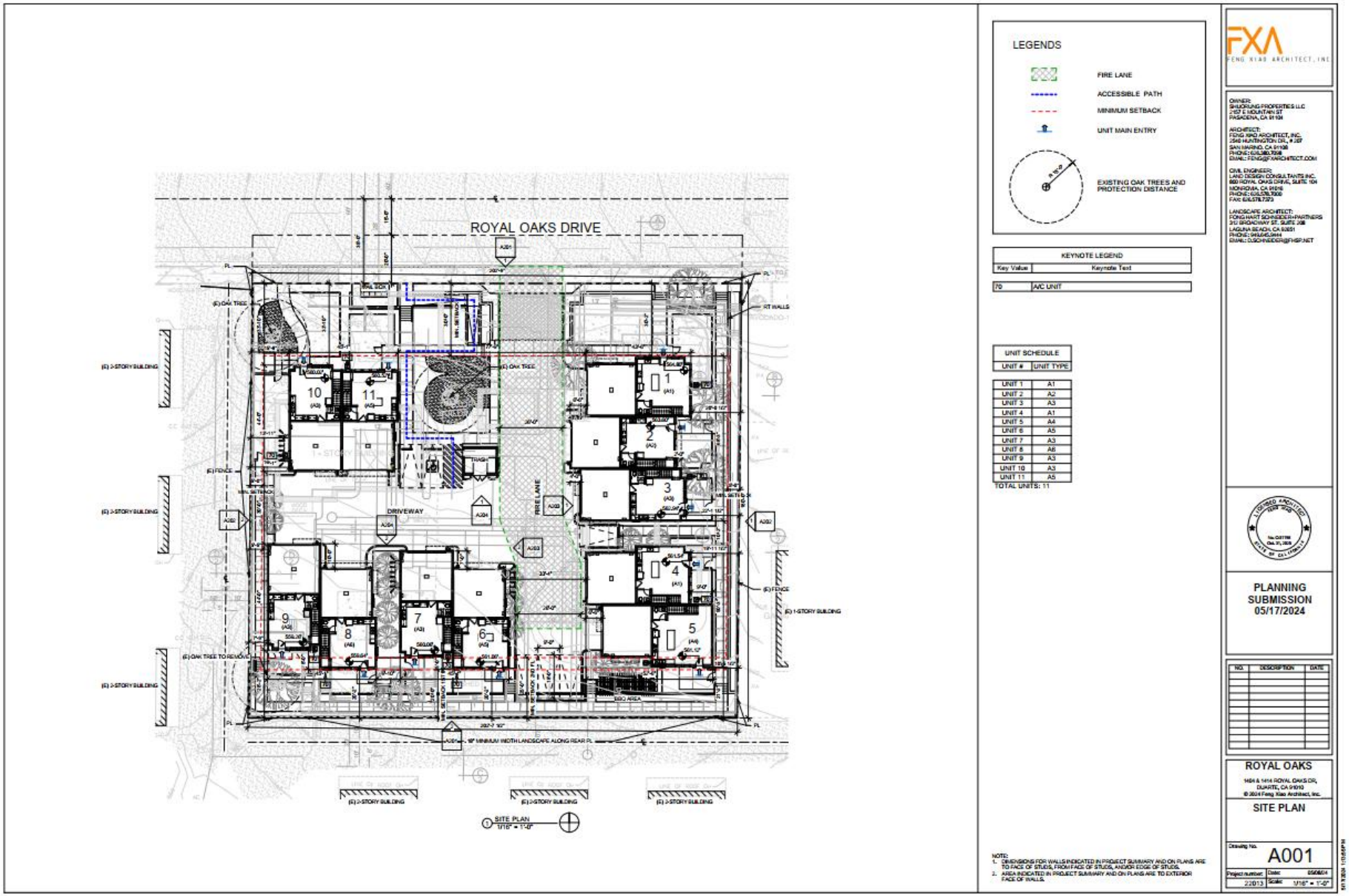
This study assesses the operational noise and traffic noise to and from the project site and compares the results to the applicable City noise standards. In addition, the study reviews noise generated by construction activities.

Exhibit A

Location Map

Exhibit B

Site Plan



2.0 Fundamentals of Noise

This section of the report provides basic information about noise and presents some of the terms used within the report.

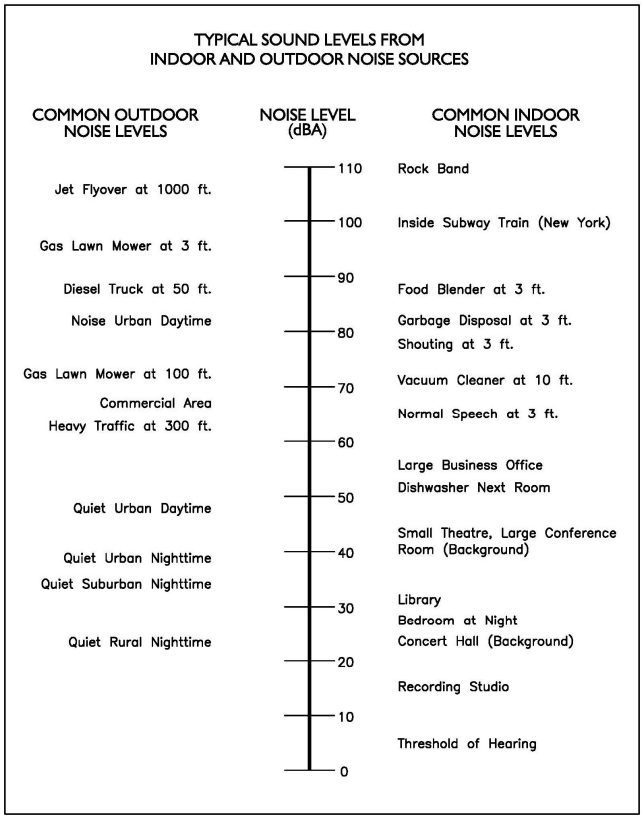
2.1 Sound, Noise and Acoustics

Sound is a disturbance created by a moving or vibrating source and is capable of being detected by the hearing organs. Sound may be thought of as mechanical energy of a moving object transmitted by pressure waves through a medium to a human ear. For traffic or stationary noise, the medium of concern is air. *Noise* is defined as sound that is loud, unpleasant, unexpected, or unwanted.

2.2 Frequency and Hertz

A continuous sound is described by its *frequency* (pitch) and its *amplitude* (loudness). Frequency relates to the number of pressure oscillations per second. Low-frequency sounds are low in pitch (bass sounding), and high-frequency sounds are high in pitch (squeak). These oscillations per second (cycles) are commonly referred to as Hertz (Hz). The human ear can hear from the bass pitch from 20 Hz to the high pitch of 20,000 Hz.

Exhibit C: Typical A-Weighted Noise Levels



2.3 Sound Pressure Levels and Decibels

The *amplitude* of a sound determines its loudness. The loudness of sound increases or decreases as the amplitude increases or decreases. Sound pressure amplitude is measured in units of micro-Newton per square inch meter (N/m2), also called micro-Pascal (µPa). One µPa is approximately one hundred billionths (0.00000000001) of normal atmospheric pressure. Sound pressure level (SPL or L_p) is used to describe in logarithmic units the ratio of actual sound pressures to a reference pressure squared. These units are called decibels, abbreviated dB. Exhibit C illustrates reference sound levels for different noise sources.

2.4 Addition of Decibels

Because decibels are on a logarithmic scale, sound pressure levels cannot be added or subtracted by simple plus or minus addition. When two sounds or equal SPL are combined, they will produce an SPL 3 dB greater than the original single SPL. In other words, sound energy must be doubled to produce a 3 dB increase. If two sounds differ by approximately 10 dB, the higher sound level is the predominant sound.

2.5 Human Response to Changes in Noise Levels

In general, the healthy human ear is most sensitive to sounds between 1,000 Hz and 5,000 Hz (A-weighted scale), and it perceives a sound within that range as being more intense than a sound with a higher or lower frequency with the same magnitude. For purposes of this report as well as with most environmental documents, the A-scale weighting is typically reported in terms of A-weighted decibel (dBA). Typically, the human ear can barely perceive the change in noise level of 3 dB. A change in 5 dB is readily perceptible, and a change in 10 dB is perceived as being twice or half as loud. As previously discussed, a doubling of sound energy results in a 3 dB increase in sound, which means that a doubling of sound energy (e.g., doubling the volume of traffic on a highway) would result in a barely perceptible change in sound level.

Changes in Intensity Level, dBA	Changes in Apparent Loudness
1	Not perceptible
3	Just perceptible
5	Clearly noticeable
10	Twice (or half) as loud

https://www.fhwa.dot.gov/environMent/noise/regulations_and_guidance/polguide/polguide02.cfm

2.6 Noise Descriptors

Noise in our daily environment fluctuates over time. Some noise levels occur in regular patterns; others are random. Some noise levels are constant, while others are sporadic. Noise descriptors were created to describe the different time-varying noise levels.

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 and L99, etc.

Noise: *A*ny 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...".

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.

2.7 Traffic Noise Prediction

Noise levels associated with traffic depend on a variety of factors: (1) volume of traffic, (2) speed of traffic, (3) auto, medium truck (2 axle) and heavy truck percentage (3 axle and greater), and sound propagation. The greater the volume of traffic, higher speeds, and truck percentages equate to a louder

volume in noise. A doubling of the Average Daily Traffic (ADT) along a roadway will increase noise levels by approximately 3 dB; reasons for this are discussed in the sections above.

2.8 Sound Propagation

As sound propagates from a source it spreads geometrically. Sound from a small, localized source (i.e., a point source) radiates uniformly outward as it travels away from the source in a spherical pattern. The sound level attenuates at a rate of 6 dB per doubling of distance. The movement of vehicles down a roadway makes the source of the sound appear to propagate from a line (i.e., line source) rather than a point source. This line source results in the noise propagating from a roadway in a cylindrical spreading versus a spherical spreading that results from a point source. The sound level attenuates for a line source at a rate of 3 dB per doubling of distance.

As noise propagates from the source, it is affected by the ground and atmosphere. Noise models use hard site (reflective surfaces) and soft site (absorptive surfaces) to help calculate predicted noise levels. Hard site conditions assume no excessive ground absorption between the noise source and the receiver. Soft site conditions such as grass, soft dirt or landscaping attenuate noise at a rate of 1.5 dB per doubling of distance. When added to the geometric spreading, the excess ground attenuation results in an overall noise attenuation of 4.5 dB per doubling of distance for a line source and 7.5 dB per doubling of distance for a point source.

Research has demonstrated that atmospheric conditions can have a significant effect on noise levels when noise receivers are located 200 feet or more from a noise source. Wind, temperature, air humidity and turbulence can further impact have far sound can travel.

3.0 Ground-Borne Vibration Fundamentals

3.1 Vibration Descriptors

Ground-borne vibrations consist of rapidly fluctuating motions within the ground that have an average motion of zero. The effects of ground-borne vibrations typically only cause a nuisance to people, but at extreme vibration levels, damage to buildings may occur. Although ground-borne vibration can be felt outdoors, it is typically only an annoyance to people indoors where the associated effects of the shaking of a building can be notable. Ground-borne noise is an effect of ground-borne vibration and only exists indoors, since it is produced from noise radiated from the motion of the walls and floors of a room and may also consist of the rattling of windows or dishes on shelves.

Several different methods are used to quantify vibration amplitude.

PPV – Known as the peak particle velocity (PPV) which is the maximum instantaneous peak in vibration velocity, typically given in inches per second.

RMS – Known as root mean squared (RMS) can be used to denote vibration amplitude.

VdB – A commonly used abbreviation to describe the vibration level (VdB) for a vibration source.

3.2 Vibration Perception

Typically, developed areas are continuously affected by vibration velocities of 50 VdB or lower. These continuous vibrations are not noticeable to humans whose threshold of perception is around 65 VdB. Outdoor sources that may produce perceptible vibrations are usually caused by construction equipment, steel-wheeled trains, and traffic on rough roads, while smooth roads rarely produce perceptible ground-borne noise or vibration. To counter the effects of ground-borne vibration, the Federal Transit Administration (FTA) has published guidance relative to vibration impacts. According to the FTA, fragile buildings can be exposed to ground-borne vibration levels of 0.3 inches per second without experiencing structural damage.

There are three main types of vibration propagation: surface, compression, and shear waves. Surface waves, or Rayleigh waves, travel along the ground's surface. These waves carry most of their energy along an expanding circular wavefront, similar to ripples produced by throwing a rock into a pool of water. P-waves, or compression waves, are body waves that carry their energy along an expanding spherical wavefront. The particle motion in these waves is longitudinal (i.e., in a "push-pull" fashion). P-waves are analogous to airborne sound waves. S-waves, or shear waves, are also body waves that carry energy along an expanding spherical wavefront. However, unlike P-waves, the particle motion is transverse, or side-to-side and perpendicular to the direction of propagation.

As vibration waves propagate from a source, the vibration energy decreases in a logarithmic nature and the vibration levels typically decrease by 6 VdB per doubling of the distance from the vibration source. As stated above, this drop-off rate can vary greatly depending on the soil but has been shown to be

effective enough for screening purposes, in order to identify potential vibration impacts that may need to be studied through actual field tests.

4.0 Regulatory Setting

The proposed project is located in the City of Duarte, California, and noise regulations are addressed through the efforts of various federal, state and local government agencies. The agencies responsible for regulating noise are discussed below.

4.1 Federal Regulations

The adverse impact of noise was officially recognized by the federal government in the Noise Control Act of 1972, which serves three purposes:

- Publicize noise emission standards for interstate commerce
- Assist state and local abatement efforts
- Promote noise education and research

The Federal Office of Noise Abatement and Control (ONAC) originally was tasked with implementing the Noise Control Act. However, it was eventually eliminated, leaving other federal agencies and committees to develop noise policies and programs. Some examples of these agencies are as follows: The Department of Transportation (DOT) assumed a significant role in noise control through its various agencies. The Federal Aviation Agency (FAA) is responsible for regulating noise from aircraft and airports. The Federal Highway Administration (FHWA) is responsible for regulating noise from the interstate highway system. The Occupational Safety and Health Administration (OSHA) is responsible for the prohibition of excessive noise exposure to workers.

The federal government advocates that local jurisdiction use their land use regulatory authority to arrange new development in such a way that “noise sensitive” uses are either prohibited from being constructed adjacent to a highway or that the developments are planned and constructed in such a manner that potential noise impacts are minimized.

Since the federal government has preempted the setting of standards for noise levels that can be emitted by the transportation source, the City is restricted to regulating the noise generated by the transportation system through nuisance abatement ordinances and land use planning.

4.2 State Regulations

Established in 1973, the California Department of Health Services Office of Noise Control (ONC) was instrumental in developing regularity tools to control and abate noise for use by local agencies. One significant model is the “Land Use Compatibility for Community Noise Environments Matrix.” The matrix allows the local jurisdiction to clearly delineate compatibility of sensitive uses with various incremental levels of noise.

The State of California has established noise insulation standards as outlined in Title 24 of the California Building Code (CBC) which in some cases requires acoustical analyses to outline exterior noise levels and to ensure interior noise levels do not exceed the interior threshold. The State mandates that the legislative body of each county and city adopt a noise element as part of its comprehensive general plan.

4.3 City of Duarte Noise Regulations

The City of Duarte outlines their noise regulations and standards within the Noise Element from the General Plan and the Noise Ordinance from the Municipal Code.

City of Duarte General Plan

Applicable policies and standards governing environmental noise in the City are set forth in the General Plan's Noise Element. Table N-1 (Exhibit D of this report) of the City's Noise Element outlines the exterior noise standards for community noise environments.

Exhibit D: Land Use Compatibility Guidelines

Land Use Category	Community Noise Exposure (L_{dn} or CNEL, dBA)			
	Normally Acceptable	Conditionally Acceptable	Normally Unacceptable	Clearly Unacceptable
Residential - Low Density, Single-Family, Duplex, Mobile Homes	50 - 60	55 - 70	70-75	75-85
Residential - Multiple Family	50 - 65	60 - 70	70 - 75	70 - 85
Transient Lodging - Motels, and Hotels	50 - 65	60 - 70	70 - 80	80 - 85
Schools, Libraries, Churches, Hospitals, Nursing Homes	50 - 70	60 - 70	70 - 80	80 - 85
Auditoriums, Concert Halls, Amphitheaters	NA	50 - 70	NA	65 - 85
Sports Arenas, Outdoor Spectator Sports	NA	50 - 75	NA	70 - 85
Playgrounds, Neighborhood Parks	50 - 70	NA	67.5 - 75	72.5 - 85
Golf Courses, Riding Stables, Water Recreation, Cemeteries	50 - 70	NA	70 - 80	80 - 85
Office Buildings, Business Commercial and Professional	50 - 70	67.5 - 77.5	75 - 85	NA
Industrial, Manufacturing, Utilities, Agriculture	50 - 75	70 - 80	75 - 85	NA

NA: Not Applicable

Source: General Plan Guidelines, Office of Planning and Research, California, October 2003.

Normally Acceptable – Specified land use is satisfactory, based upon the assumption that any buildings involved are of normal conventional construction, without any special noise insulation requirements.
Conditionally Acceptable – New construction or development should be undertaken only after a detailed analysis of the noise reduction requirements is made and needed noise insulation features included in the design. Conventional construction, but with closed windows and fresh air supply systems or air conditioning, will normally suffice.
Normally Unacceptable – New construction or development should be discouraged. If new construction or development does proceed, a detailed analysis of the noise reduction requirements must be made and needed noise insulation features included in the design.
Clearly Unacceptable – New construction or development should generally not be undertaken.

In addition to the noise standards, the City has outlined goals, policies, and implementation programs to reduce potential noise impacts, which are presented below:

Goals, Policies, and Implementation Measures
Goals, policies, and implementation measures from the Noise Element that would mitigate potential impacts on noise include the following.

Goal 1: To reduce noise impacts from transportation sources.

Objective 1.1: Maintain and reduce where feasible background noise levels emanating from citywide transportation sources.

Policies:

1.1.1 Ensure noise mitigation measures are included in the design of new developments.

1.1.4 Encourage acoustical materials in all new residential and commercial developments where noise levels exceed the compatibility standards outlined in the Noise Element.

1.1.5 Limit construction, delivery, and through truck traffic to designated routes.

Goal 2: Develop measures to control non-transportation noise impacts.

Objective 1.2: Commercial and industrial uses, construction activity and other non-transportation related sources of noise can contribute negatively to the noise environment. Identifying and mitigating these potential noise sources will reduce negative impacts.

Policies:

2.1.4 Prohibit significant noise generating activities from locating adjacent to residential neighborhoods and near schools.

Goal 3: To establish land uses which are compatible with noise levels within the community.

Objective 1.3: Land use planning decisions directly relate to potential noise impacts. Therefore, careful consideration of noise impacts should be a part of all land use decisions.

Policies:

3.1.3 Ensure that construction noise does not cause an adverse impact to the residents of the City.

3.1.4 Minimize noise and light spillage onto other residential properties.

City of Duarte Municipal Code

The City's Municipal Code outlines the City's exterior noise limits as it relates to stationary noise sources in Chapter 9.68 – Noise.

9.68.010 - Policy declaration.

It is declared to be the policy of the city to prohibit unnecessary, excessive and annoying noises from all sources subject to its police power. At certain levels, noises are detrimental to the health and welfare of the citizenry and, in the public interest, such noise levels shall be systematically proscribed.

9.68.020 - Definitions.

(a) "Ambient noise" is the all-encompassing noise associated with a given environment, being usually a composite of sounds from many sources near and far. For the purpose of this chapter, "ambient noise level" is the level obtained when the noise level is averaged over a period of fifteen minutes without inclusion of noise from isolated identifiable sources, at the location and time of day near that at which a comparison is to be made.

9.68.050 – Ambient base noise levels.

(a) It is unlawful for any person within the city of Duarte to make, cause or allow to be produced noise which is received on property occupied by another person within the designated zone, in excess of the following levels, except as expressly provided otherwise herein:

Table 1: City of Duarte Noise Ordinance Standards (dBA)

Zone	Day 7:00 A.M.-9:00 P.M.	Night 9:00 P.M.-7:00 A.M.
R-1 and R-2	55	45
R-3 and R-4	55	50
Commercial	60	55
Industrial and Light Manufacturing	70	70

At the boundary line between a residential property and a commercial and manufacturing property, the noise level of the quieter zone shall be used.

(b) The numerical limits given in subsection (a) of this section shall be adjusted by the following corrections, where appropriate:

Table 2: Corrections to Noise Limits (dBA)

Noise Condition	Correction
Repetitive impulsive noise, pure tones and sound with cyclically varying amplitude	-5
Steady whine, screech or hum	-5
The following corrections apply to day only:	
Noise occurring more than 5 but less than 15 minutes per hour	+5
Noise occurring more than 1 but less than 5 minutes per hour	+10
Noise occurring less than 1 minute per hour	+15

9.68.060 - Loud, unnecessary and unusual noise.

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

(a) The level of the noise;

(b) Whether the nature of the noise is usual or unusual;

(c) The nature and zoning of the area within which the noise emanates;

(d) The density of the inhabitation of the area within which the noise emanates;

(e) The time of day or night the noise occurs;

(f) The duration of the noise;

(g) Whether the noise is recurrent, intermittent, or constant; and

(h) Whether the origin of the noise is natural or unnatural.

9.68.120 - Construction of buildings and projects.

It is unlawful for any person within a residential zone, or within a radius of five hundred feet therefrom, to operate equipment or perform any outside construction or repair work on buildings, structures, or projects or to operate any pile-driver, power shovel, pneumatic hammer, derrick, power hoist, or any other construction type device (between the hours of ten p.m. of one day and seven a.m. of the next day) in such a manner that a reasonable person of normal sensitiveness residing in the area is caused discomfort or annoyance unless beforehand a permit therefor has been duly obtained from the planning and zoning division, department of public services. No permit shall be required to perform emergency work as defined in Section 9.68.020(h).

9.68.150 - Schools, churches, libraries, hospitals and convalescent homes.

It is unlawful for any person to create any noise on any city street, sidewalk, or public place adjacent to any school, institution of learning, church or library while the same is in use or adjacent to any hospital or convalescent home, which noise unreasonably interferes with the workings of such institution or which disturbs or unduly annoys patients in such medical facilities, provided conspicuous signs are placed in such streets, sidewalks or public place indicating the presence of these facilities.

9.68.160 - Machinery, equipment, fans and air conditioning.

It is unlawful for any person to operate any machinery, equipment, pump, fan, air conditioning apparatus, or similar mechanical device (between the hours of ten p.m. of one day and seven a.m. of the following day), use of which is attended by loud or unusual noises.

5.0 Study Method and Procedure

The following section describes the noise modeling procedures and assumptions used for this assessment.

5.1 Noise Measurement Procedure and Criteria

Noise measurements are taken to determine the existing noise levels. A noise receiver or receptor is any location in the noise analysis in which noise might produce an impact. The following criteria are used to select measurement locations and receptors:

- Locations expected to receive the highest noise impacts, such as the first row of houses
- Locations that are acoustically representative and equivalent of the area of concern
- Human land usage
- Sites clear of major obstruction and contamination

MD conducted the sound level measurements in accordance to the County's and Caltrans (TeNS) technical noise specifications. All measurement equipment meets American National Standards Institute (ANSI) specifications for sound level meters (S1.4-1983 identified in Chapter 19.68.020.AA). The following gives a brief description of the Caltrans Technical Noise Supplement procedures for sound level measurements:

- Microphones for sound level meters were placed 5 feet above the ground for all measurements
- Sound level meters were calibrated (Larson Davis CAL 200) before and after each measurement
- Following the calibration of equipment, a windscreen was placed over the microphone
- Frequency weighting was set on "A" and slow response
- Results of the long-term noise measurements were recorded on field data sheets
- During any short-term noise measurements, any noise contaminations such as barking dogs, local traffic, lawnmowers, or aircraft fly-overs were noted
- Temperature and sky conditions were observed and documented

5.2 Noise Measurement Locations

One (1) long-term 24-hour noise measurement was conducted at the project site to obtain a baseline of the existing noise environment. Appendix A includes photos, the field sheet, and measured noise data. Exhibit E illustrates the location of the measurements.

5.3 SoundPLAN Noise Model (Operational Noise)

SoundPLAN (SP) acoustical modeling software was utilized to model future worst-case stationary noise impacts to the adjacent land uses. SP is capable of evaluating multiple stationary noise source impacts at various receiver locations. SP's software utilizes algorithms (based on the inverse square law and reference equipment noise level data) to calculate noise level projections. The software allows the user to input specific noise sources, spectral content, sound barriers, building placement, topography, and sensitive receptor locations.

The future worst-case noise level projections were modeled using referenced sound level data for the various stationary on-site sources (parking spaces, HVAC units). The model assumes that the site has 6

total outdoor parking spaces and 11 total HVAC units (1 for each townhome). HVAC units will be located in the private yard of each townhome unit.

Parking was modeled with a reference noise level of 0.5 vehicles per hour coming or going from the outdoor parking spots. MD estimated the project trip generation using the ITE Trip Generation Manual. According to the trip generation, the peak hour for the 28 total parking spaces will be 6 movements. Therefore, 0.5 vehicle movements per hour represents the loudest hour, assuming that half of all parking movements are from the six (6) outdoor spaces. The 11 HVAC units were each modeled as a point source located in the private yards. MD assumed that townhomes under 1,500 square feet will have 4-ton HVAC units and that townhomes more than 1,500 square feet will have 5-ton HVAC units. Each unit is thus assumed to have a sound power level of 72 to 78 dBA. Reference data is provided in Appendix C.

5.4 FHWA Roadway Construction Noise Model

The construction noise analysis utilizes the Federal Highway Administration (FHWA) Roadway Construction Noise Model (RNCM), 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 construction noise calculation output worksheet is in Appendix D.

Exhibit E

Measurement Locations

= Long-Term 24-hour Monitoring Location

6.0 Existing Noise Environment

One (1) long-term (24-hour) noise measurement was conducted at the project site to document the existing noise environment. The measurements include the Leq, Lmin, Lmax, and other statistical data (e.g., L2, L8). Noise measurement field sheets are provided in Appendix A.

6.1 Long-Term Noise Measurement Results

One (1) long-term (24-hour) noise measurement was performed on January 30-31, 2025. Exhibit E shows the measurement location. The results of the long-term noise measurement are presented in Table 3. The quietest nighttime hourly noise level is highlighted in green. See Appendix A for the measurement field sheets.

Table 3: NM1 Long-Term Measurement Noise Data (dBA)[1]

Date	Start	Stop	Leq	Lmax	Lmin	L2	L8	L25	L50	L90
1/30/2025	12:00 PM	1:00 PM	52.2	61.5	46.6	61.1	60	56.9	52.2	47.7
1/30/2025	1:00 PM	2:00 PM	53.5	75.4	44.4	74.5	71.9	64.5	53.5	46.2
1/30/2025	2:00 PM	3:00 PM	52.2	67.2	42.6	66.6	64.8	59.7	52.2	44.5
1/30/2025	3:00 PM	4:00 PM	50.4	68.4	41	67.7	65.5	59.4	50.4	42.9
1/30/2025	4:00 PM	5:00 PM	51.7	63.7	45.1	63.2	61.8	57.7	51.7	46.4
1/30/2025	5:00 PM	6:00 PM	52.6	72	45.7	71.2	68.9	62.3	52.6	47.1
1/30/2025	6:00 PM	7:00 PM	53.8	67.2	45.5	66.7	65.1	60.5	53.8	47.2
1/30/2025	7:00 PM	8:00 PM	53.3	71.1	47.3	70.4	68.3	62.2	53.3	48.5
1/30/2025	8:00 PM	9:00 PM	52.6	67	47.6	66.4	64.7	59.8	52.6	48.6
1/30/2025	9:00 PM	10:00 PM	52.2	57.1	48.7	56.9	56.3	54.7	52.2	49.4
1/30/2025	10:00 PM	11:00 PM	53.6	63.2	48	62.8	61.7	58.4	53.6	49.1
1/30/2025	11:00 PM	12:00 AM	50.3	62.3	45.7	61.8	60.4	56.3	50.3	46.6
1/31/2025	12:00 AM	1:00 AM	51.6	58	45.7	57.7	57	54.8	51.6	46.9
1/31/2025	1:00 AM	2:00 AM	50.1	60.3	44.9	59.9	58.7	55.2	50.1	45.9
1/31/2025	2:00 AM	3:00 AM	50.8	65.7	44.3	65.1	63.3	58.3	50.8	45.6
1/31/2025	3:00 AM	4:00 AM	51.1	59.3	46.8	59	58	55.2	51.1	47.7
1/31/2025	4:00 AM	5:00 AM	52.7	62.1	49.7	61.7	60.6	57.4	52.7	50.3
1/31/2025	5:00 AM	6:00 AM	55.1	60	51.3	59.8	59.2	57.6	55.1	52.1
1/31/2025	6:00 AM	7:00 AM	56.1	67.2	52.7	66.8	65.4	61.7	56.1	53.4
1/31/2025	7:00 AM	8:00 AM	56.5	70.8	47.5	70.2	68.5	63.7	56.5	49.3
1/31/2025	8:00 AM	9:00 AM	56.0	74.4	43.2	73.7	71.5	65.2	56	45.8
1/31/2025	9:00 AM	10:00 AM	56.6	78.8	39.7	77.9	75.2	67.7	56.6	43.1
1/31/2025	10:00 AM	11:00 AM	51.3	66.5	41.8	65.9	64.1	58.9	51.3	43.7
1/31/2025	11:00 AM	12:00 PM	51.3	71.5	44.4	70.7	68.3	61.4	51.3	45.8
Ldn:	58.9									

Notes:
[1.] Measurement Locations are indicated in Exhibit E.
[2.] The quietest nighttime hourly noise level is highlighted in green.

The data indicates that the hourly noise levels on site range between 50 to 57 dBA Leq. The quietest hourly noise level was 50 dBA Leq between 1 AM to 2 AM. The 24-hour noise level is 59 dBA Ldn, and thus falls within the normally acceptable range for multi-family uses according to the land use compatibility guidelines (see Exhibit D). The measured noise levels and field notes indicate that local traffic noise and residential noise are the main sources of noise impacting the project site. See Exhibit E for the measurement location.

7.0 Future Noise Environment Impacts and Mitigation

This assessment analyzes future noise impacts from the project and compares the results to the City's Noise Standards. The analysis details the estimated exterior noise levels associated with traffic from adjacent roadway sources. The project area is outside of any airport 65 dBA CNEL contours and therefore, there is no aircraft impact.

7.1 Future Exterior Noise

The exterior noise level off-site of the project will be impacted by transportation-related sources and stationary sources from the site. The following outlines the impacts associated with exterior noise levels.

7.1.1 Future Off-Site Traffic Noise Impact

The proposed project does not require a traffic study, therefore, a full traffic impact analysis is not provided in this assessment. However, 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 generate approximately 79 daily trips, per the ITE Trip Generation Manual. The project is not anticipated to double the traffic volumes along nearby roadways, and the noise impact due to project traffic will be less than significant.

7.1.2 Noise Impacts to Off-Site Receptors Due to Stationary Sources

Sensitive receptors that may be affected by project operational noise include existing residences directly east, west, and south of the project site. The worst-case stationary noise was modeled using SoundPLAN acoustical modeling software. Worst-case assumes that all 11 HVAC units are operating simultaneously and continuously and that there are 0.5 movements per parking space per hour.

Exhibit F shows the "Project-Only" noise levels and contours at the nearest sensitive receptors. A total of three (3) receptors were modeled to evaluate the proposed project's operational impact. A receptor is denoted by a yellow dot. All yellow dots represent either a property line or a sensitive receptor, such as a building facade. Receptors 1 through 3 represent residential uses. Receptor 2 is zoned as single-family residential (R-1), and Receptors 1 and 3 are zoned as multiple family residential (R-3).

Project-Only Levels

The project-only hourly noise levels range from 44 to 47 dBA Leq at the multi-family residential receptors and 45 dBA Leq at the single-family residential receptor. The project-only noise levels thus meet the nighttime noise level limit of 50 dBA Leq for multi-family zones and 45 dBA Leq for single-family zones.

Project Plus Ambient Operational Noise Levels

Table 4 demonstrates the project plus the ambient noise levels during nighttime conditions. Project plus ambient noise level projections are anticipated to be 51 to 53 dBA Leq during daytime operation. The change in noise level as a result of the project is anticipated to be up to 2 dBA.

Table 4: Worst-Case Predicted Daytime Operational Leq Noise Levels (dBA)

Receptor[1]	Existing Ambient Noise Level (dBA, Leq)[2]	Project Noise Level (dBA, Leq)[3]	Nighttime Exterior Noise Limit (dBA, Leq)	Total Combined Noise Level (dBA, Leq)	Change in Noise Level as Result of Project (dBA)
1	50	44	**50**	51	1
2	50	45	**45**	51	1
3	50	47	**50**	52	2

Notes:
1. Receptors 1 and 3 represent multi-family residential uses, and Receptor 2 represents single-family uses.
2. See Appendix A for the ambient noise measurement.
3. See Exhibit F for the operational noise level projections at said receptors.

Table 5 provides the characteristics associated with changes in noise levels.

Table 5: Change in Noise Level Characteristics

Changes in Intensity Level, dBA	Changes in Apparent Loudness
1	Not perceptible
3	Just perceptible
5	Clearly noticeable
10	Twice (or half) as loud

https://www.fhwa.dot.gov/environMent/noise/regulations_and_guidance/polguide/polguide02.cfm

It takes a change of 3 dB for the human ear to perceive a difference. Therefore, the change in noise level would be “Not Perceptible” at the residential receptors. Thus, the change in noise level will be less than significant. The project noise level will meet the City’s noise standards for residential uses, and the change in noise level will be imperceptible. Thus, the noise impact due to the project will be less than significant.

Exhibit F

Operational Noise Level Contours dBA CNEL

8.0 Construction Noise Impact

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. The construction noise and vibration level projections are provided in the sections below.

8.1 Construction Noise

The Environmental Protection Agency (EPA) has compiled data regarding the noise characteristics of typical construction activities. The data is presented in Table 6.

Table 6: Typical Construction Noise Levels[1]

Equipment Powered by Internal Combustion Engines

Type	Noise Levels (dBA) at 50 Feet
Earth Moving	
Compactors (Rollers)	73 - 76
Front Loaders	73 - 84
Backhoes	73 - 92
Tractors	75 - 95
Scrapers, Graders	78 - 92
Pavers	85 - 87
Trucks	81 - 94
Materials Handling	
Concrete Mixers	72 - 87
Concrete Pumps	81 - 83
Cranes (Movable)	72 - 86
Cranes (Derrick)	85 - 87
Stationary	
Pumps	68 - 71
Generators	71 - 83
Compressors	75 - 86

Impact Equipment

Type	Noise Levels (dBA) at 50 Feet
Saws	71 - 82
Vibrators	68 - 82

Notes:
[1] Referenced Noise Levels from the Environmental Protection Agency (EPA)

Construction is anticipated to occur during the permissible hours as described in the City's Municipal Code Section 9.68.120. The City does not have a defined significance threshold for construction noise; however, the FTA recommends a construction noise level threshold of 80 dBA Leq at residential uses. MD has applied the FTA threshold for construction noise to analyze the noise impact due to construction activities.

Construction noise will have a temporary or periodic increase in the ambient noise level above the existing noise level within the project's vicinity. Construction noise level projections are provided below.

Sensitive land uses surrounding the site include existing residential properties to the east, south, and west. These uses are an average of 115 feet away from construction activities and as close as 12 feet from construction activities.

CalEEMod methodology was utilized to determine the construction equipment. Typical operating cycles for these types of construction equipment may involve one or two minutes of full power operation followed by three to four minutes at lower power settings. Noise levels are in Table 7. A likely worst-case construction noise scenario assumes equipment operating as close as 12 feet and an average of 115 feet from the nearest sensitive receptor. Leq levels represent the average construction noise level during each phase.

Table 7: Construction Noise Levels at Existing Adjacent Residences

Phase	dBA Leq
Demo	77.0
Site Prep	73.9
Grading	75.0
Build	74.1
Paving	74.7
Arch Coating	64.4

Construction noise will range from 64 to 77 dBA Leq at the nearest sensitive receptors. Construction noise may temporarily or periodically increase the existing ambient noise level by up to 27 dBA Leq at surrounding uses. However, the noise due to construction will meet the FTA's recommended construction noise level limit of 80 dBA Leq, and construction will occur during the permissible hours. Thus, the impact is less than significant. See Appendix D.

8.2 Construction Vibration

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 vibratory roller. A vibratory roller has a vibration impact of 0.210 inches per second peak particle velocity (PPV) at 25 feet, which is 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:

$$PPV_{equipment} = PPV_{ref} (100/D_{rec})^{n}$$

Where: PPV_{ref} = reference PPV at 100ft.
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 in Table 8 (below) provides general thresholds and guidelines as to the vibration damage potential from vibratory impacts.

Table 8: Guideline Vibration Damage Potential Threshold Criteria

Structure and Condition	Maximum PPV (in/sec)	
	Transient Sources	Continuous/Frequent Intermittent Sources
Extremely fragile historic buildings, ruins, ancient monuments	0.12	0.08
Fragile buildings	0.2	0.1
Historic and some old buildings	0.5	0.25
Older residential structures	0.5	0.3
New residential structures	1.0	0.5
Modern industrial/commercial buildings	2.0	0.5

Source: Table 19, Transportation and Construction Vibration Guidance Manual, Caltrans, Sept. 2013.
Note: Transient sources create a single isolated vibration event, such as blasting or drop balls. Continuous/frequent intermittent sources include impact pile drivers, pogo-stick compactors, crack-and-seat equipment, vibratory pile drivers, and vibratory compaction equipment.

Table 9 gives approximate vibration levels for particular construction activities. This data provides a reasonable estimate for a wide range of soil conditions.

Table 9: Vibration Source Levels for Construction Equipment[1]

Equipment	Peak Particle Velocity (inches/second) at 25 feet	Approximate Vibration Level LV (dVB) at 25 feet
Pile driver (impact)	1.518 (upper range)	112
	0.644 (typical)	104
Pile driver (sonic)	0.734 upper range	105
	0.170 typical	93
Clam shovel drop (slurry wall)	0.202	94
Hydromill	0.008 in soil	66
(slurry wall)	0.017 in rock	75
Vibratory Roller	0.21	94
Hoe Ram	0.089	87
Large bulldozer	0.089	87
Caisson drill	0.089	87
Loaded trucks	0.076	86
Jackhammer	0.035	79
Small bulldozer	0.003	58

[1] Source: Transit Noise and Vibration Impact Assessment, Federal Transit Administration, May 2006.

All proposed construction is at least 12 feet from any existing structures. At a distance of 12 feet, a vibratory roller would yield a worst-case 0.471 PPV (in/sec) which will be perceptible but below any risk of damage (0.5 in/sec PPV is the threshold of new residential structures). The impact is less than significant, and no mitigation is required.

9.0 CEQA Analysis

The California Environmental Quality Act Guidelines establishes thresholds for noise impact analysis as presented below:

(a) Would the project result in the 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 Code, or applicable standards of other agencies?

Transportation Noise Impacts

The proposed project does not necessitate a traffic study; therefore, a comprehensive traffic impact analysis is not included in this assessment. However, the traffic noise impact would be considered significant if it increased the existing traffic noise level by 3 dB or more. Based on the ITE Trip Generation Manual, the project is expected to generate approximately 79 daily trips. It takes a change in noise level of 3 dB for the human ear to perceive a difference, which occurs with a doubling of traffic volume. The project is not anticipated to double the existing traffic volumes on adjacent roadways. Therefore, the change in noise level is not perceptible, and the impact is less than significant.

Stationary Noise Sources

Stationary noise impacts would be considered significant if they result in nighttime levels exceeding 45 dBA Leq at single-family residential zones and 50 dBA Leq at multi-family residential zones (see Section 4). The worst-case stationary noise scenario was modeled using SoundPLAN acoustical modeling software. Implementation of the proposed project will result in noise related to parking and HVAC units. The model assumes that the noise sources are operating simultaneously and continuously (worst-case scenario) when the noise will, in reality, be intermittent and lower in noise level. The project-only hourly noise levels range from 44 to 47 dBA Leq at the multi-family residential uses and 45 dBA Leq at the single-family residential uses. The project-only noise levels will be below the City's residential noise standard. Thus, the impact is less than significant.

Construction Noise and Vibration

Construction is anticipated to occur during the permissible hours as described in the City's Municipal Code Section 9.68.120. Construction noise is considered a short-term impact and would be considered significant if construction occurs outside the allowable times as described in the City's Municipal Code.

The demolition phase of on-site construction activities will generate the highest temporary noise levels. Typical operating cycles for these types of construction equipment may involve 1 or 2 minutes of full power operation followed by 3 or 4 minutes at lower power settings. Construction at the nearest residential uses will be up to 77 dBA Leq. The construction noise will occur during the allowable times. Thus, the impact is less than significant.

b) Generate excessive ground-borne vibration or ground-borne noise levels?

Construction vibration will be significant if vibration exceeds levels that would result in structural damage to existing buildings. At a distance of 12 feet, the nearest building to the project construction, a vibrational roller would yield a worst-case 0.471 PPV (in/sec), which will be perceptible, but is below the threshold of any risk of damage. Therefore, the impact is less than significant.

10.0 References

State of California General Plan Guidelines: 1998. Governor's Office of Planning and Research

City of Duarte: General Plan Noise Element.

City of Duarte: Municipal Code Chapter 9.68

Caltrans Noise Technical Manual. 2013

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

Appendix A:
Field Measurement Data

24-Hour Continuous Noise Measurement Datasheet - NM-1

Project Name:	Royal Oaks Townhomes
Project: #/Name:	0462-2024-027
Site Address/Location:	1404 Royal Oaks
Date:	01/31/2025
Field Tech/Engineer:	Jason Schuyler / Rachel Edelman

Site Observations:

Daytime temps in the 70'sF. Mostly sunny with winds 0-7MPH. Placed 5 ft from the property line in a tree 5'5" from the ground. Note that the location had a chicken coop within 10' of the NM.

Sound Meter:	XL2, NTI	**SN:**	A2A-08562-E0
Settings:	A-weighted, slow, 1-hr, 24-hour duration		
Site Id:	NM-1		

24-Hour Continuous Noise Measurement Datasheet - Cont. - NM-1

Project Name:	Royal Oaks Townhomes	**Calibrator:**	
Site Address/Location:	1404 Royal Oaks	**Cal Check: Pre-test:**	**Post Test:**
Site Id:	NM-1		

Figure 1: NM1

Figure 2: NM1

Figure 3: NM1

MD ACOUSTICS

24-Hour Continuous Noise Measurement Datasheet - Cont. - NM-1

Project Name:	Royal Oaks Townhomes	**Site Topo:**	Buildings 1-2 stories	**Day:** 1 of 1	
Site Address/Location:	1404 Royal Oaks		tall site	**Noise Source(s) w/ Distance:**	
Site Id:	NM-1	**Meteorological Cond.:**	72F Winds 0-5mph	road noise and residential noise	
		Ground Type:	Sandy soil and clay		

Table 1: Baseline Noise Measurement Summary

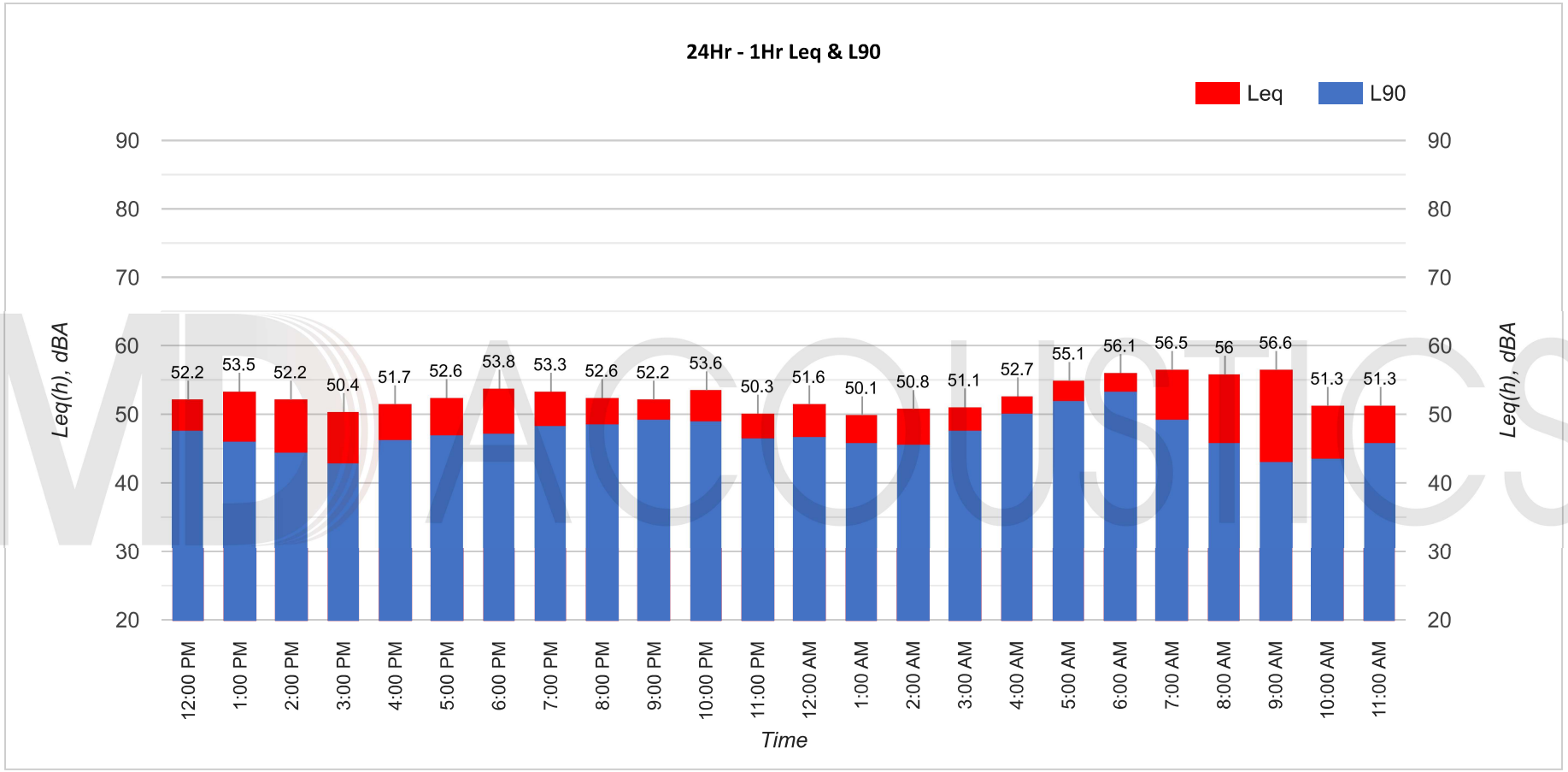
Date	Start	Stop	Leq	Lmax	Lmin	L2	L8	L25	L50	L90
1/30/2025	12:00 PM	1:00 PM	52.2	61.5	46.6	61.1	60	56.9	52.2	47.7
1/30/2025	1:00 PM	2:00 PM	53.5	75.4	44.4	74.5	71.9	64.5	53.5	46.2
1/30/2025	2:00 PM	3:00 PM	52.2	67.2	42.6	66.6	64.8	59.7	52.2	44.5
1/30/2025	3:00 PM	4:00 PM	50.4	68.4	41	67.7	65.5	59.4	50.4	42.9
1/30/2025	4:00 PM	5:00 PM	51.7	63.7	45.1	63.2	61.8	57.7	51.7	46.4
1/30/2025	5:00 PM	6:00 PM	52.6	72	45.7	71.2	68.9	62.3	52.6	47.1
1/30/2025	6:00 PM	7:00 PM	53.8	67.2	45.5	66.7	65.1	60.5	53.8	47.2
1/30/2025	7:00 PM	8:00 PM	53.3	71.1	47.3	70.4	68.3	62.2	53.3	48.5
1/30/2025	8:00 PM	9:00 PM	52.6	67	47.6	66.4	64.7	59.8	52.6	48.6
1/30/2025	9:00 PM	10:00 PM	52.2	57.1	48.7	56.9	56.3	54.7	52.2	49.4
1/30/2025	10:00 PM	11:00 PM	53.6	63.2	48	62.8	61.7	58.4	53.6	49.1
1/30/2025	11:00 PM	12:00 AM	50.3	62.3	45.7	61.8	60.4	56.3	50.3	46.6
1/31/2025	12:00 AM	1:00 AM	51.6	58	45.7	57.7	57	54.8	51.6	46.9
1/31/2025	1:00 AM	2:00 AM	50.1	60.3	44.9	59.9	58.7	55.2	50.1	45.9
1/31/2025	2:00 AM	3:00 AM	50.8	65.7	44.3	65.1	63.3	58.3	50.8	45.6
1/31/2025	3:00 AM	4:00 AM	51.1	59.3	46.8	59	58	55.2	51.1	47.7
1/31/2025	4:00 AM	5:00 AM	52.7	62.1	49.7	61.7	60.6	57.4	52.7	50.3
1/31/2025	5:00 AM	6:00 AM	55.1	60	51.3	59.8	59.2	57.6	55.1	52.1
1/31/2025	6:00 AM	7:00 AM	56.1	67.2	52.7	66.8	65.4	61.7	56.1	53.4
1/31/2025	7:00 AM	8:00 AM	56.5	70.8	47.5	70.2	68.5	63.7	56.5	49.3
1/31/2025	8:00 AM	9:00 AM	56.0	74.4	43.2	73.7	71.5	65.2	56	45.8
1/31/2025	9:00 AM	10:00 AM	56.6	78.8	39.7	77.9	75.2	67.7	56.6	43.1
1/31/2025	10:00 AM	11:00 AM	51.3	66.5	41.8	65.9	64.1	58.9	51.3	43.7
1/31/2025	11:00 AM	12:00 PM	51.3	71.5	44.4	70.7	68.3	61.4	51.3	45.8

	DNL	58.9

MD ACOUSTICS

24-Hour Continuous Noise Measurement Datasheet - Cont. - NM-1

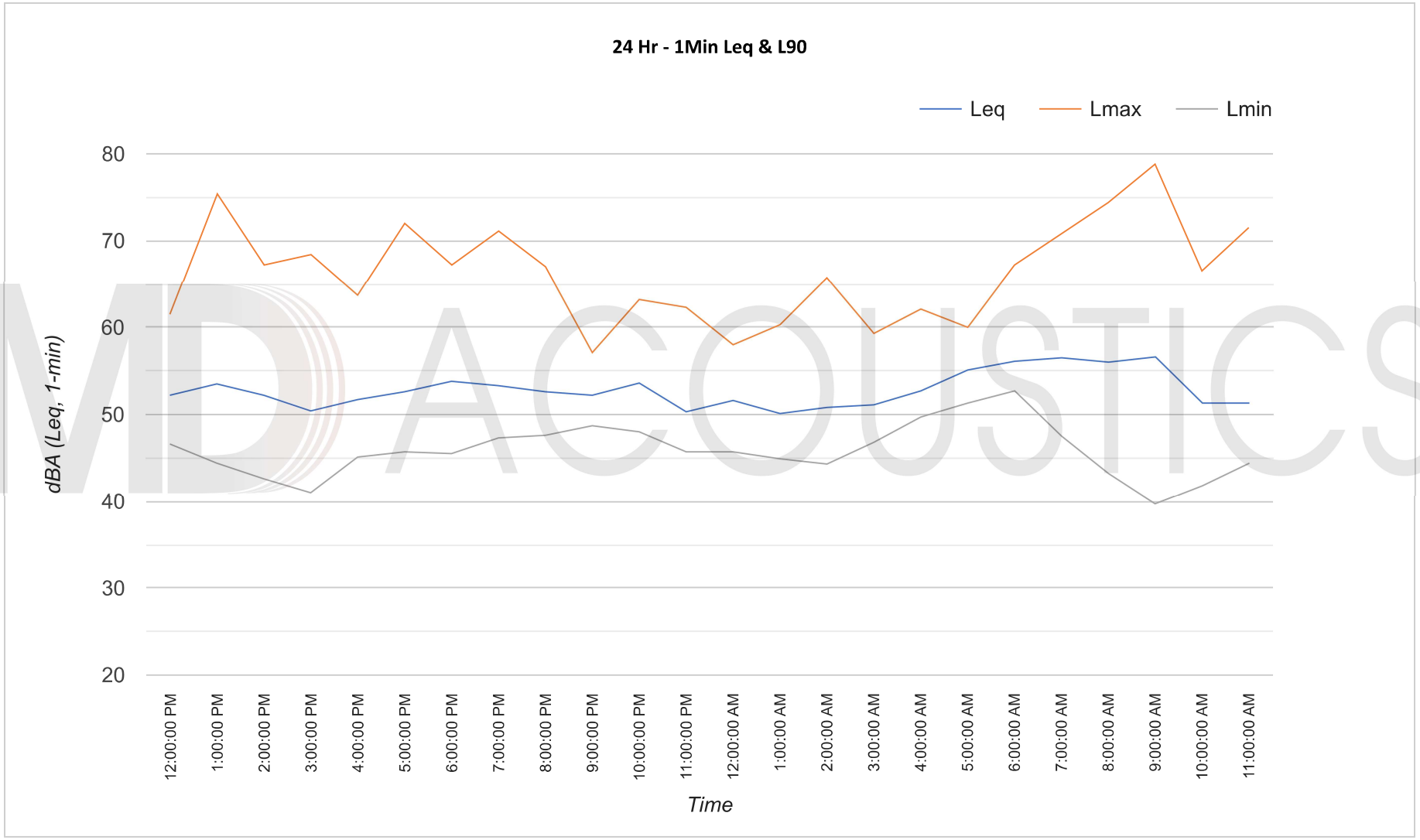
Project Name:	Royal Oaks Townhomes	**Site Topo:**	Buildings 1-2 stories	**Day:** 1 of 1	
Site Address/Location:	1404 Royal Oaks		tall site	**Noise Source(s) w/ Distance:**	
Site Id:	NM-1	**Meteorological Cond.:**	72F Winds 0-5mph	road noise and residential noise	
		Ground Type:	Sandy soil and clay		



MD ACOUSTICS

24-Hour Continuous Noise Measurement Datasheet - Cont. - NM-1

Project Name:	Royal Oaks Townhomes	**Site Topo:**	Buildings 1-2 stories	**Day:** 1 of 1	
Site Address/Location:	1404 Royal Oaks		tall site	**Noise Source(s) w/ Distance:**	
Site Id:	NM-1	**Meteorological Cond.:**	72F Winds 0-5mph	road noise and residential noise	
		Ground Type:	Sandy soil and clay		



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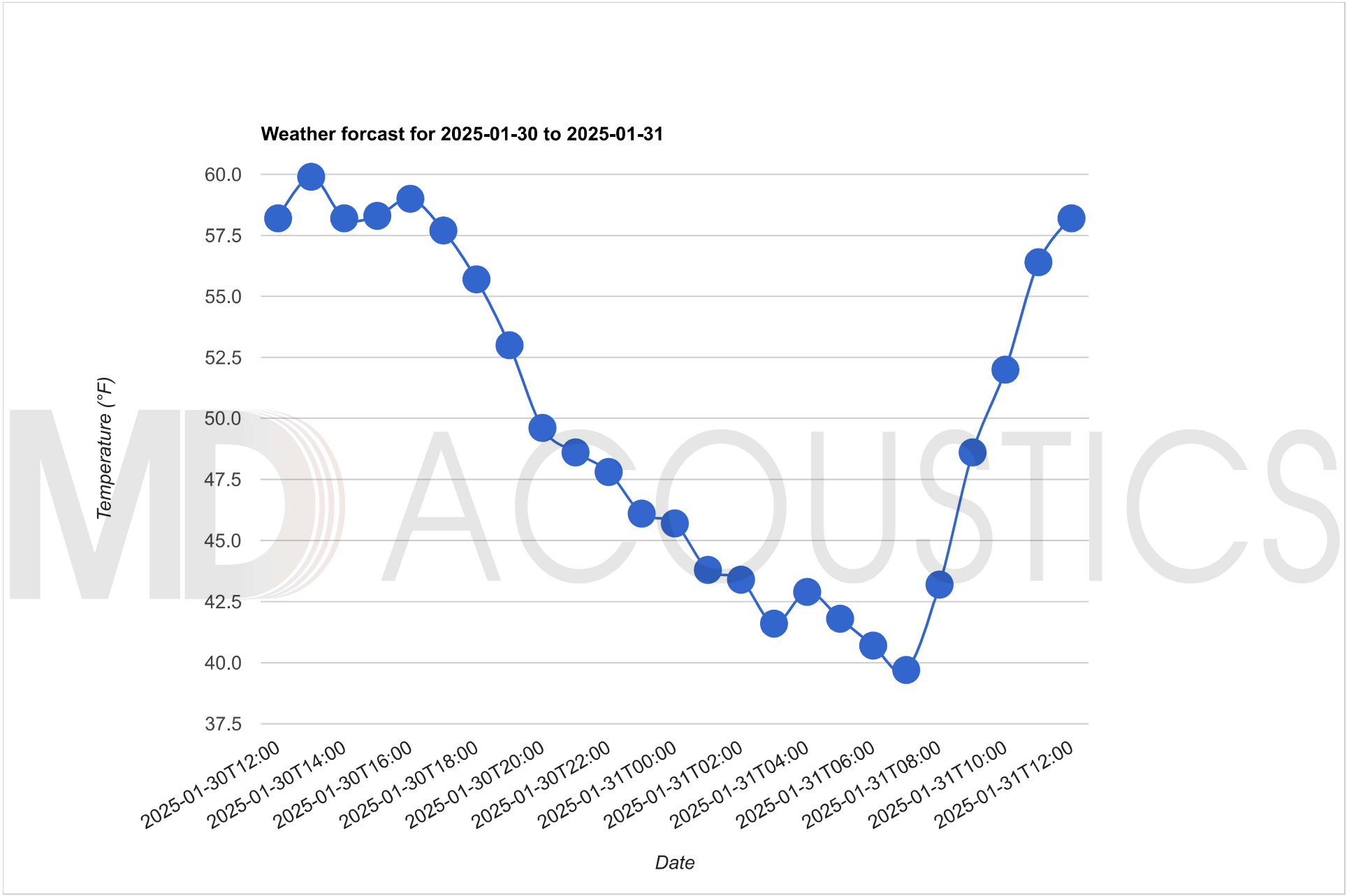

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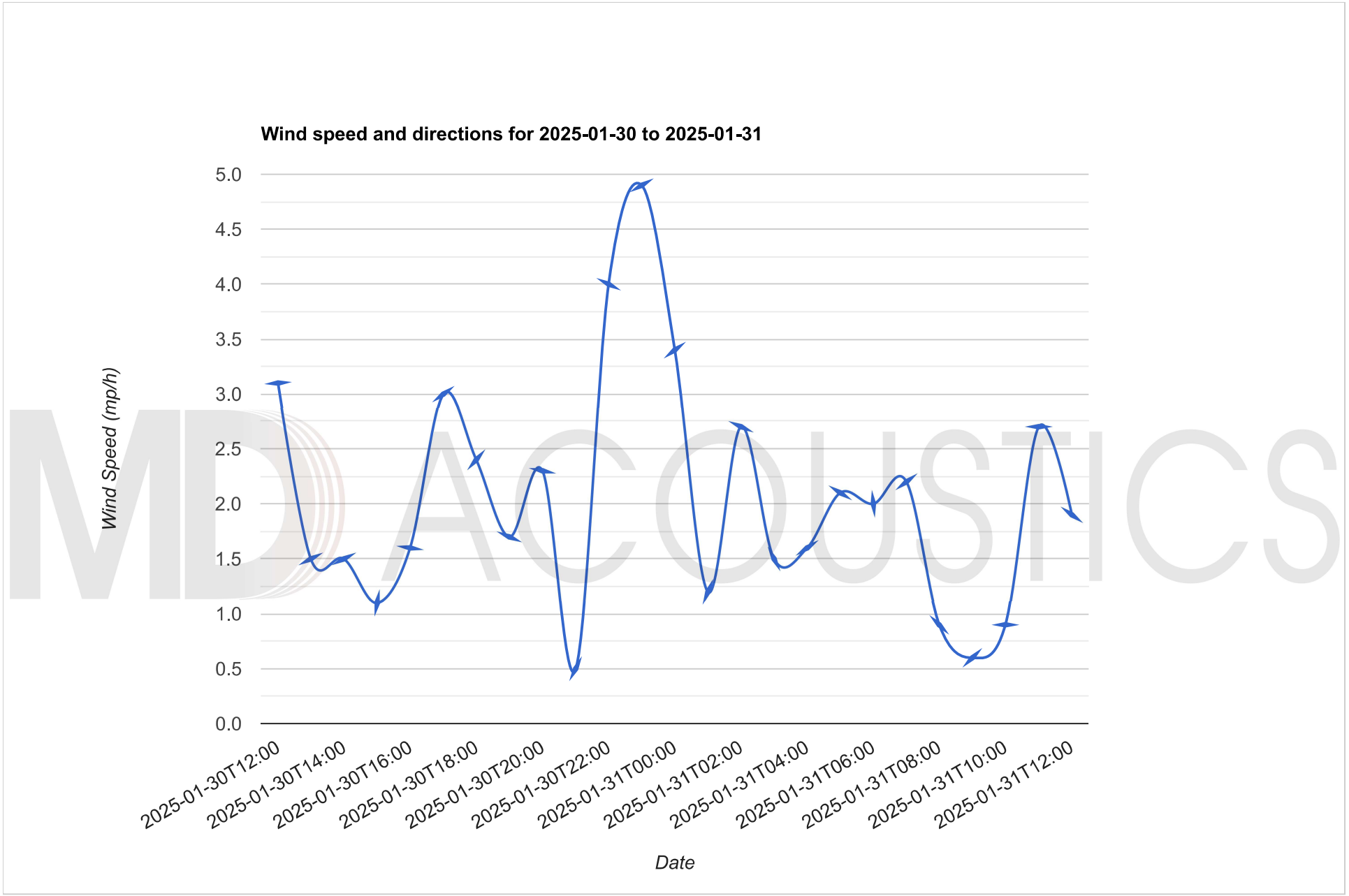

Source: Global Forecast System (GFS) weather forcast model

NM-1				
Date	**Time**	**Leq**	**Lmax**	**Lmin**
1/30/2025	12:00:00 PM	52.2	61.5	46.6
1/30/2025	1:00:00 PM	53.5	75.4	44.4
1/30/2025	2:00:00 PM	52.2	67.2	42.6
1/30/2025	3:00:00 PM	50.4	68.4	41
1/30/2025	4:00:00 PM	51.7	63.7	45.1
1/30/2025	5:00:00 PM	52.6	72	45.7
1/30/2025	6:00:00 PM	53.8	67.2	45.5
1/30/2025	7:00:00 PM	53.3	71.1	47.3
1/30/2025	8:00:00 PM	52.6	67	47.6
1/30/2025	9:00:00 PM	52.2	57.1	48.7
1/30/2025	10:00:00 PM	53.6	63.2	48
1/30/2025	11:00:00 PM	50.3	62.3	45.7
1/31/2025	12:00:00 AM	51.6	58	45.7
1/31/2025	1:00:00 AM	50.1	60.3	44.9
1/31/2025	2:00:00 AM	50.8	65.7	44.3
1/31/2025	3:00:00 AM	51.1	59.3	46.8
1/31/2025	4:00:00 AM	52.7	62.1	49.7
1/31/2025	5:00:00 AM	55.1	60	51.3
1/31/2025	6:00:00 AM	56.1	67.2	52.7
1/31/2025	7:00:00 AM	56.5	70.8	47.5
1/31/2025	8:00:00 AM	56.0	74.4	43.2
1/31/2025	9:00:00 AM	56.6	78.8	39.7
1/31/2025	10:00:00 AM	51.3	66.5	41.8
1/31/2025	11:00:00 AM	51.3	71.5	44.4

MD ACOUSTICS

Appendix B:

Traffic Noise Modeling Output

Proposed Land Use	Qty	Unit	Daily Trips (ADTs)		AM Peak Hour					PM Peak Hour				
			Rate	Trips	Rate	In:Out Split	Trips			Rate	In:Out Split	Trips		
							In	Out	Total			In	Out	Total
Single-Family Attached Housing (215)	11	DU	7.20	79	0.48	25:75	1	4	5	0.57	59:41	4	3	6
Total				**79**			**1**	**4**	**5**			**4**	**3**	**6**

ITE Trip Generation (11th Edition, 2021)
Dwelling Units

Appendix C:
SoundPLAN Inputs/Outputs

Duarte Royal Oak Townhomes
Contribution spectra - 001 - Duarte Royal Oak Townhomes: Outdoor SP

Source	Time slice	Sum	25Hz	31.5Hz	40Hz	50Hz	63Hz	80Hz	100Hz	125Hz	160Hz	200Hz	250Hz	315Hz	400Hz	500Hz	630Hz	800Hz	1kHz	1.25kHz	1.6kHz	2kHz	2.5kHz	3.15kHz	4kHz	5kHz	6.3kHz	8kHz	10kHz	12.5kHz	16kHz
		dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)
Receiver R1 Fl G Lr,lim dB(A) Leq,d 44.2 dB(A)																															
Auto Parking	Leq,d	40.6					25.1			34.9			25.5			31.1			33.6			34.4			30.9			22.1			3.2
HVAC	Leq,d	6.0	-33.6	-28.7	-26.1	-14.4	-10.9	-18.2	-10.4	-9.7	-11.9	-8.1	-9.0	-8.1	-8.1	-7.9	-4.4	-1.9	-6.7	-5.5	-3.6	-6.6	-5.4	-9.2	-9.2	-12.6	-14.7	-22.6	-31.7	-39.2	-50.4
HVAC	Leq,d	14.3	-27.7	-22.6	-19.6	-7.8	-4.2	-11.5	-3.9	-3.3	-5.6	-6.5	-7.7	-5.8	0.6	1.1	4.8	6.5	2.9	4.5	5.8	2.9	3.1	-1.1	-1.4	-5.1	-7.1	-14.9	-24.3	-32.2	-43.8
HVAC	Leq,d	10.6	-29.5	-24.4	-21.3	-9.3	-5.5	-12.7	-4.8	-4.1	-6.5	-8.5	-9.8	-2.0	-2.0	-2.1	1.5	2.7	-2.1	-0.7	0.6	-1.9	-1.7	-5.4	-5.4	-8.7	-10.5	-18.0	-26.3	-32.6	-42.0
HVAC	Leq,d	18.4	-25.1	-19.7	-16.3	-4.0	0.2	-6.7	1.7	2.7	0.7	-0.9	-1.9	-1.0	-1.0	-0.8	2.6	5.1	0.3	10.1	11.9	9.4	9.9	5.9	5.4	1.2	-2.0	-11.2	-20.8	-27.0	-35.3
HVAC	Leq,d	41.6	-10.1	-4.1	-0.1	12.9	17.9	11.9	21.3	23.2	22.2	22.5	22.6	24.5	25.6	26.6	30.6	33.0	29.2	31.2	32.6	30.5	31.5	28.4	29.2	26.9	26.5	20.9	15.0	11.8	6.3
HVAC	Leq,d	11.6	-27.1	-22.2	-19.4	-7.8	-4.2	-11.6	-3.8	-3.0	-5.2	-6.9	-7.9	-7.0	-1.9	-1.8	1.5	4.1	-0.7	0.9	2.3	-0.6	-0.2	-3.9	-4.1	-7.7	-10.1	-18.3	-27.8	-35.6	-47.2
HVAC	Leq,d	18.4	-21.4	-15.9	-12.4	0.0	4.3	-2.4	6.2	7.4	5.5	4.3	3.4	4.4	4.5	4.6	7.6	9.9	5.2	6.4	7.2	4.5	4.7	0.9	1.0	-2.0	-3.2	-9.8	-16.6	-21.0	-27.9
HVAC	Leq,d	18.0	-25.1	-19.8	-16.6	-4.4	-0.4	-7.3	0.9	1.7	-0.5	-2.3	-3.1	-2.3	-2.7	-2.9	0.7	2.7	-1.7	9.7	11.7	9.3	9.7	5.8	5.4	1.3	-1.8	-10.7	-19.7	-25.3	-33.2
HVAC	Leq,d	12.2	-29.4	-24.2	-21.2	-9.3	-5.5	-12.8	-5.0	-4.5	-7.0	-6.7	-8.0	-0.7	-0.9	-1.0	2.2	4.7	-0.1	1.2	2.9	0.2	0.7	-3.1	-3.1	-6.3	-7.9	-15.2	-23.4	-29.5	-38.6
HVAC	Leq,d	14.4	-28.3	-23.0	-19.9	-7.9	-4.0	-11.1	-3.2	-2.6	-5.1	-0.8	0.9	1.9	1.7	1.8	5.1	6.1	1.7	3.6	5.1	2.1	2.0	-2.2	-2.3	-6.2	-8.7	-17.2	-27.0	-35.4	-47.5
HVAC	Leq,d	4.5	-32.9	-28.0	-25.3	-13.6	-10.0	-17.4	-9.6	-8.8	-11.0	-12.6	-13.6	-12.7	-12.4	-12.4	-8.4	-3.7	-6.7	-5.5	-4.1	-7.0	-6.9	-10.8	-11.0	-14.5	-16.5	-24.6	-33.8	-41.5	-52.8
Receiver R2 Fl G Lr,lim dB(A) Leq,d 44.9 dB(A)																															
Auto Parking	Leq,d	29.1					17.4			24.7			13.0			18.0			21.0			22.3			18.7			8.0			-15.1
HVAC	Leq,d	35.8	-13.9	-7.9	-3.9	9.0	13.9	7.9	17.2	19.1	18.0	18.5	18.4	20.8	21.5	22.3	26.0	28.0	23.5	25.7	26.6	24.0	24.6	21.0	21.1	18.2	16.9	10.3	3.3	-0.9	-7.5
HVAC	Leq,d	29.4	-20.1	-14.8	-11.7	0.4	4.4	-2.6	5.5	6.3	3.9	3.0	11.9	13.8	14.6	16.1	19.9	21.5	17.3	19.1	20.5	18.1	18.6	14.8	16.6	13.3	11.6	4.1	-4.3	-10.7	-20.2
HVAC	Leq,d	16.8	-31.3	-26.2	-23.3	-11.5	-7.7	-15.0	-7.1	-6.4	-8.6	-9.9	-10.9	-2.4	-2.3	1.5	4.8	9.8	5.5	7.2	9.1	6.6	7.0	3.1	2.9	-0.9	-3.6	-12.5	-22.7	-30.7	-41.3
HVAC	Leq,d	10.3	-33.9	-28.9	-26.0	-14.2	-10.5	-17.8	-9.9	-9.1	-11.3	-12.6	-13.6	-12.7	-11.9	-11.6	-4.2	-2.8	-6.7	-5.2	-3.5	4.1	4.5	0.4	-0.1	-4.3	-7.6	-17.3	-28.3	-37.4	-49.0
HVAC	Leq,d	4.9	-35.0	-30.1	-27.4	-15.8	-12.2	-19.6	-11.7	-11.0	-13.2	-13.9	-14.9	-13.7	-11.9	-11.1	-7.2	-2.9	-7.5	-4.8	-3.0	-5.7	-5.5	-9.5	-9.7	-13.3	-15.4	-23.2	-32.3	-39.6	-50.6
HVAC	Leq,d	39.6	-12.9	-6.9	-3.0	12.3	17.2	11.2	21.7	23.5	22.3	22.9	22.8	24.6	25.3	26.0	29.6	31.6	27.6	29.6	30.5	27.9	28.4	24.5	24.6	21.5	20.1	13.4	6.1	1.5	-5.7
HVAC	Leq,d	5.9	-32.7	-27.6	-24.6	-12.8	-9.0	-16.3	-8.4	-7.6	-9.8	-10.8	-11.8	-10.9	-9.1	-9.0	-5.3	-3.8	-6.9	-5.1	-3.3	-5.6	-4.9	-8.5	-8.2	-9.7	-11.2	-18.7	-27.4	-34.3	-44.8
HVAC	Leq,d	5.0	-34.5	-29.6	-26.8	-15.1	-11.5	-18.9	-11.2	-10.5	-12.8	-13.7	-14.8	-13.6	-12.9	-12.0	-7.8	-5.8	-10.0	-5.9	-2.5	-4.8	-4.2	-7.6	-6.8	-10.0	-11.9	-19.6	-28.4	-35.5	-46.2
HVAC	Leq,d	5.9	-31.6	-26.5	-23.7	-11.9	-8.3	-15.7	-7.9	-7.3	-9.7	-10.6	-11.7	-10.8	-10.3	-9.5	-5.7	-3.8	-7.6	-5.8	-3.9	-6.2	-4.9	-6.6	-6.2	-9.2	-10.7	-17.9	-25.8	-31.7	-40.3
HVAC	Leq,d	41.1	-12.8	-6.8	-2.8	12.5	17.4	11.4	22.2	24.9	23.8	24.4	24.3	26.1	26.9	27.7	31.4	33.5	29.3	30.9	31.8	29.2	29.6	25.7	25.9	22.8	21.5	15.0	8.1	3.9	-3.0
HVAC	Leq,d	34.9	-14.9	-8.9	-4.9	8.0	12.9	6.9	16.2	18.0	16.9	17.4	17.3	19.5	20.3	21.0	25.0	26.9	23.0	24.9	25.8	23.2	23.8	20.0	20.1	17.1	15.9	9.3	2.5	-1.7	-8.2
Receiver R3 Fl G Lr,lim dB(A) Leq,d 47.2 dB(A)																															
Auto Parking	Leq,d	39.2					24.3			33.8			24.1			29.5			31.8			32.9			29.7			20.9			1.8
HVAC	Leq,d	9.0	-31.3	-26.2	-23.2	-11.3	-7.5	-14.8	-7.1	-6.6	-9.1	-10.2	-11.5	-10.7	-10.8	-2.8	0.4	1.5	-3.2	-1.2	0.2	-2.8	-2.9	-7.2	-7.6	-11.3	-13.4	-21.0	-29.3	-35.4	-44.7
HVAC	Leq,d	42.0	-12.5	-6.5	-2.5	10.5	16.6	10.6	19.9	22.0	21.0	20.7	21.0	23.2	24.4	25.4	30.6	34.0	30.0	31.9	33.4	31.3	32.2	29.0	29.7	27.3	26.5	20.3	13.6	9.4	2.3
HVAC	Leq,d	41.0	-10.5	-4.4	-0.5	12.5	17.5	11.5	20.9	22.9	21.8	22.1	22.1	24.1	25.2	26.2	30.2	32.6	28.6	30.6	32.0	29.9	30.9	27.7	28.6	26.4	25.9	20.3	14.4	11.3	5.7
HVAC	Leq,d	37.4	-14.4	-8.4	-4.4	8.6	13.6	7.6	16.9	18.9	17.8	17.3	17.4	19.3	20.9	21.9	25.9	29.1	25.0	27.2	28.7	26.6	27.5	24.3	25.0	22.5	21.8	15.8	9.3	5.4	-1.2
HVAC	Leq,d	8.3	-30.4	-25.2	-22.2	-10.2	-6.5	-13.7	-5.9	-5.4	-7.9	-9.5	-10.7	-10.0	-10.0	-5.2	-1.2	0.1	-4.4	-2.7	-1.1	-3.6	-3.1	-6.8	-6.6	-9.6	-11.2	-18.3	-26.4	-32.3	-41.9

Duarte Royal Oak Townhomes
Contribution spectra - 001 - Duarte Royal Oak Townhomes: Outdoor SP

Source	Time slice	Sum	25Hz	31.5Hz	40Hz	50Hz	63Hz	80Hz	100Hz	125Hz	160Hz	200Hz	250Hz	315Hz	400Hz	500Hz	630Hz	800Hz	1kHz	1.25kHz	1.6kHz	2kHz	2.5kHz	3.15kHz	4kHz	5kHz	6.3kHz	8kHz	10kHz	12.5kHz	16kHz
		dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)
HVAC	Leq,d	11.4	-26.2	-21.1	-18.1	-6.1	-2.4	-9.6	-1.8	-1.2	-3.6	-5.0	-6.2	-5.4	-5.6	-4.0	-0.9	2.3	-2.1	-0.2	2.7	0.0	0.4	-2.7	-2.6	-5.9	-7.7	-15.4	-24.2	-31.3	-42.1
HVAC	Leq,d	5.2	-31.8	-26.9	-24.1	-12.4	-8.9	-16.3	-8.5	-7.9	-10.2	-11.6	-12.7	-11.8	-11.8	-11.4	-5.6	-3.7	-7.9	-5.9	-3.9	-6.3	-5.7	-9.4	-9.3	-12.5	-14.0	-21.6	-30.3	-37.2	-47.5
HVAC	Leq,d	28.7	-22.2	-16.6	-13.0	-0.4	4.0	-2.5	6.2	7.6	5.9	4.6	3.9	5.0	10.9	11.8	15.5	19.9	15.7	19.3	21.2	19.0	19.7	16.3	16.6	13.6	12.0	4.7	-3.7	-10.2	-20.1
HVAC	Leq,d	39.7	-14.0	-8.0	-4.0	9.0	14.0	8.0	17.4	19.3	18.3	20.6	20.7	22.7	23.8	24.8	28.8	31.4	27.4	29.4	30.8	28.8	29.7	26.5	27.4	25.1	24.6	18.9	12.9	9.5	3.7
HVAC	Leq,d	17.2	-21.4	-16.2	-13.0	-0.9	3.1	-3.9	4.1	4.8	2.4	3.0	2.2	3.4	3.1	2.9	5.8	7.8	3.3	5.3	7.0	4.7	5.4	1.8	2.2	-0.8	-2.2	-9.1	-16.8	-22.3	-30.9
HVAC	Leq,d	8.8	-30.9	-25.7	-22.6	-10.6	-6.7	-13.9	-6.1	-5.5	-7.9	-9.4	-6.5	-5.9	-6.2	-3.4	-0.2	0.7	-4.0	-2.2	-0.8	-3.8	-3.7	-7.6	-7.7	-11.1	-12.9	-20.2	-28.4	-34.5	-44.0

Source	Source type	Leq,d dB(A)	
Receiver R1 Fl G Lr,lim dB(A) Leq,d 44.2 dB(A)			
HVAC	Point	41.6	
Auto Parking	PLot	40.6	
HVAC	Point	18.4	
HVAC	Point	18.4	
HVAC	Point	18.0	
HVAC	Point	14.4	
HVAC	Point	14.3	
HVAC	Point	12.2	
HVAC	Point	11.6	
HVAC	Point	10.6	
HVAC	Point	6.0	
HVAC	Point	4.5	
Receiver R2 Fl G Lr,lim dB(A) Leq,d 44.9 dB(A)			
HVAC	Point	41.1	
HVAC	Point	39.6	
HVAC	Point	35.8	
HVAC	Point	34.9	
HVAC	Point	29.4	
Auto Parking	PLot	29.1	
HVAC	Point	16.8	
HVAC	Point	10.3	
HVAC	Point	5.9	
HVAC	Point	5.9	
HVAC	Point	5.0	
HVAC	Point	4.9	
Receiver R3 Fl G Lr,lim dB(A) Leq,d 47.2 dB(A)			
HVAC	Point	42.0	
HVAC	Point	41.0	
HVAC	Point	39.7	
Auto Parking	PLot	39.2	
HVAC	Point	37.4	
HVAC	Point	28.7	
HVAC	Point	17.2	
HVAC	Point	11.4	
HVAC	Point	9.0	
HVAC	Point	8.8	
HVAC	Point	8.3	
HVAC	Point	5.2	

Duarte Royal Oak Townhomes
Octave spectra of the sources in dB(A) - 001 - Duarte Royal Oak Townhomes: Outdoor SP

Name	Source type	l or A	Li	Rw	L'w	Lw	KI	KT	DO-Wall	Emission spectrum	63Hz	125Hz	250Hz	500Hz	1kHz	2kHz	4kHz	8kHz	16kHz	
		m,m²	dB(A)	dB	dB(A)	dB(A)	dB	dB	dB		dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	
Auto Parking	PLot	804.06			55.6	84.7	0.0	0.0	0	Typical spectrum	68.0	79.6	72.1	76.6	76.7	77.1	74.4	68.2	55.4	
HVAC	Point				72.0	72.0	0.0	0.0	0	HVAC: 67.7dB @ 3ft - Carrier 50TFQ0006 -	48.3	57.1	59.9	64.7	66.4	66.2	63.2	58.8	47.1	
HVAC	Point				78.0	78.0	0.0	0.0	0	HVAC: 67.7dB @ 3ft - Carrier 50TFQ0006 -	54.3	63.1	65.9	70.7	72.4	72.2	69.2	64.8	53.1	
HVAC	Point				72.0	72.0	0.0	0.0	0	HVAC: 67.7dB @ 3ft - Carrier 50TFQ0006 -	48.3	57.1	59.9	64.7	66.4	66.2	63.2	58.8	47.1	
HVAC	Point				72.0	72.0	0.0	0.0	0	HVAC: 67.7dB @ 3ft - Carrier 50TFQ0006 -	48.3	57.1	59.9	64.7	66.4	66.2	63.2	58.8	47.1	
HVAC	Point				72.0	72.0	0.0	0.0	0	HVAC: 67.7dB @ 3ft - Carrier 50TFQ0006 -	48.3	57.1	59.9	64.7	66.4	66.2	63.2	58.8	47.1	
HVAC	Point				78.0	78.0	0.0	0.0	0	HVAC: 67.7dB @ 3ft - Carrier 50TFQ0006 -	54.3	63.1	65.9	70.7	72.4	72.2	69.2	64.8	53.1	
HVAC	Point				72.0	72.0	0.0	0.0	0	HVAC: 67.7dB @ 3ft - Carrier 50TFQ0006 -	48.3	57.1	59.9	64.7	66.4	66.2	63.2	58.8	47.1	
HVAC	Point				72.0	72.0	0.0	0.0	0	HVAC: 67.7dB @ 3ft - Carrier 50TFQ0006 -	48.3	57.1	59.9	64.7	66.4	66.2	63.2	58.8	47.1	
HVAC	Point				72.0	72.0	0.0	0.0	0	HVAC: 67.7dB @ 3ft - Carrier 50TFQ0006 -	48.3	57.1	59.9	64.7	66.4	66.2	63.2	58.8	47.1	
HVAC	Point				78.0	78.0	0.0	0.0	0	HVAC: 67.7dB @ 3ft - Carrier 50TFQ0006 -	54.3	63.1	65.9	70.7	72.4	72.2	69.2	64.8	53.1	
HVAC	Point				72.0	72.0	0.0	0.0	0	HVAC: 67.7dB @ 3ft - Carrier 50TFQ0006 -	48.3	57.1	59.9	64.7	66.4	66.2	63.2	58.8	47.1	

Appendix D:

Construction Noise Modeling Output

Receptor - Residences 12 ft 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
DEMO									
Excavator	0	81	**12**	**115**	40	**0.66**	0.40	0.0	0.0
Dozer	1	82	12	115	40	0.66	0.40	98.5	68.4
Concrete Saw	1	90	12	115	20	0.66	0.20	106.5	73.4
Tractor	2	84	12	115	40	0.66	0.40	100.5	70.4
							Log Sum	106.5	77.0
SITE PREP									
Grader	1	85	12	115	40	0.66	0.40	101.5	71.4
Tractor	1	84	12	115	40	0.66	0.40	100.5	70.4
Dozer	0	82	12	115	40	0.66	0.40	0.0	0.0
Scraper	0	84	12	115	40	0.66	0.40	0.0	0.0
							Log Sum	101.5	73.9
GRADE									
Dozer	1	82	12	115	40	0.66	0.40	98.5	68.4
Tractor	1	84	12	115	40	0.66	0.40	100.5	70.4
Grader	1	85	12	115	40	0.66	0.40	101.5	71.4
Excavator	0	81	12	115	40	0.66	0.40	0.0	0.0
Scraper	0	84	12	115	40	0.66	0.40	0.0	0.0
								101.5	75.0
BUILD									
Crane	1	81	12	115	16	0.66	0.16	97.5	63.4
Man lift	2	75	12	115	20	0.66	0.20	91.5	58.4
Tractor	2	84	12	115	40	0.66	0.40	100.5	70.4
Welder/Torch	0	74	12	115	40	0.66	0.40	0.0	0.0
Generator	0	81	12	115	50	0.66	0.50	0.0	0.0
								100.5	74.1
PAVE									
Paver	1	77	12	115	50	0.66	0.50	93.5	64.4
Concrete Mixer Truck	4	79	12	115	40	0.66	0.40	95.5	65.4
Roller	1	80	12	115	20	0.66	0.20	96.5	63.4
Tractor	1	84	12	115	40	0.66	0.40	100.5	70.4

Compactor (ground)	0	83	12	115	20	0.66	0.20	0.0	0.0
								100.5	74.7
ARCH COAT									
Compressor (air)	1	78	12	115	40	0.66	0.40	94.5	64.4
								94.5	64.4

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

VIBRATION LEVEL IMPACT

Project:	Royal Oaks Townhomes	Date: 2/17/25
Source:	Vibratory Roller	
Scenario:	Unmitigated	
Location:	East residential buildings	
Address:	Royal Oaks Drive, Duarte City	

PPV = PPVref(25/D)^n (in/sec)

DATA INPUT

Equipment = Type	1	Vibratory Roller	INPUT SECTION IN BLUE
PPVref =	0.21	Reference PPV (in/sec) at 25 ft.	
D =	12.00	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 =	**0.471**	IN/SEC	OUTPUT IN RED

Appendix H
Tribal Consultation Communications

City of Duarte
1600 Huntington Drive, Duarte, CA 91010 | Tel (626) 357-7931 | Fax (626) 358-0018 | accessduarte.com

February 24, 2025

Cahuilla Band of Indians
52701 CA Highway 371
Anza, CA, 92539

Attn: BobbyRay Esparza, Cultural Director
Erica Schenk, Chairperson
Anthony Madrigal, Tribal Historic Preservation Officer

Subject: **SB 18 Consultation Request for the 1404 Royal Oaks Project, City of Duarte, Los Angeles County, California.**

Dear Tribal Representatives,

The City of Duarte (City) is commencing its SB 18 consultation process for the 1404 Royal Oaks Project (Project). The Project site is located at 1404 and 1414 Royal Oaks Drive in the City of Duarte on Assessor's Parcel Numbers (APNs) 8530-004-059 and -060. The site is approximately 0.8-acres and is currently developed with two single-family residences totaling approximately 4,400 square feet and two detached structures. An aerial map of the Project site is provided as Attachment 1.

The Project involves a General Plan Amendment to Medium Density Residential, a Zone Change to R-3 Multiple Family Residential Medium Density, a Tentative Tract Map to create a subdivision for condominium purposes, and Site Plan and Design Review approval. The Project proposes to remove existing on-site improvements, with the exception of two of the three mature Coast Live Oak trees which would be protected in place, and construct 11 two-story attached residential townhomes in five buildings. Each building would contain two to three dwelling units and have a maximum height of 31 feet, seven inches. Each townhome would consist of three bedrooms and range in size from 1,341 to 1,594 square feet. Additional improvements include landscaping, site access and parking, and connections to existing utilities infrastructure in the site vicinity.

The City is requesting consultation under Senate Bill 18 (Chapter 905, Statutes of 2004) which requires local governments to consult with tribes prior to making certain planning decisions and requires consultation and notice for a general and specific plan adoption or amendment in order to preserve, or mitigate impacts to, cultural places that may be affected. The Native American Heritage Commission (NAHC) provided us with a list of

tribal entities and individuals who have requested to be placed on the SB 18 consultation list, including your organization.

A Sacred Lands File (SLF) search was conducted through the NAHC and results were positive.

Please consider this letter as the initiation of the SB 18 processes. Pursuant to Government Code 65352.3, your organization has 90 days upon receipt of this letter to provide a request for SB 18 consultation.

Your comments are important to the City of Duarte as we move forward with this Project. In your response, please identify a primary point of contact for the Tribe should consultation be desired. If you have any questions, or require additional information, please contact me at snash@accessduarte.com or (626) 357-7931 ext. 239. Thank you for your assistance.

Sincerely,

Scott Nash
Associate Planner
City of Duarte
1600 Huntington Drive
Duarte, CA 91010

Attachments
1. Aerial of Existing Site

City of Duarte
1600 Huntington Drive, Duarte, CA 91010 | Tel (626) 357-7931 | Fax (626) 358-0018 | accessduarte.com

February 24, 2025

Gabrieleno Band of Mission Indians - Kizh Nation
P.O. Box 393
Covina, CA, 91723

Attn: Andrew Salas, Chairperson
Christina Swindall Martinez, Secretary

Subject: **CEQA and SB18 Consultation Request for the 1404 Royal Oaks Project, City of Duarte, Los Angeles County, California.**

Dear Tribal Representative,

The City of Duarte (City) is commencing its CEQA and Senate Bill (SB) 18 consultation process for the 1404 Royal Oaks Project (Project). The Project site is located at 1404 and 1414 Royal Oaks Drive in the City of Duarte on Assessor's Parcel Numbers (APNs) 8530-004-059 and -060. The site is approximately 0.8-acres and is currently developed with two single-family residences totaling approximately 4,400 square feet and two detached structures. An aerial map of the Project site is provided as Attachment 1.

The Project involves a General Plan Amendment to Medium Density Residential, a Zone Change to R-3 Multiple Family Residential Medium Density, a Tentative Tract Map to create a subdivision for condominium purposes, and Site Plan and Design Review approval. The Project proposes to remove existing on-site improvements, with the exception of two of the three mature Coast Live Oak trees which would be protected in place, and construct 11 two-story attached residential townhomes in five buildings. Each building would contain two to three dwelling units and have a maximum height of 31 feet, seven inches. Each townhome would consist of three bedrooms and range in size from 1,341 to 1,594 square feet. Additional improvements include landscaping, site access and parking, and connections to existing utilities infrastructure in the site vicinity.

The proposed Project must comply with California Public Resources Code § 21080.3.1 (Assembly Bill [AB] 52 of 2014), which requires local governments to conduct meaningful consultation with California Native American tribes that have requested to be notified by lead agencies of proposed projects in the geographic area with which the tribe is traditionally and culturally affiliated. You are receiving this letter because you appear on the AB 52 list and wish to be contacted for CEQA projects.

Additionally, the City is requesting consultation under Senate Bill 18 (Chapter 905, Statutes of 2004) which requires local governments to consult with tribes prior to making certain planning decisions and requires consultation and notice for a general and specific plan adoption or amendment in order to preserve, or mitigate impacts to, cultural places that may be affected. The Native American Heritage Commission (NAHC) provided us with a list of tribal entities and individuals who have requested to be placed on the SB 18 consultation list, including your organization.

A Sacred Lands File (SLF) search was conducted through the NAHC and results were positive.

Please consider this letter as the initiation of the AB 52 and SB 18 processes. Pursuant to Public Resources Code Section 21080.3.1(d), your organization has 30 days upon receipt of this letter to submit a written request for AB 52 consultation on the Project to the City of Duarte. Pursuant to Government Code 65352.3, your organization has 90 days upon receipt of this letter to provide a request for SB 18 consultation. However, we respectfully ask that requests for SB 18 consultation also be provided within 30 days, if possible.

Your comments are important to the City of Duarte as we move forward with this Project. In your response, please identify a primary point of contact for the Tribe should consultation be desired. If you have any questions, or require additional information, please contact me at snash@accessduarte.com or (626) 357-7931 ext. 239. Thank you for your assistance.

Sincerely,

Scott Nash
Associate Planner
City of Duarte
1600 Huntington Drive
Duarte, CA 91010

Attachments
1. Aerial of Existing Site

City of Duarte
1600 Huntington Drive, Duarte, CA 91010 | Tel (626) 357-7931 | Fax (626) 358-0018 | accessduarte.com

February 24, 2025

Gabrieleno/Tongva San Gabriel Band of Mission Indians
Anthony Morales, Chairperson
P.O. Box 693
San Gabriel, CA, 91778

Subject: **SB 18 Consultation Request for the 1404 Royal Oaks Project, City of Duarte, Los Angeles County, California.**

Dear Chairperson Morales,

The City of Duarte (City) is commencing its SB 18 consultation process for the 1404 Royal Oaks Project (Project). The Project site is located at 1404 and 1414 Royal Oaks Drive in the City of Duarte on Assessor's Parcel Numbers (APNs) 8530-004-059 and -060. The site is approximately 0.8-acres and is currently developed with two single-family residences totaling approximately 4,400 square feet and two detached structures. An aerial map of the Project site is provided as Attachment 1.

The Project involves a General Plan Amendment to Medium Density Residential, a Zone Change to R-3 Multiple Family Residential Medium Density, a Tentative Tract Map to create a subdivision for condominium purposes, and Site Plan and Design Review approval. The Project proposes to remove existing on-site improvements, with the exception of two of the three mature Coast Live Oak trees which would be protected in place, and construct 11 two-story attached residential townhomes in five buildings. Each building would contain two to three dwelling units and have a maximum height of 31 feet, seven inches. Each townhome would consist of three bedrooms and range in size from 1,341 to 1,594 square feet. Additional improvements include landscaping, site access and parking, and connections to existing utilities infrastructure in the site vicinity.

The City is requesting consultation under Senate Bill 18 (Chapter 905, Statutes of 2004) which requires local governments to consult with tribes prior to making certain planning decisions and requires consultation and notice for a general and specific plan adoption or amendment in order to preserve, or mitigate impacts to, cultural places that may be affected. The Native American Heritage Commission (NAHC) provided us with a list of tribal entities and individuals who have requested to be placed on the SB 18 consultation list, including your organization.

A Sacred Lands File (SLF) search was conducted through the NAHC and results were positive.

Please consider this letter as the initiation of the SB 18 processes. Pursuant to Government Code 65352.3, your organization has 90 days upon receipt of this letter to provide a request for SB 18 consultation.

Your comments are important to the City of Duarte as we move forward with this Project. In your response, please identify a primary point of contact for the Tribe should consultation be desired. If you have any questions, or require additional information, please contact me at snash@accessduarte.com or (626) 357-7931 ext. 239. Thank you for your assistance.

Sincerely,

Scott Nash
Associate Planner
City of Duarte
1600 Huntington Drive
Duarte, CA 91010

Attachments
1. Aerial of Existing Site

City of Duarte
1600 Huntington Drive, Duarte, CA 91010 | Tel (626) 357-7931 | Fax (626) 358-0018 | accessduarte.com

February 24, 2025

Gabrielino Tongva Indians of California Tribal Council
Christina Conley, Cultural Resource Administrator
P.O. Box 941078
Simi Valley, CA, 93094

Subject: **SB 18 Consultation Request for the 1404 Royal Oaks Project, City of Duarte, Los Angeles County, California.**

Dear Cultural Resource Administrator Conley,

The City of Duarte (City) is commencing its SB 18 consultation process for the 1404 Royal Oaks Project (Project). The Project site is located at 1404 and 1414 Royal Oaks Drive in the City of Duarte on Assessor's Parcel Numbers (APNs) 8530-004-059 and -060. The site is approximately 0.8-acres and is currently developed with two single-family residences totaling approximately 4,400 square feet and two detached structures. An aerial map of the Project site is provided as Attachment 1.

The Project involves a General Plan Amendment to Medium Density Residential, a Zone Change to R-3 Multiple Family Residential Medium Density, a Tentative Tract Map to create a subdivision for condominium purposes, and Site Plan and Design Review approval. The Project proposes to remove existing on-site improvements, with the exception of two of the three mature Coast Live Oak trees which would be protected in place, and construct 11 two-story attached residential townhomes in five buildings. Each building would contain two to three dwelling units and have a maximum height of 31 feet, seven inches. Each townhome would consist of three bedrooms and range in size from 1,341 to 1,594 square feet. Additional improvements include landscaping, site access and parking, and connections to existing utilities infrastructure in the site vicinity.

The City is requesting consultation under Senate Bill 18 (Chapter 905, Statutes of 2004) which requires local governments to consult with tribes prior to making certain planning decisions and requires consultation and notice for a general and specific plan adoption or amendment in order to preserve, or mitigate impacts to, cultural places that may be affected. The Native American Heritage Commission (NAHC) provided us with a list of tribal entities and individuals who have requested to be placed on the SB 18 consultation list, including your organization.

A Sacred Lands File (SLF) search was conducted through the NAHC and results were positive.

Please consider this letter as the initiation of the SB 18 processes. Pursuant to Government Code 65352.3, your organization has 90 days upon receipt of this letter to provide a request for SB 18 consultation.

Your comments are important to the City of Duarte as we move forward with this Project. In your response, please identify a primary point of contact for the Tribe should consultation be desired. If you have any questions, or require additional information, please contact me at snash@accessduarte.com or (626) 357-7931 ext. 239. Thank you for your assistance.

Sincerely,

Scott Nash
Associate Planner
City of Duarte
1600 Huntington Drive
Duarte, CA 91010

Attachments
1. Aerial of Existing Site

City of Duarte
1600 Huntington Drive, Duarte, CA 91010 | Tel (626) 357-7931 | Fax (626) 358-0018 | accessduarte.com

February 24, 2025

Gabrielino Tongva Indians of California Tribal Council
Robert Dorame, Chairperson
P.O. Box 490
Bellflower, CA, 90707

Subject: **SB 18 Consultation Request for the 1404 Royal Oaks Project, City of Duarte, Los Angeles County, California.**

Dear Chairperson Dorame,

The City of Duarte (City) is commencing its SB 18 consultation process for the 1404 Royal Oaks Project (Project). The Project site is located at 1404 and 1414 Royal Oaks Drive in the City of Duarte on Assessor's Parcel Numbers (APNs) 8530-004-059 and -060. The site is approximately 0.8-acres and is currently developed with two single-family residences totaling approximately 4,400 square feet and two detached structures. An aerial map of the Project site is provided as Attachment 1.

The Project involves a General Plan Amendment to Medium Density Residential, a Zone Change to R-3 Multiple Family Residential Medium Density, a Tentative Tract Map to create a subdivision for condominium purposes, and Site Plan and Design Review approval. The Project proposes to remove existing on-site improvements, with the exception of two of the three mature Coast Live Oak trees which would be protected in place, and construct 11 two-story attached residential townhomes in five buildings. Each building would contain two to three dwelling units and have a maximum height of 31 feet, seven inches. Each townhome would consist of three bedrooms and range in size from 1,341 to 1,594 square feet. Additional improvements include landscaping, site access and parking, and connections to existing utilities infrastructure in the site vicinity.

The City is requesting consultation under Senate Bill 18 (Chapter 905, Statutes of 2004) which requires local governments to consult with tribes prior to making certain planning decisions and requires consultation and notice for a general and specific plan adoption or amendment in order to preserve, or mitigate impacts to, cultural places that may be affected. The Native American Heritage Commission (NAHC) provided us with a list of tribal entities and individuals who have requested to be placed on the SB 18 consultation list, including your organization.

A Sacred Lands File (SLF) search was conducted through the NAHC and results were positive.

Please consider this letter as the initiation of the SB 18 processes. Pursuant to Government Code 65352.3, your organization has 90 days upon receipt of this letter to provide a request for SB 18 consultation.

Your comments are important to the City of Duarte as we move forward with this Project. In your response, please identify a primary point of contact for the Tribe should consultation be desired. If you have any questions, or require additional information, please contact me at snash@accessduarte.com or (626) 357-7931 ext. 239. Thank you for your assistance.

Sincerely,

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Associate Planner
City of Duarte
1600 Huntington Drive
Duarte, CA 91010

Attachments
1. Aerial of Existing Site

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1600 Huntington Drive, Duarte, CA 91010 | Tel (626) 357-7931 | Fax (626) 358-0018 | accessduarte.com

February 24, 2025

Gabrielino/Tongva Nation
Sandonne Goad, Chairperson
106 1/2 Judge John Aiso St., #231
Los Angeles, CA, 90012

Subject: **SB 18 Consultation Request for the 1404 Royal Oaks Project, City of Duarte, Los Angeles County, California.**

Dear Chairperson Goad,

The City of Duarte (City) is commencing its SB 18 consultation process for the 1404 Royal Oaks Project (Project). The Project site is located at 1404 and 1414 Royal Oaks Drive in the City of Duarte on Assessor's Parcel Numbers (APNs) 8530-004-059 and -060. The site is approximately 0.8-acres and is currently developed with two single-family residences totaling approximately 4,400 square feet and two detached structures. An aerial map of the Project site is provided as Attachment 1.

The Project involves a General Plan Amendment to Medium Density Residential, a Zone Change to R-3 Multiple Family Residential Medium Density, a Tentative Tract Map to create a subdivision for condominium purposes, and Site Plan and Design Review approval. The Project proposes to remove existing on-site improvements, with the exception of two of the three mature Coast Live Oak trees which would be protected in place, and construct 11 two-story attached residential townhomes in five buildings. Each building would contain two to three dwelling units and have a maximum height of 31 feet, seven inches. Each townhome would consist of three bedrooms and range in size from 1,341 to 1,594 square feet. Additional improvements include landscaping, site access and parking, and connections to existing utilities infrastructure in the site vicinity.

The City is requesting consultation under Senate Bill 18 (Chapter 905, Statutes of 2004) which requires local governments to consult with tribes prior to making certain planning decisions and requires consultation and notice for a general and specific plan adoption or amendment in order to preserve, or mitigate impacts to, cultural places that may be affected. The Native American Heritage Commission (NAHC) provided us with a list of tribal entities and individuals who have requested to be placed on the SB 18 consultation list, including your organization.

A Sacred Lands File (SLF) search was conducted through the NAHC and results were positive.

Please consider this letter as the initiation of the SB 18 processes. Pursuant to Government Code 65352.3, your organization has 90 days upon receipt of this letter to provide a request for SB 18 consultation.

Your comments are important to the City of Duarte as we move forward with this Project. In your response, please identify a primary point of contact for the Tribe should consultation be desired. If you have any questions, or require additional information, please contact me at snash@accessduarte.com or (626) 357-7931 ext. 239. Thank you for your assistance.

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Scott Nash
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City of Duarte
1600 Huntington Drive
Duarte, CA 91010

Attachments
1. Aerial of Existing Site

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1600 Huntington Drive, Duarte, CA 91010 | Tel (626) 357-7931 | Fax (626) 358-0018 | accessduarte.com

February 24, 2025

Gabrielino-Tongva Tribe
Charles Alvarez, Chairperson
23454 Vanowen Street
West Hills, CA, 91307

Subject: **CEQA and SB18 Consultation Request for the 1404 Royal Oaks Project, City of Duarte, Los Angeles County, California.**

Dear Chairperson Alvarez,

The City of Duarte (City) is commencing its CEQA and Senate Bill (SB) 18 consultation process for the 1404 Royal Oaks Project (Project). The Project site is located at 1404 and 1414 Royal Oaks Drive in the City of Duarte on Assessor's Parcel Numbers (APNs) 8530-004-059 and -060. The site is approximately 0.8-acres and is currently developed with two single-family residences totaling approximately 4,400 square feet and two detached structures. An aerial map of the Project site is provided as Attachment 1.

The Project involves a General Plan Amendment to Medium Density Residential, a Zone Change to R-3 Multiple Family Residential Medium Density, a Tentative Tract Map to create a subdivision for condominium purposes, and Site Plan and Design Review approval. The Project proposes to remove existing on-site improvements, with the exception of two of the three mature Coast Live Oak trees which would be protected in place, and construct 11 two-story attached residential townhomes in five buildings. Each building would contain two to three dwelling units and have a maximum height of 31 feet, seven inches. Each townhome would consist of three bedrooms and range in size from 1,341 to 1,594 square feet. Additional improvements include landscaping, site access and parking, and connections to existing utilities infrastructure in the site vicinity.

The proposed Project must comply with California Public Resources Code § 21080.3.1 (Assembly Bill [AB] 52 of 2014), which requires local governments to conduct meaningful consultation with California Native American tribes that have requested to be notified by lead agencies of proposed projects in the geographic area with which the tribe is traditionally and culturally affiliated. You are receiving this letter because you appear on the AB 52 list and wish to be contacted for CEQA projects.

Additionally, the City is requesting consultation under Senate Bill 18 (Chapter 905, Statutes of 2004) which requires local governments to consult with tribes prior to making certain planning decisions and requires consultation and notice for a general and specific plan adoption or amendment in order to preserve, or mitigate impacts to, cultural places that may be affected. The Native American Heritage Commission (NAHC) provided us with a list of tribal entities and individuals who have requested to be placed on the SB 18 consultation list, including your organization.

A Sacred Lands File (SLF) search was conducted through the NAHC and results were positive.

Please consider this letter as the initiation of the AB 52 and SB 18 processes. Pursuant to Public Resources Code Section 21080.3.1(d), your organization has 30 days upon receipt of this letter to submit a written request for AB 52 consultation on the Project to the City of Duarte. Pursuant to Government Code 65352.3, your organization has 90 days upon receipt of this letter to provide a request for SB 18 consultation. However, we respectfully ask that requests for SB 18 consultation also be provided within 30 days, if possible.

Your comments are important to the City of Duarte as we move forward with this Project. In your response, please identify a primary point of contact for the Tribe should consultation be desired. If you have any questions, or require additional information, please contact me at snash@accessduarte.com or (626) 357-7931 ext. 239. Thank you for your assistance.

Sincerely,

Scott Nash
Associate Planner
City of Duarte
1600 Huntington Drive
Duarte, CA 91010

Attachments
1. Aerial of Existing Site

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February 24, 2025

Gabrielino-Tongva Tribe
Sam Dunlap, Cultural Resource Director
P.O. Box 3919
Seal Beach, CA, 90740

Subject: **CEQA and SB18 Consultation Request for the 1404 Royal Oaks Project, City of Duarte, Los Angeles County, California.**

Dear Cultural Resource Director Dunlap,

The City of Duarte (City) is commencing its CEQA and Senate Bill (SB) 18 consultation process for the 1404 Royal Oaks Project (Project). The Project site is located at 1404 and 1414 Royal Oaks Drive in the City of Duarte on Assessor's Parcel Numbers (APNs) 8530-004-059 and -060. The site is approximately 0.8-acres and is currently developed with two single-family residences totaling approximately 4,400 square feet and two detached structures. An aerial map of the Project site is provided as Attachment 1.

The Project involves a General Plan Amendment to Medium Density Residential, a Zone Change to R-3 Multiple Family Residential Medium Density, a Tentative Tract Map to create a subdivision for condominium purposes, and Site Plan and Design Review approval. The Project proposes to remove existing on-site improvements, with the exception of two of the three mature Coast Live Oak trees which would be protected in place, and construct 11 two-story attached residential townhomes in five buildings. Each building would contain two to three dwelling units and have a maximum height of 31 feet, seven inches. Each townhome would consist of three bedrooms and range in size from 1,341 to 1,594 square feet. Additional improvements include landscaping, site access and parking, and connections to existing utilities infrastructure in the site vicinity.

The proposed Project must comply with California Public Resources Code § 21080.3.1 (Assembly Bill [AB] 52 of 2014), which requires local governments to conduct meaningful consultation with California Native American tribes that have requested to be notified by lead agencies of proposed projects in the geographic area with which the tribe is traditionally and culturally affiliated. You are receiving this letter because you appear on the AB 52 list and wish to be contacted for CEQA projects.

Additionally, the City is requesting consultation under Senate Bill 18 (Chapter 905, Statutes of 2004) which requires local governments to consult with tribes prior to making certain planning decisions and requires consultation and notice for a general and specific

plan adoption or amendment in order to preserve, or mitigate impacts to, cultural places that may be affected. The Native American Heritage Commission (NAHC) provided us with a list of tribal entities and individuals who have requested to be placed on the SB 18 consultation list, including your organization.

A Sacred Lands File (SLF) search was conducted through the NAHC and results were positive.

Please consider this letter as the initiation of the AB 52 and SB 18 processes. Pursuant to Public Resources Code Section 21080.3.1(d), your organization has 30 days upon receipt of this letter to submit a written request for AB 52 consultation on the Project to the City of Duarte. Pursuant to Government Code 65352.3, your organization has 90 days upon receipt of this letter to provide a request for SB 18 consultation. However, we respectfully ask that requests for SB 18 consultation also be provided within 30 days, if possible.

Your comments are important to the City of Duarte as we move forward with this Project. In your response, please identify a primary point of contact for the Tribe should consultation be desired. If you have any questions, or require additional information, please contact me at snash@accessduarte.com or (626) 357-7931 ext. 239. Thank you for your assistance.

Sincerely,

Scott Nash
Associate Planner
City of Duarte
1600 Huntington Drive
Duarte, CA 91010

Attachments
1. Aerial of Existing Site

City of Duarte
1600 Huntington Drive, Duarte, CA 91010 | Tel (626) 357-7931 | Fax (626) 358-0018 | accessduarte.com

February 24, 2025

Santa Rosa Band of Cahuilla Indians
P.O. Box 391820
Anza, CA, 92539

Attn: Vanessa Minott, Tribal Administrator
Steven Estrada, Tribal Chairman

Subject: **SB 18 Consultation Request for the 1404 Royal Oaks Project, City of Duarte, Los Angeles County, California.**

Dear Tribal Representative,

The City of Duarte (City) is commencing its SB 18 consultation process for the 1404 Royal Oaks Project (Project). The Project site is located at 1404 and 1414 Royal Oaks Drive in the City of Duarte on Assessor's Parcel Numbers (APNs) 8530-004-059 and -060. The site is approximately 0.8-acres and is currently developed with two single-family residences totaling approximately 4,400 square feet and two detached structures. An aerial map of the Project site is provided as Attachment 1.

The Project involves a General Plan Amendment to Medium Density Residential, a Zone Change to R-3 Multiple Family Residential Medium Density, a Tentative Tract Map to create a subdivision for condominium purposes, and Site Plan and Design Review approval. The Project proposes to remove existing on-site improvements, with the exception of two of the three mature Coast Live Oak trees which would be protected in place, and construct 11 two-story attached residential townhomes in five buildings. Each building would contain two to three dwelling units and have a maximum height of 31 feet, seven inches. Each townhome would consist of three bedrooms and range in size from 1,341 to 1,594 square feet. Additional improvements include landscaping, site access and parking, and connections to existing utilities infrastructure in the site vicinity.

The City is requesting consultation under Senate Bill 18 (Chapter 905, Statutes of 2004) which requires local governments to consult with tribes prior to making certain planning decisions and requires consultation and notice for a general and specific plan adoption or amendment in order to preserve, or mitigate impacts to, cultural places that may be affected. The Native American Heritage Commission (NAHC) provided us with a list of tribal entities and individuals who have requested to be placed on the SB 18 consultation list, including your organization.

A Sacred Lands File (SLF) search was conducted through the NAHC and results were positive.

Please consider this letter as the initiation of the SB 18 processes. Pursuant to Government Code 65352.3, your organization has 90 days upon receipt of this letter to provide a request for SB 18 consultation.

Your comments are important to the City of Duarte as we move forward with this Project. In your response, please identify a primary point of contact for the Tribe should consultation be desired. If you have any questions, or require additional information, please contact me at snash@accessduarte.com or (626) 357-7931 ext. 239. Thank you for your assistance.

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Attachments
1. Aerial of Existing Site

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February 24, 2025

Soboba Band of Luiseno Indians
P.O. Box 487
San Jacinto, CA, 92581

Attn: Joseph Ontiveros, Tribal Historic Preservation Officer
Jessica Valdez, Cultural Resource Specialist

Subject: **CEQA and SB18 Consultation Request for the 1404 Royal Oaks Project, City of Duarte, Los Angeles County, California.**

Dear Tribal Representative,

The City of Duarte (City) is commencing its CEQA and Senate Bill (SB) 18 consultation process for the 1404 Royal Oaks Project (Project). The Project site is located at 1404 and 1414 Royal Oaks Drive in the City of Duarte on Assessor's Parcel Numbers (APNs) 8530-004-059 and -060. The site is approximately 0.8-acres and is currently developed with two single-family residences totaling approximately 4,400 square feet and two detached structures. An aerial map of the Project site is provided as Attachment 1.

The Project involves a General Plan Amendment to Medium Density Residential, a Zone Change to R-3 Multiple Family Residential Medium Density, a Tentative Tract Map to create a subdivision for condominium purposes, and Site Plan and Design Review approval. The Project proposes to remove existing on-site improvements, with the exception of two of the three mature Coast Live Oak trees which would be protected in place, and construct 11 two-story attached residential townhomes in five buildings. Each building would contain two to three dwelling units and have a maximum height of 31 feet, seven inches. Each townhome would consist of three bedrooms and range in size from 1,341 to 1,594 square feet. Additional improvements include landscaping, site access and parking, and connections to existing utilities infrastructure in the site vicinity.

The proposed Project must comply with California Public Resources Code § 21080.3.1 (Assembly Bill [AB] 52 of 2014), which requires local governments to conduct meaningful consultation with California Native American tribes that have requested to be notified by lead agencies of proposed projects in the geographic area with which the tribe is traditionally and culturally affiliated. You are receiving this letter because you appear on the AB 52 list and wish to be contacted for CEQA projects.

Additionally, the City is requesting consultation under Senate Bill 18 (Chapter 905, Statutes of 2004) which requires local governments to consult with tribes prior to making certain planning decisions and requires consultation and notice for a general and specific plan adoption or amendment in order to preserve, or mitigate impacts to, cultural places that may be affected. The Native American Heritage Commission (NAHC) provided us with a list of tribal entities and individuals who have requested to be placed on the SB 18 consultation list, including your organization.

A Sacred Lands File (SLF) search was conducted through the NAHC and results were positive.

Please consider this letter as the initiation of the AB 52 and SB 18 processes. Pursuant to Public Resources Code Section 21080.3.1(d), your organization has 30 days upon receipt of this letter to submit a written request for AB 52 consultation on the Project to the City of Duarte. Pursuant to Government Code 65352.3, your organization has 90 days upon receipt of this letter to provide a request for SB 18 consultation. However, we respectfully ask that requests for SB 18 consultation also be provided within 30 days, if possible.

Your comments are important to the City of Duarte as we move forward with this Project. In your response, please identify a primary point of contact for the Tribe should consultation be desired. If you have any questions, or require additional information, please contact me at snash@accessduarte.com or (626) 357-7931 ext. 239. Thank you for your assistance.

Sincerely,

Scott Nash
Associate Planner
City of Duarte
1600 Huntington Drive
Duarte, CA 91010

Attachments
1. Aerial of Existing Site

RESOLUTION NO. PC 25-15

A RESOLUTION OF THE PLANNING AND ECONOMIC DEVELOPMENT COMMISSION OF THE CITY OF DUARTE RECOMMENDING APPROVAL OF GENERAL PLAN AMENDMENT 24-03 FROM LOW DENSITY RESIDENTIAL TO MEDIUM DENSITY RESIDENTIAL FOR TWO PARCELS OF LAND LOCATED AT 1404 AND 1414 ROYAL OAKS DRIVE

WHEREAS, the Planning and Economic Development Commission has considered proposed General Plan Amendment 24-03 ("General Plan Amendment"), which would change the City's General Plan land use designation for two parcels (APN 8530-004-059 and 8530-004-060) from Low Density Residential to Medium Density Residential, and would make corresponding modifications to the Land Use Policy Diagram (LU-1), both as shown in Exhibit A; and

WHEREAS, the proposed General Plan Amendment provides, among other provisions, for the development of Multiple-Family Residential for an 11-unit, two-story townhome development; and

WHEREAS, notice of a public hearing on the proposed General Plan Amendment was given in accordance with applicable law; and

WHEREAS, on November 17, 2025 the Planning and Economic Development Commission held a duly noticed public hearing on the proposed General Plan Amendment, whereupon the Planning and Economic Development Commission received public testimony; and

WHEREAS, at its November 17, 2025, public meeting the Planning and Economic Development Commission received and considered the staff report and all of the information, evidence, and testimony presented in connection with the foregoing; and

WHEREAS, at its November 17, 2025, public meeting the Planning and Economic Development Commission determined that the proposed change in land use designation from Low Density Residential to Medium Density Residential is the highest and best use for the subject property; and

WHEREAS, at its November 17, 2025, public meeting, the Planning and Economic Development Commission determined that the General Plan Amendment is in the best interests and welfare of the City and its residents; and

WHEREAS, the Planning and Economic Development Commission considered the analysis and recommendations provided in the staff report, and all information, evidence and public testimony received at the public meeting held on November 17, 2025 at 7:00 p.m. in the City Council Chambers and recommended that the City Council approve the General Plan Amendment.

NOW, THEREFORE, the Planning and Economic Development Commission of the City of Duarte resolves as follows:

SECTION 1. RECITALS

The facts, findings, determinations, and directions set forth in the Recitals of this Resolution are true and correct and incorporated herein by this reference.

SECTION 2. FINDINGS FOR GENERAL PLAN AMENDMENTS

In accordance with Duarte Development Code Section 19.142.060.A, the Planning and Economic Development Commission hereby finds and determines as follows:

1. The General Plan Amendment is internally consistent with all other provisions of the Duarte General Plan;

   The General Plan Amendment conforms to the goals and objectives on the General Plan by establishing a designation that will accommodate a range and mix of housing within the city. Furthermore, the General Plan Amendment meets the goals and objectives of the General Plan by re-designating underutilized residential properties into higher-density residential sites. The land use of Medium Density Residential complements the land use of the surrounding developments and will provide an improvement along Royal Oaks Drive.

2. The General Plan Amendment will not be detrimental to the public interest, health, safety, convenience, or welfare of the City;

   The General Plan Amendment will amend an existing residential land use designation to medium density residential, which typically allows for a multi-family attached housing developments. The land use is consistent with adjacent properties to the west and south and is complementary to the remaining surrounding properties. The General Plan Amendment will establish a designation that facilitate an improvement to an underutilized property and the surrounding community.

3. The affected site is physically suitable in terms of design, location, operating characteristics, shape, size, topography, and the provision of public and emergency vehicle access, and public services and utilities and is served by highways and streets adequate in width and improvement to carry the kind and quantity of traffic the proposed use would likely generate, to ensure that the proposed use(s) and/or development will not endanger, jeopardize, or otherwise constitute a hazard to the property or improvements in the vicinity in which the property is located.

   The property that is subject to the General Plan Amendment is adequate to accommodate a multi-family residential project. The site is adjacent to Royal Oaks Drive, an arterial road in the city. The project facilitated by the General Plan Amendment will be designed to accommodate proper public and emergency personnel and will be adequately served by utilities. A traffic analysis was conducted as part of the project review and it was determined that impacts to traffic will be below significance through mitigation measures. The General Plan Amendment will allow the development of multi-family project that will accommodate a density around 11 units. It is not anticipated that the project that is facilitated by the General Plan Amendment

will endanger or jeopardize the property or improvements in the vicinity. The project will allow the improvement of underutilized properties with a development that is compatible to its surroundings and with minimal impacts to the adjacent neighborhood.

SECTION 3. CEQA DETERMINATION

In recommending adoption of PC Resolution 25-15 for the General Plan Amendment, the Planning and Economic Development Commission finds and determines that the Initial Study and Mitigated Negative Declaration ("MND") for the project is in compliance with the California Environmental Quality Act, and State regulations in Title 14 of the California Code of Regulations, which MND has been prepared and circulated for public review and comment, and will be considered for certification by the City Council prior to the City Council's action on the project, including the General Plan Amendment.

SECTION 4. RECOMMENDATION

The Planning and Economic Development Commission approves PC Resolution 25-15, based on the findings listed in Section 2 (and the findings incorporated by reference in Section 1), and recommends approval of General Plan Amendment 24-03 to the City Council. Except as expressly amended herein, the Land Use Policy Diagram shall remain in full force and effect and shall apply to the property affected by this Resolution.

APPROVED, AND ADOPTED by the Planning and Economic Development Commission of the City of Duarte at a regular meeting held on the 17th day of November, 2025.

_____
Yesenia Paez, Chairperson
City of Duarte Planning and Economic Development Commission

ATTEST:

_____
Craig Hensley, Community Development Director

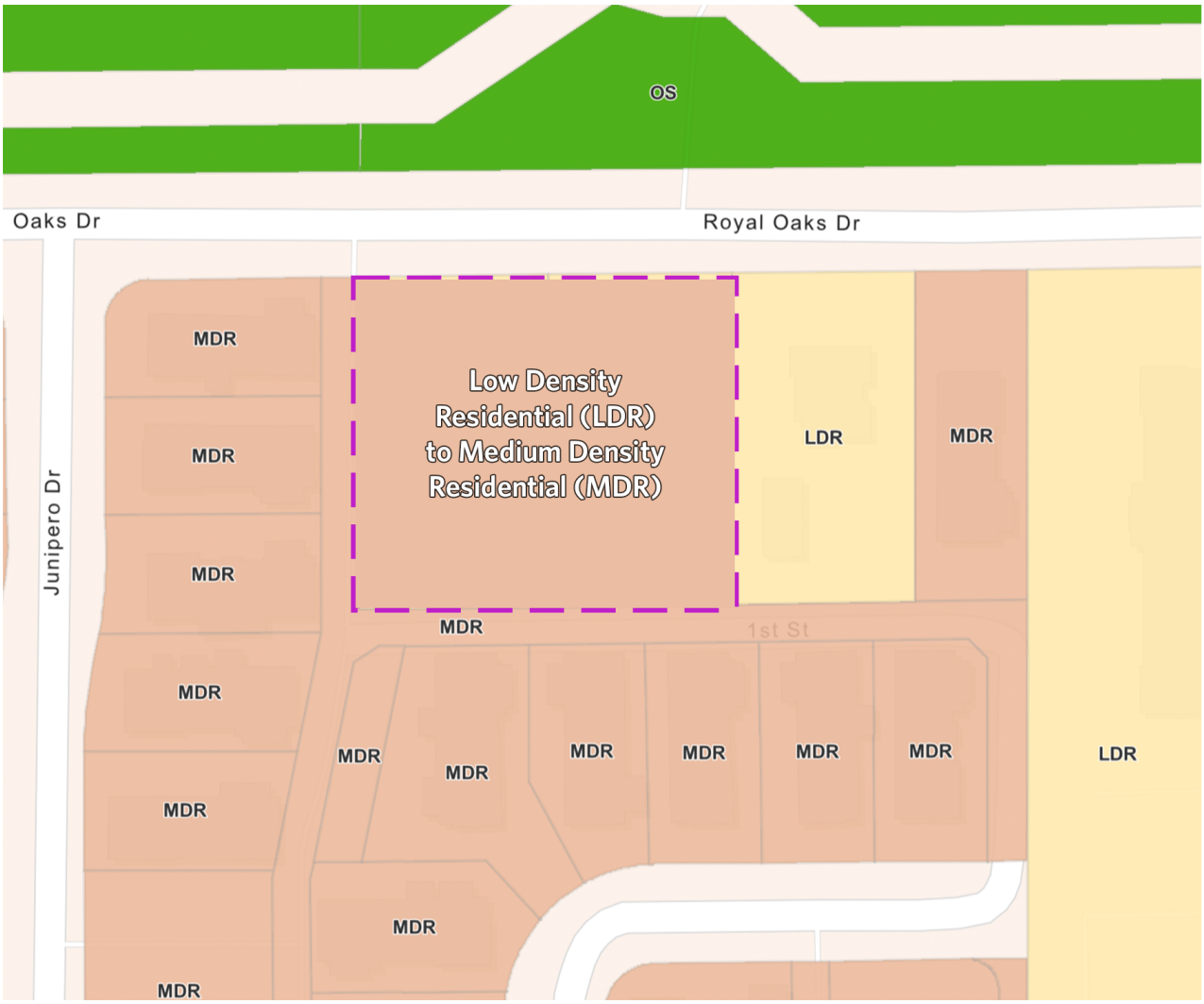
STATE OF CALIFORNIA
COUNTY OF LOS ANGELES } ss.
CITY OF DUARTE

I, Craig Hensley, Community Development Director of the City of Duarte, do hereby certify that the foregoing Resolution was adopted at a regular meeting of the Planning and Economic Development Commission of the City of Duarte held on November 17, 2025, by the following vote:

AYES:
NOES:
ABSTAIN:
ABSENT:

_____
Craig Hensley, Community Development Director

Exhibit A


OS
Oaks Dr
Royal Oaks Dr
Junipero Dr
Low Density Residential (LDR) to Medium Density Residential (MDR)
MDR
LDR
1st St

RESOLUTION NO. PC 25-16

A RESOLUTION OF THE PLANNING AND ECONOMIC DEVELOPMENT COMMISSION OF THE CITY OF DUARTE RECOMMENDING APPROVAL OF A ZONE CHANGE 24-03 TO MODIFY THE CITY OF DUARTE ZONING MAP FROM R-1 SINGLE-FAMILY RESIDENTIAL TO R-3 MULTIPLE-FAMILY RESIDENTIAL MEDIUM DENSITY FOR TWO PARCELS OF LAND LOCATED AT 1404 AND 1414 ROYAL OAKS DRIVE, AND TO AMEND THE OFFICIAL ZONING MAP

WHEREAS, the Planning and Economic Development Commission has considered proposed Zone Change 24-03 ("Zone Change 24-03") which would change the zoning designation and modify the City of Duarte Zoning Map for two parcels (APNs 8530-004-059 and 8530-004-060) from R-1 Single-family Residential to R-3 Multiple-Family Residential Medium Density, as shown on Exhibit A; and

WHEREAS, proposed Zone Change 24-03, together with other required entitlements, facilitates the development of a 11-unit, two-story townhome development on APNs 8530-004-059 and 8530-004-060; and

WHEREAS, if approved by the City, Zone Change 24-03 will be contingent upon the approval of General Plan Amendment 24-03; and

WHEREAS, notice of a public hearing for proposed Zone Change 24-03 was given in accordance with applicable law; and

WHEREAS, on November 17, 2025, the Planning and Economic Development Commission held a duly noticed public hearing on proposed Zone Change 24-03, whereupon the Planning and Economic Development Commission received public testimony; and

WHEREAS, at its November 17, 2025, public meeting the Planning and Economic Development Commission received and considered the staff report and all of the information, evidence, and testimony presented in connection with the foregoing; and

WHEREAS, at its November 17, 2025, public meeting the Planning and Economic Development Commission determined that the proposed change to the zoning designation on APNs 8530-004-059 and 8530-004-060 from R-1 Single-family Residential to R-3 Multiple Family Residential Medium Density is the highest and best use for the subject property; and

WHEREAS, at its November 17, 2025, public meeting the Planning and Economic Development Commission determined that Zone Change 24-03 is in the best interests and welfare of the City and its residents; and

WHEREAS, the Planning and Economic Development Commission considered the analysis and recommendations provided in the staff report, and all information,

evidence and public testimony received at the public meeting held on November 17, 2025 at 7:00 p.m. in the City Council Chambers and recommended that the City Council approve the Zone Change 24-03.

NOW, THEREFORE, the Planning and Economic Development Commission of the City of Duarte resolves as follows:

SECTION 1. RECITALS

The facts, findings, determinations, and directions set forth in the Recitals of this Resolution are true and correct and incorporated herein by this reference.

SECTION 2. FINDINGS FOR ZONE CHANGES

In accordance with Duarte Development Code Section 19.142.060.B, the Planning and Economic Development Commission hereby finds and determines as follows:

1. Zone Change 24-03 is consistent with the Duarte General Plan.

   Zone Change 24-03 conforms to the goals and objectives on the General Plan by re-designating underutilized residential properties into higher-density residential sites. The General Plan land use of Medium Density Residential is consistent with the R-3 zoning designation, allowing a medium density residential project consisting of multi-family housing.

2. Zone Change 24-03 will not be detrimental to the public interest, health, safety, convenience, or welfare of the City.

   Zone Change 24-03 will amend an existing residential zoning designation for APNs 8530-004-059 and 8530-004-060 to R-3 Multiple Family Medium Density Residential, which typically allows for multi-family attached housing developments. The R-3 Multiple Family Medium Density Residential zoning designation is consistent with the adjacent properties to the west and south and is complementary to the remaining surrounding properties. Zone Change 24-02 will establish a designation that will facilitate an improvement to an underutilized property and the surrounding community.

3. The affected site is physically suitable in terms of design, location, operating characteristics, shape, size, topography, and the provision of public and emergency vehicle access, and public services and utilities and is served by highways and streets adequate in width and improvement to carry the kind and quantity of traffic the proposed use would likely generate, to ensure that the proposed use(s) and/or development will not endanger, jeopardize, or otherwise constitute a hazard to the property or improvements in the vicinity in which the property is located.

   Zone Change 24-03 will modify the current zoning designation for APNs 8530-004-059 and 8530-004-060 from R-1 Single-family Residential to R-3 Multiple Family Residential Medium Density. The site is adequate to accommodate a multi-family residential project. Those parcels are adjacent to Royal Oaks Drive, an arterial road

in the city. The project facilitated by Zone Change 24-02 will be designed to accommodate proper public and emergency personnel and will be adequately served by utilities. A traffic analysis was conducted as part of the project review and it was determined that impacts to traffic will be below significance through mitigation measures. Zone Change 24-03 will allow the development of multi-family project that will accommodate a density around 11 units. It is not anticipated that the project will endanger or jeopardize the property or improvements in the vicinity. The project that is facilitated by Zone Change 24-03 will allow the improvement of underutilized properties with a development that is compatible to its surroundings and with minimal impacts to the adjacent neighborhood.

SECTION 3. CEQA DETERMINATION

In recommending adoption of PC Resolution 25-16 for the Zone Change, the Planning and Economic Development Commission finds and determines that the Initial Study and Mitigated Negative Declaration ("MND") for the project is in compliance with the California Environmental Quality Act, and State regulations in Title 14 of the California Code of Regulations, which MND has been prepared and circulated for public review and comment, and will be considered for certification by the City Council prior to the City Council's action on the project, including Zone Change 24-03.

SECTION 4. RECOMMENDATION

The Planning and Economic Development Commission approves PC Resolution 25-16, based on the findings listed in Section 2 (and the findings incorporated by reference in Section 1), and recommends approval of Zone Change 24-03 to the City Council.

APPROVED, AND ADOPTED by the Planning and Economic Development Commission of the City of Duarte at a regular meeting held on the 17th day of November, 2025.

_____
Yesenia Paez, Chairperson
City of Duarte Planning and Economic Development Commission

ATTEST:

_____
Craig Hensley, Community Development Director

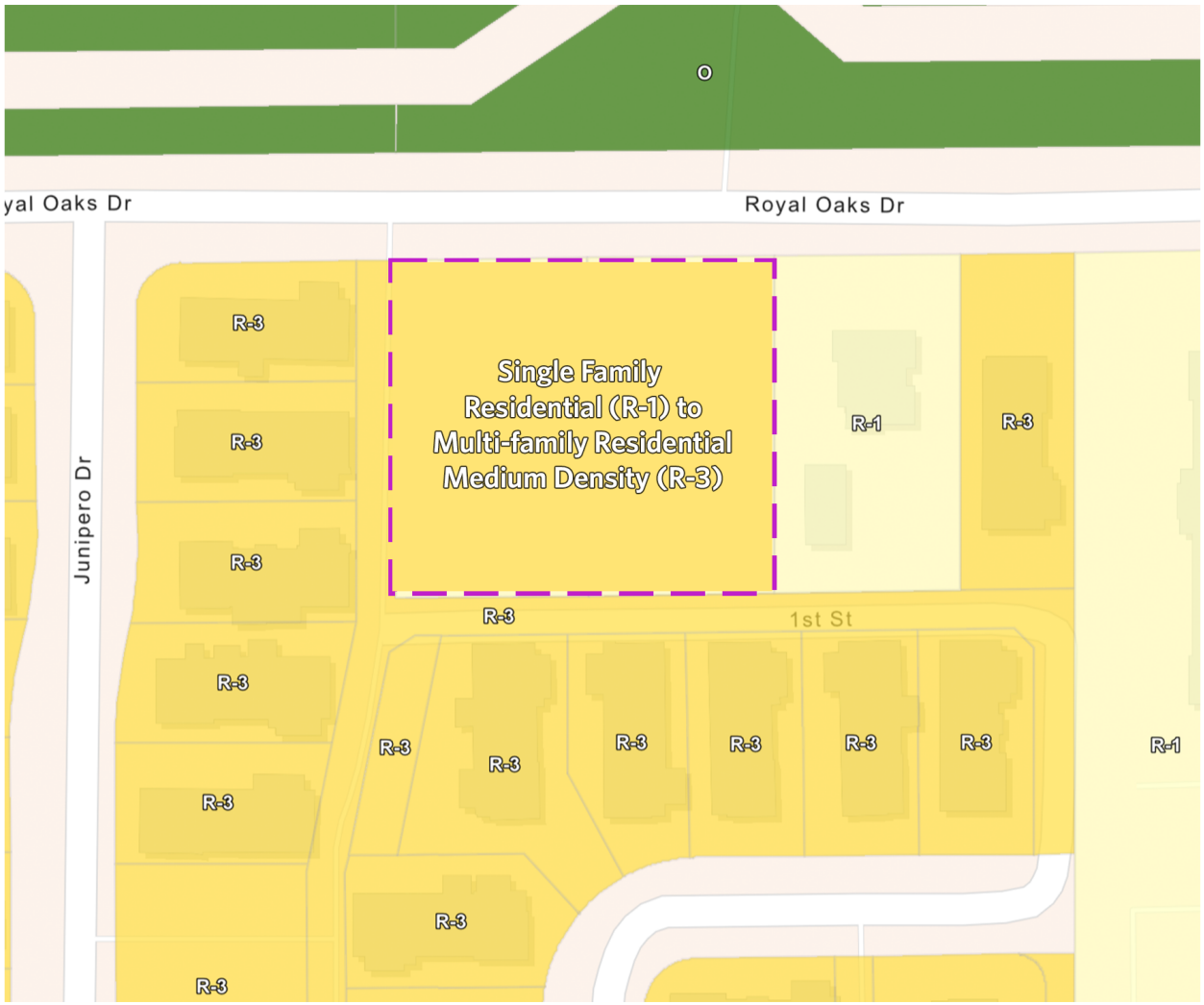
STATE OF CALIFORNIA
COUNTY OF LOS ANGELES } ss.
CITY OF DUARTE

I, Craig Hensley, Community Development Director of the City of Duarte, do hereby certify that the foregoing Resolution was adopted at a regular meeting of the Planning and Economic Development Commission of the City of Duarte held on October 17, 2025, by the following vote:

AYES:
NOES:
ABSTAIN:
ABSENT:

_____
Craig Hensley, Community Development Director

EXHIBIT A


O
yal Oaks Dr
Royal Oaks Dr
Junipero Dr
Single Family Residential (R-1) to Multi-family Residential Medium Density (R-3)
R-1
R-3
1st St

RESOLUTION PC 25-17

A RESOLUTION OF THE PLANNING AND ECONOMIC DEVELOPMENT COMMISSION OF THE CITY OF DUARTE RECOMMENDING APPROVAL OF TENTATIVE TRACT MAP 84375 FOR CONDOMINIUM PURPOSES TO ALLOW A 11-UNIT, TWO-STORY TOWNHOME DEVELOPMENT LOCATED AT 1404 AND 1414 ROYAL OAKS DRIVE

WHEREAS, the applicant has requested approval of Tentative Tract Map No. 84375 to allow the development of a 11-unit townhome development located at 1404 and 1414 Royal Oaks Drive; and

WHEREAS, if approved, proposed Tentative Tract Map No. 84375 will be contingent upon the approval of General Plan Amendment 24-03 and Zone Change 24-03; and

WHEREAS, the City Engineer has found and determined that Tentative Tract Map No. 84375, and the conditions of approval attached thereto, conforms to the State Subdivision Map Act and the applicable requirements of Article Five of the Duarte Development Code; and

WHEREAS, at its November 17, 2025, public meeting the Planning and Economic Development Commission considered Tentative Tract Map No. 84375 for a 11-unit, two-story development located 1404 and 1414 Royal Oaks Drive; and

WHEREAS, at its November 17, 2025, public meeting the Planning and Economic Development Commission found and determined that Tentative Tract Map No. 84375 is in the best interests and welfare of the City and its residents.

WHEREAS, the Planning and Economic Development Commission considered the analysis and recommendation provided in the staff report, and all information, evidence and public testimony received at the public meeting held on November 17, 2025 at 7:00 p.m. in the City Council Chambers and recommended that the City Council approve Tentative Tract Map No. 84375, subject to conditions of approval.

NOW, THEREFORE, the Planning and Economic Development Commission of the City of Duarte resolves as follows:

SECTION 1. RECITALS

The facts, findings, determinations, and directions set forth in the Recitals of this Resolution are true and correct and incorporated herein by this reference.

SECTION 2. FINDINGS FOR TENTATIVE TRACT MAP

In accordance with Duarte Development Code Section 19.72.060.A, the Planning and Economic Development Commission hereby finds and determines as follows:

1. Tentative Tract Map No. 84375 is consistent with the applicable General Plan.

   Tentative Tract Map No. 84375 conforms to the goals and objectives on the General Plan by establishing a new subdivision that will accommodate medium density housing which will ultimately lead to a range and mix of housing in the city.

2. The design of Tentative Tract Map No. 84375 is consistent with the applicable General Plan.

   Tract Map 84375 will allow a medium-density residential project consisting of multi-family housing on the 40,541 square foot project site. The design of the medium-density housing is consistent with the goals and objectives of the General Plan by allowing a range of housing opportunities that will improve and maintain a balance community with various residential housing types and commercial activities where appropriate.

3. Tentative Tract Map No. 84375 is physically suitable for the proposed development.

   Tentative Tract Map No. 84375 will allow a medium density residential townhome development on a 40,541 project site. The project will result in a density of approximately 11 units per acre, which is consistent with the Medium Density Residential General Plan land use designation and with the R-3 Multiple Family Residential Medium Density zoning designation. The proposed site is adequate to accommodate a multi-family residential project. The site is adjacent to Royal Oaks Drive, an arterial road in the city. The project facilitated by Tentative Tract Map No. 84375 will be designed to accommodate proper public and emergency personnel and will be adequately served by utilities.

4. Tentative Tract Map No. 84375 is physically suitable for the proposed development density allowed in the R-3 Multiple-Family Residential Medium Density zoning designations.

   Tentative Tract Map No. 84375 will allow a medium density residential townhome development on a 40,541 square foot project site. The project facilitated by Tentative Tract Map No. 84375 will result in a density of approximately 11 units per acre, which is consistent with the Medium Density Residential General Plan land use designation and with the R-3 Multiple Family Residential Medium Density zoning designation. The proposed site is adequate to accommodate a multi-family residential project. Tentative Tract Map No. 84375 will include eleven two-story attached townhomes in five buildings. Each building will contain two to three dwelling units. The structures will be accessible by a main 26-foot wide drive aisle from Royal Oaks Drive. Tentative Tract Map No. 84375 will be designed to provide adequate: pedestrian and vehicular circulation for residents, emergency vehicle access, and open space. Tentative Tract Map No. 84375 will also be designed to comply with the off-street parking requirements for the R-3 Multiple Family

Residential Medium Density zoning designation, using the main drive aisle as access to residential garages and surface parking areas.

5. Tentative Tract Map No. 84375 and related improvements are not likely to cause substantial environmental damage or substantially and avoidably injure fish or wildlife or their habitat.

   An Initial Study and Mitigated Negative Declaration ("MND") have been prepared pursuant to CEQA to analyze the possible environmental impacts from the project, including Tentative Tract Map No. 84375. Several technical reports and studies were completed prior to the completion of the Initial Study, including an air quality analysis, greenhouse gas analysis, cultural resource assessment, geotechnical evaluation, hydrology report, environmental assessments, noise studies, and traffic analysis. The result of the MND indicated the project would not have any significant environmental impacts with adopted mitigations. The MND recommends the adoption of mitigation measures to reduce these potential impacts to a level of less than significant. These mitigations are then implemented as part of the project and monitored through a mitigation monitoring program as required by the MND. The mitigation measures are provided in the MND.

   Furthermore, the project site is located within an urbanized portion of the City. As an urbanized and disturbed site, there is a lack of quality biological habitat within and immediately surrounding the site. As such, the proposed project would not impact or injure fish or wildlife or their habitat.

6. Tentative Tract Map No. 84375 and related improvements are not likely to cause serious public health problems.

   Tentative Tract Map No. 84375 will establish a new residential condominium subdivision for a 11-unit townhome development. A multi-family development is consistent with projects to the west and south and is complementary to the remaining surrounding properties. The tract map will help facilitate an improvement to underutilized properties. A homeowners association and Codes, Covenants and Restrictions will ensure the tract map and future project do not cause public health problems to the community.

7. Tentative Tract Map No. 84375 and related improvements will not conflict with easements, acquired by the public at large, for access through or use of, property within the proposed subdivision.

   Tentative Tract Map No. 84375 does not include any easements for access through or use of the property within the subdivision that will conflict with the proposed improvements.

8. Tentative Tract Map No. 84375 will not adversely affect the adjoining properties as to value, precedent, or be detrimental to the area.

Tentative Tract Map No. 84375 will allow the development of a multi-family residential project that has been designed to correspond with the allowed land uses and the improvements are consistent with the General Plan and applicable Duarte Development Code requirements and standards.

SECTION 3. CEQA DETERMINATION

In recommending adoption of PC Resolution 25-17 for Tentative Tract Map 84375, the Planning and Economic Development Commission finds and determines that the MND for the project is in compliance with the California Environmental Quality Act, and State regulations in Title 14 of the California Code of Regulations, which MND has been prepared and circulated for public review and comment, and will be considered for certification by the City Council prior to the City Council's action on the project, including Tentative Tract Map No. 84375.

SECTION 4. RECOMMENDATION

The Planning and Economic Development Commission approves PC Resolution 25-17, based on the findings listed in Section 2 (and the findings incorporated by reference in Section 1), and the Conditions of Approval listed in "Exhibit A", and recommends approval of Tentative Tract Map 84375 to the City Council.

APPROVED, AND ADOPTED by the Planning and Economic Development Commission of the City of Duarte at a regular meeting held on the 17th day of November, 2025.

_____
Yesenia Paez, Chairperson
City of Duarte Planning and Economic Development Commission

ATTEST:

_____
Craig Hensley, Community Development Director

STATE OF CALIFORNIA
COUNTY OF LOS ANGELES } ss.
CITY OF DUARTE

I, Craig Hensley, Community Development Director of the City of Duarte, do hereby certify that the foregoing Resolution was adopted at a regular meeting of the Planning and Economic Development Commission of the City of Duarte held on November 17, 2025, by the following vote:

AYES:
NOES:
ABSTAIN:
ABSENT:

_____
Craig Hensley, Community Development Director

EXHIBIT A
CONDITIONS OF APPROVAL
Tentative Tract Map No. 84375

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1. The Developer/applicant shall prepare Covenants, Codes, & Restrictions ("CC&Rs") in a form acceptable to the City Attorney. The CC&Rs shall provide regulations that include but are not limited to: onsite parking management, guest parking, use of resident garages for parking, outdoor storage, common area maintenance, trash service, among others. The CC&Rs shall include requirements for the establishment of a Homeowners Association that will implement and ensure compliance with the CC&Rs. The CC&Rs shall be recorded with the County Recorder's Office and proof of recordation shall be provided to the City of Duarte prior to issuance of Certificate of Occupancy. The CC&Rs shall not be modified without prior approval from the City.

2. Decorative paving materials shall be integrated into driveways, parking areas, and pedestrian walkways as shown on Tentative Tract Map 84375 and as approved by the City Engineer and/or Public Works/Engineering Division.

3. The developer shall comply with the City's cable installation requirements, per Chapter 16.34 of the Duarte Municipal Code.

4. The Applicant/Developer shall comply with the latest editions of the codes as adopted by reference by the City of Duarte. California Green Building Standards Code, California Building Code, California Residential Code, California Mechanical Code, California Plumbing Code, and California Electrical Code. (Codes as amended by the County of Los Angeles.)

5. The Applicant/Developer shall comply with the latest California Title 24 Energy requirements for all new lighting, insulation, and mechanical equipment and submit calculations at time of initial plan review.

6. The Applicant/Developer shall comply with subdivision requirements provided by the Los Angeles County Fire Department, unless otherwise modified by the Community Development Department and/or Fire Department.

7. The Applicant/Developer shall comply with the latest disabled access regulations as found in Title 24 of the California Code of Regulations and the Americans with Disabilities Act. Accessible items shall include, but not be limited to: parking, accessible pedestrian routes, accessible/adaptable units, public/common use areas, swimming pool, etc., as applicable

8. Grading, drainage, civil, and related engineering plans and all required plan check fees shall be submitted to the City Engineer and/or Public Works/Engineering Division for plan check prior to construction. Approval from the City Engineer and/or Public Works/Engineering Division shall be obtained prior to the issuance

of permits. Prior to the issuance of a certificate of occupancy, a Public Works right-of-way permit for the proposed right-of-way modifications shall be obtained, and the work completed. The right-of-way permit must be issued to a licensed concrete contractor.

9. The Applicant/Developer shall submit a Precise Paving and Drainage Plan for the proposed development to be reviewed and approved by the City Engineer and/or Public Works/Engineering Division.

10. Building foundation inspections shall not be performed until a rough grading certification, survey stakes in place, and a final soils report have been filed with the City and approved. All drainage facilities must be operable.

11. Fees shall be paid to Duarte Unified School District in compliance with Government Code Section 65995.

12. The Applicant/Developer shall contact the Los Angeles County Public Works Department, Environmental Program Division for any required permit on clearance of industrial and hazardous waste disposal.

13. The Applicant/Developer shall install sanitary sewers to serve the entire development to the specifications of the City Engineer and/or Public Works/Engineering Division. Prior to installing sewer lines, the Applicant/Developer shall perform a sewer capacity study and submit it to the City for review and approval from the City Engineer and/or Public Works Division prior installation of any sewer lines and issuance of building permits. A sewer connection fee is required by the County Sanitation District. Said fees shall be paid and proof of payment shall be provided prior to the issuance of building permits.

14. The Applicant/Developer shall dedicate all street right-of-way as shown on the Tentative Map to correct any right-of-way areas that require dedication associated with the project site that may have been previously overlooked or not completed. The main drive aisle and secondary drive aisle within the project site shall be private. Maintenance on the private drive aisles shall be the responsibility of the Applicant/Developer and the established Homeowners Association.

15. The Applicant/Developer shall submit water plans to be reviewed and approved by the City Engineer and/or Public Works/Engineering Division, California American Water and the Los Angeles County Fire Department.

16. All work adjacent to or within the right-of-way shall be subject to review and approval of the City Engineer and/or Public Works/Engineering Division and the work shall be in accordance with applicable standards of the City of Duarte; i.e. Standard Specifications for Public Works Construction (“Green Book”) and the California Manual of Uniform Traffic Control Devices (“CA MUTCD”), and further that the construction equipment ingress and egress be controlled by a plan approved by Public Works.

17. The following shall be prepared by a professional registered engineer and submitted to the Engineering/Public Works Division for review:

    - LID Plan. A Low Impact Development ("LID") Plan shall be submitted to the Engineering/Public Works Division for review. The LID plan shall provide a comprehensive and technical discussion of how the proposed project will comply with the City's stormwater program requirements. LID Guidance and implementation can be obtained from Los Angeles County Public Works LID Standards Manual. Contact the Duarte Public Works Division for more information. The LID plan shall be approved prior issuance of grading permits.

    - Civil Plans. Two sets of complete Civil plans shall be submitted to the Engineering/Public Works Division for review, accurately showing all existing public improvements near the subject development (i.e., street lights, signs, utility vaults and boxes, bus stops, street trees, catch basins, etc.) and shall clearly indicate any proposed modifications to the existing public improvements. Such proposed modifications to the public improvements shall require approval from the City Engineer and Community Development Director prior to issuance of any building permit and/or grading permit.

    - Soils/Geology report and Hydrology Study.

    - A detailed grading and drainage plan, including all supporting information and design criteria shall be prepared by a licensed Civil Engineer and submitted to the Engineering Division for review. The grading and drainage plan shall be approved by the City Engineer prior to the issuance of a grading permit.

    - A detailed utility plan.

18. A final tract map shall be prepared by a licensed land surveyor or a registered Civil Engineer and recorded with the County of Los Angeles prior to the issuance of certificate of occupancy.

19. Security Bonds and/or Subdivision Agreement shall be submitted and recorded prior to the issuance of the grading permit.

20. Prior to exoneration of any security for the project that may include existing survey monuments disturbed through construction activities and deemed necessary for preservation by the City Engineer, the applicant shall file a Corner of Record or Record of Survey with the County Surveyor to establish existing survey control points as defined in Section 8711 (b) of the California Professional Land Surveyors Act.

21. Prior to final approval of completed grading, landscaping, or any public improvements, the developer/applicant/contractor shall provide digital (PDF) and AutoCAD files of each plan to the Public Works Division. The Permit Number and the words "RECORD DRAWING" shall appear on each plan sheets.

22. All utility facilities within the public right of way including but not limited to conduit, cable, cabinets, control boxes, etc. shall be placed underground with any access panels flush with the ground surface. If there are physical constraints restricting the placement of utility facilities underground, the developer shall provide clear engineering reasons why above ground facilities cannot be installed with underground vaults/handholes.

23. All utility services stubbed to the site that will not be used to serve the development shall be properly abandoned.

24. The Developer shall construct a new driveway approach on Royal Oaks Drive per City standards. Decorative stamped concrete or enhanced paving shall be installed behind the driveway approach. The driveway approach and ramps shall be approved by the City Engineer prior to construction and shall require the issuance of a public right-of-way permit. The approach and driveway shall be designed to ensure the safety of vehicles entering and exiting the property, as well as pedestrians crossing the driveway.

25. All trenching/potholing/street cuts shall be fixed permanently within five (5) working days following the completion and acceptance of the backfill. Temporary asphalt concrete is required immediately following completion of the backfill. If plates are necessary, they shall be placed flush to the road surface and tack welded together if two or more plates are used. If plates are necessary, then under no circumstance shall a trench remain plated longer than 48 hours, unless a longer term is approved by the Public Works Manager.

26. In the event the street pavement is substantially cut and/or altered following the installation of all utilities in the public right of way, the entire street (width, length) in front of the project site shall be sealed, as determined by the City Engineer.

27. Connector Pipe Units shall be installed in all catch basins along the project site. All installations shall be inspected/verified by the Public Works Division prior to issuance of Certificate of Occupancy.

28. Traffic control work (delineation and signage) shall comply with the California Manual on Uniform Traffic Control Devices. A traffic control plan shall be submitted to the Public Works Division for review and approved prior to beginning construction and/or grading.

29. Vehicular access to public streets and driveways shall remain unobstructed during the construction period.

30. The developer, contractor and all representatives shall comply with the National Pollution Discharge Elimination System (“NPDES”) Permit No. CAS004001, Order No. R4-2012-075, and amendments, issued by the California Regional Water Quality Control Board, Los Angeles Region. Construction activities that disturb one acre or

more are regulated under the NPDES stormwater program. Operators of regulated construction sites are required to develop and implement a Stormwater Pollution Prevention Plan ("SWPPP") and to obtain a Construction General Permit (NOI) from the State Water Resources Control Board to discharge stormwater. A copy of the permit shall be provided to the Public Works Division to keep on file and ensure compliance.

31. The developer and/or contractor is responsible for implementing the following Best Management Practices ("BMPs"). These, as well as any other applicable measure shall be included in the SWPPP and implemented as approved by the City Engineer.

    - Install filter materials (such as sandbags, filter fabric, etc.) at the storm drain inlet nearest the downstream side of the project site in order to retain any debris or dirt flowing in the storm drain system. Maintain and/or replace filter materials to ensure effectiveness and to prevent street flooding.

    - Ensure that concrete supply trucks or concrete/plaster operations do not discharge wash water into street, gutters, or storm drains.

    - Concrete wash area: Locate wash out areas away from the storm drains and open ditches, construct a temporary pit large enough to store the liquid and solid waste, clean pit by allowing concrete to set, breaking up the concrete, then recycling or disposing of properly.

32. The developer and/or contractor shall incorporate and comply with all regulations, policies and standards regarding water, sewer, and storm water.

33. Improvement plans and necessary letters of credit, cash, and/or bonds to secure the construction of all streets, storm drains, water, sewer, grading, etc. as required shall be submitted and approved by the City Engineer, and the subdivision agreement and other required agreements approved by City Attorney, prior to the recordation of the Final Map.

34. All easements existing at the time of the Final Tract Map approval must be accounted for on the approved Tentative Map. This includes the location, owner, purpose, and recording reference for all existing easements. If an easement is blanket in nature or indeterminate in nature, a statement to that effect must be shown on the tentative map in lieu of its location.

35. Easements for Private Driveways and Fire Lanes, and all utilities, including water, sewer, storm drains shall be provided on the Final Map to the satisfaction of the City Engineer and City Attorney.

36. All site, grading, landscape & irrigation, and street improvement plans shall be coordinated for consistency prior to the issuance of any permits.

37. A preliminary title report and guarantee is required and such document shall show all fee interest holders; all interest holders whose interest could ripen into a fee; all trust deeds, together with the name of the trustee; and all easement holders. The account for this title report should remain open until the final map is filed with the County Recorder.

38. The tentative tract map must comply with the State Subdivision Map Act and Article 5 (Subdivisions) of the Duarte Development Code.

39. The Tentative Tract Map shall expire 24 months from the date of approval. The subdivider, not less than 60 days prior to the expiration date, may request in writing, to the City, an extension of the approval.

40. Application for approval of the final tract map shall be filed with the City Council 30 days prior to the expiration date of the tentative map.

41. The decision of the Planning and Economic Development Commission may be appealed to the City Council within 15 days from the date of the approval letter. Said appeal must be in writing and filed with the City Clerk's office (DMC 19.144) and include all associated fees. The written appeal shall include reasons for the appeal.

42. That by acceptance of the approval of the project by the City, the applicant shall defend, indemnify and hold harmless the City of Duarte and its agents, officers and employees from any claim, action or proceeding against the City or its agents, officers and employees to challenge, set aside, void or annul the approval of the project or from any other action pertaining to this application or the granting of approval which may be brought within the time period provided for such actions or challenges under applicable law.

RESOLUTION PC 25-18

A RESOLUTION OF THE PLANNING AND ECONOMIC DEVELOPMENT COMMISSION OF THE CITY OF DUARTE RECOMMENDING APPROVAL OF SITE PLAN AND DESIGN REVIEW CASE 24-45 TO THE CITY COUNCIL, FOR AN 11-UNIT TWO-STORY TOWNHOME DEVELOPMENT AND ASSOCIATED SITE IMPROVEMENTS, LOCATED AT 1404 AND 1414 ROYAL OAKS DRIVE

WHEREAS, the applicant is requesting approval Site Plan and Design Review Case No. 24-45 ("SPDR") to allow for the development of an 11-unit owner-occupied residential townhome development located at 1404 and 1414 Royal Oaks Drive; and

WHEREAS, if approved, the proposed SPDR will be upon the approval of General Plan Amendment 24-03, Zone Change 24-03, and Tentative Tract Map No. 84375; and

WHEREAS, new two-story, multiple-family residential construction requires recommendation from the Architectural Review Board to the Planning and Economic Development Commission, and since this project involves entitlements that also require consideration from the City Council, a recommendation from the Planning and Economic Development Commission to City Council is required for complete project approval, pursuant to Duarte Development Code Sections 19.112.030 and 19.122.030, Table 2; and

WHEREAS, On September 22, 2025 the Architectural Review Board reviewed the plans for the SPDR and recommended approval to the Planning and Economic Development Commission subject to conditions; and

WHEREAS, notice of a public hearing on the SPDR was given pursuant to Duarte Development Code Chapter 19.146 and in accordance with applicable State law; and

WHEREAS, the Planning and Economic Development Commission considered the analysis and recommendation provided in the staff report, and all information, evidence and public testimony received at the public meeting held on November 17, 2025 at 7:00 p.m. in the City Council Chambers and recommended that the City Council approve the SPDR, subject to conditions of approval.

NOW THEREFORE, the Planning and Economic Development Commission of the City of Duarte resolves as follows:

SECTION 1. RECITALS

The facts, findings, determinations, and directions set forth in the Recitals of this Resolution are true and correct and incorporated herein by this reference.

SECTION 2. FINDINGS FOR PLANNED DEVELOPMENT PERMITS

In accordance with Duarte Development Code Section 19.122.050.E, the Planning and Economic Development Commission hereby finds and determines as follows:

1. The SPDR is consistent with the General Plan and is in compliance with all applicable provisions of the Duarte Development Code and all other City ordinances and regulations;

   General Plan Amendment 24-03 and Zone Change 24-03 are included as part of the overall project proposal that includes the SPDR. The project conforms to the goals and objectives on the General Plan by establishing a designation that will accommodate a range and mix of housing within the city. Furthermore, the project meets the goals and objectives of the General Plan by re-designating underutilized residential properties into higher-density residential sites. The land use of Medium Density Residential complements the land use of the surrounding developments and will provide an improvement along Royal Oaks Drive.

2. The project that is the subject of the SPDR is to be constructed on a parcel that is adequate in shape, size, topography, and other circumstances to accommodate the proposed development:

   The residential project that is the subject of the SPDR will be developed on roughly 40,540 square feet of land, and based on the project design, the project site is suitable for accommodating the residential structures, drive aisles, open space and pedestrian walkways. The project includes 11 units, which is a density of approximately 11 units per acre. This is below the maximum of the R-3 Multiple Family Residential Medium Density zoning designation but suitable for the development and project site. The density also allows for enhanced amenities such as increased open space to further improve the overall project. The project meets all development code requirements for the R-3 zone.

3. The project that is the subject of the SPDR complies with the applicable criteria specified in Duarte Development Code Section 19.122.040(D), and the site is suitable for the proposed development; and

   - Compatibility. *The project development has been well designed to improve the subject property and provide a visual enhancement to the surrounding community. The surrounding land uses include single-family residential to the east, and multiple-family residential uses to the west and south. The proposed project will construct multiple-family residential which is compatible with the existing uses that surround the project site.*

   - Architectural Design and Detail. *The project proposes a high-quality Spanish architectural style. Overall, each building is well designed and incorporates a variety of details that improve the property and creates visual appeal along Royal Oaks Drive. Some of the details include the following:*

     a. A color and material palette that includes sand finished Monterey White

stucco applied throughout most of the exterior with complementary brown shades as accents colors.

b. *A variety of architectural features are used such as stucco vents and recesses, ceramic tile door trim, wrought iron window covers and French balconies, painted wood window shutters, exposed rafters, and decorative Spanish-style light fixtures.*

c. *All of the windows will include a recessed design at different depths depending on the window type and style.*

d. *Various pop-out features, arched covered entries, juliet balconies, and roof extensions help break up the building plane and create good horizontal movement.*

e. *Vertical massing is controlled with a low-profile gable roof using a 3:12 pitch. The roof is finished with a concrete Spanish tile to complement the architectural style.*

f. *The site is designed with only a few of the units fronting Royal Oaks Drive, and a 30 foot front setback, creating the appearance of a lower-density development.*

4. The project that is the subject of the SPDR is designed and arranged to provide adequate consideration to ensure the public health, safety, and general welfare, and to prevent adverse effects on neighboring property.

   The project site for the SPDR is surrounded by residential uses on all sides – a single-family residential home to the east, multi-family condominiums to the west and south. The proposed R-3 Multiple Family Residential Medium Density zoning designation is consistent with the adjacent residential properties to the west and south and compatible with the other surrounding properties. The characteristics of the project have taken the surrounding uses into consideration regarding the architectural and site design of the project to ensure residential development and will not decrease the level of compatibility with the surrounding uses and will not create and adverse effect on public health, safety, and general welfare on neighboring properties.

SECTION 3. CEQA DETERMINATION

In recommending adoption of PC Resolution 25-18 for Site Plan and Design Review 24-45, the Planning and Economic Development Commission finds and determines that the Initial Study and Mitigated Negative Declaration ("MND") for the project is in compliance with the California Environmental Quality Act, and State regulations in Title 14 of the California Code of Regulations, which MND has been prepared and circulated for public review and comment, and will be considered for certification by the City Council prior to the City Council's action on the project, including the SPDR

SECTION 4. RECOMMENDATION

The Planning and Economic Development Commission approves PC Resolution 25-18, based on the findings listed in Section 2 (and the findings incorporated by reference in Section 1), and the conditions of approval listed in "Exhibit A" and recommends approval of the SPDR.

APPROVED, AND ADOPTED by the Planning and Economic Development Commission of the City of Duarte at a regular meeting held on the 17th day of November 2025.

_____
Yesenia Paez, Chairperson
City of Duarte Planning and Economic Development Commission

ATTEST:

_____
Craig Hensley, Community Development Director

STATE OF CALIFORNIA
COUNTY OF LOS ANGELES } ss.
CITY OF DUARTE

I, Craig Hensley, Community Development Director of the City of Duarte, do hereby certify that the foregoing Resolution was adopted at a regular meeting of the Planning and Economic Development Commission of the City of Duarte held on November 17, 2025, by the following vote:

AYES:
NOES:
ABSTAIN:
ABSENT:

_____
Craig Hensley, Community Development Director

EXHIBIT A
CONDITIONS OF APPROVAL
Site Plan and Design Review SPDR 24-45

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1. This approval recommendation is for the construction of 11 two-story, attached townhomes, located at 1404-1414 Royal Oaks Drive, as depicted on the approved plans on file with the Planning Division.

2. Complete project approval is contingent upon City Council approval of: General Plan Amendment #24-03, Zone Change #24-03, Tentative Tract Map #084375, Site Plan and Design Review Case #24-45, and the associated Mitigated Negative Declaration. Any associated conditions, related to the approval of the aforementioned entitlements, shall be integrated into the project plans or development.

3. The elevations of each building (townhome cluster) shall be reviewed and approved by the Planning Division prior to submitting to Building and Safety plan check. Final review shall include approval of the color palette, placement of colors, and all finished building materials/elements. All finished materials/elements incorporated into the building design shall be of high quality and high durability, and shall take into consideration locations that may be more vulnerable to damage or potential maintenance concerns.

4. All windows and doors shall require final approval from the Planning Division prior to permit issuance. A separate window and door plan with an accurate window and door schedule shall be provided to the Planning Division for review prior to submitting to Building and Safety plan check. The schedule shall list the window and door types and their locations. The plan shall include all necessary details on the type, color, and material of all proposed windows and doors; sections/detail drawings depicting the use of trims, moldings, mullions, etc.

5. All garage doors shall be of high quality design that is complementary to the architectural style of the building. Final approval from the Planning Division is required prior to issuance of building permits.

6. All exterior materials shall be designed and installed to match the architectural style provided in the submitted plans. Exterior colors and materials for the proposed 11-units and perimeter walls shall be applied as reviewed and approved by Architectural Review Board (“ARB”).

7. Any revisions to the site plan, floor plan, elevations, colors, and materials in addition to those listed as conditions of approval, shall be reviewed and approved by the Planning Division prior to installation. Such changes may require further review and approval from the ARB.

8. Grading, drainage, civil, and related engineering plans and all required plan check fees shall be submitted to the Public Works/Engineering Division for plan check prior to construction. Approval from Public Works/Engineering Division shall be obtained prior to the issuance of permits.

9. Prior to the issuance of a certificate of occupancy, a Public Works right-of-way permit for the proposed driveway modifications shall be obtained, and the work completed. The right-of-way permit must be issued to a licensed concrete contractor.

10. Follow the list of Best Management Practices ("BMP's") of the National Pollution Discharge Elimination System ("NPDES"), including recommendations from the City grading inspector. During grading, watering shall be established to adequately reduce on and off site dust. Grading is prohibited during high wind conditions.

11. The Developer/applicant shall prepare Covenants, Codes, & Restrictions ("CC&Rs") in a form acceptable to the City Attorney. The CC&Rs shall provide regulations that include but are not limited to: onsite parking management, guest parking, use of resident garages for parking, outdoor storage, common area maintenance, trash service, among others. The CC&Rs shall include requirements for the establishment of a Homeowners Association that will implement and ensure compliance with the CC&Rs. In addition to being a requirement of this approval, the CC&Rs shall also be a requirement of the approved subdivision tract map associated with this project; any requirements associated with the tract map or other entitlements as part of the overall project approval shall be incorporated with this approval by reference. The CC&Rs shall be recorded with the County Recorder's Office and proof of recordation shall be provided to the City of Duarte prior to issuance of Certificate of Occupancy. The CC&Rs shall not be modified without prior approval from the City.

12. The maintenance responsibilities of the Homeowners Association shall include the private yard areas for each residential unit, in addition to all common areas on the property. The Developer/Applicant shall provide an HOA maintenance plan to the Community Development Director for approval prior to building permit issuance. The HOA plan shall clearly depict the HOA maintenance areas and the private ownership areas. Language to this effect, as determined by the City Attorney, shall be included in the CC&Rs.

13. Resident garages shall be used for vehicle parking only. Excessive storage or any reduction of vehicle parking space within the garage shall be prohibited. Garages shall maintain a minimum clearance of 20 feet wide and 20 feet deep for vehicle parking. Language to this effect, as determined by the City Attorney, shall be included in the CC&Rs.

14. Uncovered off-street parking within the property shall be designated for guest and overflow only and not for the exclusive use of residents. Language to this effect, as determined by the City Attorney, shall be included in the CC&Rs.

15. The Developer and/or Homeowners Association shall establish a Residential Parking Management Plan that regulates onsite parking to reduce any potential overflow parking onto the street and within adjacent properties. The parking management

plan shall be incorporated into the recorded CC&Rs and implemented/monitored by the established Homeowners Association. The management plan shall be provided to the Planning Division for review and approval prior to permit issuance. Language to this effect, as determined by the City Attorney, shall be included in the CC&Rs.

16. Final design/location of all fences, walls, and gates shall require approval from the Planning Division. A detailed fence, wall, and gate plan shall be submitted to the Planning Divisions for review and approval prior to permit issuance, and shall include all finish color and material details, block wall cap details, among others.

17. A complete landscape, hardscape, and irrigation plan, prepared by a licensed landscape architect, shall be submitted to the Planning Division for review and approval prior to permit issuance. All landscape areas shall be permanently landscaped and irrigated with a variety of drought-tolerant plants, shrubs, ground cover, large and/or small canopy trees. A variety of hardscape areas shall also be included with the landscape plans. All pedestrian walkways and garage approaches shall be constructed out of concrete; decorative/enhanced paving material shall be incorporated in the drive aisle at the back of the approach. All landscaping and irrigation shall comply with Chapter 19.40 (Landscaping) of the Duarte Development Code. Separate review fees shall apply.

18. The developer/applicant shall contact the City's waste disposal company, Burrtec Waste, to create a sufficient disposal schedule that will ensure waste generated by the residents is hauled off site in a timely manner.

19. All exterior lighting shall require final approval from the Planning Division prior to installation and/or issuance of permits. Lighting fixtures shall be of high quality and decorative form and shall be designed to prevent offsite glare. A lighting plan shall be provided to the Planning Division for review and shall include cut-section drawings, manufacture brochure, illumination levels/lighting distribution, operational features, and any additional information as needed for all proposed wall-mounted lights, street lights, pedestrian lights, and common area lighting. Separate review fees for the lighting plan review may apply.

20. A maintenance plan that provides continued and regular maintenance throughout the property shall be submitted to the Community Development Department for review and approval prior to permit issuance. The maintenance plan shall be incorporated in the CC&Rs and implemented by the established Homeowners Association. All requirements of the approved maintenance plan shall be incorporated by reference as a condition of approval.

21. The Developer shall provide mailboxes per designs and placement approved by the local postmaster and Community Development Department. Any multi-unit or "cluster box", that serves multiple residents, shall be designed to match or compliment the architectural style of the project. Multi-unit mailboxes shall require review and approval from the Planning Division prior to permit issuance.

22. The storage of bikes, equipment, clothing, or other types of miscellaneous storage within the private courtyards visible to the public is prohibited. Restrictions on

storage shall be incorporated in the approved CC&Rs and regulated by the established Homeowner's Association for the property.

23. The Developer shall comply with all requirements of the Los Angeles County Fire Department, including inspections, unit address identification, among others, prior to the issuance of a certificate of occupancy.

24. The Developer shall install both building and curb address numbers per City and Los Angeles County Fire Department standards, prior to the issuance of a certificate of occupancy.

25. The project shall comply with all regulations of the Duarte Municipal Code and the Duarte Development Code, including the intent and purpose, permitted uses, development standards, and any other applicable sections.

26. Any revisions to the site plan, elevations, colors, and materials in addition to those listed as conditions of approval, shall be reviewed and approved by the Planning Division prior to installation; substantial changes may require review and approval from the Architectural Review Board and/or Planning and Economic Development Commission.

27. Mechanical equipment and related ducts, vents and other apparatus, including HVAC, shall be screened from public view and must be located inside the structure, attic, or ground mounted. Vents, pipes, caps, hoods, and other roof penetrations that must be installed on the roof shall be painted or finished to match the roof color. Ground mounted equipment shall be shielded from public view by landscaping and/or enclosed in integrated utility closet, subject to approval from the Planning Division.

28. All utilities for direct service to the project shall be installed underground and concealed from view, as approved by the Planning Division, except for transformers, which shall be allowed above ground with adequate screening.

29. This project is subject to the requirements of Chapter 6.10 of the Duarte Municipal Code, Diversion and Demolition Waste. Prior to the issuance of any permits, the applicant shall submit a Construction and Demolition Diversion Plan and required security deposit. Contact the Planning Division for more information.

30. A final inspection shall be made by the Planning Division prior to final of any building permits to ensure that all conditions have been met.

31. Plans and all required plan check fees shall be submitted to the Community Development Department for Building & Safety plan check prior to construction. Approval from Building & Safety shall be obtained prior to the issuance of permits. Construction drawings, including the site plan, elevations, and colors shall be consistent and in substantial compliance with the conceptual approval and any required conditions of the Planning and Economic Development Commission.

32. Any and all correction notice(s) generated through the plan check and/or inspection process is/are hereby incorporated by reference as conditions of approval and shall be fully complied with by the owner, applicant, and all agents thereof.

33. Building permits for this project must be issued within one-year from the date of approval from the Planning and Economic Development Commission or the application and approval shall expire.

34. Prior to issuing permits, any required school fees shall be paid directly to Duarte Unified School District and proof of payment provided to the City. Contact Duarte Unified School District for more information.

35. The Developer shall comply with applicable City noise ordinances. Construction activities, deliveries and haul-off will only be permitted from 7:00 a.m. to 7:00 p.m., Monday through Saturday. No construction related idling of engines or other disturbances shall occur outside of noted work hours.

36. Prior to the issuance of a Certificate of Occupancy, landscaping and irrigation shall be installed and functional. All landscaping shall be automatically irrigated. Landscaping shall be continuously maintained and permanently irrigated. All existing plant material shall be alive and healthy and in a disease and pest free condition at all times.

37. The decision of the Architectural Review Board may be appealed to the City Council within 15 days from the date of approval. Said appeal must be in writing and filed with the City Clerk's office (Duarte Development Code section 19.144). The written appeal shall include reasons for the appeal.

38. That by acceptance of the approval of the project by the City, the applicant shall defend, indemnify and hold harmless the City of Duarte and its agents, officers and employees from any claim, action or proceeding against the City or its agents, officers and employees to challenge, set aside, void or annul the approval of the project or from any other action pertaining to this application or the granting of approval which may be brought within the time period provided for such actions or challenges under applicable law.

Department of Toxic Substances Control

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Secretary for
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Gavin Newsom
Governor

SENT VIA ELECTRONIC MAIL

September 17, 2025

Scott Nash
Associate Planner
City of Duarte
1600 Huntington Drive
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RE: MITIGATED NEGATIVE DECLARATION FOR THE 1404 ROYAL OAKS PROJECT DATED SEPTMEBER 15, 2025, STATE CLEARINGHOUSE NUMBER 2025090685

Dear Scott Nash,

The Department of Toxic Substances Control (DTSC) reviewed the Mitigated Negative Declaration (MND) for the 1404 Royal Oaks Project (Project). The Project proposes to remove existing on-site improvements and construct 11 two-story attached townhomes in five buildings with attached two car garages for each of the townhome units. The Project proposes a General Plan Amendment to change the General Plan land use designation of the site to Medium Density Residential; a Zone Change to change the zoning of the site to R-3 Multiple Family Residential Medium Density; a Tentative Tract Map to create a subdivision for condominium purposes; and a Site Plan and Design Review to approve the proposed Site Plan.

DTSC recommends and requests consideration of the following comments:

1. If buildings or other structures are to be demolished on any Project sites included in the proposed Project, surveys should be conducted for the presence of lead-based paints or products, mercury, asbestos containing

materials, and polychlorinated biphenyl caulk. Removal, demolition, and disposal of any of the above-mentioned chemicals should be conducted in compliance with California environmental regulations and policies. In addition, sampling near current and/or former buildings should be conducted in accordance with DTSC's Preliminary Endangerment Assessment (PEA) Guidance Manual.

2. All imported soil/fill material should be tested to assess any contaminants of concern meet screening levels as outlined in DTSC's PEA Guidance Manual. Additionally, DTSC advises referencing the DTSC Information Advisory Clean Imported Fill Material Fact Sheet if importing fill is necessary. To minimize the possibility of introducing contaminated soil/fill material, there should be documentation of the origins of the soil/fill material and, if applicable, sampling be conducted to ensure that the imported soil/fill material are suitable for the intended land use. The soil sampling should include analysis based on the source of the soil/fill and knowledge of prior land use.

DTSC would like to thank you for the opportunity to comment on the MND for the 1404 Royal Oaks Project. Thank you for your assistance in protecting California's people and environment from the harmful effects of toxic substances. If you have any questions or would like clarification on DTSC's comments, please respond to this letter or via our CEQA Review email for additional guidance.

Sincerely,

Dave Kereazis

Dave Kereazis
Associate Environmental Planner
HWMP-Permitting Division – CEQA Unit
Department of Toxic Substances Control
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cc: (via email)

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