NOTICE OF INTENT TO ADOPT A MITIGATED NEGATIVE DECLARATION

Notice is hereby given that, as Lead Agency, the City of Roseville, Development Services Department, Planning Division has prepared an Initial Study leading to a Mitigated Negative Declaration for the project referenced below. This Mitigated Negative Declaration is available for public review and comment.

Project Title/File#: Infill Pcl 93 & 196– Huntington Senior Apartments; File # PL17-0247

Project Location: 1650 Huntington Drive; 048-260-030-000 and -032-000

Project Owner: Sayed and Talat Hussain Sayed and Talat Hussain

Project Applicant: Craig Miers, Craig Miers + George Scott Architects, LLP

Project Planner: Lauren Hocker, Senior Planner

Project Description: The project site is approximately 3.34 acres, and is bounded by Huntington Drive on the western side, Strauch Drive on the northern and northeastern sides, City-owned property on the eastern side, and single-family residences on the southern side. The applicant proposes to construct a multi-family, senior, age-restricted (55+) apartment complex consisting of ten apartment buildings, which would include 48 one-bedroom units and 298 two-bedroom units, a community clubhouse, and associated parking. Five of the proposed 76 apartment units will be designated as affordable housing units. The proposed project would include single-story buildings and a clubhouse along the southern boundary of the site, adjacent to single-family residences, and two- and three-story buildings along Strauch Drive, on the northern and northeastern boundaries of the site.

Development of the proposed project would require a General Plan Amendment to change the land use designation of the site from Community Commercial and Medium Density Residential to High Density Residential, and a Rezone to change the zoning designation of the site from Planned Development 7 to Attached Housing (R3). It also requires a Design Review Permit to approve the site design and architecture, a Tree Permit to authorize the removal of oak trees, and a Lot Line Adjustment on the eastern side and northwestern corner of the site.

Document Review and Availability: The public review and comment period begins on February 8, 2019 and ends on March 11, 2019. The Mitigated Negative Declaration may be reviewed during normal business hours (8:00 am to 5:00 pm) at the Planning Division offices, located at 311 Vernon Street. It may also be viewed online at https://www.roseville.ca.us/cms/One.aspx?portalId=7964922&pageId=8774505. **Written comments on the adequacy of the Mitigated Negative Declaration may be submitted to Lauren Hocker, Planning Division, 311 Vernon Street, Roseville, CA 95678, and must be received no later than 5:00 pm on March 11, 2019**.

This project will be scheduled for a public hearing before the City's Planning Commission. At this hearing, the Planning Commission will consider the Mitigated Negative Declaration and associated project entitlements. The tentative hearing date is March 14, 2019.

Greg Bitter
Planning Manager

Dated: February 5, 2019

Publish: February 8, 2019

CITY OF ROSEVILLE CALIFORNIA

DEVELOPMENT SERVICES DEPARTMENT–PLANNING DIVISION

311 Vernon St, Roseville, CA 95678 (916) 774-5276

INITIAL STUDY & ENVIRONMENTAL CHECKLIST

Project Title/File Number:	Huntington Senior Apartments, File # PL17-0247
Project Location:	1650 Huntington Drive, Roseville, Placer County, California Assessor's Parcel Number (APN): 048-260-030-000
Project Description:	The Project Applicant proposes to construct a multi-family, senior, age restricted (55+) apartment complex consisting of 10 apartment buildings composed of 48 one-bedroom units and 28 two-bedroom units, a community clubhouse, and associated parking. Five of the proposed 76 apartment units would be designated as affordable housing units. The project also includes a lot line adjustment along the northwestern corner and southeastern edge of the project site. In addition, a Tree Permit would be required to remove up to ten onsite oak trees.
Project Applicant:	Craig Miers, Craig Miers + George Scott Architects, llp, 1624 Santa Clara Drive, Suite 230, Roseville, California 95661
Property Owner:	Dr. Sayed Hussain, MD, 729 Sunrise Avenue, Suite 604, Roseville, California 95661
Lead Agency Contact Person:	Lauren Hocker, Senior Planner, Phone (916) 774-5272

This Initial Study has been prepared to identify and assess the anticipated environmental impacts of the above described project application. The document relies on site-specific studies prepared to address in detail the effects or impacts associated with the Proposed Project (see **Attachments**). Where documents were submitted by consultants working for the Project Applicant, City staff reviewed such documents in order to determine whether, based on their own professional judgment and expertise, staff found such documents to be credible and persuasive. Staff has only relied on documents that reflect their independent judgment, and has not accepted at face value representations made by consultants for the Project Applicant.

This document has been prepared to satisfy the California Environmental Quality Act (CEQA), (Public Resources Code, Section 21000 *et seq.*) and the State CEQA Guidelines (14 CCR 15000 *et seq.*). CEQA requires that all State and local government agencies consider the environmental consequences of projects over which they have discretionary authority before acting on those projects.

The Initial Study (IS) is a public document used by the decision-making lead agency to determine whether a project may have a significant effect on the environment. If the lead agency finds substantial evidence that any aspect of the project, either individually or cumulatively, may have a significant effect on the environment, regardless of whether the overall effect of the project is adverse or beneficial, the lead agency is required to prepare an Environmental Impact Report (EIR). If the agency finds no substantial evidence that the project or any of its aspects may cause a significant effect on the environment, a Negative Declaration (Neg Dec) shall be prepared. If in the course of analysis, the agency recognizes that the project may have a significant impact on the environment, but that by incorporating specific mitigation measures to which the applicant agrees, the impact will be reduced to a less than significant effect, a Mitigated Negative Declaration (MND) shall be prepared.

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PROJECT DESCRIPTION

This section provides an overview of the Proposed Project and contains the information used to analyze potential impacts on environmental resources.

Project Location

The project site is located at 1650 Huntington Drive within the City of Roseville in Placer County, California on southern the corner of Strauch Drive and Huntington Drive and is located within Township 10 North, Range 7 East, Section 7 of the *Citrus Heights*, California U.S. Geological Service (USGS) 7.5-minute quadrangle map. The approximate location of the center of the project site is 38° 44' 32.459" North, 121° 15' 17.824" West (NAD 83, State Plane Zone II (**Figure 1**) (Project Site) (APN 048-260-030-000).

Environmental Setting

The Project Site encompasses approximately 3.34 acres and is owned by Dr. Sayed Hussain, MD. The Project Site is currently characterized as a vacant infill site south of Douglas Boulevard and west of Rocky Ridge Drive and is bounded on the north and west by Huntington Drive, on the east by Strauch Drive, and on the south by residential development. Land uses immediately surrounding the Project Site include single-family residential units to the south, duplex residential units to the west, a small area of undeveloped oak woodland to the northeast, and business development to the northwest and northeast, adjacent to the off-site oak woodland.

Project Site topography is generally undulating along the outside boundaries, giving rise to a large, mound in the center of the site composed of sandy soils dominated by non-native grasses. Elevations range from approximately 170 feet (52 meters) above mean sea level (MSL) in the southeast to 202 feet (60 meters) MSL in the center. A perennial drainage occurs approximately 40 feet to the east of the Project Site (off-site), running north to south and paralleling the southeastern boundary adjacent to Rocky Ridge Drive.

Historically the Project Site has been disturbed by off-road vehicle activity and unauthorized public access.

General Plan Land Use Designation and Zoning Designations

Per the *City of Roseville General Plan Land Use Element*[1] the current land use designation for the Project Site is Community Commercial (CC) and Medium Density Residential (MDR-8) (**Figure 2**). The Project Site is within the Infill Specific Plan area per the *City of Roseville Zoning Map*[2] and is within an area zoned as Planned Development (PD) (**Figure 3**). Adjacent land uses include CC, MDR-8, and Low Density Residential (LDR-3.8). Adjacent land uses and zoning are summarized below in **Table 1**.

Table 1 — City of Roseville Existing General Plan Land Use and Zoning

Location	Zoning	General Plan Land Use	Actual Use of Property
Project Site	PD7	CC and MDR-8	Undeveloped
North	PD7	CC	Strauch Drive, Rocky Ridge Plaza, and Douglas Boulevard
South	R1	LDR-3.8	Tanglewood Lane and single-family residential development
East	R1 / CC	LDR-3.8 and MDR-8	Rocky Ridge Drive and Commercial/Professional
West	PD7	CC and MDR-8	Huntington Drive, TJ Maxx Plaza, single-family residential, and duplex residential

[1] City of Roseville. 2017. *General Plan 2035 Land Use Map*, updated March 2017. Available online at: https://www.roseville.ca.us/cms/One.aspx?portalId=7964922&pageId=8853705. [Accessed 1/10/18].
[2] City of Roseville, 2017. *Zoning Map*, updated March 2017. Available online at: https://www.roseville.ca.us/government/departments/development_services/planning/zoning_information/. [Accessed 1/11/18].

Proposed Project

The proposed project would construct a multi-family, senior, age restricted (55+) apartment complex consisting of 10 apartment buildings composed of 48 one-bedroom units and 28 two-bedroom units, a community clubhouse, and associated parking (**Figure 4**). Five of the proposed 76 apartment units would be designated as affordable housing units (Proposed Project).

The Proposed Project would include single-, two-, and three-story buildings. The single-story buildings along with a single-story community clubhouse are proposed along the southern boundary of the Project Site adjacent to existing single-family residences. The two and three-story buildings are proposed adjacent to Strauch Drive and the existing Rocky Ridge Plaza and would be staggered from Huntington Drive. The proposed building heights are summarized below in **Table 2**.

Table 2 — Summary of Building Elevation Heights

Elevation	North	East	West	South
One Story Elevation	17’ 1”	19’ 4 ½”	17’ 1”	19’ 4 ½”
Two Story Elevation	27’ 5”	27’ 5”	25’ 2”	25’ 2”
Three Story Elevation	34’ 4”	34’ 4”	36’ 7”	36’ 7”
Community Clubhouse	18’ 1 ½”	18’ 6 ½”	15’ 10”	18’ 6 ½”

The elevations of the buildings would be consistent with the California Ranch neighborhood by using materials that would consist of plaster/stone and heavy shingle profile materials. Sloping roof elements would consist of both hip and gables that blend in with the existing neighboring structures. Elevation profiles for the single, two, and three-story buildings including the community clubhouse are shown on **Figure 5** through **Figure 8**.

Community Clubhouse

The Proposed Project would include a community clubhouse for resident use and professional office space for property management along with amenities such as a mail room, gym facility, library, community room for group activities, kitchen, dog grooming, and restroom facilities. A paratransit stop would be located in front of the clubhouse for individuals with disabilities utilizing the Roseville American Disabilities Act (ADA) Paratransit Service.

Bio Retention Facilities

Development of the Proposed Project would attenuate storm water onsite. Project development would include several bio-retention facilities located adjacent to paved areas. The bio-retention facilities would include plantings to help retain and treat storm water runoff from impervious surfaces during high flow storm events. A 1,418 square-foot vegetative swale would be constructed adjacent to the project entrance along Strauch Drive. Trees would be planted in planter spaces throughout the site and in bio retention facilities and would include 31 California native trees.

Parking

The Proposed Project would include 89 parking spaces for residents and guests which would consist of nine accessible ADA-compliant spaces, two compact spaces, and 78 standard parking spaces. Runoff from the parking areas would be routed through bio-retention facilities prior to entering the City of Roseville storm drain system.

Landscaping

An outdoor garden would be located within the center of the complex along with a designated sitting area. Landscaping would consist of trees and shrubs, and other flora native to the area. Maximum consideration would be given to those plants that are drought resistant, and that require the least amount of maintenance. Two additional sitting areas would be located in the complex adjacent to housing and landscape areas.

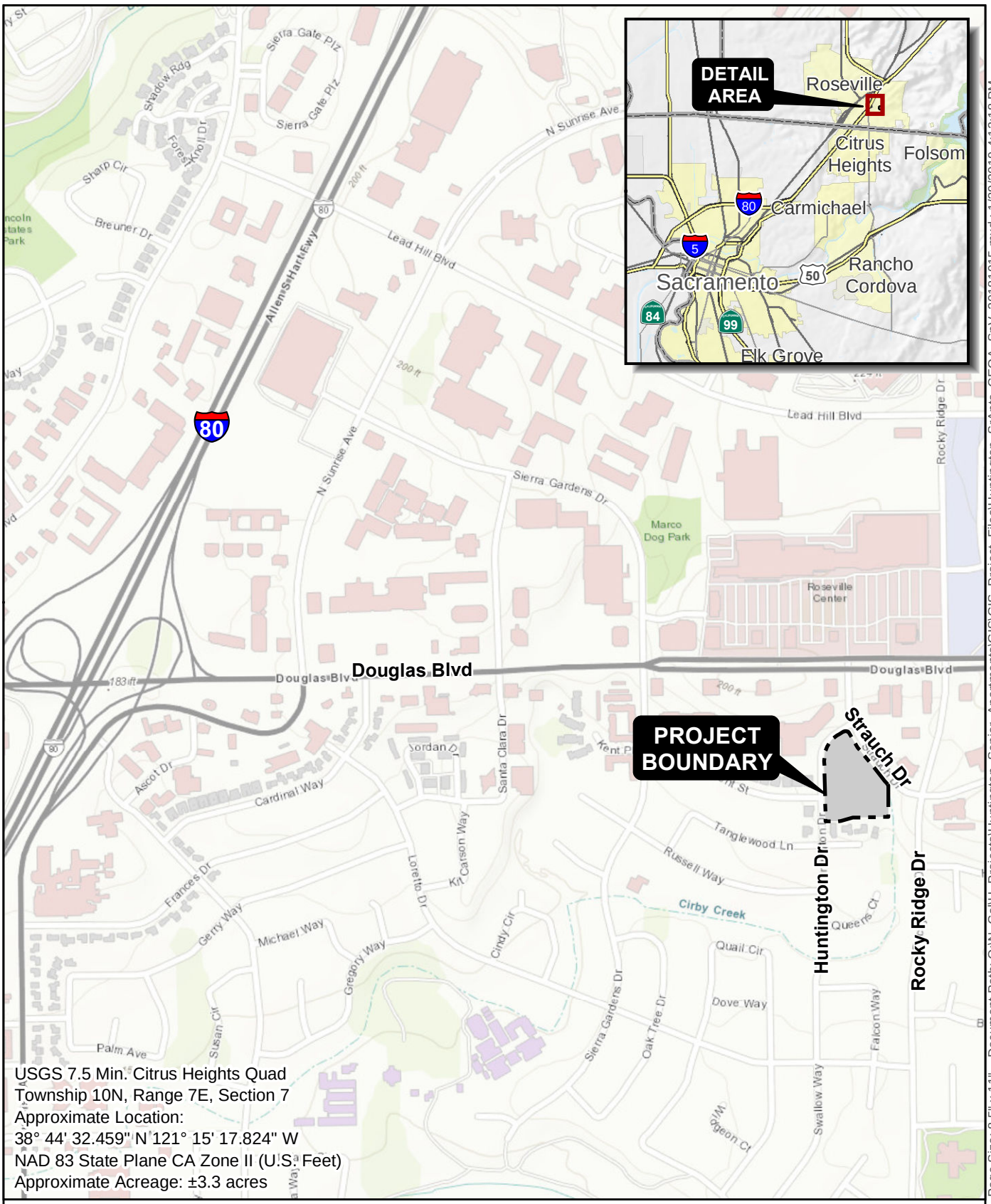
Utilities
Project development would include trash enclosures and an elevator and elevator machine room. Lighting for safety, security, and public use would also be installed on the site (i.e. sconce lighting, pole lighting). Lighting design would comply with all local and state codes (e.g. Title 24).

Construction, Grading, and Staging
Project construction is planned to commence during summer 2019 and would involve a combination of standard types of construction equipment, including, but not limited to, backhoe/skiploader, grader, excavator, compactor/roller, asphalt paver, and trucks. All staging for construction equipment would occur on the Project Site. Proposed Project development would require leveling the site and exporting approximately 27,295 cubic yards of fill to an environmentally approved site with an approved Grading Plan within 50 miles of the Project Site.

The maximum elevation of the site is currently 202 feet MSL, and would be lowered to between 170 and 180 feet MSL. The highest point of the graded site would be at the corner of Strauch Drive and Huntington Drive, with the site gradually sloping down to the southern side of the site. The elevation of the three neighboring single-family properties to the south is between 167 feet MSL at Huntington Drive and gradually increasing to 177 feet MSL on the parcel closest to Rocky Ridge Drive. The Proposed Project elevation would closely match the existing grade of the adjacent single-family homes on Huntington Drive, but as proposed would gradually become lower than the adjacent residential properties. Low-level concrete masonry walls (approximately 2 to 2.5 feet in height) would be constructed to retain soils due to this grade difference. A concrete masonry wall (approximately 2.5 feet in height) would be included for a portion of Huntington Drive near Strauch Drive, because the site would be slightly higher than the roadway.

A 6-foot-high concrete masonry wall would be constructed along the southern project boundary adjacent to existing single-family residential and would be complimentary in color to the buildings.

Entitlements
Development of the Proposed Project would require a Rezone and General Plan Amendment to change existing CC and MDR land use designations to High Density Residential (HDR). As shown on **Figure 4**, a lot line adjustment is proposed along the northwestern corner and southeastern edge of the Project Site. The Proposed Project would also require a Design Review Permit to approve the site design and architecture and a Tree Permit for the removal of oak trees.



USGS 7.5 Min. Citrus Heights Quad
Township 10N, Range 7E, Section 7
Approximate Location:
38° 44' 32.459" N 121° 15' 17.824" W
NAD 83 State Plane CA Zone II (U.S. Feet)
Approximate Acreage: ±3.3 acres

HUNTINGTON SENIOR APARTMENTS – SITE AND VICINITY

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FIGURE 1

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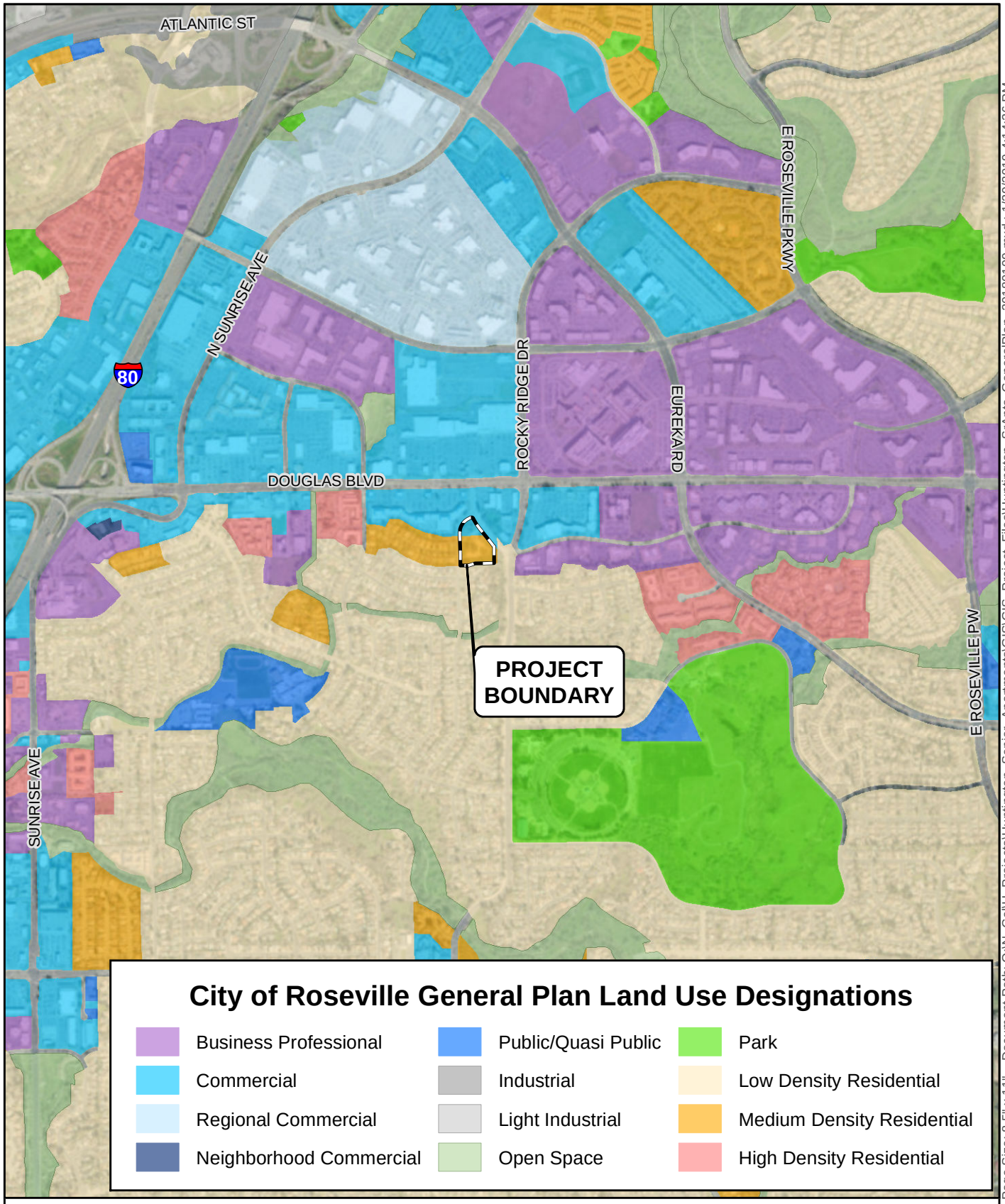

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HUNTINGTON SENIOR APARTMENTS
GENERAL PLAN LAND USE DESIGNATIONS

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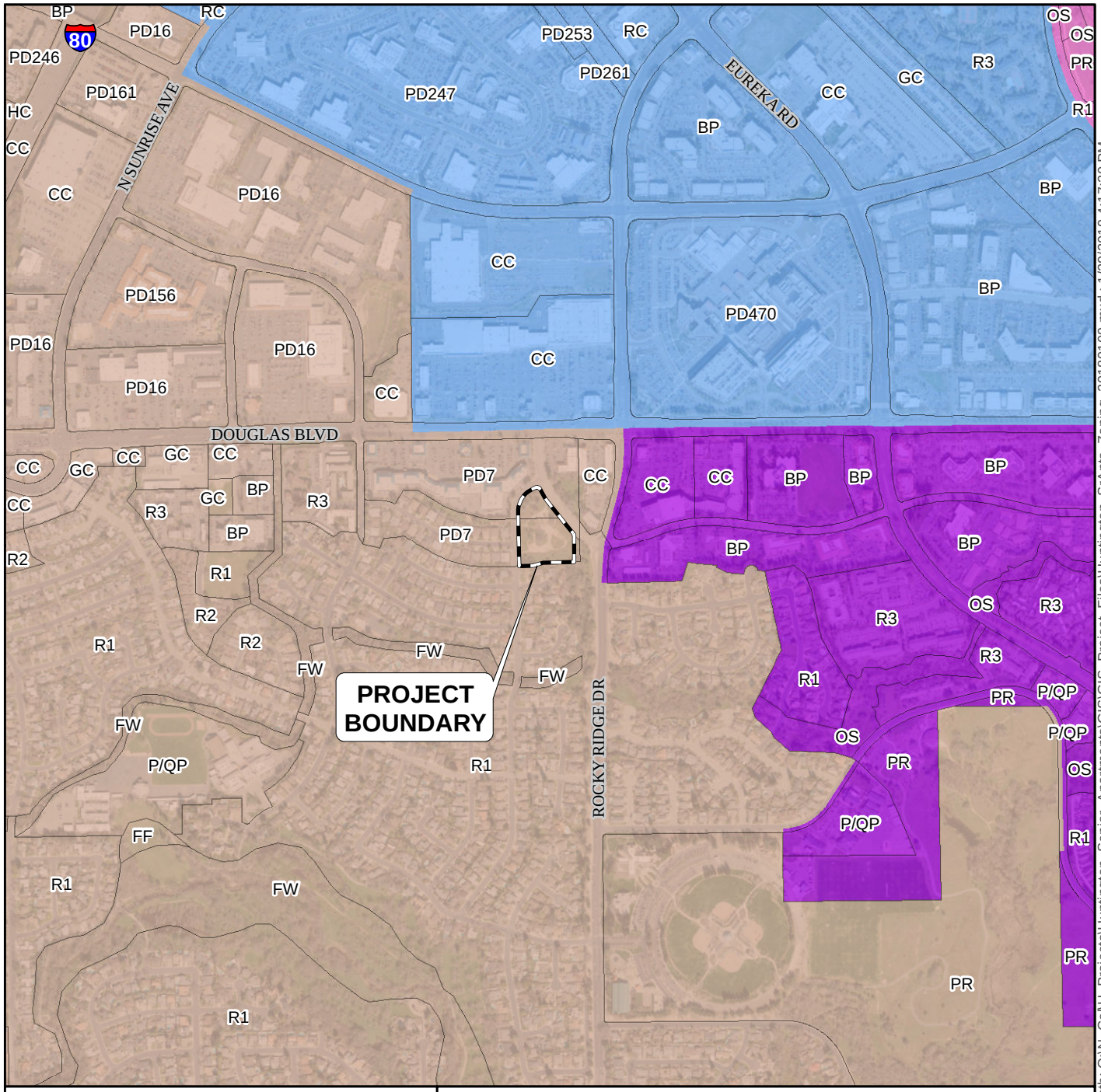
FIGURE 2



Specific Plan Areas

- Infill
- Northeast Roseville Specific Plan
- Southeast Roseville Specific Plan
- Stoneridge Specific Plan

City of Roseville Zoning

Residential Zones

R1	Single Family Residential
R2	Two-Family Residential
RS	Small Lot Residential
R3	Attached Housing

Overlay/Special Purpose Zones

/SA	Special Area
/FW	Floodway
/FF	Floodway Fringe
/PD	Planned Development

Commercial Zones

BP	Business Professional
NC	Neighborhood Commercial
CC	Community Commercial
GC	General Commercial
HC	Highway Commercial

Civic and Resource Protection Zones

PR	Park and Recreation
OS	Open Space
P/QP	Public/Quasi-Public

HUNTINGTON SENIOR APARTMENTS - ZONING

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FIGURE 3

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Legend

Proposed Project	Area Post Light	Clubhouse
20-Foot Building Setback	Monument Sign	Single Story Building
Bioretention Planter	Paratransit Stop	Two Story Building
Vegetative Swale	6 Ft Concrete Masonry Fence	Three Story Building
Lot Line Adjustment	2.5 Ft Retaining Wall	Project Boundary ±3.3 Acres
Limit of Grading		

Digital base data provided by Craig Miers & George Scott Architects LLP

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HUNTINGTON SENIOR APARTMENTS - PROPOSED PROJECT

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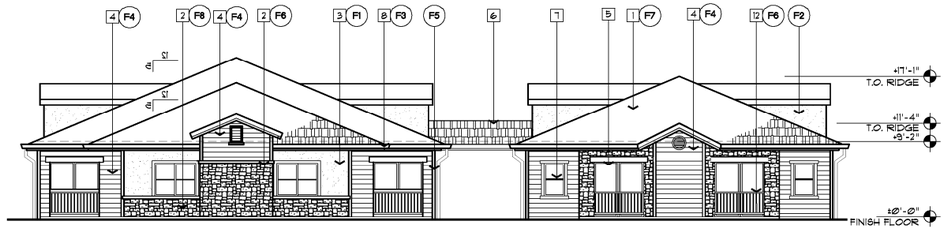
FIGURE 4



NORTH ELEVATION

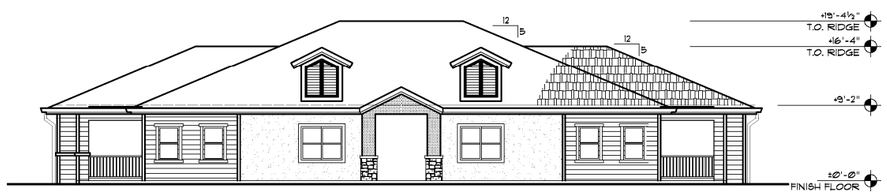
KEYNOTES

1. HEAVY COMPOSITION SHINGLE ROOF , CLASS A
2. STONE
3. PLASTER SYSTEM
4. WOOD LAP SIDING
5. SLIDING DOOR
6. BREEZE WAY BETWEEN UNITS
7. WINDOW
8. METAL GUTTER
9. CLERSTORY ROOF ELEMENT
10. LOUVERS
11. WINDOW TRIM
12. METAL RAILING

FINISH SCHEDULE

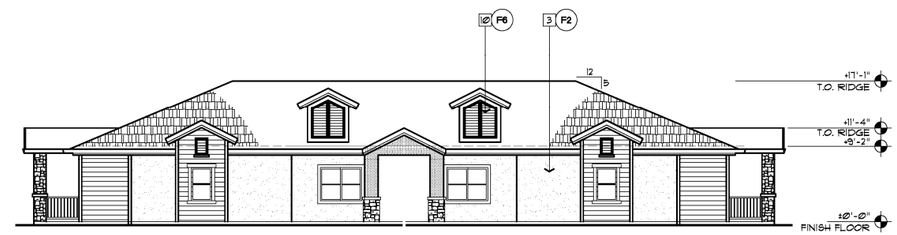
- F1 PLASTER MAIN BODY COLOR 'MESA TAN' SW 7695
- F2 PLASTER MAIN BODY COLOR 'HONED SOAP STONE' SW 9126
- F3 PLASTER MAIN BODY COLOR 'CITYSCAPE' SW 7067
- F4 WOOD SIDING 'ANALYTICAL GRAY' SW 7051
- F5 TRIM ACCENTS 'SHOJI WHITE' SW 7042
- F6 METAL WORK 'SEALSKIN' SW 7675
- F7 DOORS 'DARK WALNUT' SW 6237
- F8 STONE VENEER CULTURED STONE 'SOUTHERN LEDGESTONE' COLOR VARIETY- 'ECHO RIDGE'
- F9 ROOFING "CERTIANTEED" PRESIDENTIAL SHAKE TL 'SHADOW GRAY'

NOTE 1: SW = SHERWIN WILLIAMS



NOTE : FOR COLORS/ FINISHES REFER TO NORTH ELEVATION

EAST ELEVATION



NOTE : FOR COLORS/ FINISHES REFER TO NORTH ELEVATION

WEST ELEVATION

NOTE : FOR COLORS/ FINISHES REFER TO NORTH ELEVATION

SOUTH ELEVATION

HUNTINGTON SENIOR APARTMENTS — ONE STORY ELEVATIONS

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WEST ELEVATION

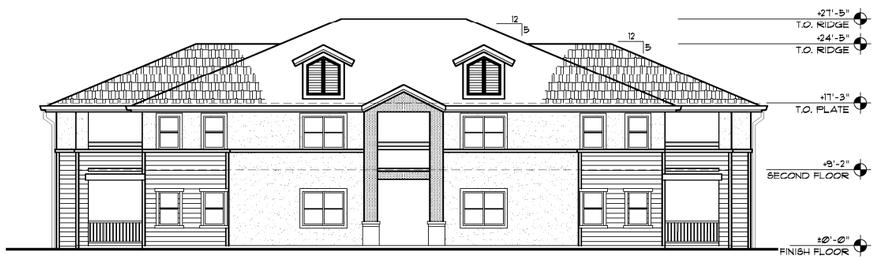
KEYNOTES

1. HEAVY COMPOSITION SHINGLE ROOF , CLASS A
2. STONE
3. PLASTER SYSTEM
4. WOOD LAP SIDING
5. SLIDING DOOR
6. BREEZEWAY @ UNITS
7. WINDOW
8. METAL GUTTER/ DOWNSPOUT
9. BRIDGE BETWEEN UNITS
10. BALCONY RAIL
11. METAL RAILING
12. CLERSTORY ROOF ELEMENT
13. LOUVERS
14. WINDOW TRIM

FINISH SCHEDULE

- F1 PLASTER MAIN BODY COLOR 'MESA TAN' SW 7695
- F2 PLASTER MAIN BODY COLOR 'HONED SOAP STONE' SW 9126
- F3 PLASTER MAIN BODY COLOR 'CITYSCAPE' SW 7067
- F4 WOOD SIDING 'ANALYTICAL GRAY' SW 7051
- F5 TRIM ACCENTS 'SHOJI WHITE' SW 7042
- F6 METAL WORK 'SEALSKIN' SW 7675
- F7 DOORS 'DARK WALNUT' SW 6237
- F8 STONE VENEER CULTURED STONE "SOUTHERN LEDGESTONE" COLOR VARIETY- 'ECHO RIDGE'
- F9 ROOFING "CERTIANTEED" PRESIDENTIAL SHAKE TL 'SHADOW GRAY'

NOTE 1: SW = SHERWIN WILLIAMS



FOR OTHER KEYNOTES, REFER TO WEST ELEVATION

NORTH ELEVATION

FOR OTHER KEYNOTES, REFER TO WEST ELEVATION

SOUTH ELEVATION

FOR OTHER KEYNOTES, REFER TO WEST ELEVATION

EAST ELEVATION

HUNTINGTON SENIOR APARTMENTS — TWO STORY ELEVATIONS

FOOTHILL ASSOCIATES ENVIRONMENTAL CONSULTING • PLANNING • LANDSCAPE ARCHITECTURE	Digital Data Provided by: Craig Miers + George Scott Architects, LLP Revised 5/15/18	NOT TO SCALE	Layout By: CTGH Date: 05/21/18	FIGURE 6

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WEST ELEVATION

NORTH ELEVATION

SOUTH ELEVATION

EAST ELEVATION

KEYNOTES

1. HEAVY COMPOSITION SHINGLE ROOF , CLASS A
2. STONE
3. PLASTER SYSTEM
4. WOOD LAP SIDING
5. SLIDING DOOR
6. BREEZEWAY @ UNITS
7. WINDOW
8. METAL GUTTER/ DOWNSPOUT
9. BRIDGE BETWEEN UNITS
10. BALCONY RAIL
11. METAL RAILING
12. CLERSTORY ROOF ELEMENT
13. LOUVERS
14. WINDOW TRIM

FINISH SCHEDULE

- F1 PLASTER MAIN BODY COLOR 'MESA TAN' SW 7695
- F2 PLASTER MAIN BODY COLOR 'HONED SOAP STONE' SW 9126
- F3 PLASTER MAIN BODY COLOR 'CITYSCAPE' SW 7067
- F4 WOOD SIDING 'ANALYTICAL GRAY' SW 7051
- F5 TRIM ACCENTS 'SHOJI WHITE' SW 7042
- F6 METAL WORK 'SEALSKIN' SW 7675
- F7 DOORS 'DARK WALNUT' SW 6237
- F8 STONE VENEER CULTURED STONE "SOUTHERN LEDGESTONE" COLOR VARIETY- 'ECHO RIDGE'
- F9 ROOFING "CERTIANTEED" PRESIDENTIAL SHAKE TL 'SHADOW GRAY'

NOTE 1: SW = SHERWIN WILLIAMS

HUNTINGTON SENIOR APARTMENTS — THREE STORY ELEVATIONS

FOOTHILL ASSOCIATES ENVIRONMENTAL CONSULTING • PLANNING • LANDSCAPE ARCHITECTURE	Digital Data Provided by: Craig Miers + George Scott Architects, LLP Revised 5/21/18	NOT TO SCALE	Layout By: CTGH Date: 05/21/18	FIGURE 7

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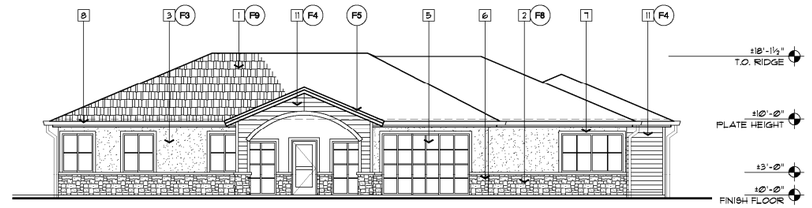


NORTH ELEVATION

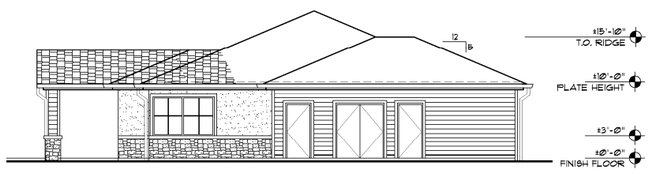
KEYNOTES

1. HEAVY COMPOSITION SHINGLE ROOF, CLASS A
2. STONE
3. PLASTER SYSTEM
4. WOOD TRUSS
5. DOOR
6. STONE COLUMN BASE
7. WINDOW
8. METAL GUTTER
9. WATER STATION (BOTTLE FILLER)
10. ROOF ABOVE
11. WOOD LAP SIDING
12. WINDOW TRIM

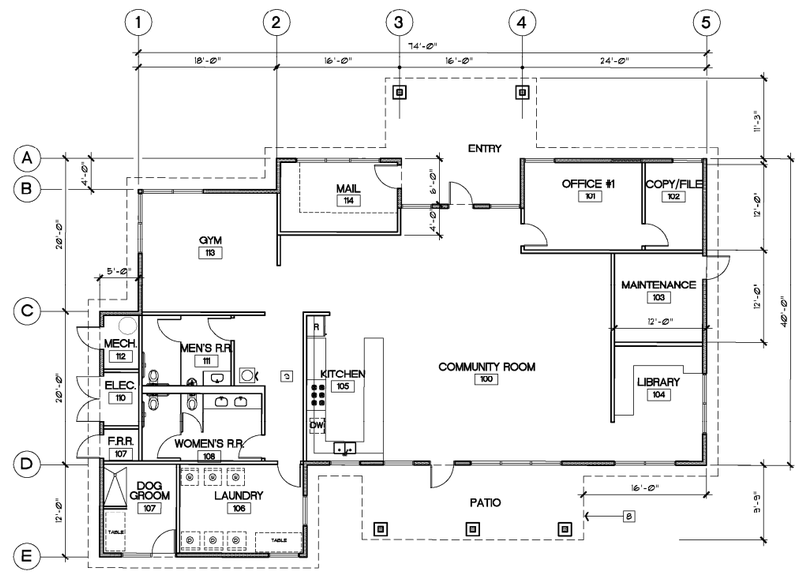
FINISH SCHEDULE

- F1 PLASTER MAIN BODY COLOR 'MESA TAN' SW 7695
- F2 PLASTER MAIN BODY COLOR 'HONED SOAP STONE' SW 9126
- F3 PLASTER MAIN BODY COLOR 'CITYSCAPE' SW 7067
- F4 WOOD SIDING 'ANALYTICAL GRAY' SW 7051
- F5 TRIM ACCENTS 'SHOJI WHITE' SW 7042
- F6 METAL WORK 'SEALSKIN' SW 7675
- F7 DOORS 'DARK WALNUT' SW 6237
- F8 STONE VENEER CULTURED STONE "SOUTHERN LEDGESTONE" COLOR VARIETY- 'ECHO RIDGE'
- F9 ROOFING "CERTIANTEED" PRESIDENTIAL SHAKE TL 'SHADOW GRAY'

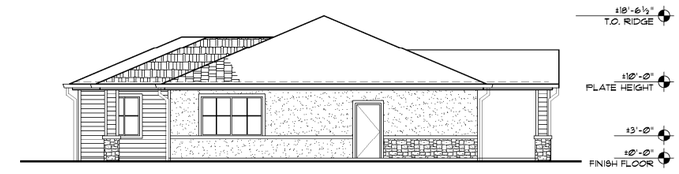
NOTE 1: SW = SHERWIN WILLIAMS



WEST ELEVATION



PLAN- 3,248 SF



EAST ELEVATION

SOUTH ELEVATION

HUNTINGTON SENIOR APARTMENTS — COMMUNITY CLUBHOUSE ELEVATIONS

FOOTHILL ASSOCIATES ENVIRONMENTAL CONSULTING • PLANNING • LANDSCAPE ARCHITECTURE	Digital Data Provided by: Craig Miers + George Scott Architects, LLP Revised 5/15/18	NOT TO SCALE	Layout By: CTGH Date: 05/21/18	FIGURE 8

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CITY OF ROSEVILLE MITIGATION ORDINANCES, GUIDELINES, AND STANDARDS

The City of Roseville (City) adopted CEQA Implementing Procedures (Implementing Procedures) in April 2008, along with Findings of Fact, as Resolution 08-172. The below regulations and ordinances were found to provide uniform mitigating policies and standards, and are applicable to development projects. The City's Mitigating Policies and Standards are referenced, where applicable, in the IS Checklist:

- City of Roseville 2035 General Plan
- City of Roseville Zoning Ordinance (RMC Title 19)
- City of Roseville Improvement Standards (Resolution 02-37)
- City of Roseville Construction Standards (Resolution 01-208)
- Subdivision Ordinance (RMC Title 18)
- Noise Regulation (RMC Ch.9.24)
- Flood Damage Prevention Ordinance (RMC Ch.9.80)
- Drainage Fees (Dry Creek [RMC Ch.4.49] and Pleasant Grove Creek [RMC Ch.4.48])
- West Placer Stormwater Quality Design Manual (Resolution 16-152)
- Urban Stormwater Quality Management and Discharge Control Ordinance (RMC Ch. 14.20)
- Traffic Mitigation Fee (RMC Ch.4.44)
- Highway 65 Joint Powers Authority Improvement Fee (Resolution 2008-02)
- South Placer Regional Transportation Authority Transportation and Air Quality Mitigation Fee (Resolution 09-05)
- Tree Preservation Ordinance (RMC Ch.19.66)
- Community Design Guidelines (Resolution 95-347)

EXPLANATION OF INITIAL STUDY CHECKLIST

The CEQA Guidelines recommend that lead agencies use an IS Checklist to determine potential impacts of the Proposed Project on the physical environment. The IS Checklist provides a list of questions concerning a comprehensive array of environmental issue areas potentially affected by the Proposed Project. This section of the IS incorporates a portion of Appendix G Environmental Checklist Form, contained in the CEQA Guidelines. Within each topical section (e.g. Air Quality) a description of the setting is provided, followed by the checklist responses, thresholds used, and finally a discussion of each checklist answer.

There are four (4) possible answers to the Environmental Impacts Checklist on the following pages. Each possible answer is explained below:

1. A "**Potentially Significant Impact**" is appropriate if there is enough relevant information and reasonable inferences from the information that a fair argument based on substantial evidence can be made to support a conclusion that a substantial, or potentially substantial, adverse change may occur to any of the physical conditions within the area affected by the project. When one or more "Potentially Significant Impact" entries are made, an EIR is required.
2. A "**Less Than Significant with Mitigation**" answer is appropriate when the lead agency incorporates mitigation measures to reduce an impact from "Potentially Significant" to "Less than Significant." For example, floodwater impacts could be reduced from a potentially significant level to a less than significant level by relocating a building to an area outside of the floodway. The Lead Agency must describe the mitigation measures, and briefly explain how they reduce the effect to a less than significant level. Mitigation measures are identified as MM followed by a number.
3. A "**Less Than Significant Impact**" answer is appropriate if there is evidence that one or more environmental impacts may occur, but the impacts are determined to be "Less Than Significant", or the application of development policies and standards to the project will reduce the impact(s) to a less than significant level. For instance, the application of the City's Improvement Standards reduces potential erosion impacts to a less than significant level.
4. A **"No Impact**" answer is appropriate where it can be demonstrated that the impact does not have the potential to adversely affect the environment. For instance, a project in the center of an urbanized area with no agricultural lands on or adjacent to the project area clearly would not have an adverse effect on agricultural resources or operations. A brief explanation is required for all answers except "No Impact" answers that are adequately supported by the information sources cited in the IS. Where a "No Impact" answer is adequately supported by the information sources cited in the IS, further narrative explanation is not required. A "No Impact" answer is explained when it is based on project-specific factors as well as generous standards.

All answers must take account of the whole action involved, including off- and on-site, indirect, direct, construction, and operation impacts, except as provided for under State CEQA Guidelines.

INITIAL STUDY CHECKLIST

I. Aesthetics

The Proposed Project would construct a multi-family, senior, age restricted (55+) apartment complex consisting of 10 apartment buildings with associated parking, landscaping, and lighting. The Proposed Project would include single-, two-, and three-story buildings. The single-story buildings along with a single-story community clubhouse are proposed along the southern boundary of the Project Site adjacent to existing single-family residences. The two- and three-story buildings are proposed adjacent to Strauch Drive and the existing Rocky Ridge Plaza and would be staggered from Huntington Drive. The proposed building heights for the one-story elevations would not exceed 19" 4 ½" at the top of ridge, two-story elevations would not exceed 27' 5" at the top of ridge, and three-story elevations would not exceed 36' 7" at the top of ridge. Single-family residences, such as the ones in the vicinity, are typically 15 to 20 feet tall at the top of ridge for a single-story dwelling, and are permitted by the City Zoning Ordinance to be up to 35 feet tall.

The elevations of the buildings would be consistent with the California Ranch neighborhood by using materials that would consist of plaster/stone and heavy shingle profile materials. Sloping roof elements would consist of both hip and gables that blend in with the existing neighboring structures. Elevation profiles for the single-, two-, and three-story buildings including the community clubhouse are shown on **Figure 5** through **Figure 8**.

The Proposed Project would include a six-foot high masonry wall along the southern boundary of the Project Site and 20-foot wide building setback with landscape buffers along the northern and western project boundary where the property fronts public streets. Low-level concrete masonry walls (approximately 2 to 2.5 feet in height) would be constructed within the 20-foot setback.

Would the project:

Environmental Issue	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
a) Have a substantial adverse effect on a scenic vista?	☐	☐	☐	☒
b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?	☐	☐	☐	☒
c) Substantially degrade the existing visual character or quality of the site and its surroundings?	☐	☐	☒	☐
d) Create a new source of substantial light or glare, which would adversely affect day or nighttime views in the area?	☐	☐	☒	☐

Thresholds of Significance and Regulatory Setting:

The significance of an environmental impact cannot always be determined through the use of a specific, quantifiable threshold. CEQA Guidelines Section 15064(b) affirms this by the statement "an ironclad definition of significant effect is not always possible because the significance of an activity may vary with the setting." This is particularly true of aesthetic impacts. As an example, a proposed parking lot in a dense urban center would have markedly different visual effects than a parking lot in an open space area. For the purpose of this IS, the

significance thresholds are as stated in CEQA Guidelines Appendix G, as shown in a) through d) of the checklist above. The Findings of the Implementing Procedures indicate that compliance with the Zoning Ordinance (e.g. building height, setbacks, etc.), Subdivision Ordinance (RMC Ch. 18), Community Design Guidelines (Resolution 95-347), and applicable General Plan Policies and/or Community Design Guidelines would prevent significant impacts in urban settings as it relates to items a, b, and c, below.

Discussion of Checklist Answers:

a, b) **No Impact**. The Proposed Project would result in the development of a multi-family, senior, age restricted (55+) apartment complex. There are no designated or eligible scenic vistas or scenic highways within or adjacent to the City of Roseville. Therefore, ***no impact*** would result from implementation of the Proposed Project.

c) **Less Than Significant Impact**. Aesthetic impacts are a function of several factors: the visual quality of the Project Site itself, the visual quality of the surrounding view shed, the sensitivity of viewers to changes in the view, and the number of viewers affected by the change. The visual quality of a site is based on the degree to which it is striking or makes a visual impression, is unobstructed or unaffected by encroachments, and is visually unified within the site and compatible with its surroundings.

The Project Site is in an urban setting and is currently characterized as a vacant infill site. Project Site topography is generally undulating along the outside boundaries, giving rise to a large mound in the center of the Project Site. The mound is mostly screened from view by trees along Rocky Ridge Drive and buildings on Douglas Boulevard, so it is only routinely viewed by drivers passing by on Strauch Drive or Huntington Drive (both low-volume roadways) and the people living adjacent to the Project Site. Passersby tend to be less affected by visual changes, because their views are transitory, while people living near a site are more strongly affected, because the views may feel integral to their property. Since the primary viewer group consists of residents living in the neighborhood, the number of viewers in this group is relatively small, although the sensitivity of those viewers is high. The residents who live adjacent to or across from the Project Site on Tanglewood Lane and Huntington Drive have views of the Project Site from their residences, and would therefore be the most affected.

The two most prominent visual characteristics of the Project Site are the topography and large, mature oak trees. The mound is 30-35 feet higher than the surrounding properties, and the height combined with the 55-foot-tall oak tree growing on the hilltop make this Project Site striking. However, one of the main reasons the Project Site is so distinctive is that it stands in contrast to its surroundings. The Project Site is not cohesive, unified, or consistent with the surrounding development, because the Project Site was not planned to be open space; there is no transition of the interface between the Project Site and its urban setting. The Project Site is bordered by two roadways with unimproved dirt shoulders, telephone poles and lines along the eastern and southern boundaries, street signs and signals at the adjacent roadway intersections, commercial development to the north and east, and single-family residences to the south and west. The Project Site itself has also been disturbed by off-road vehicle activity and illegal dumping, and while vegetation has re-established in the disturbed areas in the last few years, due to the Project Site being fenced with a 6-foot chain link to prevent unauthorized public access. The combination of all these factors leads to the conclusion that while the Project Site is visually striking, the Project Site and surroundings are not visually unified and contain substantial visual encroachments. An image of the Project Site taken from the northwestern corner of Huntington Drive and Kent Street is included as **Figure 9**.

Description: Looking east towards the project site from the northwestern corner of Huntington Drive and Kent Street.

HUNTINGTON SENIOR APARTMENTS — REPRESENTATIVE SITE PHOTOGRAPH

FOOTHILL ASSOCIATES ENVIRONMENTAL CONSULTING • PLANNING • LANDSCAPE ARCHITECTURE	Digital Data Provided by: Lauren Hocker, Senior Planner, City of Roseville Date of Photograph: January 27, 2019	NOT TO SCALE	Layout By: CTGH Date: 2/5/19	FIGURE 9

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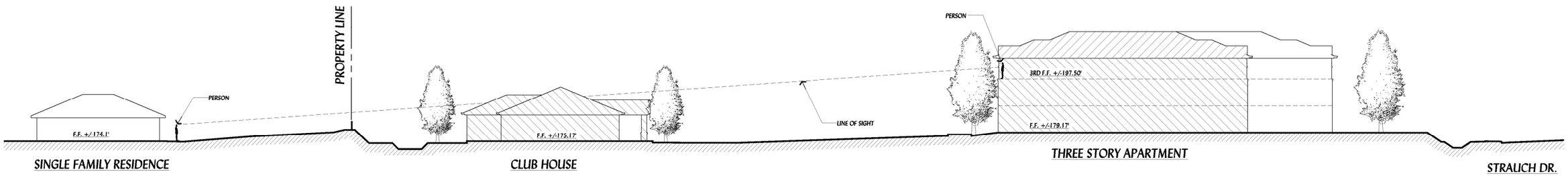
To assess the visual impacts to viewers across Huntington Drive from the Project Site and within the court on Tanglewood Lane, two line of sight drawings were created (**Figure 10**). As shown on **Figure 10**, residents standing within the rear yards of residences adjacent to the Project Site's southern property line would be able to see the single-story buildings, but would not be able to see the proposed multiple-story buildings farther north; likewise, residents standing on the balconies of the proposed three-story buildings in Project Site would not be able to see into the backyards of the adjacent residences to the south of the Project Site. The height of the proposed single-story buildings are similar to the height of the existing single-story residences in the neighborhood. Therefore, the views in these yards would no longer include the existing mound and oak trees, but would be similar to the views experienced by neighbors whose rear yards abut another single-family residence.

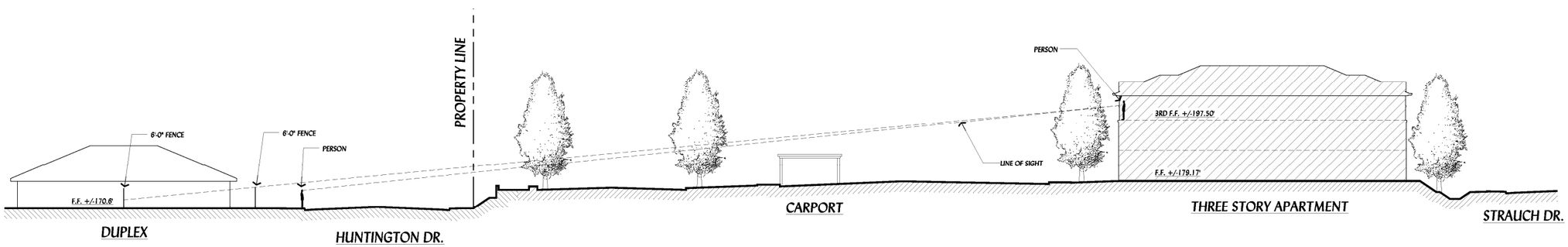
As shown on **Figure 10**, residents on Huntington Drive would be able to see all of the proposed buildings on the Project Site, at a distance of approximately 150 feet from the western side of Huntington Drive to the wall of the nearest multi-story building. In the existing condition, the mound is approximately 35 feet taller than the grade of the nearest residence on the western side of Huntington Drive, and the mound plus the central tree is approximately 80 feet in height. The existing mound and trees block views of any areas farther to the east. After construction, this would remain the case. The peak height of the three-story building would be 37 feet above grade, and 45 feet above the grade of the nearest residence on the western side of Huntington Drive. The floor of the third story would be 18 feet above grade and 28 feet above grade of the nearest residence on the western side of Huntington Drive. The backyard of the nearest residence has a flat portion, and then the back of the yard slopes steeply upward. The evaluation was based on the flat, usable portion of the yard. **Figure 10** shows that viewers on the newly constructed balconies would be able to see people if both the viewer and the person in the backyard are standing, but would not be able to see if either is seated, and would not be able to see into any other yards. Once landscaping trees on the frontage of the Project Site and within the parking lot have established, this view would be blocked.

The City has adopted Community Design Guidelines for the purpose of creating building and community designs which are a visual asset to the community. The Community Design Guidelines includes guidelines for building design, site design, and landscape design, which would result in a project that enhances the existing urban visual environment. The Proposed Project would be constructed in conformance with the Community Design Guidelines and City standards and requirements. Specifically, the buildings themselves would include variation in colors, materials, and architecture, so that they are a visually engaging and vibrant addition to the neighborhood.

The Proposed Project has been designed to integrate into surrounding land uses, including completing the sidewalks along the property frontages, implementing detailed landscape plans which include flowering plants and shrubs along the frontages to create a seasonal and attractive streetscape, and planting 31 native oak trees for screening and shade. Many of these trees would be planted on the property frontages, where they would be part of the neighborhood viewshed. While the project would reduce the degree to which the site is striking, it would nonetheless be visually interesting and attractive, and would also be unified with surrounding land uses, and would therefore result in the removal of existing encroachments such as the unimproved dirt/gravel shoulders. Therefore, implementation of the Proposed Project would not substantially degrade the existing visual character or quality of the Project Site and its surroundings, and a ***less than significant impact*** would result from implementation of the Proposed Project.



SITE PROFILE SECTION 2



SITE PROFILE SECTION 1

HUNTINGTON SENIOR APARTMENTS — SITE CROSS SECTIONS

FOOTHILL ASSOCIATES ENVIRONMENTAL CONSULTING • PLANNING • LANDSCAPE ARCHITECTURE	Digital Data Provided by: Craig Miers + George Scott Architects, LLP January 2, 2018	NOT TO SCALE	Layout By: CTGH Date: 1/29/19	FIGURE 10

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d) **Less Than Significant Impact**. The project involves nighttime lighting to provide for the security and safety of residents. However, the project is already located within an urbanized setting with many existing lighting sources. Lighting is conditioned to comply with City standards (i.e. Community Design Guidelines) to limit the height of light standards and to require cut-off lenses and glare shields to minimize light and glare impacts, and prevent any light trespass from the Project Site onto surrounding properties. The Proposed Project would not create a new source of substantial light. None of the project elements are highly reflective, and thus the Proposed Project would not contribute to an increased source of glare. Although lighting would remain on overnight, sources of light would be designed to only illuminate the walking surfaces of the Proposed Project, avoiding any light beyond the Project Site. Therefore, impacts resulting from implementation of the Proposed Project are anticipated to be ***less than significant***.

Mitigation Measures

No mitigation is required.

II. Agricultural & Forestry Resources

The State Department of Conservation oversees the Farmland Mapping and Monitoring Program, which was established to document the location, quality, and quantity of agricultural lands, and the conversion of those lands over time. The primary land use classifications on the maps generated through this program are: Urban and Built Up Land, Grazing Land, Farmland of Local Importance, Unique Farmland, Farmland of Statewide Importance, and Prime Farmland. According to the current California Department of Conservation Placer County Important Farmland Map (2016),[3] the majority of the City is designated as Urban and Built Up Land and most of the open space areas of the City are designated as Grazing Land. There are a few areas designated as Farmland of Local Importance and two small areas designated as Unique Farmland located on the western side of the City along Baseline Road. The current Williamson Act Contract map (2015/2016) produced by the Department of Conservation shows that there are no Williamson Act contracts within the City, and only one (on PFE Road) that is adjacent to the City.[4] None of the land within the City is considered forest land by the California Board of Forestry and Fire Protection.

Would the project:

Environmental Issue	Potentially Significant Impact	Less Than Significant with Mitigation	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?	☐	☐	☐	☒
b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?	☐	☐	☐	☒
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?	☐	☐	☐	☒
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?	☐	☐	☐	☒

Thresholds of Significance and Regulatory Setting:

Unique Farmland, Farmland of Statewide Importance, and Prime Farmland are called out as protected farmland categories within CEQA Guidelines Appendix G. Neither the City nor the State has adopted quantified significance thresholds related to impacts to protected farmland categories or to agricultural and forestry

[3] California Department of Conservation, Division of Land Resource Protection. 2016. *Farmland Mapping and Monitoring Program: 2016 Field Report* [for] *Placer County*. Available online at: http://www.conservation.ca.gov/dlrp/fmmp/Pages/Placer.aspx. [Accessed 03/05/18].
[4] California Department of Conservation, Division of Land Resource Protection. 2016. *Placer County Williamson Act FY2015/2016*. Available online at: ftp://ftp.consrv.ca.gov/pub/dlrp/wa/Placer_w_15_16_WA.pdf. [Accessed 03/05/18].

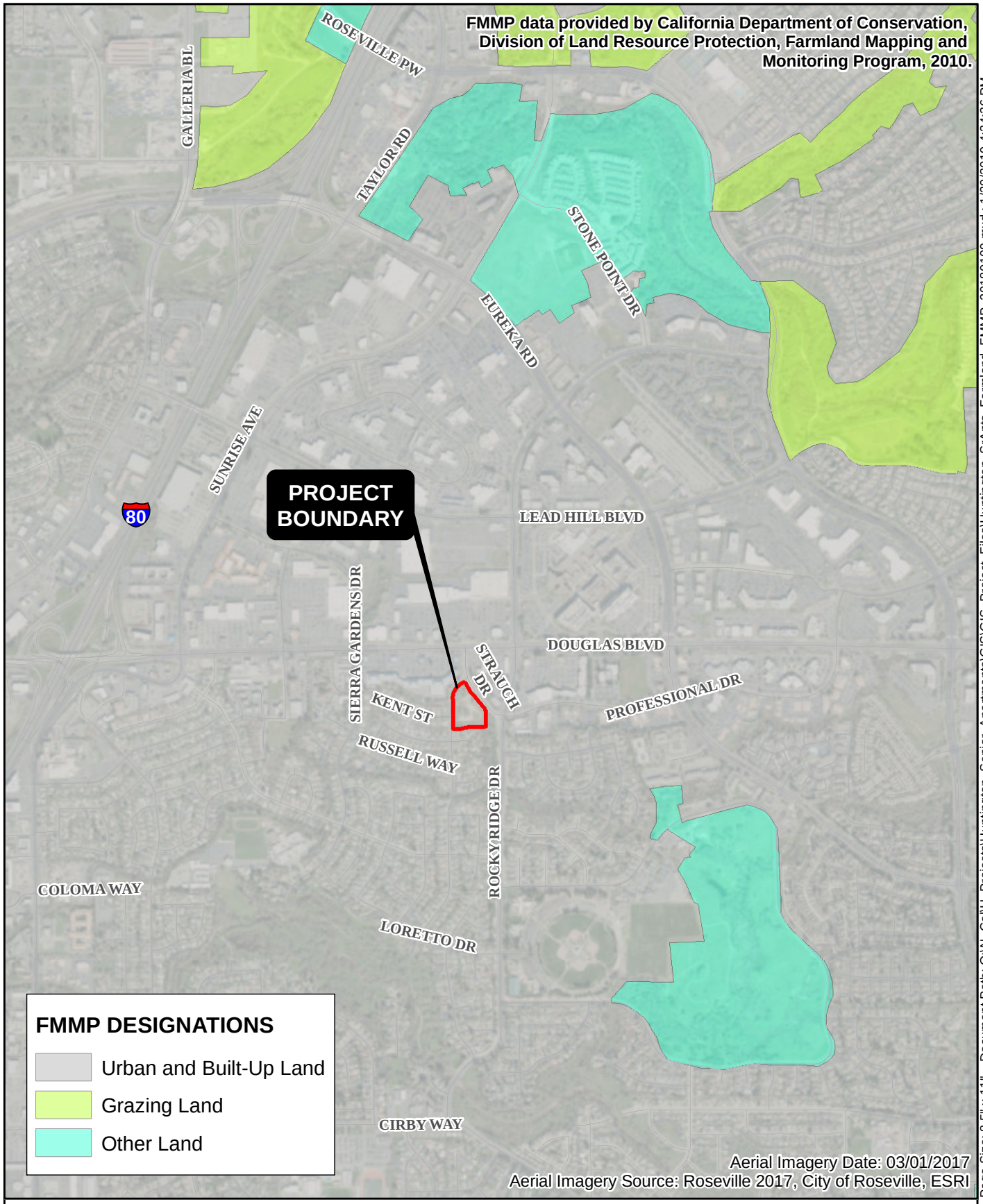
resources. For the purpose of this IS, the significance thresholds are as stated in CEQA Guidelines Appendix G, as shown in a) through e) of the checklist above.

Discussion of Checklist Answers:

a–e) **No Impact**. The Project Site is not used for agricultural purposes, does not include agricultural zoning, is not within or adjacent to one of the areas of the City designated as a protected farmland category on the Placer County Important Farmland Map, is not within or adjacent to land within a Williamson Act Contract, and is not considered forest land (**Figure 11**). Therefore, ***no impact*** would result from the development of the Proposed Project related to agricultural and forestry resources and no mitigation is required.

Mitigation Measures

No mitigation is required.



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HUNTINGTON SENIOR APARTMENTS - FARMLAND

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QA/QC: CTG
Date: 1/29/2019

FIGURE 11

III. Air Quality

The City, along with the southern Placer County, is located in the Sacramento Valley Air Basin (SVAB). The SVAB is within the Sacramento Federal Ozone Non-Attainment Area. Under the Clean Air Act (CAA), Placer County has been designated a "serious non-attainment" area for the federal eight-hour ozone standard, "non-attainment" for the State ozone standard, and a "non-attainment" area for the federal and State PM_{10} (particulate matter less than 10 microns in diameter) standard. Within Placer County, the Placer County Air Pollution Control District (PCAPCD) is responsible for ensuring that emission standards are not violated.

Would the project:

Environmental Issue	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
a) Conflict with or obstruct implementation of the applicable air quality plan?	☐	☐	☒	☐
b) Violate any air quality standard or contribute substantially to an existing or projected air quality violation?	☐	☐	☒	☐
c) Result in a cumulatively considerable net increase of any criteria for which the project region is non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions, which exceed quantitative thresholds for ozone precursors)?	☐	☐	☒	☐
d) Expose sensitive receptors to substantial pollutant concentrations?	☐	☐	☒	☐
e) Create objectionable odors affecting a substantial number of people?	☐	☐	☒	☐

Thresholds of Significance and Regulatory Setting:

In responding to checklist items, a), b), and d), project-related air emissions would have a significant effect if they would result in concentrations that either violate an ambient air quality standard or contribute to an existing air quality violation. To assist in making this determination, the PCAPCD adopted thresholds of significance, which were developed by considering both the health-based ambient air quality standards and the attainment strategies outlined in the State Implementation Plan (SIP). The PCAPCD-recommended significance threshold for reactive organic gases (ROG) and nitrogen oxides (NO_x) is 82 pounds daily during construction and 55 pounds daily during operation, and for particulate matter (PM) is 82 pounds per day during both construction and operation. For all other constituents, significance is determined based on the concentration-based limits in the federal and State Ambient Air Quality Standards. Toxic Air Contaminants (TAC) are also of public health concern, but no thresholds or standards are provided because they are considered to have no safe level of exposure. Analysis of TAC is based on the *Air Quality and Land Use Handbook – A Community Health Perspective (*April 2005, California Air Resources Board), which lists TAC sources and recommended buffer distances from sensitive uses. For checklist item c), the PCAPCD's *CEQA Air Quality Handbook* (Handbook) recommends that the same thresholds used for the project analysis be used for the cumulative impact analysis.

With regard to checklist item e), there are no quantified significance thresholds for exposure to objectionable odors. Significance is determined after taking into account multiple factors, including screening distances from odor sources (as found in the PCAPCD CEQA Handbook), the direction and frequency of prevailing winds, the time of day when odors are present, and the nature and intensity of the odor source.

Discussion of Checklist Answers:

a, b) **Less Than Significant Impact**. Analyses are not included for sulfur dioxide, lead, and other constituents because there are no mass emission thresholds; these are concentration-based limits in the Federal and State Ambient Air Quality Standards which require substantial, point-source emissions (e.g. refineries, concrete plants, etc.) before exceedance would occur, and the SVAB is in attainment for these constituents. The PCAPCD has established significance thresholds for emissions of ozone precursors ROG, NO_x, and PM_{10}. The discussions below focus on ozone emissions of ROG**,** NO_x, and PM**.** A project-level analysis has been prepared to determine whether the Proposed Project would, on a singular level, exceed the established thresholds.

KD Anderson & Associates, Inc. prepared an Air Quality Study (**Attachment 2**) for the Proposed Project. The Proposed Project's short-term construction related and long-term operational emissions were estimated using the California Emissions Estimator Model (CalEEMod) version 2016.3.1, as recommended by the PCAPCD. Construction was assumed to take place between August 2019 and August 2020. No wood-burning fireplaces would be included as part of the Proposed Project. Proposed Project development would require leveling the Project Site and exporting approximately 30, 672 cubic yards of fill to an environmentally approved site with an approved Grading Plan within 50 miles of the Project Site. The removal and transport of onsite earthen materials is expected to involve the use of a Caterpillar 966 Front End Loader and material transport trucks with a 24 cubic yard capacity.

Construction operations such as grading, excavation and travel on unpaved surfaces would generate dust, and can lead to elevated concentrations of PM_{10} and $PM_{2.5}$. The operation of construction equipment results in exhaust emissions. A substantial portion of the construction equipment is powered by diesel engines, which produce relatively high levels of NO_x emissions. Construction activity could also potentially entertain naturally occurring asbestos (NOA), if present in the soil. However, a screening-level assessment for NOA indicates the Project Site is approximately 5.6 miles from areas considered to have elevated risk of NOA being present.

Long-term operation of the Proposed Project has the potential to have an effect on air quality by generating vehicle trips, by resulting in on-site activities (e.g., use of landscaping equipment), and by locating sensitive receptors in the vicinity of air pollutant emissions sources.

CalEEMod results are provided below in **Table 3**. As shown, the Proposed Project's maximum unmitigated construction-related and operation-related emissions would remain below the applicable thresholds of significance.

Table 3 — CalEEMod Results

Pollutant	Project Emissions (pounds per day)	Significance Threshold (pounds per day)	Exceeds Threshold?
Maximum Construction Emissions			
ROG	74.39	82	No
NO_x	66.99	82	No
PM_{10}	12.36	82	No
Maximum Operational Emissions			
ROG	2.77	55	No
NO_x	4.19	55	No
PM_{10}	1.72	82	No

The Proposed Project's construction and operational emissions would not exceed the applicable threshold of significance. In addition, the Proposed Project must comply with all applicable PCAPCD rules and regulations. Therefore, the Proposed Project would not substantially contribute to the region's non-attainment status for ozone or PM and implementation of the Proposed Project would not violate an air quality standard or contribute to an existing or projected air quality violation. In addition, because the Proposed Project would not produce substantial emissions of criteria air pollutants, adjacent residents and businesses would not be exposed to significant levels of pollutant concentrations during constriction or long-term operation of the Proposed Project. Therefore, implementation of the Proposed Project would result in ***less than significant impacts***. No mitigation is required.

c) **Less Than Significant Impact**. As described in checklist items a–b, the Proposed Project would not contribute significant project-level criteria air pollutant emissions (ROG, No_x, and PM_{10}). Cumulative-level estimates of long-term operational criteria pollutant emissions are presented in **Table 4**.

Table 4 — Operational Cumulative-Level Criteria Pollutant Emissions

Pollutant	Project-Related Emissions	Operational Phase Cumulative-Level Thresholds	Exceeds Cumulative Threshold?
ROG	2.77	55	No
NO_x	4.19	55	No
PM_{10}	1.72	82	No

Note: All values are expressed in pounds per day (ppd).
All values shown are summer (ozone season) values.

As shown in **Table 4**, ROG, NO_x, and PM_{10} emissions associated with operation of the Proposed Project would be below the PCAPCD cumulative-level significance threshold. Implementation of the Proposed Project would involve minimal emissions during construction; it is not anticipated the development of the Proposed Project would result in a substantial increase in long-term operational emissions. Construction emissions would be short-term in duration. Accordingly, the incremental contribution of the Proposed Project's construction-related emissions would not be considered cumulatively considerable. Therefore, the Proposed Project would result in a ***less than significant impact***, cumulatively. No mitigation is required.

d) **Less Than Significant Impact**. Some land uses are considered more sensitive to air pollution than others, due to the types of population groups or activities involved. Heightened sensitivity may be caused by health problems, proximity to the emissions source, and/or duration of exposure to air pollutants. Children, pregnant women, the elderly, and those with existing health problems are especially vulnerable to the effects of air pollution. Accordingly, land uses that are typically considered to be sensitive receptors include residences, schools, childcare centers, playgrounds, retirement homes, convalescent homes, hospitals, and medical clinics. The Proposed Project involves construction and operation multi-family, senior age restricted (55+) apartment complex. Nearby residents would be considered sensitive receptors. The major pollutant concentrations of concern are localized carbon dioxide (CO) emissions.

The screening procedures applied to the Proposed Project focused on the effects of the Proposed Project on traffic operations. Since elevated CO concentrations are associated with traffic congestion, a project is considered to have no potential for significant impacts on CO concentrations if it does not substantially contribute to excessive traffic congestion.

Implementation of the Proposed Project would generate CO emissions in the project vicinity. Long-term operational emissions associated with the Proposed Project were estimated using the CalEEMod

emissions modeling program.[5] The model quantifies direct emissions (including vehicle use) as well as, indirect emissions from sources such as energy use, dispersed area sources, solid waste disposal, and water use. Long-term operation of the Proposed Project would result in the generation of CO emissions. Operation of the Proposed Project would generate 13.95 ppd of CO. The generation of CO emissions by the Proposed Project would be less than the PCAPCD 550 ppd screening threshold. Therefore, impacts to local CO emissions is considered less than significant.

In addition to project-related exposure to existing sensitive receptors to CO, project development would also introduce new sensitive receptors to the area. As described in the PCAPCD CEQA Handbook, high traffic volume freeways and roads are considered a source of toxic air contaminant (TAC) emissions. Table 6-1 of the PCAPCD CEQA Handbook defines high traffic volume freeways and roads as those with more than 100,000 vehicles per day in urban areas and 50,000 vehicles per day in rural areas. The Proposed Project is considered to be in an urban area.

According to Table 6-1 of the PCAPCD CEQA Handbook, the recommended minimum separation between high traffic volume freeways and roads and sensitive receptors is 500 feet. Sensitive receptors include residential dwelling units, schools, and medical facilities. The proposed land uses with sensitive receptors proposed within 500 feet of high traffic volume freeways and roads are considered to have a significant impact.

Douglas Boulevard is an east-west arterial roadway located approximately 400 feet north of the Project Site. The Amoruso Ranch Specific Plan EIR shows existing traffic volumes on the portion of Douglas Boulevard nearest to the Project Site are 48,000 vehicles per day. The Amoruso Ranch Specific Plan EIR includes future forecasted 2035 Cumulative Plus Project Conditions traffic volumes would be 54,600 vehicles per day. While this roadway is within 500 feet of the Project Site, traffic volumes on this roadway are less than 100,000 vehicles per day. As a result, impacts from Douglas Boulevard to sensitive receptors would be less than significant.

Interstate 80 (I-80) is a southwest-northeast freeway located approximately 4,000 feet northwest of the Project Site. The Caltrans document *2016 Traffic Volumes on California State Highways* shows traffic volumes on I-80 at the Douglas Boulevard interchange being 190,2000 vehicles per day. While the traffic volume on I-80 is greater than 100,000 vehicles per day, this roadway is located more than 500 feet from the Project Site. Impacts from I-80 to sensitive receptors would be less than significant.

Project development would not expose existing sensitive receptors in the area to substantial levels of pollutant concentrations. Project development would introduce new sensitive receptors to the area. However, as summarized above, project development would not result in exposure of new sensitive receptors to substantial pollutant concentrations exceeding established regulatory thresholds. Therefore, potential impacts associated with exposure of sensitive receptors to substantial pollutant concentrations would be a ***less than significant impact***. No mitigation is required.

e) **Less Than Significant Impact**. While offensive odors rarely cause any physical harm, they can be unpleasant, leading to considerable distress among the public and often generating citizen complaints to local governments and air districts. The Project Site is located in a developed area and is not located in the vicinity of any existing or planned land uses that generate considerable orders. A multi-family, senior, age restricted (55+) apartment complex is not typically associated with the creation of objectable orders. As such, the Proposed Project would not be anticipated to change the odor setting of project vicinity by

[5] California Air Pollution Control Officers Association. 2016. CAlEEMod – California Emissions Estimator Model User's Guide, Version 2016.3.1. Sacramento, California.

introducing new land uses. Thus, the Proposed Project would not introduce any new sources or be exposed to any existing sources of potential objectionable odors.

Although less common, diesel fumes associated with diesel-fueled equipment and heavy-duty trucks, such as from construction activities, could be found to be objectionable. However, construction is temporary and construction equipment would operate intermittently throughout the course of a day, and would be restricted to certain hours per the City's Municipal Code. All construction equipment and operation thereof would be regulated per the statewide In-Use Off-Road Diesel Vehicle Regulation and the CARB's Airborne Toxic Control Measure for Stationary Compression Ignition Engines. Construction equipment would also be required to comply with applicable PCAPCD rules and regulations, particularly associated with permitting of air pollutant sources. The aforementioned regulations would help to minimize air pollutant emissions as well as any associated odors. Considering the short-term nature of construction activities and the regulated and intermittent nature of the operation of construction, construction of the Proposed Project would not be expected to create objectional orders affecting a substantial number of people. This impact is therefore considered to be a ***less than significant impact***. No mitigation is required.

Mitigation Measures

No mitigation is required.

IV. Biological Resources

The ±3.34-acre Project Site consists primarily of partially disturbed non-native grassland with patches of oak and riparian woodland. Tree species within the woodlands include blue oak (*Quercus douglasii*) and interior live oak (*Quercus wislizeni*). Topography within the Project Site is characterized by gently undulating terrain punctuated by a central 25-foot mound of sandy substrate of unknown origin. The extreme southeast corner of the Project Site is characterized by a steep but short descent into an off-site perennial drainage immediately adjacent to the Project Site. Surrounding land use consists of single-family residential and light commercial development.

Would the project:

Environmental Issue	Potentially Significant Impact	Less Than Significant with Mitigation	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?	☐	☒	☐	☐
b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies or regulations or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?	☐	☒	☐	☐
c) Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?	☐	☒	☐	☐
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?	☐	☐	☒	☐
e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	☐	☐	☒	☐
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?	☐	☐	☐	☒

Thresholds of Significance and Regulatory Setting:

There is no ironclad definition of significance as it relates to biological resources. Thus, the significance of impacts to biological resources is defined by the use of expert judgment supported by facts, and relies on the policies, codes, and regulations adopted by the City and by regulatory agencies which relate to biological resources (as cited and described in the Discussion of Checklist Answers section). For the purpose of this IS, the significance thresholds related to biological resources are as stated in CEQA Guidelines Appendix G, as

shown in checklist items a) through f) listed above. Consistent with CEQA Guidelines Section 15065, a project may have a significant effect on the environment if:

> *The project has 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; [or] substantially reduce the number or restrict the range of an endangered, rare or threatened species…*

Various agencies regulate impacts to the habitats and wildlife addressed by the CEQA Guidelines checklist. These include the U.S. Fish and Wildlife Service (USFWS), National Oceanic and Atmospheric Administration–Fisheries (NOAA), United States Army Corps of Engineers (Corps), Central Valley Regional Water Quality Control Board (CVRWQCB), and the California Department of Fish and Wildlife (CDFW). The primary regulations affecting biological resources are described in the sections below.

Checklist item a) addresses impacts to special-status species. A "special-status" species is one which has been identified as having relative scarcity and/or declining populations. Special-status species include those formally listed as threatened or endangered, those proposed for formal listing, candidates for federal listing, and those classified as species of special concern. Also included are those species considered to be "fully protected" by the CDFW, those granted "special animal" status for tracking and monitoring purposes, and those plant species considered to be rare, threatened, or endangered in California by the California Native Plant Society (CNPS). The primary regulatory protections for special-status species are within the Federal Endangered Species Act (FESA), California Endangered Species Act (CESA), California Fish and Game Code, and the Federal Migratory Bird Treaty Act (MBTA).

Checklist item b) addresses all "sensitive natural communities" that may be affected by local, State, or federal regulations/policies while checklist item c) focuses specifically on one type of such a community: federally-protected wetlands. Focusing first on wetlands, there are two questions to be posed in examining wet habitats: the first is whether the wetted area meets the technical definition of a wetland, making it subject to checklist item b), and the second is whether the wetland is subject to federal jurisdiction, making it subject to checklist item c). The 1987 *U.S. Army Corps Wetlands Delineation Manual* is used to determine whether an area meets the technical criteria for a wetland. A delineation verification by the Corps verifies the size and condition of the wetlands and other waters in question, and determines the extent of government jurisdiction as it relates to Section 404 of the Federal Clean Water Act and Section 401 of the State Clean Water Act.

The Clean Water Act protects all "navigable waters", which are defined as traditional navigable waters that are or were used for commerce, or may be used for interstate commerce; tributaries of covered waters; and wetlands adjacent to covered waters, including tributaries. Non-navigable waters are called isolated wetlands, and are not subject to either the Federal or State Clean Water Act. Thus, isolated wetlands are not subject to federal wetland protection regulations. However, in addition to the Clean Water Act, the State also has jurisdiction over impacts to surface waters through the State Porter-Cologne Water Quality Control Act, which <u>does not</u> require that waters be "navigable". For this reason, isolated wetlands are regulated by the State of California pursuant to State Porter-Cologne Water Quality Control Act. The City's General Plan also provides protection for wetlands, including isolated wetlands, pursuant to the *Open Space and Conservation Element*. Federal, State and City regulations/policies all seek to achieve no net loss of wetland acreage, values, or function.

Aside from wetlands, checklist item b) also addresses other "sensitive natural communities," which includes any habitats protected by local or regional plans, policies, or regulations, or by the CDFW or USFWS. The City's General Plan, *Open Space and Conservation Element* includes policies for the protection of riparian areas (streamside habitat) and floodplain areas; these are Vegetation and Wildlife Section Policies 2 and 3. Policy 4 also directs preservation of additional area around stream corridors and floodplain if there is sensitive woodland, grassland, or other habitat which could be made part of a contiguous open space area. Other than wetlands,

which were already discussed, USFWS and CDFW habitat protections generally result from species protections, and are thus addressed via checklist item a).

For checklist item d), there are no regulations specific to the protection of migratory corridors. This item is addressed by an analysis of the habitats present in the vicinity and analyzing the probable effects on access to those habitats which would result from a project.

The City of Roseville Tree Preservation Ordinance (RMC Ch.19.66) requires protection of native oak trees, and compensation for oak tree removal. The Findings of the Implementing Procedures indicate that compliance with the City of Roseville Tree Preservation Ordinance (RMC Ch.19.66) would prevent significant impacts related to loss of native oak trees, referenced by item e), above.

Regarding checklist item f), there are no adopted Habitat Conservation Plans within the City of Roseville.

Discussion of Checklist Answers:

a) **Less Than Significant with Mitigation**. Based on a records search of the California Natural Diversity Database (CNDDB), the USFWS, and CNPS lists as well as field observations, several special-status species have the potential to occur onsite or in the vicinity of the Project Site. The CNDDB special-status species occurrences in the project vicinity are shown on **Figure 12** and enclosed in the Biological Resources Assessment prepared by Foothill Associates (**Attachment 3**).

Species that are known to be present or that are considered to have a high potential to occur within the Project Site include pallid bat, purple martin, Cooper's hawk, white-tailed kite, silver-haired bat, western spadefoot, and western pond turtle. Species that are considered to have a low potential to occur within the Project Site include, grasshopper sparrow and song sparrow ("Modesto" population). The regulatory status and habitat requirements for these species is summarized below in **Table 5**.

Table 5 — Summary of Special-Status Species with the Potential to Occur within the Project Site

Special-Status Species	Regulatory Status	Potential for Occurrence
Reptiles/Amphibians		
Western pond turtle *Emys marmorata*	California Species of Concern	**High**; the Project Site provides suitable wintering habitat for this species within the annual grassland and oak woodland onsite. Habitat is marginal; however, the off-site perennial drainage provides potential access to the Project Site. There is one CNDDB occurrence within five miles of the Project Site.
Western spadefoot *Spea hammondii*	California Species of Concern	**High**; the burrows within the non-native grassland within Project Site provides aestivation habitat for this species. The offsite perennial drainage provides access to the Project Site. Three are three CNDDB occurrences within five miles of the Project Site.
Birds		
Cooper's hawk *Accipiter cooperii*	California Species of Concern	**High**; the oak and riparian woodland within the Project Site provide habitat for this species. While there are no CNDDB occurrences documented within five miles of the Project Site, this species is known to occur locally.

Special-Status Species	Regulatory Status	Potential for Occurrence
Grasshopper sparrow *Ammodramus savannarum*	California Species of Concern	**Low**; found usually in expansive grasslands, the 1.75 acres of non-native grassland within the Project Site provides marginal nesting and foraging habitat for this species. There are no CNDDB occurrences documented within five miles of the Project Site.
Purple martin *Progne subis*	California Species of Concern	**High**; the oak and riparian woodland within the Project Site provide suitable habitat for this species. There is one CNDDB occurrence documented within five miles of the Project Site.
Song sparrow ("Modesto" population) *Melospiza melodia*	California Species of Concern	**Low**; the oak and riparian woodland within the Project Site provide suitable nesting and foraging habitat for this species. There are no CNDDB occurrences documented within five miles of the Project Site.
White-tailed kite *Elanus leucurus*	California Fully Protected	**High**; found usually in open areas, the oak woodland and non-native grassland within the Project Site provide marginal nesting a foraging habitat for this species. There are two CNDDB occurrences within five miles of the Project Site.
Mammals		
Pallid bat *Antrozous pallidus*	California Species of Concern	**High**; the trees within the oak woodland within the Project Site provide suitable roosting habitat for this species. There is one CNDDB occurrence is within five miles of the Project Site.
Silver haired bat *Lasionycteris noctivagans*	California Special Animal	**High**; the trees within the oak woodland within the Project Site provide suitable roosting habitat for this species. There is one CNDDB occurrence is within five miles of the Project Site.

The Proposed Project would result in the removal of all habitat that could potentially support these species within the Project Site. This has the potential to impact these species directly if present within the Project Site and indirectly through habitat loss. Implementation of **Mitigation Measures BIO-1 through BIO-4** would require pre-construction surveys for each of the species discussed above, to ensure no special-status species would be harmed by construction. If a special-status species is found, the Project Applicant is required to develop a mitigation plan to avoid significant impacts. The measures selected would depend upon many variables, including the location of the individual relative to construction activities, the time of year, whether there is the potential to relocate the individual, and other factors. While the information needed to formulate specific mitigation is not available at this time, the mitigation has been written to ensure that all appropriate measures to avoid significant impacts would be implemented. These measures would reduce impacts to special-status species to a less than significant level. Therefore, impacts to special-status species are considered to be ***less than significant with mitigation incorporated***. No further mitigation is required.

b) **Less Than Significant with Mitigation**. As shown on **Figure 13,** the Project Site contains several biological communities including 1.74 acres of annual grassland, 0.58 acres mixed oak woodland, and 0.01 acres of riparian habitat. The Proposed Project would avoid 0.03 acres of annual grassland, 0.02 acres of mixed oak woodland, and 0.01 acres riparian habitat located in the southeastern corner of the Project Site which includes a perennial drainage (Cirby Creek) running north to south and paralleling the southeastern boundary of the Project Site. This feature exhibits a defined bed and bank and an ordinary high water mark (OHWM), and therefore, may be considered a feature with both federal and State jurisdictional status. Without accurate demarcation of onsite riparian habitat, project-related construction would have the potential to impact this biological community as well as the associated aquatic resource. Therefore, impacts are considered ***less than significant with mitigation incorporated***. Implementation

of **Mitigation Measure BIO-5** would require the establishment of a construction exclusion zone through the installation of exclusion fencing surrounding the perimeter of the onsite riparian habitat.

In addition, as discussed in further detail in checklist item e), the Project Applicant would be required to comply with the City's Tree Preservation Ordinance (RMC Ch.19.66) in the Roseville Municipal Code as applicable in order to avoid impacts to the riparian habitat and in order to mitigate for the removal of native oak trees.

The Project Applicant would be required comply with the City Grading Permit, the State Water Resources Control Board (SWRCB) National Pollutant Discharge Elimination System (NPDES) General Permit, the City's Construction and Design Standards, and the City's Stormwater Best Management Practices (BMP) Guidance Manual, as discussed in **Section IX**, **Hydrology and Water Quality** to ensure that water quality-related impacts remain less than significant.

c) **Less Than Significant Impact with Mitigation**. The Project Site lies immediately to the west of a perennial stream (Cirby Creek). No work would be conducted with the OHWM of the perennial drainage (Cirby Creek). The Project Applicant would be required comply with the City grading permit, the SWRCB NPDES General Permit, the City's Construction and Design Standards, and the City's Stormwater BMP Guidance Manual, as discussed in **Section IX**, **Hydrology and Water Quality**. Compliance with the standards mandated by these regulatory requirements (grading permit, NPDES, City construction standards, etc.) and implementation of the associated BMPs, such as installation of silt fencing, would further reduce these impacts to less than significant. However, without accurate demarcation of onsite riparian habitat, project-related construction would have the potential to impact this biological community as well as the associated aquatic resource. Therefore, impacts are considered ***less than significant with mitigation incorporated***. Implementation of **Mitigation Measure BIO-5** would require the establishment of a construction exclusion zone through the installation of exclusion fencing surrounding the perimeter of the onsite riparian habitat.

d) **Less Than Significant Impact**. According to the Biological Resources Assessment prepared by Foothill Associates (**Attachment 3**), there are no fish species known to occur within the Project Site. No work would be conducted within the OHWM of the perennial drainage (Cirby Creek) and construction is not anticipated to interfere with the movement of resident or migratory fish or wildlife species.

The City includes an interconnected network of open space corridors and preserves located throughout the City, to ensure that the movement of wildlife is not substantially impeded as the City develops. The development of the Project Site would not negatively impact these existing and planned open space corridors, nor is the Project Site located in an area that has been designated by the City, USFWS, or CDFW as vital or important for the movement of wildlife or the use of native wildlife nursery sites. Impacts are therefore considered ***less than significant*** and no mitigation is required.

e) **Less Than Significant Impact**. The City's Tree Preservation Ordinance (RMC Ch.19.66) in the Roseville Municipal Code includes regulations controlling the removal and preservation of trees within the City of Roseville. A Protected Tree is defined in the Roseville Municipal Code as a native oak tree equal to or greater than six inches diameter at breast height (DBH) measured as a total of a single trunk or multiple trunks.

According to the Arborist Report prepared by Foothill Associates (**Attachment 4**), and as shown on **Figure 14**, construction of the Proposed Project would result in the removal of 12 protected blue oak and 21 protected interior live oak trees. In addition, excavation activities associated with project development would occur within the dripline of an interior live oak in fair condition and comprised of a multi-trunk of approximately 6-, 5-, 4-, and 4-inch DBHs. Two single-trunk interior live oaks in poor-fair condition with

an 8- and 6-inch DBH respectively, would be avoided. **Table 6** summarizes the oak trees that would be removed by development of the Proposed Project.

Table 6 — Summary of Oak Trees to be Removed

Tree No.	Common Name	Health	# of Trunks	DBH each trunk (inches)	Total DBH (inches)
498	Interior Live Oak	Poor-Fair	4	4, 4, 3, 2	13
499	Blue Oak	Poor-Fair	1	6	6
3960	Interior Live Oak	Fair	2	8, 5	13
3961	Interior Live Oak	Fair	2	7, 6	13
3962	Interior Live Oak	Fair	4	13, 8, 7, 4	32
3963	Interior Live Oak	Poor	4	4, 4, 3, 3	14
3964	Interior Live Oak	Fair	2	7, 6	13
3965	Interior Live Oak	Fair-Good	6	7, 6, 5, 5, 5, 4	32
3966	Interior Live Oak	Fair	5	7, 5, 4, 4, 3	23
3967	Interior Live Oak	Fair	4	7, 6, 5, 4	22
3968	Blue Oak	Poor-Fair	1	7	7
3969	Interior Live Oak	Fair-Good	2	7, 7	14
3970	Interior Live Oak	Fair-Good	3	7, 6, 6	19
3971	Interior Live Oak	Fair-Good	4	4, 4, 4, 3	15
3972	Interior Live Oak	Fair	5	6, 5, 4, 4	19
3978	Blue Oak	Poor-Fair	5	4, 4, 3, 3, 3	17
3979	Blue Oak	Poor-Fair	1	41	41
3980	Blue Oak	Poor-Fair	1	20	20
3981	Blue Oak	Poor-Fair	1	36	36
3982	Blue Oak	Fair	4	7, 5, 2, 2	16
3983	Blue Oak	Fair	1	6	6
3984	Blue Oak	Fair	3	18, 17, 14	49
3985	Interior Live Oak	Fair	3	6, 3, 3	12
3986	Interior Live Oak	Fair	3	15, 8, 7	30
3987	Blue Oak	Fair	1	6	6
3989	Interior Live Oak	Fair-Good	2	7, 5	12
3990	Interior Live Oak	Fair-Good	2	8, 7	15
3991	Blue Oak	Poor-Fair	1	6	6
3992	Interior Live Oak	Fair	3	17, 5, 5	27
3993	Interior Live Oak	Fair-Good	3	7, 6, 4	17
3994	Interior Live Oak	Fair-Good	2	6, 5	11
3995	Blue Oak	Poor-Fair	3	12, 10, 8	30
3996	Interior Live Oak	Fair-Good	1	7	7
				TOTAL DBH INCHES	**613**

The Applicant evaluated the potential for additional tree preservation. Two interior live oaks on the eastern project boundary would be protected within the riparian buffer zone, and one blue oak on the northernmost project boundary. The tree on the northernmost boundary would be retained because it is

within the proposed landscape buffer adjacent to the proposed sidewalk. However, the grades on the Project Site are very challenging, and in order to create level pads for the buildings, a drainage pattern which directs stormwater to the existing system, and finished boundary grades which can be appropriately tied in to the adjacent roads and other development, the entire site needs to be heavily graded. In addition, there are other necessary improvements which would impact trees. The Proposed Project would require construction of a six-foot masonry wall on the southern project boundary, to buffer the existing adjacent residences from site development. The wall and the underground supports (footings) would directly impact the trunks of most of the existing trees along the southern project boundary, which isn't compatible with tree retention.

Compliance with the City's Tree Preservation Ordinance, which is administered through the Tree Permit required for the Proposed Project, would ensure the Project Applicant would mitigate for the loss of 613 inches of protected oak trees. In addition, the Tree Permit would ensure that trees not planned for removal, or otherwise identified as impacted, would be avoided or compensated for, as applicable. The loss of onsite oak trees would be offset through a combination of on-site planting and the City's in-lieu fee program; this would reduce potential impacts to native oak trees to ***less than significant***. No further mitigation is required.

f) **No Impact**. There are no approved Habitat Conservation Plans, Natural Conservation Community Plans, or other adopted plans applicable to the Proposed Project. Therefore, there would be ***no impact*** and no mitigation is required.

Mitigation Measures

MM BIO-1: Within 14 days prior to the start of ground disturbance, the Project Applicant shall have a qualified biologist conduct a pre-construction survey for western spadefoot toad. Ground disturbance includes any grading and excavation activities and any work associated with work adjacent to Cirby Creek. If construction does not commence within 14 days of the pre-construction survey or halts for more than 14 days, a new survey shall be required. The biologist shall provide a brief written report (including the date, time of survey, survey method, name of surveyor, and survey results) to City Planning prior to any ground-disturbing activity. If no western spadefoot toads are found, no additional measures are required.

If western spadefoot toads are found, all onsite work shall cease and the Project Applicant shall submit a mitigation plan for review and approval by City Planning, in consultation with the California Department of Fish and Wildlife. The plan shall document all proposed measures, including avoidance, minimization, exclusion, relocation, the presence of a biological monitor, or other measures, and include a plan to monitor mitigation success. Work on the site shall not resume until the mitigation plan is approved and appropriate measures have been implemented.

MM BIO-2: Within 14 days prior to the start of ground disturbance, the Project Applicant shall have a qualified biologist conduct a pre-construction survey for western pond turtles. Ground disturbance includes any grading and excavation activities and any work associated with work adjacent to Cirby Creek. If construction does not commence within 14 days of the pre-construction survey or halts for more than 14 days and the site still contains undisturbed habitat, a new survey shall be required. The biologist shall provide a brief written report (including the date, time of survey, survey method, name of surveyor, and survey results) to City Planning prior to any ground-disturbing activity. If no western pond turtles are found, no additional measures are required.

If western pond turtles are found, all onsite work shall cease and the Project Applicant shall submit a mitigation plan for review and approval by City Planning, in consultation with the California Department of Fish and Wildlife. The plan shall document all proposed measures, including

avoidance, minimization, exclusion, relocation, the presence of a biological monitor, or other measures, and include a plan to monitor mitigation success. Work on the site shall not resume until the mitigation plan is approved and appropriate measures have been implemented.

MM BIO-3: Migratory birds and other birds of prey, protected under 50 CFR 10 of the MBTA and/or Section 3503 of the California Fish and Game Code, including Nuttall's woodpecker, loggerhead shrike, yellow-billed magpie, oak titmouse, grasshopper sparrow, song sparrow, purple martin, and white-tailed kite have the potential to nest within the trees within the riparian woodland and within the annual grassland. Ground-disturbing activities and/or vegetation clearing operations, including pruning or removal of trees and shrubs, shall be completed between September 1 to February 14, if feasible. If ground-disturbing activities and/or vegetation removal begins during the nesting season (February 15 to August 31), the Project Applicant shall have a qualified biologist conduct a pre-construction survey for active nests within 300 feet of the Project Site. The pre-construction survey will be conducted within 14 days prior to commencement of ground-disturbing activities and/or vegetation removal. The biologist shall provide a brief written report (including the date, time of survey, survey method, name of surveyor, and survey results) to City Planning prior to any ground-disturbing activity or vegetation removal. If the pre-construction survey shows that there is no evidence of active nests, no additional measures are required. If construction does not commence within 14 days of the pre-construction survey, or halts for more than 14 days, an additional pre-construction survey shall be required.

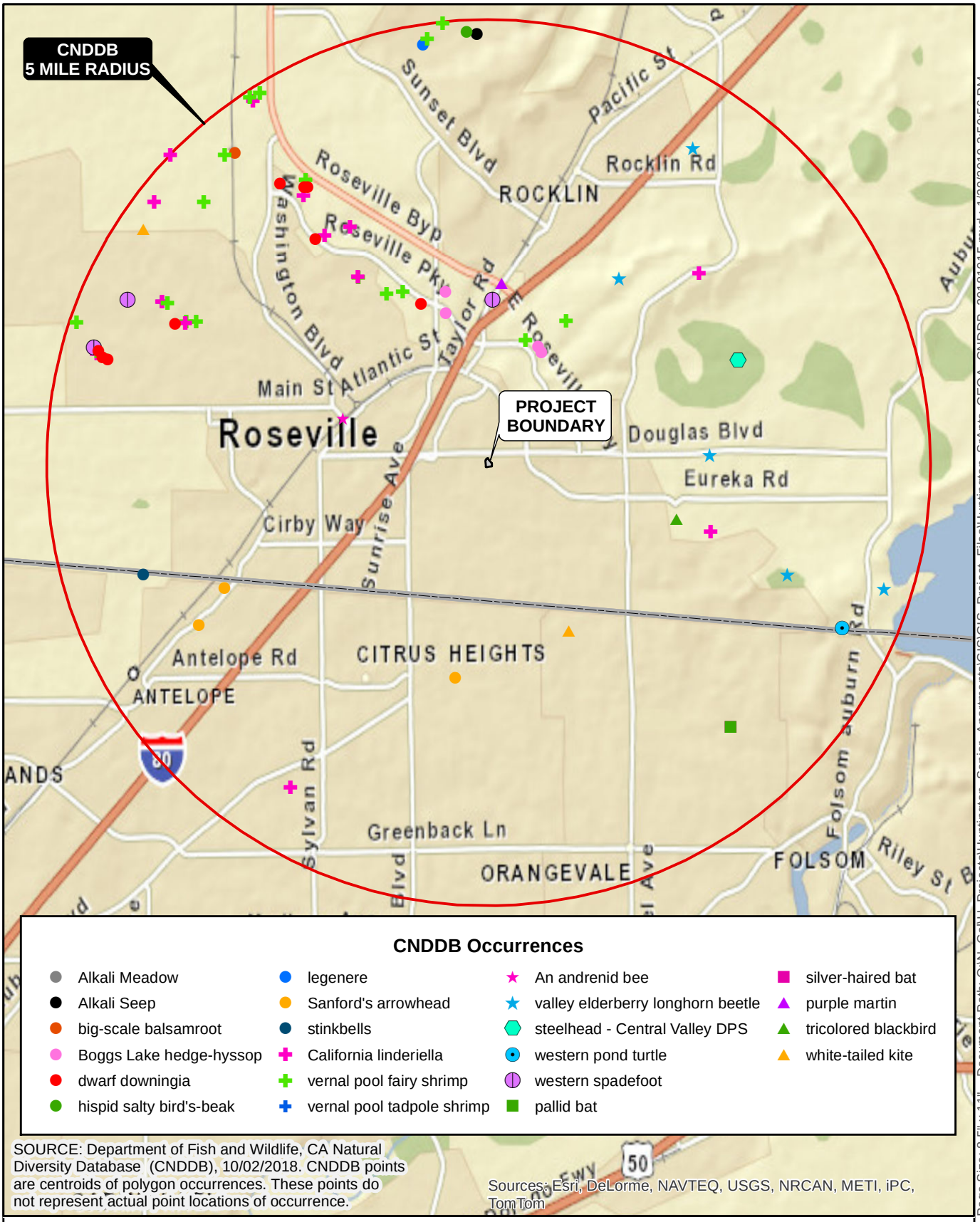
If any active nests are located within the vicinity of the Proposed Project the qualified biologist shall delimit an appropriate buffer zone, subject to approval of City Planning and in consultation with any other appropriate agencies, with construction tape or pin flags and maintain the buffer zone until the end of the breeding season or the young have successfully fledged. Buffer zones are typically 100 feet for migratory bird nests and 250 feet for raptor nests. If active nests are found onsite, a qualified biologist shall monitor nests weekly during construction to ensure activities are not causing nesting disturbance.

MM BIO-4: The trees within the riparian woodland provide roosting habitat for special-status bats. The Project Applicant shall have a qualified biologist perform onsite pre-construction surveys for special-status bat species within 14 days prior to the start of ground disturbance and tree removal. The biologist shall provide a brief written report (including the date, time of survey, survey method, name of surveyor, and survey results) to City Planning prior to any ground-disturbing activity or tree removal. If no bats are observed, then no additional measures are required. If construction does not commence within 14 days of the pre-construction survey or halts for more than 14 days and the site still contains undisturbed habitat, a supplemental survey is required.

If bats are found, all onsite work shall cease and the Project Applicant shall submit a mitigation plan for review and approval by City Planning, in consultation with the California Department of Fish and Wildlife. The plan shall document all proposed measures, including avoidance, minimization, exclusion, relocation, the presence of a biological monitor, or other measures, and include a plan to monitor mitigation success. Work on the site shall not resume until the mitigation plan is approved and appropriate measures have been implemented. If the bat is roosting in a tree anticipated for removal, then that tree shall not be removed until a qualified biologist has determined that the tree is no longer occupied by the bat.

MM BIO-5: Prior to commencement of ground-disturbing activities, a qualified biologist shall mark the boundaries of onsite riparian habitat and the contractor shall install exclusion fencing around these boundaries to exclude construction equipment and personnel. The fencing shall be inspected and approved by City Planning prior to ground-disturbing activities. The exclusion area

shall be maintained until ground-disturbing activities are completed and soil within the adjacent area is stabilized.



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HUNTINGTON SENIOR APARTMENTS - CNDDB OCCURRENCES

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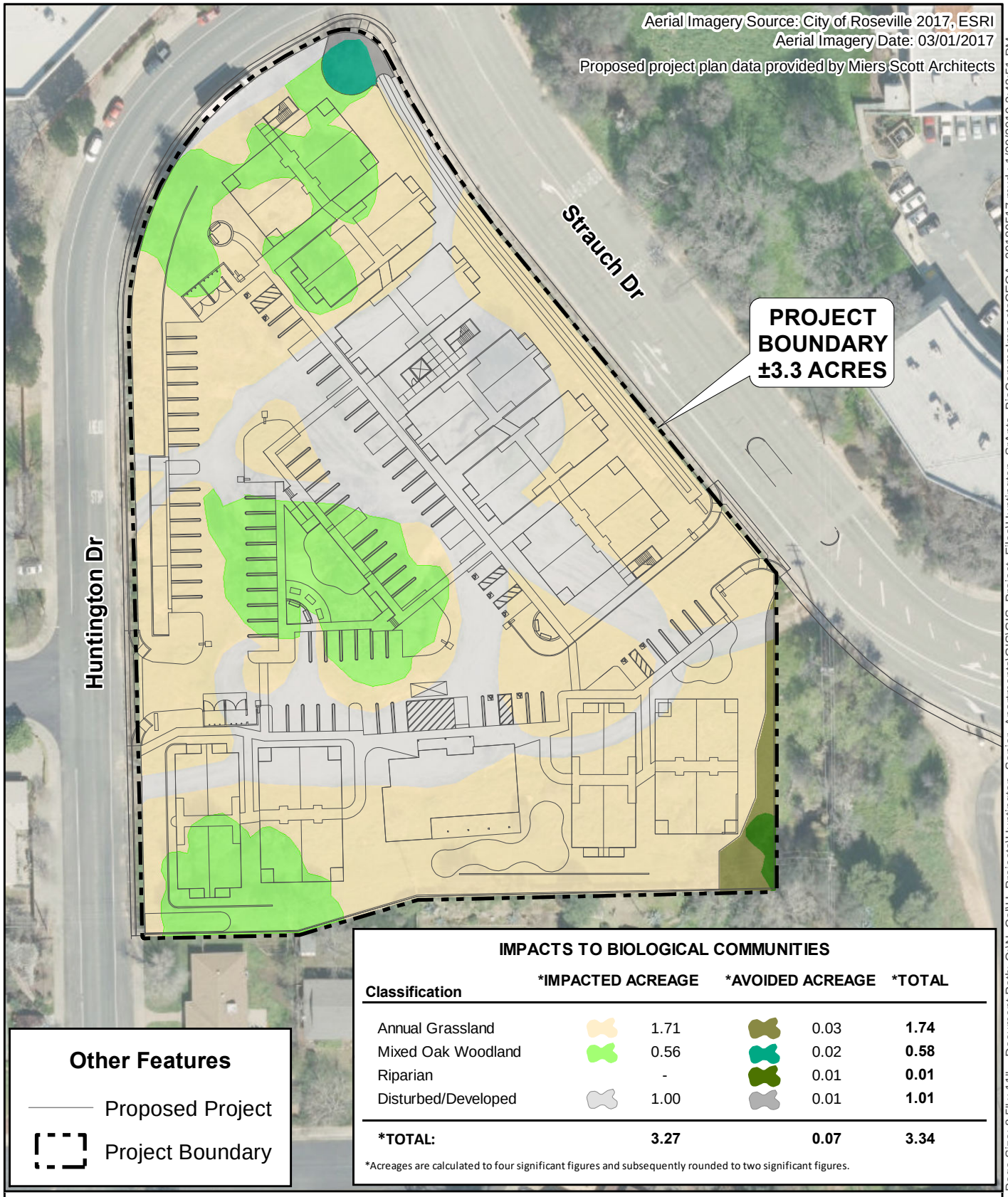
FIGURE 12



IMPACTS TO BIOLOGICAL COMMUNITIES

Classification	*IMPACTED ACREAGE	*AVOIDED ACREAGE	*TOTAL
Annual Grassland	1.71	0.03	**1.74**
Mixed Oak Woodland	0.56	0.02	**0.58**
Riparian	-	0.01	**0.01**
Disturbed/Developed	1.00	0.01	**1.01**
***TOTAL:**	**3.27**	**0.07**	**3.34**

*Acreages are calculated to four significant figures and subsequently rounded to two significant figures.

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HUNTINGTON SENIOR APARTMENTS – IMPACTS TO BIOLOGICAL COMMUNITIES

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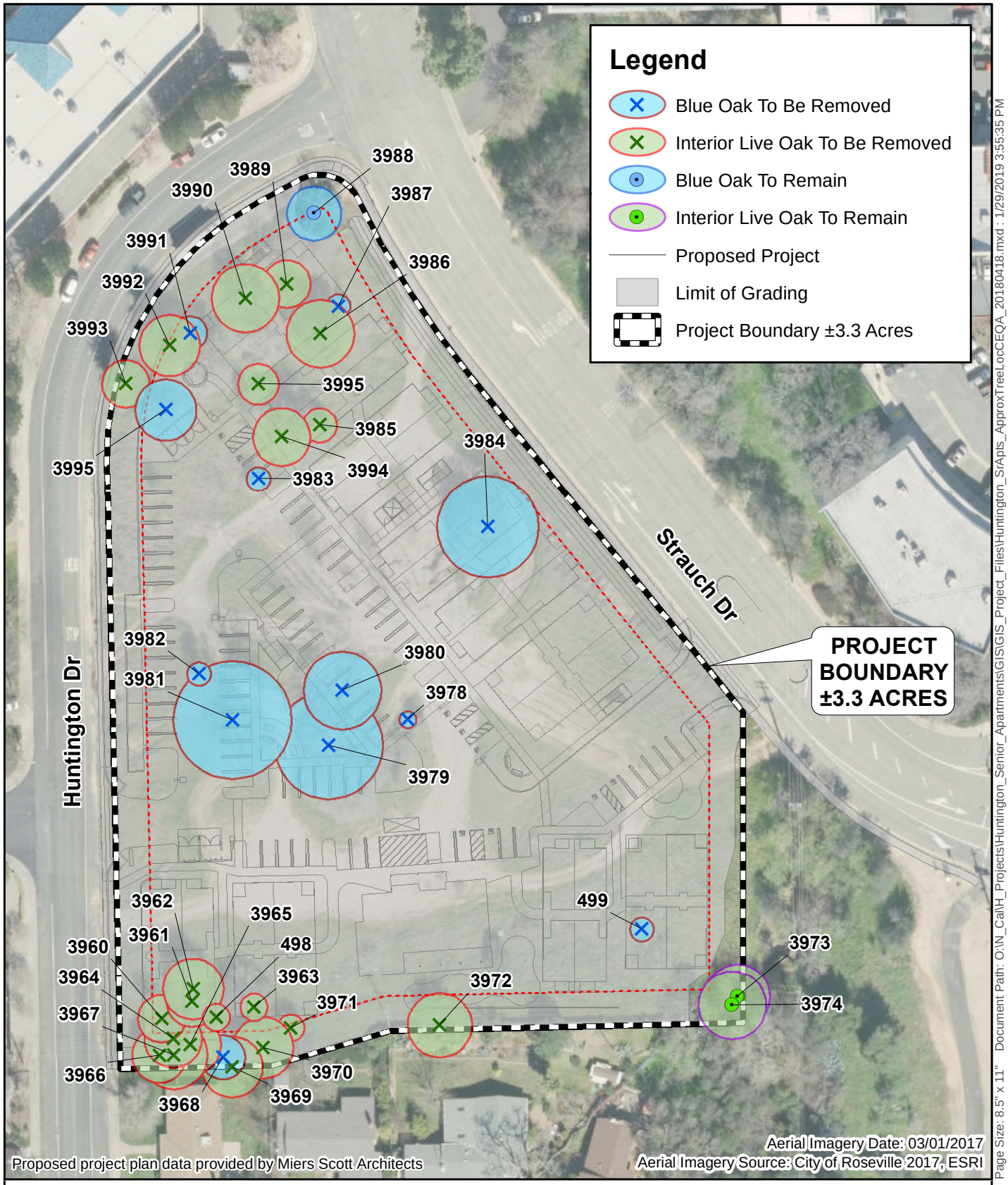
Date: 1/29/2019

FIGURE 13



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HUNTINGTON SENIOR APARTMENTS – APPROXIMATE TREE LOCATIONS AND PROJECT IMPACTS

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FIGURE 14

V. Cultural Resources

As described within the *Open Space and Conservation Element* of the City's General Plan, the Roseville region was within the territory of the Nisenan (also Southern Maidu or Valley Maidu). Two large permanent Nisenan habitation sites have been identified and protected within the City's open space (in Maidu Park). Numerous smaller cultural resources, such as midden deposits and bedrock mortars, have also been recorded in the City. The gold rush which began in 1848 marked another settlement period, and evidence of Roseville's ranching and mining past are still found today. Historic features include rock walls, ditches, low terraces, and other remnants of settlement and activity. A majority of documented sites within the City are located in areas designated for open space uses. Refer to the **Tribal Cultural Resources Section** of this IS for a discussion of tribal consultation.

Would the project:

Environmental Issue	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
a) Cause a substantial adverse change in the significance of an historic resource as defined in Section 15064.5?	☐	☐	☒	☐
b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to Section 15064.5?	☐	☐	☒	☐
c) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	☐	☐	☒	☐
d) Disturb any human remains, including those interred outside of dedicated cemeteries?	☐	☐	☒	☐

Thresholds of Significance and Regulatory Setting:

The significance of impacts to cultural resources is based directly on the CEQA Guidelines checklist items a) through e) listed above. The *Archaeological, Historic, and Cultural Resources Section* of the City's General Plan also directs the proper evaluation of and, when feasible, protection of significant resources (Policies 1 and 2). There are also various federal and State regulations regarding the treatment and protection of cultural resources, including the National Historic Preservation Act and the Antiquities Act (which regulate items of significance in history), Section 7050.5 of the California Health and Safety Code, Section 5097.9 of the California Public Resources Code (which regulates the treatment of human remains) and Section 21073 *et seq.* of the California Public Resources Code (regarding Tribal Cultural Resources). The CEQA Guidelines also contains specific sections, other than the checklist items, related to the treatment of effects on historic resources.

Pursuant to the CEQA Guidelines, if it can be demonstrated that a project would cause damage to a unique archaeological resource, the Lead Agency may require reasonable efforts to 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 (Section 21083.2 (a), (b), and (c)). A *historical resource* is a resource listed, or determined to be eligible for listing, in the California Register of Historical Resources (CRHR) (Section 21084.1); a resource included in a local register of historical resources (Section 15064.5(a)(2)); or any object, building, structure, site, area, place, record, or manuscript which a lead agency determines to be historically significant (Section 15064.5 (a)(3)). Public Resources Code Section 5024.1 requires evaluation of historical resources to determine their eligibility for listing on the CRHR.

Discussion of Checklist Answers:

a, b, d) **Less Than Significant Impact**. The Proposed Project is located within the Infill Specific Plan area and is within an area zoned as Planned Development. Adjacent land uses include Community Commercial, Medium and Low Density Residential. The Project Site is bounded on the north and west by Huntington Drive, on the east by Strauch Drive, and on the south by residential development.

No cultural resources are known to exist on the Project Site. The City's General Plan policies state that in the event of a discovery of buried archeological or historic deposits, or human remains, project activity in the vicinity to be halted until a qualified archeologist can assess the resources and provide management. Impacts to potential cultural resources are therefore considered to be ***less than significant*** and no mitigation is required.

c) **Less Than Significant Impact**. No paleontological resources are known to exist on the Project Site per the City's General Plan EIR, nor is their presence on the site likely; however, standard General Plan Polices apply which are designed to minimize impacts to such resources, should any be found on-site. The measures require an immediate cessation of work, and contact with a qualified archeologist to address the resource before work can resume. It is not anticipated that project development would result in impacts beyond those already discussed and disclosed in the General Plan EIR; therefore, project-specific impacts are ***less than significant*** and no mitigation is required.

Mitigation Measures

No mitigation is required.

VI. Geology and Soils

As described in the *Safety Element* of the City's General Plan, there are three inactive faults (Volcano Hill, Linda Creek, and an unnamed fault) in the vicinity, but there are no known active seismic faults within Placer County. The last seismic event recorded in the South Placer area occurred in 1908, and is estimated to have been at least a 4.0 on the Richter Scale. Due to the geographic location and soil characteristics within the City, the General Plan indicates that soil liquefaction, landslides, and subsidence are not a significant risk in the area.

Would the project:

Environmental Issue	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
a) Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:				
I. Ruptures 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.)	☐	☐	☒	☐
II. Strong seismic ground shaking?	☐	☐	☒	☐
III. Seismic-related ground failure, including liquefaction?	☐	☐	☒	☐
IV. Landslides?	☐	☐	☒	☐
b) Result in substantial soil erosion or the loss of topsoil?	☐	☐	☒	☐
c) Be located in a geological 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?	☐	☐	☒	☐
d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property?	☐	☐	☐	☒
e) Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater?	☐	☐	☐	☒

Thresholds of Significance and Regulatory Setting:

For the purpose of this IS, the significance thresholds related to geology and soils are as stated in CEQA Guidelines Appendix G, as shown in checklist items a) through e) listed above. Regulations applicable to this topic include the Alquist-Priolo Act, which addresses earthquake safety in building permits, and the Seismic Hazards Mapping Act, which requires the state to gather and publish data on the location and risk of seismic faults.

The Findings of the Implementing Procedures indicate that compliance with the Flood Damage Prevention Ordinance (RMC Ch.9.80) and the City's Design and Construction Standards (Resolution 07-107) would prevent significant impacts related to checklist item b). The Ordinance and standards include permit requirements for construction and development in erosion-prone areas and ensure that grading activities would not result in significant soil erosion or loss of topsoil. The use of septic tanks or alternative waste systems is not permitted in the City of Roseville, and therefore no analysis of criterion e is necessary.

Discussion of Checklist Answers:

a) The project would not expose people or structures to potential substantial adverse effects involving seismic shaking, ground failure or landslides.

i-iii) **Less Than Significant Impact**. Several faults have been identified within 60 miles of the Sacramento area. However, no known active faults are located in Placer County, including the project vicinity, and the south Placer County area is classified as a low-severity earthquake zone. Three inactive faults lie within the immediate Roseville vicinity: the Volcano Hill Fault, extending approximately one mile northwesterly from just east of Roseville city limits; the Linda Creek Fault, extending along a portion of Linda Creek through Roseville and a portion of Sacramento County; and an unnamed fault extending east to west between Folsom Lake and Rocklin. Portions of this fault are concealed, but they are possibly connected to the Bear Mountain fault near Folsom Lake. Geological literature indicates that no major active faults delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map transect Placer County.[6] The Project Site is not expected to experience faulting, strong ground shaking, seismically related ground failure, or liquefaction.

Further, site-specific geotechnical information prepared for the project has been incorporated into project design to ensure compliance with applicable California Building Code (CBC) regulations for seismic safety as well as the City's Design and Construction Standards. Impacts are therefore considered to be ***less than significant***. No mitigation is required.

iv) **Less Than Significant Impact**. Landsides typically occur where soils on steep slopes become saturated or where natural or manmade conditions have taken away supporting structures and vegetation. An existing mound is present on the site extending approximately 22 feet vertically and consisting of dense to very dense silty sand. Project development would include the removal of this mound, with excavated materials being hauled offsite. In addition, measures would be incorporated during construction to shore minor slopes and prevent earth movement. Therefore, impacts associated with landslides are considered ***less than significant*** and no mitigation is required.

b) **Less Than Significant Impact**. As shown in **Figure 15**, the Proposed Project is characterized by two soil units including: Cometa-Fiddyment Complex, 1 to 5 Percent Slopes and Inks-Exchequer Complex, 2 to 25 Percent Slopes.[7] Cometa series is a deep, well drained claypan soil that formed in alluvium, mainly from granitic sources. Permeability is very slow and surface runoff is slow. The hazard of erosion is slight. The Fiddyment series is a moderately deep, well-drained soil over a hardpan formed in old valley siltstone. Permeability is very slow and surface runoff is slow. The hazard of erosion is slight. The Inks series is a shallow, well-drained cobbly soil that formed in residuum from andesitic conglomerate. Permeability is moderate and surface runoff is medium. The hazard of erosion is slight or moderate. The Exchequer series is a shallow, somewhat excessively-drained and stony soil that formed in residuum

[6] California Department of Conservation. 2015. Alquist-Priolo Earthquake Fault Zone Maps. Available online at: http://www.conservation.ca.gov/cgs/rghm/ap/Pages/Index.aspx. Accessed [03/21/18].
[7] U.S. Department of Agriculture (USDA), Natural Resources Conservation Service (NRCS). 1980. *Soil Survey of Placer County, California - Western Part, California*. USDA, NRCS, in cooperation with the Regents of the University of California (Agricultural Experiment Station).

from hard andesitic breccia. Permeability is moderate and surface runoff is medium. The hazard of erosion is slight or moderate.

State regulations pertaining to the management of erosion and sedimentation target the protection of surface water resources from the effects of land development (such as turbidity caused by sedimentation), measures include regulations and standards to reduce the potential for erosion and soil loss. Such regulations include, but are not limited to, the NPDES program for management of construction and municipal storm water runoff, which is part of the Clean Water Act and the State Porter-Cologne Water Quality Control Act and is implemented at the State local level through issuance of permits and preparation of site-specific Storm Water Pollution Prevention Plans (SWPPP).

Site disturbance related to grading, paving, and excavation activities associated with implementation of the Proposed Project would have the potential to increase erosion within the Project Site. The Proposed Project is required to comply with the City's Storm Water Control Ordinance (Ordinance No. 4822) that was developed to meet the terms of the City's General Permit (NPDES No. CAS000004). Section 14.20.160 of the City's Storm Water Control Ordinance outlines requirements to prevent, control, and minimize pollution to storm water from construction activities with erosion and sediment controls. Implementation of these erosion and sediment control BMPs would prevent soil loss and erosion within the Project Site.

Construction activities associated with implementation of the Proposed Project with the potential to impact water quality resulting from pollutant discharges including sediment and soil particulate matter would be subject to compliance with the City's Storm Water Control Ordinance, including the implementation of appropriate site-specific BMPs to prevent erosion and sediment loss. Therefore, impacts are considered ***less than significant*** and no mitigation is required.

c) **Less Than Significant Impact**. Lateral spreading, a phenomenon associated with liquefaction, subsidence, or other geologic or soils conditions that could create unstable subsurface conditions that could affect Proposed Project features, is not a significant hazard for the Project Site. Based on the density of onsite subgrade materials, the distance of the Project Site from active faults, and absence of groundwater encountered during exploratory geotechnical investigations conducted on the Project Site, the potential for liquefaction is low.[8] During project design and prior to construction, the City would ensure the design specifications in the site-specific geotechnical report prepared for the Proposed Project are implemented, in accordance with City's Design and Construction Standards. Impacts would therefore be considered ***less than significant***. No mitigation is required.

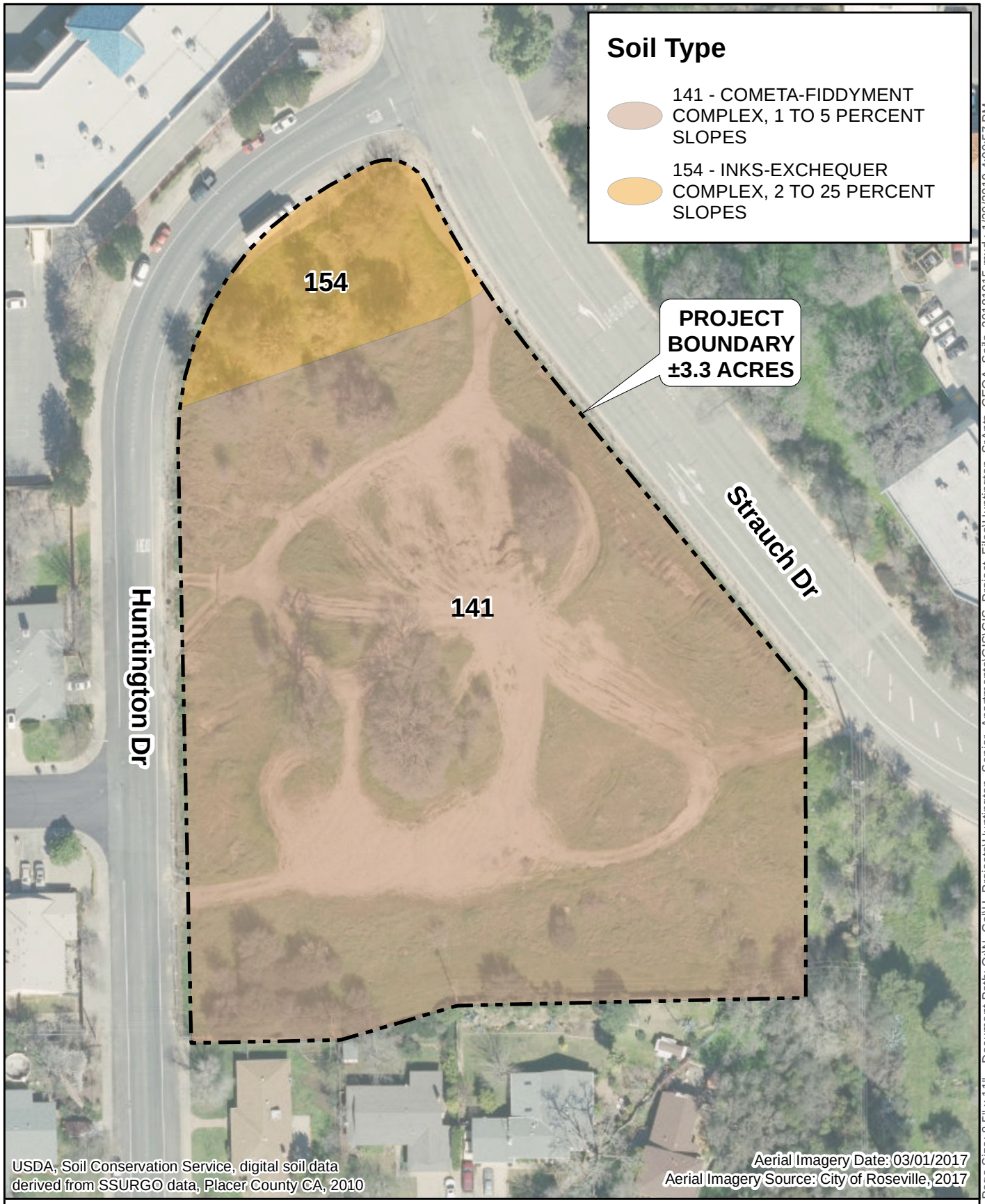
d) **No Impact**. As shown in **Figure 15**, the Proposed Project is characterized by two soil units including: Cometa-Fiddyment Complex, 1 to 5 Percent Slopes and Inks-Exchequer Complex, 2 to 25 Percent Slopes,[9] which are not listed as geologically unstable or sensitive. The Project Site is not located in an area of expansive soils and would not expose people to risk related to potential geologic impacts. ***No impact*** would result from project development and no mitigation is required.

e) **No Impact**. The City's General Plan *Safety Element* requires that new development connect to the City's sanitary sewer system. Project development would not involve septic tank installation or the use of alternative waste water disposal systems. Therefore, ***no impact*** related to the use of septic tanks would occur. No mitigation is required.

[8] Terracon Consultants, Inc. 2018. *Geotechnical Engineering Report Huntington Senior Apartments Roseville, California*. March 16, 2018.
[9] U.S. Department of Agriculture (USDA), Natural Resources Conservation Service (NRCS). 1980. *Soil Survey of Placer County, California - Western Part, California*. USDA, NRCS, in cooperation with the Regents of the University of California (Agricultural Experiment Station).

Mitigation Measures

No mitigation is required.



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HUNTINGTON SENIOR APARTMENTS - SOILS

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FIGURE 15

VII. Greenhouse Gases

Global climate change, also known as global warming, has been recognized as an important environmental issue. Documented impacts of climate change include rising sea levels, glacier retreat, shortening of frost seasons, and increases in precipitation, among other events. Climate change is considered to be heavily influenced by the rising concentration of greenhouse gases (GHG), primarily atmospheric carbon dioxide (CO_2). Burning of fossil fuels, including oil, natural gas, gasoline and coal, is a major contributor to rising GHG levels.[10] The City has taken proactive steps to reduce greenhouse gas emissions, which include the introduction of General Plan policies to reduce emissions, changes to City operations, and climate action initiatives which are available at https://www.roseville.ca.us/cms/One.aspx?portalId=7964922&pageId=8774544.[11]

Would the project:

Environmental Issue	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
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?	☐	☐	☒	☐

Thresholds of Significance and Regulatory Setting:

In Assembly Bill 32 (the California Global Warming Solutions Act), signed by Governor Schwarzenegger of California in September 2006, the legislature found that climate change resulting from global warming was a threat to California, and directed that "the State Air Resources Board design emissions reduction measures to meet the statewide emissions limits for greenhouse gases…". The target established in AB 32 was to reduce emissions to 1990 levels by the year 2020. CARB subsequently prepared the *Climate Change Scoping Plan* (Scoping Plan) for California, which was approved in 2008. The Scoping Plan provides the outline for actions to reduce California's GHG emissions. CARB's updated August 2011 Scoping Plan calculated a reduction needed of 21.7% from future "Business As Usual" (BAU) conditions in the year 2020. The current Scoping Plan (adopted May 2014) indicates that statewide emissions of GHG in 1990 amounted to 431 million metric tons, and that the 2020 "Business As Usual" (BAU) scenario is estimated as 509[12] million metric tons, which would require a reduction of 15.3% from 2020 BAU. In addition to this, Senate Bill 32 was signed by the Governor on September 8, 2016, to establish a reduction target of 40 percent below 1990 levels by 2030. The Air Resources Board is currently updating the Scoping Plan to reflect this target.

The Placer County Air Pollution Control District (PCAPCD) recommends that thresholds of significance for GHG be related to AB 32 reduction goals, and has adopted thresholds of significance which take into account the 2030 reduction target. The thresholds include a de minimis and a bright-line maximum threshold. Any project emitting less than 1,100 metric tons of carbon dioxide equivalents per year (MT CO_2e/yr) during construction or operation results in less than significant impacts. The PCAPCD considers any project with emissions greater than the bright-line cap of 10,000 MT CO_2e/yr to have significant impacts. For projects exceeding the de minimum

[10] KD Anderson & Associates. 2019. *Huntington Senior Apartments Air Quality Study*. February 1, 2019.
[11] City of Roseville. General Plan and Development Guideline, Accessed May 10, 2018.
[12] Includes Pavely and Renewables Portfolio Standard Reduction

threshold but below the bright-line threshold, comparison to the appropriate efficiency threshold is recommended. The significance thresholds are shown below in **Table 7**.

Table 7 — PCAPCD Greenhouse Gas Significance Thresholds

Bright-line Threshold 10,000 MT CO_2e/yr			
Residential Efficiency (MT CO_2e/capita[1])		**Non-Residential Efficiency (MT CO_2e/ksf[2])**	
Urban	**Rural**	**Urban**	**Rural**
4.5	5.5	26.5	27.3
De Minimis Threshold 1,100 MT CO_2e/yr			

1. Per Capita = per person
2. Per ksf = per 1,000 square feet of building

Discussion of Checklist Answers:

a, b) **Less Than Significant Impact**. Implementation of the Proposed Project would generate GHG emissions in the project vicinity. Both short-term construction-related emissions and long-term operational emissions associated with the Proposed Project were estimated using the CalEEMod emissions modeling program.[13] CalEEMod is a land use emissions computer model designed to provide a platform for government agencies, land use planners, and environmental professionals to quantify potential emissions associated with both construction and operation of a variety of land use projects. The model quantifies direct emissions (including vehicle use), as well as indirect emissions, such as GHG emissions from energy use, solid waste disposal, vegetation planting and/or removal, and water use. As part of the Air Quality Study for the Proposed Project (**Attachment 2**), impacts to global climate change and GHG emissions were evaluated.

Table 8 presents construction-related and operational emissions associated with the Proposed Project.

Table 8 — Greenhouse Gas Emissions (in Metric Tons)

Emissions Category	Carbon Dioxide (CO_2)	Methane (CH_4)	Nitrous Oxide (N_20)	Carbon Dioxide Equivalent (CO_2e)
Construction-Related Emissions				
2019 Emissions	456.52	0.06	0.00	458.08
2020 Emissions	346.30	0.07	0.00	348.11
Operational Emissions				
Area Source	0.92	0.00	0.00	0.95
Energy	100.50	0.01	0.00	101.21
Mobile Source	366.52	0.02	0.00	366.89
Waste	7.10	0.42	0.00	17.58
Water	6.82	0.16	0.00	12.04
Total (Operational)	**481.85**	**0.60**	**0.01**	**498.66**

[13] California Air Pollution Control Officers Association 2016

Construction-Related Emissions

Construction of the Proposed Project would result in the generation of GHG emissions. As shown in **Table 8**, construction of the Proposed Project would generate 458.08 MT of CO_2e in 2019 and 348.11 MT of CO_2e in 2020. GHG emissions generated by construction of the Proposed Project would be less than the 1,100 MT CO_2e per year De Minimis Level significance threshold adopted by the PCAPCD (**Table 7**). Therefore, impacts to construction-related emissions would be *less than significant*.

Operational Emissions

Long-term operation of the Proposed Project would result in the generation of GHG emissions. As shown in **Table 8**, operation of the Proposed Project is estimated to generate 498.66 MT CO_2e per year. The generation of GHG emissions by the Proposed Project would be less than the 1,100 MT CO_2e per year De Minimis Level significance threshold adopted by the PCAPCD (**Table 7**). Therefore, impacts to operational emissions would be l*ess than significant*.

Conclusion

In conclusion, operational GHG emissions would be minimal and would not change as a result of the Proposed Project; however, construction of the Proposed Project would generate GHG emissions that would contribute to the overall GHG levels in the atmosphere. Although the Proposed Project would contribute to GHG levels during construction of the Proposed Project, the incremental contribution to cumulative GHG emissions and global climate change would be minor and below established thresholds defined for the region. In addition, the GHG emissions resulting from construction of the Proposed Project would occur only once temporarily during construction. Therefore, the Proposed Project's contribution to global climate change through GHG emissions would be considered a ***less than significant impact***. No mitigation is required.

Mitigation Measures

No mitigation is required.

VIII. Hazards and Hazardous Materials

There are no hazardous cleanup sites of record within 1,000 feet of the Proposed Project according to a recent records search of the California Department of Toxic Substances Control *EnviroStor Database*.[14] There are no sites within the Proposed Project that are listed in the *State of California Hazardous Waste and Substances Site List* (Cortese List).[15] No previous environmental review of the Project Site has found evidence of contamination or hazardous conditions.

The Project Site is not located within the vicinity of an airport land use plan or private airstrip and would not result in a safety hazard for people residing or working in the project vicinity.

Would the project:

Environmental Issue	Potentially Significant Impact	Less Than Significant with Mitigation	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?	☐	☐	☒	☐
b) Create a significant hazard to the public or the environment though reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?	☐	☐	☒	☐
c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	☐	☐	☐	☒
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?	☐	☐	☐	☒
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 for people residing or working in the project area?	☐	☐	☐	☒
f) For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing in the project area?	☐	☐	☐	☒
g) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	☐	☐	☐	☒

[14] California Department of Toxic Substances Control (CDTSC). 2018a. *Envirostor Data Base*. Available online at: www.envirostor.dtsc.ca.gov. Accessed [03/20/18].
[15] CDTSC. 2018b. *Hazardous Waste and Substances Site List- Site Cleanup (Cortese List)*. Available online at: http://www.dtsc.ca.gov/SiteCleanup/Cortese_List.cfm. Accessed [03/20/18].

Environmental Issue	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
h) Expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?	☐	☐	☐	☒

Thresholds of Significance and Regulatory Setting:

For the purpose of this IS, the significance thresholds related to hazardous materials are as stated in CEQA Guidelines Appendix G, as shown in a) through h) in the checklist above. A material is defined as hazardous if it appears on a list of hazardous materials prepared by a federal, State or local regulatory agency, or if it has characteristics defined as hazardous by such an agency. The determination of significance based on the above criteria depends on the probable frequency and severity of consequences to people who might be exposed to the health hazard, and the degree to which project design or existing regulations would reduce the frequency of or severity of exposure. As an example, products commonly used for household cleaning are classified as hazardous when transported in large quantities, but one would not conclude that the presence of small quantities of household cleaners at a home would pose a risk to a school located within ¼-mile.

Many federal and State agencies regulate hazards and hazardous substances, including the US EPA, California Department of Toxic Substances Control (CDTSC), CVRWQCB, and the California Occupational Safety and Health Administration (CalOSHA). The State has been granted primacy (primary responsibility for oversight) by the US EPA to administer and enforce hazardous waste management programs. State regulations also have detailed planning and management requirements to ensure that hazardous materials are handled, stored, and disposed of properly to reduce human health risks. California regulations pertaining to hazardous waste management are published in the California Code of Regulations (see 8 CCR, 22 CCR, and 23 CCR).

Discussion of Checklist Answers:

a, b) **Less Than Significant Impact**. Standard construction activities would require the use of hazardous materials such as fuels, oils, lubricants, glues, paints and paint thinners, soaps, bleach, and solvents. These are common household and commercial materials routinely used by both businesses and average members of the public. The materials only pose a hazard if they are improperly used, stored, or transported either through upset conditions (e.g. a vehicle accident) or mishandling. In addition to construction use, the operational project would result in the use of common hazardous materials as well, including bleach, solvents, and herbicides. Regulations pertaining to the transport of materials are codified in 49 Code of Federal Regulations 171–180, and transport regulations are enforced and monitored by the California Department of Transportation (Caltrans) and by the California Highway Patrol. Specifications for storage on a construction site are contained in various regulations and codes, including the California Code of Regulations, the Uniform Fire Code, and the California Health and Safety Code. These same codes require that all hazardous materials be used and stored in the manner specified on the material packaging. Existing regulations and programs are sufficient to ensure that potential impacts as a result of the use or storage of hazardous materials are reduced to less than significant levels. Therefore, impacts related to the creation of a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials are considered ***less than significant*** and no mitigation is required.

c) **No Impact**. Warren T. Eich Middle School is the nearest school to the Project Site and is located ½-mile from the Project Site. Maidu Elementary School is located one mile from the Project Site. There are no

public or private schools neither located within ¼-mile of the Project Site nor are there any schools planned to be developed within ¼-mile of the Proposed Project according to the General Plan, *Public Facilities Element.* Construction would not generate hazardous air emissions or handle acutely hazardous substances within a quarter of a mile of a school. Therefore, ***no impact*** would result from development of the Proposed Project and no mitigation is required.

d) **No Impact**. The Project Site is not included on the State Cortese List compiled pursuant to Government Code Section 65962.5.[16] Therefore, no impact would occur. According to the CDTSC *Envirostor Database*, there are no known hazardous sites within the immediate vicinity of the Proposed Project. Therefore, ***no impact*** would result from development of the Proposed Project and no mitigation is required.

e, f) **No Impact**. The Project Site is not located within the vicinity of an airport land use plan or private airstrip and would not result in a safety hazard for people residing or working in the project vicinity. Therefore, ***no impact*** would result from development of the Proposed Project and no mitigation is required.

g) **No Impact**. The Proposed Project would not impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan. The Proposed Project is located within an area currently receiving emergency services and development of the Project Site has been anticipated and incorporated into emergency response plans. Therefore, the ***no impact*** would result from development of the Proposed Project and no mitigation is required.

h) **No Impact**. The Project Site is not located within a fire hazard severity zone as defined by Cal Fire and is located within the City of Roseville Fire District.[17] The Project Site is in an urban area, and therefore, would not expose people to any risk from wildland fire. ***No impact*** associated with wildland fires would result from development of the Proposed Project and no mitigation is required.

Mitigation Measures

No mitigation is required.

[16] CDTSC. 2018b. *Hazardous Waste and Substances Site List- Site Cleanup (Cortese List)*. Available online at: http://www.dtsc.ca.gov/SiteCleanup/Cortese_List.cfm. Accessed [03/20/18].
[17] California Department of Forestry and Fire Protection (Cal Fire). 2007. *Fire Hazard Severity Zones in SRA, Placer County*, November 7, 2007. Available Online at: http://www.fire.ca.gov/fire_prevention/fhsz_maps_placer. Accessed [03/21/18].

IX. Hydrology and Water Quality

As described in the *Open Space and Conservation Element* of the City's General Plan, the City is located within the Pleasant Grove Creek Basin and the Dry Creek Basin. Pleasant Grove Creek and its tributaries drain most of the western and central areas of the City and Dry Creek and its tributaries drain the remainder of the City. Most major stream areas in the City are located within designated open space.

Would the project:

Environmental Issue	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
a) Violate any water quality standards or waste discharge requirements?	☐	☐	☒	☐
b) Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)?	☐	☒	☐	☐
c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on or off-site?	☐	☐	☒	☐
d) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on or off-site?	☐	☐	☒	☐
e) Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted water?	☐	☐	☒	☐
f) Otherwise substantially degrade water quality?	☐	☐	☒	☐
g) Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?	☐	☐	☐	☒
h) Place within a 100-year flood hazard area structures, which would impede or redirect flood flows?	☐	☐	☐	☒
i) Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam?	☐	☐	☒	☐
j) Inundation by seiches, tsunami, or mudflow?	☐	☐	☐	☒

Thresholds of Significance and Regulatory Setting:

The significance of impacts related to hydrology and water quality is based directly on the CEQA Guidelines checklist items a) through j) listed above. For checklist item a), the Findings of the Implementing Procedures indicate that compliance with the City's Design and Construction Standards (Resolution 07-107), Urban Stormwater Quality Management and Discharge Control Ordinance (RMC Ch. 14.20), and Stormwater Quality Design Manual (Resolution 16-152) would prevent significant impacts. The standards require preparation of an Erosion and Sediment Control Plan for construction activities and includes designs to control pollutants within post-construction urban water runoff. Likewise, it is indicated that the Drainage Fees for the Dry Creek and Pleasant Grove Watersheds (RMC Ch.4.48) and the City's Design and Construction Standards (Resolution 07-107) would prevent significant impacts related to item e. The ordinance and standards require the collection of drainage fees to fund improvements that mitigate potential flooding impacts, and require the design of a water drainage system that would adequately convey anticipated stormwater flows. Finally, it is indicated that compliance with the Flood Damage Prevention Ordinance (RMC Ch. 9.80) would prevent significant impacts related to checklist items g), h), and i). The Ordinance includes standard requirements for all new construction, including regulation of development with the potential to impede or redirect flood flows, and prohibits development within flood hazard areas. Impacts from tsunamis and seiches were screened out of the analysis (checklist item j) given the fact that the project is not located near a water body or other feature that would pose a risk of such an event.

Discussion of Checklist Answers:

a, c, d, e, f) **Less Than Significant Impact**. Site disturbance related to grading, paving, and excavation activities associated with implementation of the Proposed Project would have the potential to increase erosion within the Project Site. The Proposed Project is required to comply with the City's Grading Ordinance and National Pollutant Discharge Elimination System (NPDES) Municipal Stormwater Permit issued by the Central Valley Regional Water Quality Control Board (CVRWQCB) which requires the City to reduce pollutants in stormwater to the maximum extent practicable. The City would require the contractor to comply by preparing a Stormwater Pollution Prevention Plan (SWPPP) to meet the requirement of the City's Statewide General Construction Permit (General Permit) and the NDPES Storm Water Management Program (SWMP), which implements the General Permit for Stormwater Discharge from the CVRWQCB. All permanent stormwater quality control measures must be designed to comply with the City's Manual for Stormwater Quality Control Standards for New Development, the City's Design and Construction Standards, Urban Stormwater Quality Management and Discharge Control Ordinance, and Stormwater Quality Design Manual.

Development of the Proposed Project would include installation of bio retention planters and a vegetative swale for treating excess stormwater from paved areas. The bio retention planters and a vegetative swale would be planted with native California plants to help retain and treat stormwater project-related runoff from impervious surfaces during high flow storm events. The development of the additional drainage features would not be expected to substantially alter the existing drainage pattern of the Project Site in a manner that would result in substantial erosion or siltation or contribute runoff water in quantities that exceed the capacity of the existing and planned drainage systems at the Project Site nor provide substantial additional sources of polluted runoff.

Implementation, monitoring, and maintenance of BMPs required to comply with existing enforceable City ordinance requirements, combined with compliance with State and federal regulations relevant to maintaining water quality objectives, would ensure that project development would not result in substantial erosion or siltation violating water quality standards and discharge requirements. Therefore, impacts related to water quality are considered ***less than significant*** and no mitigation is required.

b) **Less Than Significant with Mitigation**. The Project Site is located in the foothills North American Subbasin, which overlies the eastern central portion of the Sacramento Valley Groundwater Basin, which

has a total surface area of approximately 351,000 acres, or 548 square miles. Groundwater recharge in the basin occurs mostly by infiltration from the Sacramento, Feather, and Bear Rivers, along with their tributaries. There are currently no artificial recharge areas for the North American Subbasin.

Water supply for the Proposed Project would come from existing City water supplies, which include wells as well as surface water sources. Project demand is anticipated to exceed City-defined allocations for the Project Site, when compared to the City's defined baseline usage and current land use designations on the Project Site. Impacts associated with water supply sufficiency are discussed in **Section XVIII, Utilities and Service Systems**. Project-related demands for water would be required to comply with existing City standards, as assessed within the City's Water Supply Assessment and the Water Conservation Plan (WCP) prepared for the Proposed Project (**Attachment 6**). The WCP identifies anticipated project baseline usage and identify measures to reduce project water demand to levels which meet or are less than the City's allocated water demand for the Project Site. Proposed post-construction water quality BMPs, including bio-retention facilities and swales would accommodate onsite infiltration of stormwater. Therefore, the Proposed Project is not anticipated to interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level. Implementation of **Mitigation Measure USS-1** would require the Project Applicant to implement measures identified in the City approved WCP for the Proposed Project identifying specific measures to be implemented to facilitate reductions in water usage. Therefore, reducing impacts to ***less than significant with mitigation incorporated***.

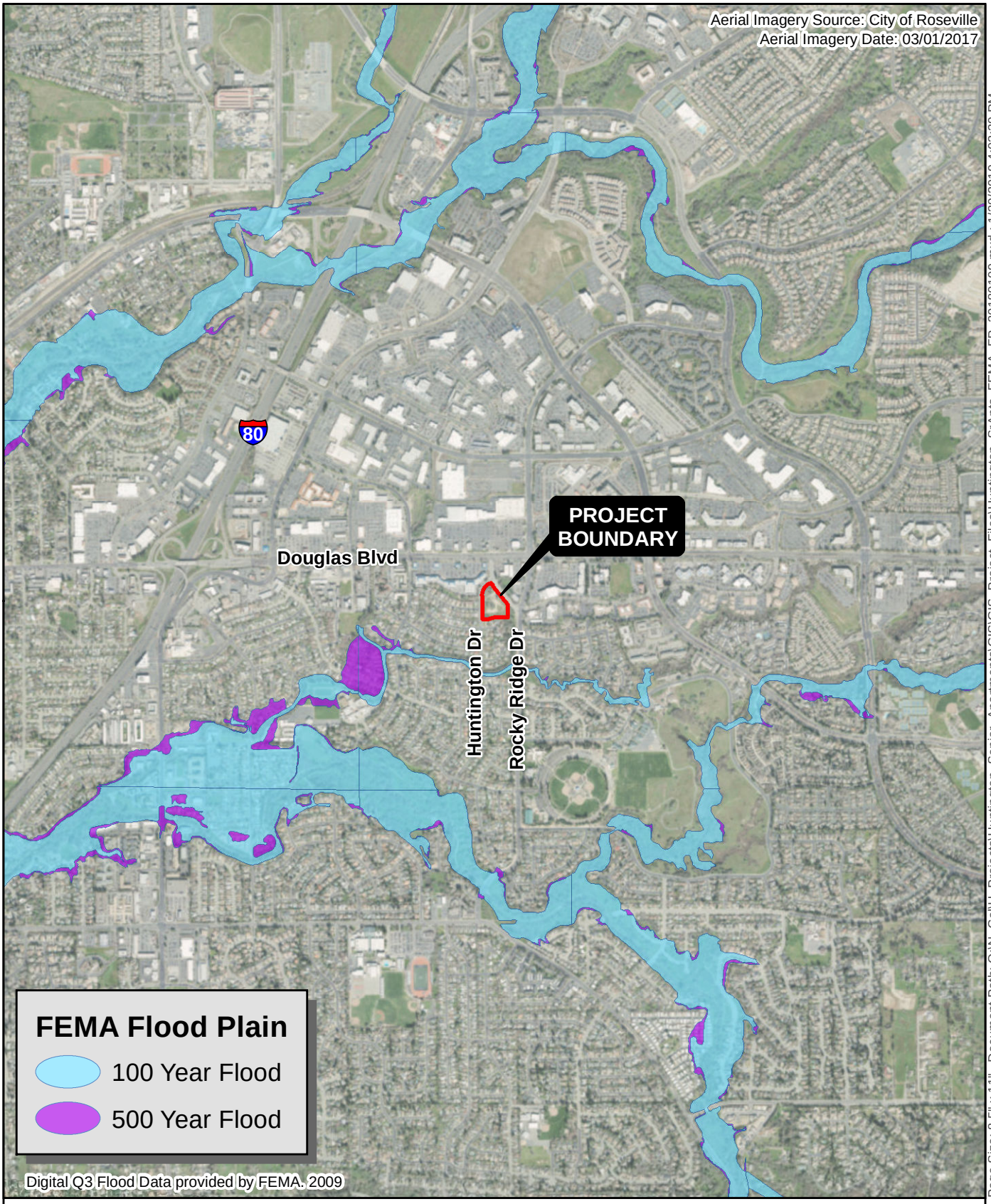
g, h) **No Impact**. The Project Site is not located within a FEMA-designated 100-year flood hazard area (**Figure 16**), or within the City's regulatory floodplain. Therefore, no structures would be placed within a FEMA-designated or local 100-year flood hazard area that would impede or redirect flood flows. Additionally, the Proposed Project would not involve placing housing in special flood hazard areas. Therefore, project development would result in ***no impact*** related to impeding or redirecting flood flows within a FEMA-designated or local 100-year flood hazard area. No mitigation is required.

i) **Less Than Significant Impact**. The Project Site is not located within the vicinity of a dam or levee. Folsom Dam is located approximately 10 miles southeast of the Project Site and is the closet dam to the Project Site. While portions of the City could be subject to flooding in the event of failure or damage of Folsom Dam, the Project Site is not located in an area that would be subject to inundation due to dam failure. Therefore, impacts would be ***less than significant*** and no mitigation is required.

j) **No Impact**. The Project Site is not located near an ocean coast or enclosed body of water that could produce a seiche or tsunami, nor is the site located near areas having steep slopes that would create mudflows. Therefore, ***no impact*** would result from project development and no mitigation is required.

Mitigation Measures

Implementation of **Mitigation Measure USS-1** (see **Section XVIII, Utilities and Service Systems**) would reduce potential impacts to Hydrology and Water Quality relevant to the Proposed Project.



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HUNTINGTON SENIOR APARTMENTS FEMA FLOODPLAIN LOCATION

FOOTHILL ASSOCIATES
ENVIRONMENTAL CONSULTING • PLANNING • LANDSCAPE ARCHITECTURE

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QA/QC: CTG
Date: 1/29/2019

FIGURE 16

X. Land Use and Planning

Per the City's General Plan, *Land Use Element*[18] the current land use designation for the Project Site is Community Commercial and Medium Density Residential (**Figure 2**). The Project Site is within the Infill Specific Plan area per the *City of Roseville Zoning Map*[19] and is within an area zoned as PD (**Figure 3**). Adjacent land uses include CC and MDR. Development of the Proposed Project would require a Rezone and General Plan Amendment to change existing CC and MDR land use designations to HDR. The project entitlements include Rezone and General Plan Amendment to change existing CC and MDR land use designations to HDR. As shown on **Figure 4**, a lot line adjustment is proposed along the northwestern corner and southeastern edge of the Project Site.

Would the project:

Environmental Issue	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
a) Physically divide an established community?	☐	☐	☐	☒
b) Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?	☐	☐	☒	☐
c) Conflict with any applicable habitat conservation plan or natural community conservation plan?	☐	☐	☐	☒

Thresholds of Significance and Regulatory Setting:

For the purpose of this IS, the significance thresholds related to land use and planning are as stated in CEQA Guidelines Appendix G, as shown in a) through c) of the checklist above. Consistency with applicable City General Plan policies, Improvement Standards, and design standards is already required and part of the City's processing of permits and plans, so these requirements do not appear as mitigation measures. Land use regulations applicable to the Project Site include the City's General Plan 2035 and the Zoning Ordinance.

Discussion of Checklist Answers:

a) **No Impact**. The Proposed Project would result in development of a multi-family, senior, age restricted (55+) apartment complex consisting of 10 apartment buildings, a community clubhouse, and associated parking. Development of the Proposed Project would include adequate roads, pedestrian paths, and bicycle paths to provide connections within the community. The Proposed Project would not physically divide an established community. Therefore, ***no impact*** would result from development of the Proposed Project and no mitigation is required.

b) **Less Than Significant Impact**. As summarized above, the current land use designation for the Project Site is Community Commercial and Medium Density Residential. Development of the Proposed Project

[18] City of Roseville. 2017. *General Plan 2035 Land Use Map*, updated March 2017. Available online at: https://www.roseville.ca.us/cms/One.aspx?portalId=7964922&pageId=8853705. [Accessed 1/10/18].
[19] City of Roseville, 2017. *Zoning Map*, updated March 2017. Available online at: https://www.roseville.ca.us/government/departments/development_services/planning/zoning_information/. [Accessed 1/11/18].

would require a Rezone and General Plan Amendment to change existing Community Commercial and Medium Density Residential land use designations to High Density Residential. Design Review standards, as well as City-required Conditions of Approval would ensure that the Proposed Project would be developed in conformance with all applicable land use plans and ordinances, and would not conflict with any agency's plans, policies, or regulations adopted for the purpose of avoiding or mitigating an environmental effect. The Project Site is not located within a coastal zone management area. Therefore, impacts from development of the Proposed Project would be ***less than significant*** and no mitigation is required.

c) **No Impact**. There are no Habitat Conservation Plans, Natural Conservation Community Plans, or other adopted plans applicable to the Proposed Project. Therefore, ***no impact*** would result from development of the Proposed Project and no mitigation is required.

Mitigation Measures

No mitigation is required.

XI. Mineral Resources

The Surface Mining and Reclamation Act (SMARA) of 1975 requires the State Geologist to classify land into Mineral Resource Zones (MRZ's) based on the known or inferred mineral resource potential of that land. The California Department of Conservation, Division of Mines and Geology (CDCDMG) was historically responsible for the classification and designation of areas containing, or potentially containing, significant mineral resources, though that responsibility now lies with the California Geological Survey (CGS). CDCDMG published Open File Report 95-10, which provides the mineral classification map for Placer County[20]. A detailed evaluation of mineral resources has not been conducted within the City limits, but MRZ's have been identified. There are four broad MRZ categories (MRZ-1 through MRZ-4), and only MRZ-2 represents an area of known significant mineral resources. The General Plan EIR included Exhibit 4.1-3, depicting the location of MRZ's in the City limits. There is only one small MRZ-2 designation area, located at the far eastern edge of the City.

Would the project:

Environmental Issue	Potentially Significant Impact	Less Than Significant with Mitigation	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?	☐	☐	☐	☒
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?	☐	☐	☐	☒

Thresholds of Significance and Regulatory Setting:

For the purpose of this IS, the significance thresholds related to mineral resources are as stated in CEQA Guidelines Appendix G, as shown in a) and b) of the checklist above.

Discussion of Checklist Answers:

a, b) **No Impact**. The Project Site is not in the area of the City known to include any mineral resources that would be of local, regional, or statewide importance. Therefore, ***no impact*** would result from the development of the Proposed Project on mineral resources and no mitigation is required.

Mitigation Measures

No mitigation is required.

[20] Davis. James F. *Mineral Land Classification of Placer County, California*, California Geological Survey Open-File Report 95-10. 1995. Available online at: http://www.conservation.ca.gov/cgs/information/publications/counties/Pages/pla.aspx. [Accessed 03/05/18].

XII. Noise

The Project Site is currently undeveloped and surrounded by single-family residential to the south, duplex residential to the west, a small area of undeveloped oak woodland to the northeast, and business development to the northwest and northeast, adjacent to the off-site oak woodland. The existing ambient noise environment in the immediate vicinity of the Project Site is primarily defined by traffic on Strauch Drive and Huntington Drive. Both Huntington Drive and Strauch Drive are two-lane roadways. The Proposed Project does not include any features that are significant sources of noise, such as a pool or other noise-generating outdoor activity area. The primary source of potential noise from the Proposed Project is related to construction, though traffic is also addressed.

Would the project:

Environmental Issue	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
a) Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?	☐	☐	☒	☐
b) Exposure of persons to or generation of excessive ground borne vibration of ground borne noise levels?	☐	☐	☒	☐
c) A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?	☐	☐	☐	☒
d) A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?	☐	☒	☐	☐
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 expose people residing or working in the project area to excessive noise levels?	☐	☐	☐	☒
f) For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels?	☐	☐	☐	☒

Thresholds of Significance and Regulatory Setting:

Standards for transportation noise and non-transportation noise affecting existing or proposed land uses are established within the City's General Plan *Noise Element* Table IX-1 and IX-3, and these standards are used as the thresholds to determine the significance of impacts related to items a) and c). The significance of other noise impacts is based directly on the CEQA Guidelines checklist items b), and d) through f) listed above. The *Findings of the Implementing Procedures* indicate that compliance with the City Noise Regulation (RMC Ch. 9.24) would prevent significant non-transportation noise as it relates to items a), b), and c). The Ordinance establishes noise exposure standards that protect noise-sensitive receptors from a variety of noise sources, including non-transportation/fixed noise, amplified sound, industrial noise, and events on public property. The project is not within an airport land use plan or within two miles of a public or public use airport, and there are also no private airstrips in the vicinity of the Project Site.

Discussion of Checklist Answers:

a) **Less Than Significant Impact**. The Proposed Project would construct a multi-family, senior, age restricted (55+) apartment complex consisting of 10 apartment buildings composed of 48 one-bedroom units and 28 two-bedroom units, a community clubhouse, and associated parking. Bollard Acoustical Consultants prepared an Environmental Noise and Vibration Assessment (**Attachment 5**) for the Proposed Project. The following discussion evaluates the impacts of the Proposed Project.

The City's General Plan*, Noise Element* has established Goals and Policies relating to evaluating noise impacts due to projects. The overall noise goal for the City is to protect the health and welfare of the community by promoting community development which is compatible with noise level criteria. The *Noise Element* establishes noise standards for maximum allowable noise exposure due to non-transportation (stationary) sources and fixed noise sources, as well as for transportation sources. For transportation sources Table IX-1 indicates a noise threshold of 60 dB L_{dn} for outdoor residential activity areas (backyard patios or decks) and 45 dB L_{dn} for interior spaces. Standard residential construction practices provide an approximately 25 dB decrease in noise, and therefore if a project meets the exterior noise standard, it would also meet the interior noise standard. As summarized below in **Table 9**, fixed noise sources are not to exceed 50 dBA L_{eq} and 70 dBA L_{max} during daytime hours (7:00 A.M. to 10:00 P.M.) and 45 dBA L_{eq} and 65 dBA L_{max} during nighttime hours (10:00 P.M. to 7:00 A.M.) as measured at the property line of noise sensitive land uses. These standards apply to permanent increases in noise, not to construction noise, which is instead regulated by the City's Health and Safety Ordinance and is evaluated within checklist item d).

Table 9 — Sound Level Standards for Non-Transportation or Fixed Sound Sources

Sound Lelvel Descriptor	Daytime (7:00 A.M. to 10:00 P.M.)	Nighttime (10:00 P.M. to 7:00 A.M.)
Hourly L_{eq}, dB	50	45
Maximum Level, dB	70	65

Notes:

A. Each of the sound level standards specified in Table 1 shall be reduced by five dB for simple tone noises, consisting of speech and music.

B. If the intruding sound source is continuous and cannot be reasonably be discontinued or stopped for a time period whereby the ambient sound level can be measured, the south level measured while the source is in operation shall be compared directly to the sound level standards of Table 1 (Ord. 3638 § 1, 2001.)

The existing noise environment at the Project Site is influenced by adjacent residential and commercial development and by vehicular noise attributable to traffic on Huntington Drive and Strauch Drive. The Project Site is surrounded by residential development to the south and west. The nearest residence is approximately 25 feet south of the Project Site. The existing mound on the Project Site may shield areas to the west and south from traffic noise from Rocky Ridge Drive and Douglas Boulevard, and therefore, its removal may increase noise volumes. In addition, the Proposed Project would add a small amount of additional traffic to surrounding roadways.

Traffic noise from all of the major roadways in the City was evaluated for the *City's* General Plan, based on existing conditions and City-wide buildout. Figure IX-5 of the City's General Plan *Noise Element* shows the 60 and 65 dB L_{dn} noise contours which resulted from that analysis. The analysis did not account for any existing noise control or shielding sources in the City, and therefore is a worst-case analysis. As shown in the Figure IX-5 of the City's General Plan *Noise Element*, the Project Site and surrounding residential areas to the south and east of the site are not within either of the identified noise contours, even if you exclude consideration of the existing commercial buildings and the mound on the Project Site,

which shield this neighborhood from traffic noise. Therefore, removal of the mound would not increase noise volumes to levels which exceed adopted standards.

According to the Environmental Noise and Vibration Assessment prepared by Bollard Acoustical Consultants, Inc.[21], the existing average ambient noise volume, which is dominated by traffic noise from Huntington Drive, is 58.3 dB. The exterior transportation noise threshold is 60 dB. Therefore, project traffic would need to generate a 2 dB increase in noise volume in order to exceed standards. During the peak hour, the project would generate 18 trips. This small increase in traffic volume is insufficient to generate a 2 dB increase in noise. Project traffic would not increase noise volumes to levels which exceed adopted standards. The Proposed Project would not exceed noise standards, and therefore impacts are considered ***less than significant***.

b) **Less Than Significant Impact**. Construction of proposed improvements may result in vibration and groundborne noise and may have the potential to impact residents adjacent to the Project Site. Primary sources of groundborne noise are anticipated to result from the construction of the Proposed Project, which would involve construction equipment including, but is not limited to: crane, jackhammer, grader, concrete mixer, roller, and paver.

The City does not currently have adopted standards for groundborne vibration. To analyze groundborne vibration, this analysis relies on the vibration criteria established by Caltrans[22], because it is an accepted statewide methodology for assessing these impacts. Vibration can be described in terms of acceleration, velocity, or displacement. A common practice is to monitor vibration measures in terms of velocity in inches per second (in/sec). Standards pertaining to perception as well as damage to structures have been developed for vibration in terms of peak particle velocity (PPV) as well as RMS velocities. Caltrans provides guidelines for acceptable vibration limits for transportation and construction projects in terms of the induced PPV. Human and structural response to different vibration levels is influenced by a number of factors, including ground type, distance between source and receptor, duration, and the number of perceived vibration events. The Caltrans criteria applicable to human responses to vibration are shown below in **Table 10**.

Table 10 — Human Response to Transient Vibration

Human Response/Structure	Peak Particle Velocity (PPV) (in/sec)
Barely Perceptible	0.04
Distinctly Perceptible	0.25
Strongly Perceptible	0.90
Severe	2.00
Residential Construction	1.0

As shown in **Table 10**, a vibration level of 0.25 in/sec is the level at which vibration becomes distinctly to strongly perceptible. As a result, the 0.25 threshold is considered to be a conservative benchmark against which project vibration levels are evaluated. Bollard Acoustical Consultants conducted a short-term (15-minute) vibration measurement assessment on March 5, 2018. Results of the survey are summarized in **Table 11** below.

[21] Bollard Acoustical Consultants. 2018. Environmental Noise and Vibration Assessment. May 8, 2018.
[22] California Department of Transportation (Caltrans). 2013. *Transportation and Construction Vibration Guidance Manual*. September 2013.

Table 11 — Short-Term Vibration Measurement Survey Results[23]

Site	Time	Average Vibration, VdB RMS
1	2:57 P.M.	52

As shown above in **Table 11**, the measured average vibration levels during the survey were 52 VdB RMS. The measured vibration level of 52 VdB RMS is well below the threshold of perception, or, below 0.1 inches per second (in/sec) if converted to Peak Particle Velocities (PPV). The greatest source of construction vibration for the Proposed Project would be a large bulldozer, which has a PPV of 0.089 in/sec. Adding this to the existing vibration levels of 0.1 in/sec results in total PPV of 0.189 in/sec, which remains below the detectible level of 0.25 in/sec PPV. At the nearest residence to the Proposed Project, approximately 25 feet away, construction-generated vibration levels are predicted to be less than the 0.25 in/sec PPV threshold at which vibration levels become distinctly perceptible. As a result, this impact is considered ***less than significant*** and no mitigation is required.

c) **No Impact**. According to the Environmental Noise and Vibration Assessment prepared by Bollard Acoustical Consultants, Inc.,[24] the existing average ambient noise volume is 58.3 dB and the existing maximum is 78.5 dB. The threshold for permanent increases in ambient noise volumes is an increase of 3 dBA at the noise sensitive land use property line. Any potential increases in ambient noise levels in the project vicinity resulting from project construction activities would be temporary, and would only occur during the project construction phase. As a result, there would be no permanent increase in ambient noise levels as a result of construction of the Proposed Project. As discussed in checklist section a), proposed increases in traffic would not result in significant increases of noise. Removal of the mound on the Project Site would eliminate any noise shielding it provides; however, it would be replaced by multi-story buildings which would provide a similar level of shielding. Moreover, as previously discussed, the Project Site is not exposed to significant noise from Douglas Boulevard and Rocky Ridge Drive even when only accounting for proximity, with no shielding. Therefore, removal of the mound would not result in any significant increases in noise. ***No impact*** would result from the development of the Proposed Project and no mitigation is required.

d) **Less Than Significant with Mitigation**. The ambient noise environment in the immediate project vicinity is primarily defined by traffic on the nearby roadways (Strauch Drive and Huntington Drive). The ambient noise measurement site was located approximately 25 feet from the centerline of Huntington Drive, approximately the same distance from the residential property to the west of the Project Site to the centerline of Huntington Drive. According to the ambient noise level measurement results (representative of ambient noise levels at residences adjacent to Huntington Drive), the measured daytime maximum noise level was 79 dB L_{max}.

Construction of the Proposed Project would be a source of temporary or periodic increases in ambient noise levels that could be audible to nearby residents. Construction would involve the use of heavy equipment for grading, excavation, paving and building construction, which would increase ambient noise levels when in use. The mix of equipment operating would vary depending on the activity being conducted onsite, and noise levels would vary based on the type of equipment being used, how it is operated, and how well it is maintained. Noise exposure at any single point outside the Project Site would also vary depending on the proximity of construction activities at that point. Standard construction equipment, such as graders, backhoes, loaders, and trucks, would be used for this work.

The range of maximum noise levels for various types of construction equipment at a distance of 50 feet is depicted below in **Table 12**. The noise values represent maximum noise generation, or full power

[23] Bollard Acoustical Consultants. 2018. Environmental Noise and Vibration Assessment. May 8, 2018.
[24] *ibid*.

operation of the equipment. As one increases the distance between equipment, or increases separation of areas with simultaneous construction activity, dispersion and distance attenuation reduce the effects of combining separate noise sources.

Table 12 — Construction Equipment Noise Emission Levels[25]

Equipment	Typical Noise Level (dBA) 50 Ft. from Source
Air Compressor	81
Compactor	80
Concrete Mixer	82
Concrete Pump	85
Concrete Vibrator	76
Crane, Mobile	83
Dozer	85
Generator	81
Grader	85
Impact Wrench	85
Jack Hammer	88
Loader	85
Paver	89
Pneumatic Tool	85
Pump	76
Roller	74
Saw	76
Truck	88

The nearest sensitive receptors to the Project Site are single-family residences located to the south, with the nearest residence located approximately 25 feet from construction activities that would occur on the Project Site. As shown above on **Table 12**, construction activities typically generate noise levels ranging from approximately 75 to 89 dB L_{max} at a reference distance of 50 feet from the construction activities. The noise levels from construction operations decrease at a rate of approximately 6 db per doubling distance from the source. As a result, maximum construction noise levels would range from 81 to 95 dB L_{max} at the nearest residence. Note, that these are exterior noise volumes; with windows closed, the walls of a typical home reduce interior noise by approximately 25 dB. Interior noise is expected to be approximately 56 to 70 dB.

Construction is a necessary activity in developing urban environments, as vacant sites are developed or existing buildings are remodeled. While actions can be taken to reduce the noise impacts of construction on existing residents and businesses, by requiring muffling devices and limiting the hours of construction to the daytime, construction noise cannot be avoided. It is acknowledged that construction-related noise may be considered a nuisance to sensitive receptors in the residential neighborhoods adjacent to the Project Site; however, this increase would be short-term, and would not result in a permanent increase in ambient noise levels. The City only exempts noise associated with construction if it occurs between the hours of 7:00 A.M. and 7:00 P.M. Monday through Friday and between 8:00 A.M. and 8:00 P.M. on Saturday and Sunday because these hours are outside of the recognized sleep hours for residents and outside of evening and early morning hours and time periods where residents are most sensitive to

[25] U.S. Department of Transportation. 2006. *Transit Noise and Vibration Impact Assessment*. Federal Transit Administration, Table 12-1. May 2006.

exterior noise. Thus, active construction is limited to daytime hours or it is in violation of the City's Noise Regulations. These regulations are monitored and enforced by the City's engineering and building inspection staff. Construction work on the Proposed Project would only occur between the hours of 7:00 A.M. and 7:00 P.M. Monday through Friday and between 8:00 A.M. and 8:00 P.M. on Saturday and Sunday. Since the noise ordinance is enforced through existing regulatory mechanisms and the City's construction inspection staff, no mitigation is required. The Proposed Project would comply with the City's Municipal Code requirements for construction noise..

Based on the measured daytime noise level at the measurement site, maximum noise levels generated during project construction activities would be equivalent to or up to 15 dB greater than existing maximum noise levels currently received by nearby residences. However, these maximum volumes would only occur during the beginning stages of the project construction, while the Project Site is being graded and leveled with large, heavy equipment. Most of the remainder of construction would involve smaller or hand-held equipment which generates much less noise, and would not be as close to the property line as grading activities. However, during this initial site preparation, it is recognized that due to proximity of several residential backyards and the sustained, though temporary, periods of noise which would result during grading, mitigation to reduce nuisance noise impacts is recommended.

Mitigation Measure NOISE-1 reduces the noise impacts to the extent practicable, and also ensures noticing of adjacent residents of the construction schedule. Among the noise-reducing measures is the requirement to build the masonry wall on the southern property line as early as practicable, as the masonry wall would provide noise shielding for properties to the south. The noticing requirement would help residents make plans to avoid or limit their outdoor exposure to grading noise, such as by scheduling outdoor events for periods when heavy grading is not planned. **Mitigation Measure NOISE-1** would ensure that impacts related to temporary increases in ambient noise are ***less than significant with mitigation incorporated***.

e, f) **No Impact**. The Proposed Project is not located within the immediate vicinity of an airport land use plan, or within two miles of a public airport. The Proposed Project is approximately ten miles southeast of the privately owned Fiddyment Field Airport; however, the airport is permanently closed. The Proposed Project would involve the construction of a senior apartment complex and residents would not be exposed to hazardous noise levels from the private airport. There would be ***no impact*** and no mitigation is required.

Mitigation Measures

MM Noise-1: The following measures shall be incorporated into project construction operations:

- At least two weeks advance notice shall be provided to the homes adjacent to the Project Site (1803, 1805, and 1807 Tanglewood Lane; 1636 Huntington Drive; and 1734A, 1734B, 1735A, and 1735B Kent Street), advising the residents of the proposed commencement of rough grading activities. If the grading activities are expected to occur for longer than two weeks, the notice shall include the likely duration of grading activities.

- To the extent feasible, rough site grading activities shall progress from north to south, thereby preserving the shielding provided by the intervening topography for the maximum practicable duration.

- The masonry wall on the southern property boundary shall be constructed as early in the construction phase as possible, so that it will provide attenuation of noise generated during the remainder of construction.

- All noise-producing project equipment and vehicles using internal combustion engines used for construction shall be fitted with manufacturer recommended mufflers and be maintained in good working condition.

- All mobile or fixed noise-producing equipment used on the Project Site that are regulated for noise output by a federal, State, or a local agency shall comply with such regulations while in the course of project activity.

- Electrically powered equipment shall be used instead of pneumatic or internal combustion-powered equipment, where feasible.

- Material stockpiles and mobile equipment staging, parking, and maintenance areas shall be located as far as practicable from noise sensitive receptors.

- Project area and site access road speed limits shall be established and enforced during the construction period.

XIII. Population and Housing

Per the City's General Plan, *Land Use Element*[26] the current land use designation for the Project Site is Community Commercial and Medium Density Residential (**Figure 2**). The Project Site is within the Infill Specific Plan area per the *City of Roseville Zoning Map*[27] and is within an area zoned as PD (**Figure 3**). The *City of Roseville General Plan* Table II-4 identifies the total number of residential units and population anticipated as a result of buildout of the City, and the Specific Plan likewise includes unit allocations and population projections for the Plan Area.

Would the project:

Environmental Issue	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
a) Induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, though extension of roads or other infrastructure)?	☐	☐	☒	☐
b) Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?	☐	☐	☐	☒
c) Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?	☐	☐	☐	☒

Thresholds of Significance and Regulatory Setting:

For the purpose of this IS, the significance thresholds related to population and housing are as stated in CEQA Guidelines Appendix G, as shown in a) through c) of the checklist above.

Discussion of Checklist Answers:

a) **Less Than Significant Impact**. The CEQA Guidelines identify several ways in which a project could have growth-inducing impacts (Public Resources Code Section 15126.2), either directly or indirectly. Growth-inducement may be the result of fostering economic growth, fostering population growth, providing new housing, or removing barriers to growth. Growth inducement may be detrimental, beneficial, or of no impact or significance under CEQA. An impact is only deemed to occur when it directly or indirectly affects the ability of agencies to provide needed public services, or if it can be shown that the growth would significantly affect the environment in some other way. Development of the Proposed Project would require a Rezone and General Plan Amendment to change existing CC and MDR land use designations to HDR. The Proposed Project would therefore provide additional housing than that which is currently anticipated for the Project Site under existing General Plan Land Use Designation and Zoning. However, although the density of residential units on the Project Site would increase, the Proposed Project would consist of an age-restricted community consisting of 76 apartment units intended to provide housing for seniors within an urbanized setting anticipated for infill development by the General Plan within the City of Roseville, with existing utilities and service available to serve the Proposed Project and

[26] City of Roseville. 2017. *General Plan 2035 Land Use Map*, updated March 2017. Available online at: https://www.roseville.ca.us/cms/One.aspx?portalId=7964922&pageId=8853705. [Accessed 1/10/18].
[27] City of Roseville, 2017. *Zoning Map*, updated March 2017. Available online at: https://www.roseville.ca.us/government/departments/development_services/planning/zoning_information/. [Accessed 1/11/18].

would therefore not be considered "growth-inducing." Impacts are therefore considered ***less than significant***.

b, c) **No Impact**. The Project Site is currently undeveloped and is located within an area designated as infill. Development of the Proposed Project would include an age restricted (+55) apartment complex. The Proposed Project would not displace any existing housing or people. Therefore, ***no impact*** would result from development of the Proposed Project and no mitigation is required.

Mitigation Measures

No mitigation is required.

XIV. Public Services

Fire protection, police protection, park services, and library services are all provided by the City of Roseville. Residential areas surrounding the Project Site are served by the Roseville City School District (RCSD) and the Roseville Joint Union High School District (RJUHSD). The RCSD serves kindergarten through 8th grade students.[28] The RJUHSD services 9th through 12th grade students.[29] 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 government 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 listed below.

Would the project:

Environmental Issue	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
a) Fire protection?	☐	☐	☒	☐
b) Police protection?	☐	☐	☒	☐
c) Schools?	☐	☐	☐	☒
d) Parks?	☐	☐	☒	☐
e) Other public facilities?	☐	☐	☒	☐

Thresholds of Significance and Regulatory Setting:

The General Plan EIR identifies and adopts mitigation for impacts to public services, including fire protection, police protection, wastewater services, and solid waste disposal. The Proposed Project may incrementally increase the need for public services.

For the purpose of this IS, the significance thresholds related to public services are as stated in CEQA Guidelines Appendix G, as shown in a) through e) in the checklist above. The City's General Plan EIR addressed the level of public services which would need to be provided in order to serve planned growth in the community. In addition, the Proposed Project has been routed to the various public service agencies, both internal and external, to ensure that the Proposed Project meets the agencies' design standards (where applicable) and to provide an opportunity to recommend appropriate Conditions of Approval.

Discussion of Checklist Answers:

a) **Less Than Significant Impact**. Existing City codes and regulations require adequate water pressure in the water lines, and construction must comply with the Uniform Fire and Building Codes used by the City of Roseville. The Proposed Project is served by the City of Roseville Fire Department, Station #4 located approximately 1-mile from the Project Site.[30] The City's General Plan, *Safety Element* identifies goals and policies to prevent and protect against catastrophic fire and minimize the loss of life and damage t to property and the environment. Policies have been established to achieve a four-minute response time and an Insurance Service Office (ISO) rate of 3 or better. Additionally, the Project Applicant through the

[28] Roseville City School District (RCSD). 2018. Roseville City School District, My School Locator. Available online at: http://locator.decisioninsite.com/?StudyID=196812. Accessed [03/19/18].
[29] Roseville Joint Union High School District (RJUHSD). 2018. Roseville Joint Union High School District, Attendance Boundary. Available online at: https://www.rjuhsd.us/domain/5. Accessed [03/19/18].
[30] City of Roseville Fire Department. 2017. Emergency Response Map, Location of Roseville Fire Stations. Available online at: https://www.roseville.ca.us/cms/One.aspx?portalId=7964922&pageId=8917224. Accessed [03/20/18].

Development Agreement process would be required to pay a Fire Service Construction Tax, which is designated for fire suppression and protection. These funds must be spent on capital improvements, such as fire stations, fire apparatus, and fire equipment. Therefore, impacts to fire protection services associated with the development of the Proposed Project are considered ***less than significant*** and no mitigation is required.

b) **Less Than Significant Impact**. Police protection services within the vicinity of the Proposed Project are provided by the City of Roseville Police Department. The police department is located on 1051 Junction Boulevard, approximately three miles from the Project Site. The City's General Plan, *Safety Element* identifies goals and policies to respond to both emergency and routine calls for service in a timely manner. Policies have been established to achieve a three-minute or less response time for 90 percent of all emergency calls. Additionally, the Project Applicant through the Development Agreement process, would be required to pay fees into a Community Facilities District, which provides funding for police services. Property taxes resulting from the development of the Proposed Project would add revenue to the General Fund, which also serves to fund police services. Therefore, impacts to police protection services associated with the development of the Proposed Project are considered ***less than significant*** and no mitigation is required.

c) **No Impact**. The Proposed Project would involve construction of a multi-family, senior, age restricted (55+) apartment complex. Development of the Proposed Project would not result in the potential need for educational facilities. Therefore, ***no impact*** related to school facilities would result from project development and no mitigation is required.

d) **Less Than Significant Impact**. The Project Applicant would be required to pay fees into a Community Facilities District, which provides funding for park services. The City's General Plan, *Parks and Recreation Element* identifies future park and recreation sites and facilities. The Proposed Project would not cause any unforeseen or new impacts related to the construction or expansion of recreational facilities. Therefore, impacts to park services associated with the development of the Proposed Project are considered ***less than significant*** and no mitigation is required.

e) **Less Than Significant Impact**. The Project Applicant would be required to pay fees into a Community Facilities District, which provides funding for the library system and other such facilities and services. In addition, the City of Roseville charges fees to end-users for other services, such as garbage and greenwaste collection, in order to fund those services. Therefore, impacts to other public services associated with the development of the Proposed Project are considered ***less than significant*** and no mitigation is required.

Mitigation Measures

No mitigation is required.

XV. Recreation

The Proposed Project would construct a multi-family, senior, age restricted (55+) apartment complex consisting of 10 apartment buildings composed of 48 one-bedroom units and 28 two-bedroom units, a community clubhouse, and associated parking (**Figure 4**). The community clubhouse would include a community room and kitchen, gym, library, and dog grooming room. Four City parks are located within one-half mile of the Project Site (Marco Dog Park, 0.5 miles northwest of the Project Site; Maidu Regional Park, 0.7 miles southeast of the Project Site; Sierra Gardens Park, 1.2 miles southwest of the Project Site; and Lockridge Park, 1.5 miles southeast of the Project Site). The Maidu Community Center, located at Maidu Regional Park hosts a variety of recreation classes and serves the FAB "Fifty and Better" Club for City of Roseville residents and non-residents 50 years and older.[31]

Would the project:

Environmental Issue	Potentially Significant Impact	Less Than Significant with Mitigation	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 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?	☐	☒	☐	☐

Thresholds of Significance and Regulatory Setting:

For the purpose of this IS, the significance thresholds related to recreation are as stated in CEQA Guidelines Appendix G, as shown in a) and b) of the checklist above.

Discussion of Checklist Answers:

a) **Less Than Significant Impact**. The Proposed Project would include the integration of onsite recreational facilities. Increased use of surrounding recreational facilities is not anticipated to be substantial or result in accelerated deterioration of existing recreational facilities. Therefore, impacts associated with the development of the Proposed Project are considered ***less than significant*** and no mitigation is required.

b) **Less Than Significant with Mitigation**. The Proposed Project would include the integration of onsite recreational facilities. Environmental impacts of the construction of these facilities are discussed throughout this IS. Where applicable, mitigation measures are identified to reduce potential environmental impacts to less than significant levels. The Proposed Project would not cause any unforeseen or new impacts related to the construction or expansion of recreational facilities. Therefore, impacts associated with the development of the Proposed Project are considered ***less than significant with mitigation incorporated***.

[31] City of Roseville. 2018. City of Roseville, Parks and Recreation Programs and Classes. Available online at: https://roseville.ca.us/cms/One.aspx?portalId=7964922&pageId=11969673. Accessed [03/20/18].

Mitigation Measures

Compliance with mitigation measures for **Biological Resources**, **Hydrology and Water Quality**, **Noise**, **Tribal Cultural Resources**, and **Utilities and Service Systems** would reduce potential impacts to a less than significant level.

XVI. Transportation/Traffic

The Proposed Project includes frontage on Huntington Drive and Strauch Drive. Both Huntington Drive and Strauch Drive are two-lane roadways. Douglas Boulevard, an east-west six-lane major arterial roadway intersects Strauch Drive approximately 377 feet north of the Project Site. Rocky Ridge Drive, a four-lane roadway running north-south intersects with Strauch Drive directly east of the Project Site. Douglas Boulevard is one of the major east-west routes through the City of Roseville that provides connectivity to Vernon Street, Interstate 80, and Auburn-Folsom Road in the community of Granite Bay. The Project Site's primary access points would be via two driveways, one off Huntington Drive, and one via Strauch Drive. The frontages of the Project Site are mostly unimproved. Where adjacent to the Project Site, Strauch Drive includes curb and gutter, but no sidewalks exist on either side of the street. Huntington Drive is improved on the west side of the street, but on the eastern side on the Project Site there is no curb, gutter, or sidewalk.

Would the project:

Environmental Issue	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
a) Conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit?	☐	☐	☒	☐
b) Conflict with an applicable congestion management program, including, but not limited to level of service standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways?	☐	☐	☒	☐
c) Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks?	☐	☐	☐	☒
d) Substantially increase hazards due to a design feature(s) (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	☐	☐	☒	☐
e) Result in inadequate emergency access?	☐	☐	☒	☐
f) Conflict with adopted policies, plans, or programs supporting public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities?	☐	☐	☒	☐

Thresholds of Significance and Regulatory Setting:

The significance of checklist items c) through f) are based directly on the CEQA Guidelines checklist descriptions. For checklist items a) and b), the *Circulation Element* of the City's General Plan establishes Level of Service C

or better as an acceptable operating condition at all signalized intersections during a.m. and p.m. peak hours. Exceptions to this policy may be made by the City Council, but a minimum of 70 percent of all signalized intersections shall maintain LOS C. The Findings of the Implementing Procedures indicate that compliance with the Traffic Mitigation Fee (RMC Ch. 4.44) would fund roadway projects and improvements necessary to maintain the City's Level of Service standards for projects consistent with the General Plan and related Specific Plan. An existing plus project conditions (short-term) traffic impact study *may* be required for projects with unique trip generation or distribution characteristics, in areas of local traffic constraints, or to study project access. A cumulative plus project conditions (long-term) study is required if a project is inconsistent with the General Plan or Specific Plan and would generate 50 or more PM peak-hour trips than had been anticipated. The guidelines for traffic study preparation are found in the City of Roseville Design and Construction Standards, Section 4.

City Engineering staff reviewed the Proposed Project and determined that a short-term traffic study was not required. While the Proposed Project is inconsistent with the existing General Plan land use designation (project entitlements include a Rezone and General Plan Amendment to change existing CC and MDR land use designations to HDR), the Proposed Project would not generate more trips than had been anticipated for the Project Site in the City's General Plan citywide traffic analysis. City Engineering staff calculated the project trip generation, and determined that the Proposed Project would actually reduce anticipated peak hour trips by 73 tips. This is because the trip rates within the City's traffic model for Medium Density Residential and Commercial (the existing land use designations, **Figure 2**) are much higher than are the rates for senior apartment communities. The Proposed Project would reduce trip generation compared to what had been anticipated within the City's General Plan. Therefore, a long-term conditions traffic study is not warranted.

The Project Site is not located within an airport planning area or within any height restriction area established around an airport for the purpose of protecting navigable airspace. Consequently, impacts to changes in air traffic patterns (checklist item c) were screened out of the analysis.

Discussion of Checklist Answers:

a, b, d) **Less Than Significant Impact**. The Project Site access on Huntington Drive has been aligned with Kent Street, so that offset points of access are avoided. The Project Site access on Strauch Drive is designed to allow right-in, right-out only turning movements, to avoid conflicts with movements at the nearby traffic signal at Rocky Ridge Drive and Strauch Drive. For the eastbound and westbound travelers, the signal at Rocky Ridge Drive and Strauch Drive is a permissive left-turn, which means that the light turns green and the left turn yields to oncoming traffic. This intersection was examined for safety and to determine whether standards for a signal modification would be met, and it was determined that the accident rate at this signal is low (on average 3 per year, with only one in 2018), and that traffic volumes did not warrant a signal modification.

Traffic data for Strauch Drive indicates that the peak travel time on this roadway is 3:00 P.M. to 6:00 P.M., during which time the roadway experiences volumes of approximately 260 vehicles per hour. The Proposed Project would only add 18 new peak hour trips to the existing conditions. City Engineering staff indicate this low volume is consistent with the design and capacity of the roadway. For perspective, a major facility such as the nearby Douglas Boulevard and Rocky Ridge Drive intersection may experience approximately 5,000 vehicles in a single hour. Huntington Drive is a residential collector street with volumes as low as that of Strauch Drive, and is also operating well within the design capacity for the roadway.

The Proposed Project has been reviewed by the City Engineering and City Fire Department staff, and has been found to be consistent with the City's Design Standards. Project development would involve construction of a senior, age restricted (55+) apartment complex. The project would not substantially increase vehicle trips in the project vicinity. City Engineering staff have reviewed the proposal and nearby facilities and conclude the Proposed Project does not include any design features that could result in

increased safety hazards. Therefore, impacts are considered ***less than significant*** and no mitigation is required.

c) **No Impact**. The Proposed Project would not result in a change in air traffic patterns. There would be ***no impact*** and no mitigation is required.

e) **Less Than Significant Impact**. Project development may involve temporary road or lane closures during construction. All temporary lane closures or detours would require an encroachment permit from the City which would require that lane closures and detours be implemented according to City standards. No emergency access routes would be affected by the Proposed Project. Access to the Project Site would be provided via Huntington Drive and Strauch Drive. Furthermore, standard Conditions of Approval added to all City projects require compliance with Fire Codes and City's Design Standards. Therefore, impacts are considered ***less than significant*** and no mitigation is required.

f) **Less Than Significant Impact**. The City of Roseville has adopted a Pedestrian Master Plan, Bicycle Master Plan, and Short-Range Transit Plan. The Proposed Project was reviewed for consistency with these documents. With the exception of a sidewalk system on the frontage of Huntington Drive and Strauch Drive, the Pedestrian Master Plan, Bicycle Master Plan, and Short-Range Transit Plan do not identify facilities on the Project Site. The project design includes installation of sidewalks adjacent to Huntington Drive and Strauch Drive. This would complete the pedestrian circulation system in the project vicinity, which currently does not include pedestrian facilities which connect Strauch Drive to Rocky Ridge Drive. Thus, the Proposed Project results in a beneficial impact related to pedestrian access and circulation. The Proposed Project is consistent with the policies of the Pedestrian Master Plan, Bicycle Master Plan, and Short-Range Transit Plans. Therefore, impacts are considered ***less than significant*** and no mitigation is required.

Mitigation Measures

No mitigation is required.

XVII. Tribal Cultural Resources

As described within the *Open Space and Conservation Element* of the City's General Plan, the Roseville region was within the territory of the Nisenan (also Southern Maidu or Valley Maidu). Two large permanent Nisenan habitation sites have been identified and protected within the City's open space (in Maidu Park). Numerous smaller cultural resources, such as midden deposits and bedrock mortars, have also been recorded in the City. A majority of documented sites within the City are located in areas designated for open space uses.

Would the project cause a substantial adverse change in the significance of a Tribal Cultural Resource as 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:

Environmental Issue	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
a) 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)?	☐	☐	☒	☐
b) 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 Resources Code Section 5024.1 the lead agency shall consider the significance of the resource to a California Native American tribe.	☐	☒	☐	☐

Thresholds of Significance and Regulatory Setting:

In addition to archeological resources, tribal cultural resources are also given particular treatment. Tribal cultural resources are defined in Public Resources Code Section 21074, as either 1) a site, feature, place, geographically-defined cultural landscape, sacred place, or object with cultural value to a California Native American Tribe, that is listed or eligible for listing on the California Register or Historical Resources, or on a local register of historical resources or as 2) a resource determined by the lead agency, supported by substantial evidence, to be significant according to the historical register criteria in Public Resources Code section 5024.1(c), and considering the significance of the resource to a California Native American Tribe.

Discussion of Checklist Answers:

a) **Less Than Significant Impact**. No tribal cultural resources are known to exist on the Project Site, and the Proposed Project is located within the Infill Specific Plan area and is within an area zoned as Planned Development. The General Plan EIR does not note the presence of any listed or eligible resources on the Project Site. The Proposed Project would not result in any new impacts beyond those already discussed and disclosed in the General Plan EIR. Therefore, project-specific impacts are ***less than significant*** and no mitigation is required.

b) **Less Than Significant Impact with Mitigation**. The City provided notice of the Proposed Project to appropriate tribal representatives pursuant to both Senate Bill 18 (SB 18) and Assembly Bill 52 (AB 52). A response from the United Auburn Indian Community of the Auburn Rancheria (UAIC) was received,

requesting consultation. The City and UAIC exchanged additional information via e-mail and through phone conversations, eventually concluding that standard mitigation would be sufficient. The UAIC and the City concluded consultation in agreement. As requested by the UAIC, standard mitigation has been included. **Mitigation Measures TCR-1 and TCR-2** grants tribal representatives access to the Project Site during development, to observe ground-disturbing activities, **Mitigation Measure TCR-3** provides for contractor awareness training, and **Mitigation Measure TCR-4** includes cessation of work should any resources be uncovered, and procedures to follow after an unanticipated discovery. Therefore, project-specific impacts are ***less than significant with mitigation incorporated***.

Mitigation Measures

MM TCR-1: **Pre-Construction Inspections**. A minimum of seven days prior to beginning earthwork or other soil disturbance activities, the contractor or Project Applicant shall notify the City of the proposed earthwork start-date, in order to provide the City representative sufficient time to contact the United Auburn Indian Community. A tribal representative shall be invited to, at its discretion, voluntarily inspect the project location, including any soil piles, trenches, or other disturbed areas, within the first five days of ground breaking activity. Construction activity may be ongoing during this time. Should the tribe choose not to perform a field visit within the first five days, construction activities may continue as scheduled, as long as the notification was made.

MM TCR-2: **Unpaid Tribal Observation**. A minimum of seven days prior to beginning earthwork or other soil disturbance activities, the contractor or Project Applicant shall notify the City of the proposed earthwork start-date, in order to provide the City representative sufficient time to contact the United Auburn Indian Community. A tribal representative shall be invited to, at its discretion, voluntarily observe any or all ground-disturbing activities during construction. The tribe shall be provided 72 hours to accept or decline observation and shall provide the names of all tribal personnel who will be present to observe activity. All tribal observers shall be required to comply with all job site safety requirements and shall sign a waiver of liability prior to entering the job site. Should the tribe choose not to observe any or all of the activity, the City shall deem the mitigation measure completed in good faith without tribal observation as long as the notification was made and documented.

MM TCR-3: **Contractor Awareness Training**. The Project Applicant shall ensure that a Contractor Awareness Training Program is developed and delivered to train equipment operators about cultural resources and tribal cultural resources. The program shall be designed to inform construction personnel about: federal and State regulations pertaining to cultural resources and tribal cultural resources; the subsurface indicators of resources that shall require a work stoppage; procedures for notifying the City of any occurrences; and project-specific requirements; and enforcement of penalties and repercussions for non-compliance with the program.

The training shall be prepared by a qualified professional archaeologist and reviewed by City for approval, and may be provided in an audio-visual format, such as a DVD. The Project Applicant shall provide the United Auburn Indian Community the option of attending the initial training in person and/or providing additional materials germane to the unanticipated discovery of tribal cultural resources for incorporation into the training.

The training program shall be required for all construction supervisors, forepersons, and operators of ground-disturbing equipment, and all personnel shall be required to sign a training roster and display a hard hat sticker that is visible to City inspectors. The construction manager is responsible for ensuring that all required personnel receive the training. The Project Applicant shall provide a copy of the signed training roster to the City as proof of compliance.

MM TCR-4: **Post-Review Discovery Procedures.** If subsurface deposits believed to be cultural or human in origin, or tribal cultural resources, are discovered during construction, all work shall halt within a 50-foot radius of the discovery, and the Project Applicant shall immediately notify the City of Roseville Development Services Director. The City of Roseville will notify the tribes of the discovery, and a tribal representative shall have the opportunity to determine whether or not the find represents a tribal cultural resource. If a response is not received within five days of notification, the City will deem this portion of the measure completed in good faith as long as the notification was made and documented. The Project Applicant shall retain a qualified professional archaeologist, meeting the Secretary of the Interior's Professional Qualification Standards for prehistoric and historic archaeology and subject to approval by the City, to evaluate the significance of the find and develop appropriate management recommendations. All management recommendations shall be provided to the City in writing for the City's review and approval. If recommended by the qualified professional and approved by the City, this may include modification of the no-work radius. The following notifications shall apply, depending on the nature of the find, subject to the review and approval of the City:

1) Work may resume immediately and no agency notifications are required if: 1) the professional archaeologist determines that the find does not represent a cultural resource and, if a response from a tribal representative was received within five days 2) the tribal representative determines that the find does not represent a tribal cultural resource or determines that no further action is necessary.

2) If the professional archaeologist determines that the find does represent a cultural resource from any time period or cultural affiliation, the City shall be notified immediately, to consult on a finding of eligibility and implementation of appropriate treatment measures, if the find is determined to be a Historical Resource under CEQA, as defined in Section 15064.5(a) of the CEQA Guidelines. Work shall not resume within the no-work radius until the City, through consultation as appropriate, determines that the site either: 1) is not a Historical Resource under CEQA, as defined in Section 15064.5(a) of the CEQA Guidelines; or 2) that the treatment measures have been completed to its satisfaction.

3) If the find represents a Native American or potentially Native American resource (including a tribal cultural resource) that does not include human remains, the United Auburn Indian Community and City shall be notified. The City will consult with the tribe(s) on a finding of eligibility and implement appropriate treatment measures, if the find is determined to be either a Historical Resource under CEQA, as defined in Section 15064.5(a) of the CEQA Guidelines, or a Tribal Cultural Resource, as defined in Section 21074 of the Public Resources Code. Preservation in place is the preferred treatment, if feasible. Work shall not resume within the no-work radius until the City, through consultation as appropriate, determines that the site either: 1) is not a Historical Resource under CEQA, as defined in Section 15064.5(a) of the CEQA Guidelines; or 2) not a Tribal Cultural Resource, as defined in Section 21074 of the Public Resources Code; or 3) that the treatment measures have been completed to its satisfaction.

4) If the find includes human remains, or remains that are potentially human, the construction supervisor or on-site archaeologist shall ensure reasonable protection measures are taken to protect the discovery from disturbance (AB 2641) and shall notify the City and Placer County Coroner (per § 7050.5 of the Health and Safety Code). The provisions of § 7050.5 of the California Health and Safety Code, § 5097.98 of the California Public Resources Code, and Assembly Bill 2641 shall be implemented. If the Coroner determines the remains are Native American and not the result of a crime scene, the Coroner will notify the Native American Heritage Commission, which then will designate a Native American Most Likely Descendant

(MLD) for the project (§ 5097.98 of the Public Resources Code). The designated MLD will have 48 hours from the time access to the property is granted to make recommendations concerning treatment of the remains. If the landowner does not agree with the recommendations of the MLD, the NAHC can mediate (§ 5097.94 of the Public Resources Code). If no agreement is reached, the landowner must rebury the remains where they will not be further disturbed (§ 5097.98 of the Public Resources Code). This will also include either recording the site with the NAHC or the appropriate Information Center; using an open space or conservation zoning designation or easement; or recording a reinternment document with the county in which the property is located (AB 2641). Work shall not resume within the no-work radius until the City, through consultation as appropriate, determines that the treatment measures have been completed to its satisfaction.

XVIII. Utilities and Service Systems

The project area has no existing utilities within the Project Site. It is expected that minimal work would need to be completed to the existing utility services serving the Project Site. The Proposed Project would tie into existing water lines along Strauch Drive, Huntington Drive, and Kent Street; storm drain lines along Huntington Drive and Kent Street; and the sanitary sewer system that runs along Huntington Drive and Kent Street. Water and sewer services are provided by the City of Roseville. Utilities are available within the existing streets adjacent to the Project Site. Storm water would be collected on-site and transferred via the existing storm drain system into an off-site storm drain system. Solid waste would be collected by the City of Roseville's Refuse Department. The City of Roseville would provide electric service to the Project Site, while natural gas would be provided by Pacific Gas and Electric Company (PG&E). Comcast would provide cable.

Would the project:

Environmental Issue	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
a) Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?	☐	☐	☒	☐
b) Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	☐	☐	☒	☐
c) Require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	☐	☐	☒	☐
d) Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?	☐	☒	☐	☐
e) Result in a determination by the wastewater treatment provider which serves the project that it has adequate capacity to serve the project's projected demand in addition of the provider's existing commitments?	☐	☐	☒	☐
f) Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?	☐	☐	☒	☐
g) Comply with federal, state, and local statutes and regulations related to solid waste?	☐	☐	☒	☐

Thresholds of Significance and Regulatory Setting:

For the purpose of this IS, the significance thresholds related to utilities and service systems are as stated in CEQA Guidelines Appendix G, as shown in a) through g) of the checklist above.

Discussion of Checklist Answers:

a, e) **Less Than Significant Impact**. The Proposed Project would include 76 apartment units and would be served by the Dry Creek Wastewater Treatment Plant (DCWWTP). The CVRWQCB regulates water

quality and quantity of effluent discharged from the City's wastewater treatment facility. The DCWWTP has the capacity to treat 18 million gallons per day (mgd) and is currently treating 8.9 mgd. The volume of wastewater generated by the Proposed Project would be accommodated by the facility; the Proposed Project would not contribute to an exceedance of applicable wastewater treatment requirements. Therefore, the Proposed Project would not result in the need for new or expanded wastewater facilities and would not have an adverse effect on wastewater treatment requirements. Project-specific impacts are ***less than significant*** and no mitigation is required.

b, c) **Less Than Significant Impact**. Development of the Proposed Project is a part of the Infill Specific Plan Area. Infrastructure would be constructed within the Project Site to tie the project into the existing major systems located within the adjacent roadways. These facilities would be constructed in locations where site development is already occurring as part of the overall Proposed Project.

An expansion of sewage treatment facilities is not required. Domestic water in the City of Roseville is treated at the City's Water Treatment Plant on Barton Road. The City's water treatment plant currently has a treatment capacity of 100 mgd, though due to pipe sizes a slightly smaller total capacity of 96.1 mgd can be conveyed to the plant for treatment. The *Amoruso Ranch Specific Plan Water Supply Assessment* (ARSP WSA, Appendix E of the Amoruso Ranch FEIR), dated May 2016, analyzed water demand at City buildout. The analysis indicates that peak treatment demand would be approximately 115 mgd, which is insufficient to serve peak demand at City buildout. However, the additional water demand would be provided through contracts with other water suppliers, such as the Placer County Water Agency (PCWA) and the San Juan Water District (SJWD), rather than through a treatment plant expansion. The Proposed Project would not require an expansion of water treatment capacity.

The General Plan notes intended expansion of the wastewater treatment and collection system in the Capital Improvement Plan. The Proposed Project would pay connections fees for wastewater connection. Connection fees help offset the cost of expansion of wastewater treatment facilities and collection and delivery systems for both wastewater and recycled water. Additionally, bioretention facilities would be constructed as part of the Proposed Project to attenuate the storm water on the Project Site. These facilities would help retain storm water runoff onsite during storm events to reduce peak flow volumes off site. Therefore, there would be no need for construction of new stormwater infrastructure or the expansion of existing infrastructure related to project development. Project-specific impacts are ***less than significant*** and no mitigation is required.

d) **Less Than Significant with Mitigation**. In February 2008, then California Governor Arnold Schwarzenegger introduced a seven-part comprehensive plan for improving the Sacramento-San Joaquin Delta. As part of this effort, the Governor directed state agencies to develop a plan to reduce statewide per capita urban water use by 20 percent by the year 2020. In February 2010, the State Water Resources Control Board (SWRCB) issued the 20x2020 Water Conservation Plan, which sets forth a statewide road map to maximize the state's urban water efficiency and conservation opportunities between 2009 and 2020, and beyond.

As part of the response to the 20x2020 Plan, the City has a requirement that all new specific plan projects incorporate water conservation measures into the overall project design such that the overall water demands (both potable and recycled) are reduced. The City has an overall conservation goal of 20 percent for potable and irrigation water usage throughout the City.

Kimley-Horn and Associates, Inc., Inc. prepared a Water Conservation Plan (WCP) (**Attachment 6**) for the Proposed Project. The WCP presents measures and guidance that can result in a reduction of the projected overall water usage within the Proposed Project, which would contribute towards the City-wide conservation goal.

As summarized in **Table 13**, based on the City baseline water usage for HDR land uses (>16 dwelling units per acre) the proposed 76 apartment units would result in an average daily demand of 177 gallons per day per dwelling unit (GPD/DU), or 13,452 GPD for the Proposed Project. This equates to 0.041 acre feet (AF) demand. An acre foot is defined as the volume of water that would cover an acre of land a foot deep)

Table 13 — Proposed Project Water Usage Estimate

Land Use Category Density	Number of Units	Average Day Demand (GPD/DU)	Average Daily Demand (GPD)	Total Average Day Demand (AF)
HDR(>16 DU's/ Acre)	76	177	13,452	0.041

As summarized in **Table 14**, water usage for HDR land uses and 76 apartment units with a 177 GPD/DU would result in a demand for 15.07 acre-feet of domestic water supply annually.

Table 14 — Proposed Project Water Use Factors and Demands

Land Use Zoning	Total Area (Acres)	Dwelling Unit County	Water Use Factor (GPD/DU)	Daily Demand (GPD)	Annual Demand (AFY)
HDR	3.2	76	177	13,452	15.07

A series of implementable water use reduction strategies and methods were identified and analyzed to calculate a quantifiable savings in water demand for the Proposed Project. The water use reduction strategies identified for the Proposed Project include:

Irrigation: The most effective and cost-efficient way to reduce water demand is by limiting the use of turf and replacing turf with low water use plants and landscaping. Because turf areas account for a sizeable portion of the water demand of residential developments they typically can be used for a sizable reduction in water use. However, because the size of turf areas is limited in HDR uses (the Proposed Project) the potential to save water by converting to low water demand landscaping can be limited. In an HDR development such as the Proposed Project, it would be reasonable to reduce irrigated lawn areas to 42 percent. The Proposed Project, however, would reduce the irrigated lawn area further, and is proposing to reduce the percent of the total irrigated area containing lawn/turf to 4,448 square feet (SF) (3.2%) of the overall Project Site. This area would be planted with low water demand plants and other landscaping to reduce overall water demand. In addition, although the turf areas would be irrigated, these areas would be used as bioswales that have an added benefit of reducing run-off and erosion and promoting water infiltration and groundwater recharge. Lastly, the use of low water demand vegetation provides other benefits such as enabling the use of more efficient irrigation systems such as drip watering. Implementation of planting low water consumption plants within landscaped areas and limiting irrigation areas to 3.2 percent of the Project Site would result in a 2.18 AF (14.5%) reduction in water use.

Smart irrigation controls: Smart and centrally located irrigation controllers restrict irrigation to times and rates necessary to maintain landscaping. They account for changes in the demand for water, which varies with weather patterns, seasonal influences and soil moisture content. For use in the Proposed Project, smart irrigation controllers would be required for all irrigated areas within the Project Site. Smart irrigation controls would result in a 0.16 AF (1.1%) reduction in water use.

Other water conservation methods: There are many other water conservation measures that would be implemented throughout the Proposed Project. Some of these conservation measures have already been included to the Proposed Project, including low flow shower heads, faucet aerators, etc., The Proposed

Project, however, also would include on demand hot water heaters and single (low) flush toilets. On demand hot water heaters would result in a 0.64 AF (4.2%) reduction in water use. Single (low) flush toilets account for a 0.75 AF reduction (5.0%) water use.

Table 15 provides a summary of the water conservation measures and their estimated savings in water use. Implementation of water conservation methods described above and in the WCP would reduce water demands by approximately 3.73 AFY or approximately 24.8%, below the 15.07 AFY that would be expected to occur if the Proposed Project was implemented without recommended water conservation measures.

Table 15 — Summary of Water Efficiencies

Water Conservation Opportunity	Total Water Demand (AFY)	Annual Demand without Reduction (AFY)	Annual Demand with Reduction (AFY)	Water Demand Reduction (AF)	Water Demand Reduction (%)
Irrigation	15.07	3.01	0.83	2.18	14.5%
Smart Irrigation Controls		0.82	0.66	0.16	1.1%
On-Demand Hot Water System[2]		1.91	1.27	0.64	4.2%
Low Flush Toilets		1.96	1.21	0.75	5.0%
Other Water Uses[1]		7.37	7.37	—	—
Total		**15.07**	**11.34**	**3.73**	**24.8%**

[1] Other water uses include faucets, cooking, cleaning, clothing washing, bath, toilet leaks, and dishwasher.
[2] Assumes a 25% more efficient delivery of hot water.

Project development would require implementation of the water conservation measures identified in the WCP reduce water demands by 20 percent consistent with the City's has an overall conservation goals. Therefore, impacts related to water supply resulting from development of the Proposed Project are considered ***less than significant with mitigation incorporated***.

Implementation of **Mitigation Measure USS–1** would require the Project Applicant to implement measures identified in the City approved WCP for the Proposed Project identifying specific measures to be implemented to facilitate reductions in water usage.

f, g) **Less Than Significant Impact**. The Western Placer Waste Management Authority (WPWMA) is the regional agency handling recycling and waste disposal for the western portion of the Placer County, including the City of Roseville. The regional waste facilities include a Material Recovery Facility (MRF) and the Western Regional Sanitary Landfill (WRSL). Currently, the WRSL is permitted to accept up to 1,900 tons of municipal solid waste per day. Per the General Plan, *Public Facilities Element*, the (WPWMA) controls a total of 800 acres, of which 290 acres are approved for use as a landfill. The existing 290-acre landfill has a projected lifespan until 2041. An additional 480 acres west of the current landfill was acquired by the City for future expansion. According to the solid waste analysis of the Amoruso Ranch Specific Plan FEIR, the WRSL has a total capacity of 36,350,000 cubic yards. As of July 1, 2013, a total of 10,672,400 cubic yards have been disposed at the WRSL, leaving a remaining capacity of 25,677,600 cubic yards. Under current projected development conditions, including buildout of General Plan and approved development plans, the WRSL has a projected lifespan extending through 2058. There is sufficient existing capacity to serve the Proposed Project. All residences and business in the City pay fees for solid waste collection, a portion of which is collected to fund future solid waste disposal expansion. The Proposed Project would not result in any new impacts associated with major infrastructure. The Proposed Project would be required to comply with current City policies, codes, and

regulations related to waste disposal services. Therefore, impacts associated with development of the Proposed Project would be considered a ***less than significant impact*** and no mitigation is required.

Mitigation Measures

MM USS-1: The Project Applicant shall implement measures identified in the City approved Water Conservation Plan for the Proposed Project identifying specific measures to be implemented to facilitate reductions in water usage.

XIX. Mandatory Findings of Significance

Environmental Issue	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
a) Does the project have the potential to 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 an endangered, threatened or rare species, or eliminate important examples of the major periods of California history or prehistory?	☐	☒	☐	☐
b) Does the project have impacts which 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.)	☐	☒	☐	☐
c) Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?	☐	☒	☐	☐

Significance Criteria and Regulatory Setting:

For the purpose of this IS, the significance thresholds related to mandatory findings of significance are as stated in CEQA Guidelines Appendix G, as shown in a) through c) of the checklist above.

Discussion of Checklist Answers:

a, b, c) **Less Than Significant with Mitigation**. Implementation of the Proposed Project would have the potential to degrade the quality of the existing environment and would have the potential to degrade the quality of the environment and result in substantial adverse effects on human beings. Potential impacts have been identified related to **Biological Resources**, **Hydrology and Water Quality**, **Noise**, **Recreation**, **Tribal Cultural Resources**, and **Utilities and Service Systems**. Where applicable, this IS, identifies mitigation measures by individual resource area as relevant to potential environmental impacts resulting from development of the Proposed Project. With implementation of the City's Mitigating Ordinances, Guidelines, and BMPs, mitigation measures, and permit conditions, the Proposed Project would not have the potential to degrade the quality of the environment, substantially reduce the habitat of any wildlife species, or create adverse effects on human beings. Therefore, impacts associated with the development of the Proposed Project are considered ***less than significant with mitigation incorporated***.

ENVIRONMENTAL DETERMINATION

In reviewing the site-specific information provided for this project and acting as Lead Agency, the City of Roseville, Development Services Department, Planning Division has analyzed the potential environmental impacts created by this project and determined that with mitigation the impacts are less than significant. As demonstrated in the initial study checklist, there are no "project specific significant effects which are peculiar to the project or site" that cannot be reduced to less than significant effects through mitigation (CEQA Section 15183) and therefore an EIR ***is not*** *required. Therefore,* ***on the basis of the foregoing initial study:***

☒ I find that the proposed project COULD, but with mitigation agreed to by the applicant, clearly will not have a significant effect on the environment and a MITIGATED NEGATIVE DECLARATION has been prepared.

☐ I find that the proposed project WILL NOT have a significant effect on the environment and a NEGATIVE DECLARATION has been prepared.

Initial Study Prepared by:

Lauren Hocker

Digitally signed by Lauren Hocker
Date: 2019.02.05 11:31:20 -08'00'

Lauren Hocker, Senior Planner
City of Roseville, Development Services – Planning Division

LIST OF ATTACHMENTS

1. Mitigation Monitoring and Reporting Program
2. Huntington Senior Apartments Project Air Quality Study, February 1, 2019
3. Biological Resources Assessment [for the] ±3.34-Acre Huntington Senior Apartments, City of Roseville, Placer County, California, January 29, 2019
4. Arborist Report Huntington Senior Apartments, City of Roseville, California, January 29, 2019
5. Environmental Noise and Vibration Assessment for the Huntington Senior Apartments, Roseville, California, May 8, 2018
6. Water Conservation Plan for the Huntington Senior Apartments, September 27, 2018

Attachment 1

Mitigation Monitoring and Reporting Program

CITY OF ROSEVILLE CALIFORNIA

DEVELOPMENT SERVICES DEPARTMENT – PLANNING DIVISION
311 Vernon Street, Roseville, CA 95678 (916) 774-5276

MITIGATION MONITORING AND REPORTING PROGRAM

Project Title/File Number:	Huntington Senior Apartments, File # PL17-0247
Project Location:	1650 Huntington Drive, Roseville, Placer County, California Assessor's Parcel Number (APN): 048-260-030-000
Project Description:	The Applicant proposes to construct a multi-family, senior, age restricted (55+) apartment complex consisting of 10 apartment buildings composed of 48 one-bedroom units and 28 two-bedroom units, a community clubhouse, and associated parking. Five of the proposed 76 apartment units will be designated as affordable housing units. The project also includes lot line adjustment along the northwestern corner and southeastern edge of the project site. In addition, a Tree Permit would be required to remove up ten onsite oak trees
Environmental Document	Initial Study and Environmental Checklist
Project Applicant:	Craig Miers, Craig Miers + George Scott Architects, llp, 1624 Santa Clara Drive, Suite 230, Roseville, California 95661
Property Owner:	Dr. Sayed Hussain, MD, 729 Sunrise Avenue, Suite 604, Roseville, California 95661
Lead Agency Contact Person:	Lauren Hocker, Senior Planner, Phone (916) 774-5272

Section 21081.6 of the California Public Resources Code requires public agencies to "adopt a reporting and monitoring program for the changes to the project which it has adopted or made a condition of project approval in order to mitigate or avoid significant effects on the environment." This Mitigation Monitoring and Reporting Program has been adopted for the purpose of avoiding environmental impacts

MONITORING PROCESS: Existing monitoring mechanisms are in place that assist the City of Roseville in meeting the intent of CEQA. These existing monitoring mechanisms eliminate the need to develop new monitoring processes for each mitigation measure. These mechanisms include grading plan review and approval, improvement/building plan review and approval and on-site inspections by City Departments. Given that these monitoring processes are requirements of the project, they are not included in the mitigation monitoring program.

It shall be the responsibility of the project applicant/owner to provide written notification to the City using the Mitigation Verification Cover Sheet and Forms, in a timely manner, of the completion of each Mitigation Measure as identified on the following pages. The City will verify that the project is in compliance with the adopted Mitigation Monitoring and Reporting Program. Any non-compliance will be reported by the City to the applicant/owner, and it shall be the project applicant's/owner's responsibility to rectify the situation by bringing the project into compliance. The purpose of this program is to ensure diligent and good faith compliance with the Mitigation Measures which have been adopted as part of the project.

TABLE OF MITIGATION MEASURES

Mitigation Measure	Implementation	Timing	Reviewing Party	Documents to be Submitted to City	Staff Use Only
BIO- 1: Within 14 days prior to the start of ground disturbance, the Project Applicant shall have a qualified biologist conduct a pre-construction survey for western spadefoot toad. Ground disturbance includes any grading and excavation activities and any work associated with work adjacent to Cirby Creek. If construction does not commence within 14 days of the pre-construction survey or halts for more than 14 days, a new survey shall be required. The biologist shall provide a brief written report (including the date, time of survey, survey method, name of surveyor, and survey results) to City Planning prior to any ground-disturbing activity. If no western spadefoot toads are found, no additional measures are required. If western spadefoot toads are found, all onsite work shall cease and the Project Applicant shall submit a mitigation plan for review and approval by City Planning, in consultation with the California Department of Fish and Wildlife. The plan shall document all proposed measures, including avoidance, minimization, exclusion, relocation, the presence of a biological monitor, or other measures, and include a plan to monitor mitigation success. Work on the site shall not resume until the mitigation plan is approved and appropriate measures have been implemented.	Project Applicant/ Qualified Biologist	14 Days Prior to the Start of Construction	City of Roseville/ CDFW		
BIO- 2: Within 14 days prior to the start of ground disturbance, the Project Applicant shall have a qualified biologist conduct a pre-construction survey for western pond turtles. Ground disturbance includes any grading and excavation activities and any work associated with work adjacent to Cirby Creek. If construction does not commence within 14 days of the pre-construction survey or halts for more than 14 days and the site still contains undisturbed habitat, a new survey	Project Applicant/ Qualified Biologist	14 Days Prior to the Start of Construction	City of Roseville/ CDFW		

Mitigation Measure	Implementation	Timing	Reviewing Party	Documents to be Submitted to City	Staff Use Only
shall be required. The biologist shall provide a brief written report (including the date, time of survey, survey method, name of surveyor, and survey results) to City Planning prior to any ground-disturbing activity. If no western pond turtles are found, no additional measures are required. If western pond turtles are found, all onsite work shall cease and the Project Applicant shall submit a mitigation plan for review and approval by City Planning, in consultation with the California Department of Fish and Wildlife. The plan shall document all proposed measures, including avoidance, minimization, exclusion, relocation, the presence of a biological monitor, or other measures, and include a plan to monitor mitigation success. Work on the site shall not resume until the mitigation plan is approved and appropriate measures have been implemented.					
BIO- 3: Migratory birds and other birds of prey, protected under 50 CFR 10 of the MBTA and/or Section 3503 of the California Fish and Game Code, including Nuttall's woodpecker, loggerhead shrike, yellow-billed magpie, oak titmouse, grasshopper sparrow, song sparrow, purple martin, and white-tailed kite have the potential to nest within the trees within the riparian woodland and within the annual grassland. Ground-disturbing activities and/or vegetation clearing operations, including pruning or removal of trees and shrubs, shall be completed between September 1 to February 14, if feasible. If ground-disturbing activities and/or vegetation removal begins during the nesting season (February 15 to August 31), the Project Applicant shall have a qualified biologist conduct a pre-construction survey for active nests within 300 feet of the Project Site. The pre-construction survey will be conducted within 14 days prior to	Project Applicant/ Qualified Biologist	Prior to and During Construction	City of Roseville/ CDFW		

Mitigation Measure	Implementation	Timing	Reviewing Party	Documents to be Submitted to City	Staff Use Only
commencement of ground-disturbing activities and/or vegetation removal. The biologist shall provide a brief written report (including the date, time of survey, survey method, name of surveyor, and survey results) to City Planning prior to any ground-disturbing activity or vegetation removal. If the pre-construction survey shows that there is no evidence of active nests, no additional measures are required. If construction does not commence within 14 days of the pre-construction survey, or halts for more than 14 days, an additional pre-construction survey shall be required. If any active nests are located within the vicinity of the Proposed Project the qualified biologist shall delimit an appropriate buffer zone, subject to approval of City Planning and in consultation with any other appropriate agencies, with construction tape or pin flags and maintain the buffer zone until the end of the breeding season or the young have successfully fledged. Buffer zones are typically 100 feet for migratory bird nests and 250 feet for raptor nests. If active nests are found onsite, a qualified biologist shall monitor nests weekly during construction to ensure activities are not causing nesting disturbance.					
BIO- 4: The trees within the riparian woodland provide roosting habitat for special-status bats. The Project Applicant shall have a qualified biologist perform onsite pre-construction surveys for special-status bat species within 14 days prior to the start of ground disturbance and tree removal. The biologist shall provide a brief written report (including the date, time of survey, survey method, name of surveyor, and survey results) to City Planning prior to any ground-disturbing activity or tree removal. If no bats are observed, then no additional measures are required. If construction does not commence within 14 days	Project Applicant/ Qualified Biologist	14 Days Prior to the Start of Construction	City of Roseville/ CDFW		

Mitigation Measure	Implementation	Timing	Reviewing Party	Documents to be Submitted to City	Staff Use Only
of the pre-construction survey or halts for more than 14 days and the site still contains undisturbed habitat, a supplemental survey is required. If bats are found, all onsite work shall cease and the Project Applicant shall submit a mitigation plan for review and approval by City Planning, in consultation with the California Department of Fish and Wildlife. The plan shall document all proposed measures, including avoidance, minimization, exclusion, relocation, the presence of a biological monitor, or other measures, and include a plan to monitor mitigation success. Work on the site shall not resume until the mitigation plan is approved and appropriate measures have been implemented. If the bat is roosting in a tree anticipated for removal, then that tree shall not be removed until a qualified biologist has determined that the tree is no longer occupied by the bat.					
BIO- 5: Prior to commencement of ground-disturbing activities, a qualified biologist shall mark the boundaries of onsite riparian habitat and the contractor shall install exclusion fencing around these boundaries to exclude construction equipment and personnel. The fencing shall be inspected and approved by City Planning prior to ground-disturbing activities. The exclusion area shall be maintained until ground-disturbing activities are completed and soil within the adjacent area is stabilized.	Project Applicant/Contractor/ Qualified Biologist	Prior to and During Construction	City of Roseville		

NOISE- 1: The following measures shall be incorporated into project construction operations: • At least two weeks advance notice shall be provided to the homes adjacent to the Project Site (1803, 1805, and 1807 Tanglewood Lane; 1636 Huntington Drive; and 1734A, 1734B, 1735A, and 1735B Kent Street), advising the residents of the proposed commencement of rough grading activities. If the grading activities are expected to occur for longer than two weeks, the notice shall include the likely duration of grading activities. • To the extent feasible, rough site grading activities shall progress from north to south, thereby preserving the shielding provided by the intervening topography for the maximum practicable duration. • The masonry wall on the southern property boundary shall be constructed as early in the construction phase as possible, so that it will provide attenuation of noise generated during the remainder of construction. • All noise-producing project equipment and vehicles using internal combustion engines used for construction shall be fitted with manufacturer recommended mufflers and be maintained in good working condition. • All mobile or fixed noise-producing equipment used on the Project Site that are regulated for noise output by a federal, State, or a local agency shall comply with such regulations while in the course of project activity. • Electrically powered equipment shall be used instead of pneumatic or internal combustion-powered equipment, where feasible. • Material stockpiles and mobile equipment staging, parking, and maintenance areas shall be located as far as practicable from noise sensitive receptors.	Contractor	Prior to and During Construction	City of Roseville		

Mitigation Measure	Implementation	Timing	Reviewing Party	Documents to be Submitted to City	Staff Use Only
• Project area and site access road speed limits shall be established and enforced during the construction period.					
TCR-1: **Pre-Construction Inspections**. A minimum of seven days prior to beginning earthwork or other soil disturbance activities, the contractor or Project Applicant shall notify the City of the proposed earthwork start-date, in order to provide the City representative sufficient time to contact the United Auburn Indian Community. A tribal representative shall be invited to, at its discretion, voluntarily inspect the project location, including any soil piles, trenches, or other disturbed areas, within the first five days of ground breaking activity. Construction activity may be ongoing during this time. Should the tribe choose not to perform a field visit within the first five days, construction activities may continue as scheduled, as long as the notification was made.	Project Applicant/Contractor/ UAIC Tribal Representative	Prior to and During Construction	City of Roseville		
TCR-2: **Unpaid Tribal Observation**. A minimum of seven days prior to beginning earthwork or other soil disturbance activities, the contractor or Project Applicant shall notify the City of the proposed earthwork start-date, in order to provide the City representative sufficient time to contact the United Auburn Indian Community. A tribal representative shall be invited to, at its discretion, voluntarily observe any or all ground-disturbing activities during construction. The tribe shall be provided 72 hours to accept or decline observation and shall provide the names of all tribal personnel who will be present to observe activity. All tribal observers shall be required to comply with all job site safety requirements and shall sign a waiver of liability prior to entering the job site. Should the tribe choose not to observe any or all of the activity, the City shall deem the mitigation measure completed in good faith without tribal observation as long as the	Project Applicant/Contractor//UAIC Tribal Representative	Prior to and During Construction	City of Roseville		

Mitigation Measure	Implementation	Timing	Reviewing Party	Documents to be Submitted to City	Staff Use Only
notification was made and documented.					
TCR-3: **Contractor Awareness Training.** The Project Applicant shall ensure that a Contractor Awareness Training Program is developed and delivered to train equipment operators about cultural resources and tribal cultural resources. The program shall be designed to inform construction personnel about: federal and State regulations pertaining to cultural resources and tribal cultural resources; the subsurface indicators of resources that shall require a work stoppage; procedures for notifying the City of any occurrences; and project-specific requirements; and enforcement of penalties and repercussions for non-compliance with the program. The training shall be prepared by a qualified professional archaeologist and reviewed by City for approval, and may be provided in an audio-visual format, such as a DVD. The Project Applicant shall provide the United Auburn Indian Community the option of attending the initial training in person and/or providing additional materials germane to the unanticipated discovery of tribal cultural resources for incorporation into the training. The training program shall be required for all construction supervisors, forepersons, and operators of ground-disturbing equipment, and all personnel shall be required to sign a training roster and display a hard hat sticker that is visible to City inspectors. The construction manager is responsible for ensuring that all required personnel receive the training. The Project Applicant shall provide a copy of the signed training roster to the City as proof of compliance.	Project Applicant/Contractor/ Qualified Archaeologist/ UAIC Tribal Representative	Prior to and During Construction	City of Roseville		

Mitigation Measure	Implementation	Timing	Reviewing Party	Documents to be Submitted to City	Staff Use Only
TCR-4: Post-Review Discovery Procedures. If subsurface deposits believed to be cultural or human in origin, or tribal cultural resources, are discovered during construction, all work shall halt within a 50-foot radius of the discovery, and the Project Applicant shall immediately notify the City of Roseville Development Services Director. The City of Roseville will notify the tribes of the discovery, and a tribal representative shall have the opportunity to determine whether or not the find represents a tribal cultural resource. If a response is not received within five days of notification, the City will deem this portion of the measure completed in good faith as long as the notification was made and documented. The Project Applicant shall retain a qualified professional archaeologist, meeting the Secretary of the Interior's Professional Qualification Standards for prehistoric and historic archaeology and subject to approval by the City, to evaluate the significance of the find and develop appropriate management recommendations. All management recommendations shall be provided to the City in writing for the City's review and approval. If recommended by the qualified professional and approved by the City, this may include modification of the no-work radius. The following notifications shall apply, depending on the nature of the find, subject to the review and approval of the City: 1) Work may resume immediately and no agency notifications are required if: 1) the professional archaeologist determines that the find does not represent a cultural resource and, if a response from a tribal representative was received within five days 2) the tribal representative determines that the find does not represent a tribal cultural	Project Applicant/Contractor/ Qualified Archaeologist	During Construction	City of Roseville/ County Coroner		

Mitigation Measure	Implementation	Timing	Reviewing Party	Documents to be Submitted to City	Staff Use Only
resource or determines that no further action is necessary. 2) If the professional archaeologist determines that the find does represent a cultural resource from any time period or cultural affiliation, the City shall be notified immediately, to consult on a finding of eligibility and implementation of appropriate treatment measures, if the find is determined to be a Historical Resource under CEQA, as defined in Section 15064.5(a) of the CEQA Guidelines. Work shall not resume within the no-work radius until the City, through consultation as appropriate, determines that the site either: 1) is not a Historical Resource under CEQA, as defined in Section 15064.5(a) of the CEQA Guidelines; or 2) that the treatment measures have been completed to its satisfaction. 3) If the find represents a Native American or potentially Native American resource (including a tribal cultural resource) that does not include human remains, the United Auburn Indian Community and City shall be notified. The City will consult with the tribe(s) on a finding of eligibility and implement appropriate treatment measures, if the find is determined to be either a Historical Resource under CEQA, as defined in Section 15064.5(a) of the CEQA Guidelines, or a Tribal Cultural Resource, as defined in Section 21074 of the Public Resources Code. Preservation in place is the preferred treatment, if feasible. Work shall not resume within the no-work radius until the City, through consultation as appropriate, determines that the site either: 1) is not a Historical Resource under CEQA, as defined in Section 15064.5(a) of the CEQA Guidelines; or 2) not a Tribal Cultural Resource, as defined in Section 21074 of the					

Mitigation Measure	Implementation	Timing	Reviewing Party	Documents to be Submitted to City	Staff Use Only
Public Resources Code; or 3) that the treatment measures have been completed to its satisfaction. 4) If the find includes human remains, or remains that are potentially human, the construction supervisor or on-site archaeologist shall ensure reasonable protection measures are taken to protect the discovery from disturbance (AB 2641) and shall notify the City and Placer County Coroner (per § 7050.5 of the Health and Safety Code). The provisions of § 7050.5 of the California Health and Safety Code, § 5097.98 of the California Public Resources Code, and Assembly Bill 2641 shall be implemented. If the Coroner determines the remains are Native American and not the result of a crime scene, the Coroner will notify the Native American Heritage Commission, which then will designate a Native American Most Likely Descendant (MLD) for the project (§ 5097.98 of the Public Resources Code). The designated MLD will have 48 hours from the time access to the property is granted to make recommendations concerning treatment of the remains. If the landowner does not agree with the recommendations of the MLD, the NAHC can mediate (§ 5097.94 of the Public Resources Code). If no agreement is reached, the landowner must rebury the remains where they will not be further disturbed (§ 5097.98 of the Public Resources Code). This will also include either recording the site with the NAHC or the appropriate Information Center; using an open space or conservation zoning designation or easement; or recording a reinternment document with the county in which the property is located (AB 2641). Work shall not resume within the no-work radius until the City, through consultation as appropriate, determines that the treatment					

Mitigation Measure	Implementation	Timing	Reviewing Party	Documents to be Submitted to City	Staff Use Only
measures have been completed to its satisfaction.					
USS- 1: The Project Applicant shall implement measures identified in the City approved Water Conservation Plan for the Proposed Project identifying specific measures to be implemented to facilitate reductions in water usage.	Project Applicant	Prior to the Start of Construction	City of Roseville		

CITY OF ROSEVILLE CALIFORNIA

DEVELOPMENT SERVICES DEPARTMENT
311 Vernon Street, Roseville, CA 95678 (916) 774-5276

MITIGATION VERIFICATION SUBMITTAL COVER SHEET

Project Title/Planning File #	Huntington Senior Apartments, File # PL17-0247
Project Address	1650 Huntington Drive, Roseville, Placer County, California Assessor's Parcel Number (APN): 048-260-030-000
Property Owner	Dr. Sayed Hussain, MD, 729 Sunrise Avenue, Suite 604, Roseville, California 95661
Planning Division Contact	Lauren Hocker, Senior Planner, Phone (916) 774-5272

SUMMARY OF VERIFICATION MATERIALS INCLUDED IN THIS SUBMITTAL

Mitigation Measure	Supporting Attachments Included	Date Complete

I HAVE ATTACHED THE FOLLOWING REQUIRED ITEMS:

☐ Table of Applicable Mitigation Measures

☐ Mitigation Verification Form(s)

☐ Specific supporting documentation required by measure(s), if applicable (e.g. biologist's report)

I hereby certify under penalty of perjury under the laws of the State of California that I am the property owner or an agent of the property owner and am authorized to submit this Mitigation Verification Form. I also certify that the above-listed mitigation measures have been completed in the manner required, and that all of the information in this submittal is true and correct, to the best of my knowledge:

Signature and Date	Print Name	Contact Number

MITIGATION VERIFICATION FORM

Mitigation Measure

Description of Monitoring and Verification Work Performed. The following information is a required part of the description: dates, personnel names or titles, and the stage/phase of construction work. Additional notes sheets may be attached, if necessary, or the below may simply reference a separate attachment that provides the required information.

INSTRUCTIONS

COVER SHEET:

A Cover Sheet for the project/development is prepared by City staff, with the top portion filled out. Each time Mitigation Verification Forms(s) are being submitted, a Cover Sheet completed by the Project Applicant, Contractor, or Designee is required. An example of a completed summary table is provided below. The signature on the Cover Sheet must be *original wet ink*.

EXAMPLE MITIGATION VERIFICATION SUBMITTAL COVER SHEET

Project Title/Planning File #	New Coffee Shop, PL15-0000
Project Address	10 Justashort Street
Property Owner	Jane Owner
Planning Division Contact	Joe Planner, Associate Planner, (916) 774-####

SUMMARY OF VERIFICATION MATERIALS INCLUDED IN THIS SUBMITTAL

Mitigation Measure	Supporting Attachments Included	Date Complete
MM-3	Copy of survey report signed by biologist	5/10/2016
MM-4	All information included in Mitigation Verification Form	5/12/2016
MM-5	E-mail from Air District approving Dust Control Plan	5/05/2016

MITIGATION VERIFICATION FORM:

A Mitigation Verification Form is provided by City staff, along with the Cover Sheet and Table of Applicable Mitigation Measures. A form is filled in and submitted for each mitigation measure by the Project Applicant, Contractor, or Designee. The form needs only the mitigation number to be filled in, along with the Description of Monitoring and Verification Work Performed. Multiple forms may be submitted simultaneously, under one cover sheet. It is also permissible to submit a form for each part of a measure, on separate dates. For instance, in the example measure MM-4 in the table above, the actual mitigation requires informing construction workers *and* retaining a qualified archeologist if resources are uncovered. Thus, a Project Applicant may submit a form in May certifying that construction workers have been informed, and also submit a second copy of the form in July because resources were discovered and additional actions had to be undertaken.

Each mitigation measure specifies the type of supporting documentation required; this must be submitted in order for the City to accept the mitigation as complete. An example of a completed Mitigation Verification Form is provided below.

EXAMPLE
MITIGATION VERIFICATION FORM

Mitigation Measure MM3

Description of Monitoring and Verification Work Performed. The following information is a required part of the description: dates, personnel names or titles, and the stage/phase of construction work. Additional notes sheets may be attached, if necessary, or the below may simply reference a separate attachment that provides the required information.

The mitigation measure text is included on the Improvement Plans General Notes page (Improvement Plan EN15-0001). On May 4, 2016, prior to any ground-disturbing activities (the pre-construction phase), a site meeting was held. At this meeting, workers on the site were informed of the potential to unearth remains, and were instructed to cease work and notify their supervisor immediately if any resources were observed.

Attachment 2

Huntington Senior Apartments Project Air Quality Study,
prepared by KD Anderson & Associates

February 1, 2019

HUNTINGTON SENIOR APARTMENTS PROJECT
AIR QUALITY STUDY

Prepared for:

Foothill Associates

Prepared by:

KD Anderson & Associates
3853 Taylor Road, Suite G
Loomis, CA 95650
916/660-1555

February 1, 2019

Project #3358-025

KD Anderson & Associates, Inc.
Transportation Engineers

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CalEEMod Model Output Files

EXECUTIVE SUMMARY

This Executive Summary is a brief overview of the analysis presented in this Air Quality Study. It is not intended to be a comprehensive description of the analysis. For more details, the reader is referred to the full description presented in the Air Quality Study.

The Huntington Senior Apartments Project would include 76 attached senior adult housing units, approximately 37,851 square feet of asphalt-paved surface, and community open space area.

The project site is located on the south corner of the intersection of Huntington Drive and Strauch Drive in the City of Roseville, Placer County, CA. The California Environmental Quality Act (CEQA) Lead Agency for the Proposed Project is the City of Roseville.

This Air Quality Study presents an evaluation of the construction-related and operational impacts of the Proposed Project on the air quality environment, including both criteria pollutant emissions and greenhouse gas (GHG) emissions associated with global climate change.

The project site is located within the Sacramento Valley Air Basin (SVAB). The SVAB portion of Placer County is designated a state and federal nonattainment area for ozone. The area is a state nonattainment area for inhalable particulate matter smaller than 10 microns in diameter (designated PM_{10}), and is a federal nonattainment area for fine particulate matter smaller than 2.5 microns in diameter ($PM_{2.5}$). The area is designated attainment or unclassified for carbon monoxide (CO), nitrogen dioxide (NO_2), sulfur dioxide (SO_x), and lead.

Implementation of the Huntington Senior Apartments Project would result in the generation of short-term construction-related emissions. However, the amount of project-related emissions would be less than the significant thresholds. Therefore, construction of the project is considered to have a less-than-significant impact on the criteria pollutant air quality.

The project is generally in an area that may contain naturally occurring asbestos (NOA). However, a screening-level assessment for NOA indicates the project site is approximately 5.6 miles from areas considered to have elevated risk of NOA being present. Therefore, this impact is considered to be less-than-significant.

The project would result in the generation of long-term operational emissions. The project is considered to have a less-than-significant operational impact on ozone and PM_{10}.

Screening-level analyses were performed to assess the project-related effect on CO concentrations. These analyses concluded that the project would not result in violations of the federal and state CO standards and would have a less-than-significant impact on CO levels.

An assessment of the effects of the Proposed Project on global climate change and greenhouse gas (GHG) emissions was conducted. The project-related change in GHG emissions was quantified. The Huntington Senior Apartments Project is determined to have a less-than-significant impact on global climate change.

SECTION 1
INTRODUCTION

This Air Quality Study has been prepared to assess the air quality impacts of the proposed Huntington Senior Apartments Project. The City of Roseville is the CEQA Lead Agency for the Proposed Project. This study contains information that will be used by the City of Roseville in the preparation of the CEQA environmental document for this project.

The purpose of this Air Quality Study is to provide documentation of the air quality resources in the project area, and an assessment of the impacts of the Proposed Project on the air quality environment.

This study assesses the localized air quality impacts of the Proposed Project, the impacts of the project on regional air quality, and construction-related impacts of the project.

Following this *Introduction* section, this Air Quality Study presents a description of:

- the Proposed Project,
- air quality standards and existing air quality conditions,
- short-term construction-related impacts,
- long-term operational impacts,
- local CO impacts, and
- impacts on global climate change and GHG emissions.

SECTION 2
PROJECT DESCRIPTION

The following is a description of the Huntington Senior Apartments Project, based on information from the project site plan and Shields pers. comm.

2.1 PROJECT LOCATION

The proposed Huntington Senior Apartments Project is located at 1650 Huntington Drive in the City of Roseville, Placer County, CA. The project site is on the south corner of the intersection of Huntington Drive and Strauch Drive. **Figure 1** presents an aerial photograph of the vicinity of the project site, indicating the types of existing land use in the general vicinity. **Figure 2** presents the project site plan, showing the components of the project, and roadways immediately surrounding the project site.

As shown in **Figure 1**, the project site is located approximately 400 feet south of Douglas Boulevard, and approximately 4,000 feet southeast of Interstate 80 (I-80).

The following describes current land uses in the immediate vicinity of the project site:

- The project site is currently vacant.
- Single family residential dwelling units are located west, south, and southeast of the project site.
- Retail commercial land uses are located northwest, north, northeast, and east of the project site.

2.2 PROJECT COMPONENTS

As shown in **Figure 2**, the Huntington Senior Apartments Project would include:

- 76 attached senior adult housing units,
- approximately 37,851 square feet of asphalt-paved surface, and
- community open space area.

No wood-burning fireplaces would be included in the project.

A portion of the surface of the project site is elevated. During construction, approximately 30,672 cubic yards of earthen material would be transported off-site. The removal and transport of the earthen material is expected to involve use of a Caterpillar 966 Front End Loader and material transport trucks.

2.3 PROJECT CONSTRUCTION SCHEDULE

Construction of the Huntington Senior Apartments Project is expected to take place between August 2019 and August 2020.

VICINITY MAP

KD Anderson & Associates, Inc.
Transportation Engineers

3358-025 RA 3/15/2018

Huntington Senior Apartment Project Air Quality Study

figure 1

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P2	TYPICAL APARTMENT UNITS
P3	COMMUNITY CLUBHOUSE
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P4B	ONE STORY PLAN EAST
P4C	ONE STORY PLAN WEST
P5	TWO STORY ELEVATIONS
P5B	TWO STORY PLAN
P6	THREE STORY ELEVATIONS
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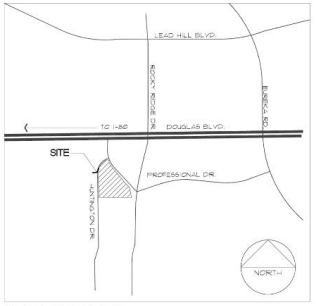
P7	PROPOSED DETAILS

CIVIL

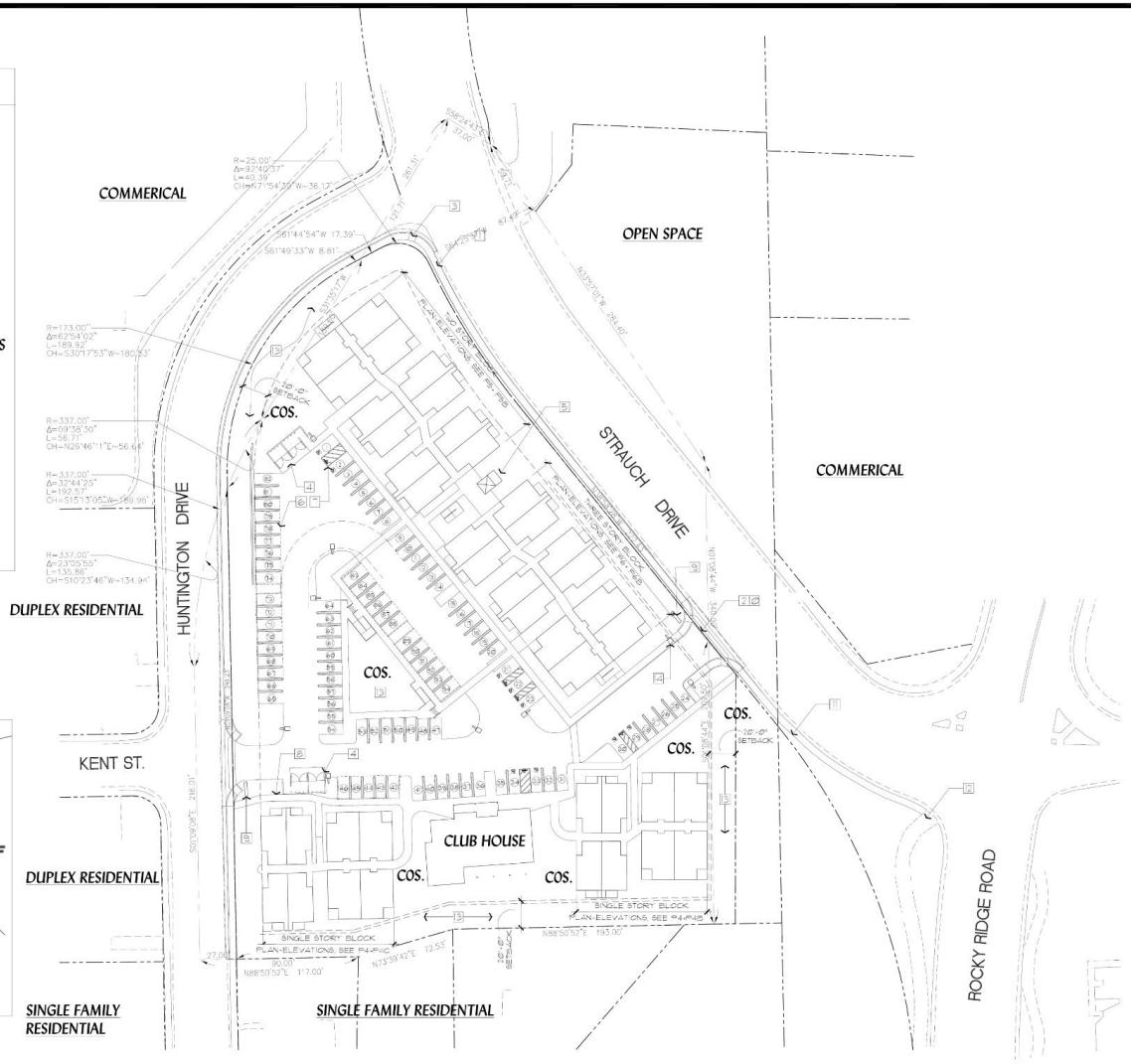
1 OF 2	PRELIMINARY GRADING PLAN
2 OF 2	PRELIMINARY UTILITY PLAN

LANDSCAPE

1 OF 1	PRELIMINARY LANDSCAPE PLANTING PLAN



VICINITY MAP



APARTMENT UNIT MATRIX

APN. 048.260.030.000
LOT SIZE 3.2 AC. 139,392 SF
ZONING

48	ONE BEDROOM
28	TWO BEDROOMS
76	TOTAL

5 UNITS TO BE AFFORDABLE

PARKING

9	ACCESSIBLE
2	COMPACT
84	STANDARD

94	TOTAL
86	REQUIRED

COS. = COMMUNITY OPEN SPACE

KEYNOTES

1. SIDEWALK, CURB AND GUTTER TO CITY STANDARDS
2. DRIVEWAY TO CITY STANDARDS
3. CURB RAMP TO CITY STANDARDS
4. TRASH ENCLOSURES, CONCRETE MASONRY UNTS TYP.
5. ELEVATOR AND MACHINE ROOM
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8. SIDEWALK CONNECTION TO CITY RIGHT OF WAY, TYP.
9. MONUMENT SIGN
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13. LANDSCAPE AREAS, REFER TO LANDSCAPE PLANS
14. AREA POST LIGHT, LED FULL CUTOFF W/ HOUSE SIDE SHIELD 15' HIGH ON ROUND POLE

NORTH

0 20' 40' 80'
SCALE: 1/40"=1'-0"

August 7 , 2017

HUNTINGTON SENIOR APARTMENTS

for ICON ENTERPRISES - HUNTINGTON PLACE
1650 HUNTINGTON DRIVE
ROSEVILLE, CALIFORNIA

PROPOSED SITE PLAN P1

craig MIERS + george SCOTT ARCHITECTS llp

1824 Santa Clara Drive, Suite 200
Roseville, CA 95661
916.780.0200
916.360.2237 mobile
916.780.0105 fax
cmiers@miersscottarchitects.com

KD Anderson & Associates, Inc.
Transportation Engineers

SITE PLAN

3358-025 RA 3/15/2018

Huntington Senior Apartment Project Air Quality Study

figure 2

SECTION 3
AIR QUALITY STANDARDS AND EXISTING CONDITIONS

The following is a description of ambient air quality standards and existing air quality conditions in the project study area.

3.1 AIR POLLUTANTS AND AMBIENT STANDARDS

Both the U.S. Environmental Protection Agency (EPA) and the California Air Resources Board (CARB or ARB) have established ambient air quality standards for common pollutants. These ambient air quality standards indicate levels of contaminants that represent safe levels, to avoid specific adverse health effects associated with each pollutant. The ambient air quality standards cover what are called "criteria" pollutants because the health and other effects of each pollutant are described in criteria documents. The federal and state ambient air quality standards are presented in **Table 1**. The federal and state ambient standards were developed independently with differing purposes and methods, although both processes attempted to avoid health-related effects. As a result, the federal and state standards differ in some cases. In general, the California state standards are more stringent, as is the case for ozone, PM_{10}, and $PM_{2.5}$.

There are three basic designation categories: nonattainment, attainment, and unclassified. A "nonattainment" designation indicates the air quality violates an ambient air quality standard. Although a number of areas may be designated as nonattainment for a particular pollutant, the severity of the problem can vary greatly. To identify the severity of the problem and the extent of planning required, nonattainment areas are assigned a classification that is commensurate with the severity of their air quality problem (e.g., moderate, serious, severe). In contrast to nonattainment, an "attainment" designation indicates the air quality does not violate the established standard. Finally, an "unclassified" designation indicates there are insufficient data for determining attainment or nonattainment. EPA combines unclassified and attainment into one designation for ozone, CO, PM_{10} and $PM_{2.5}$.

3.2 POLLUTANTS OF CONCERN

Criteria pollutants that are of greatest concern for the Proposed Project are CO, ozone, and particulate matter. Ozone is a pollutant created in the atmosphere through the combination of two "precursors", reactive organic gases (ROG) and nitrogen oxides (NO_x), in the presence of sunlight.

In addition, this Air Quality Study addresses asbestos, and the effects of GHG emissions on global climate change.

Table 1. Ambient Air Quality Standards

Ambient Air Quality Standards						
Pollutant	Averaging Time	California Standards [1]		National Standards [2]		
		Concentration [3]	Method [4]	Primary [3,5]	Secondary [3,6]	Method [7]
Ozone (O_3)[8]	1 Hour	0.09 ppm (180 µg/m^3)	Ultraviolet Photometry	—	Same as Primary Standard	Ultraviolet Photometry
	8 Hour	0.070 ppm (137 µg/m^3)		0.070 ppm (137 µg/m^3)		
Respirable Particulate Matter (PM10)[9]	24 Hour	50 µg/m^3	Gravimetric or Beta Attenuation	150 µg/m^3	Same as Primary Standard	Inertial Separation and Gravimetric Analysis
	Annual Arithmetic Mean	20 µg/m^3		—		
Fine Particulate Matter (PM2.5)[9]	24 Hour	—	—	35 µg/m^3	Same as Primary Standard	Inertial Separation and Gravimetric Analysis
	Annual Arithmetic Mean	12 µg/m^3	Gravimetric or Beta Attenuation	12.0 µg/m^3	15 µg/m^3	
Carbon Monoxide (CO)	1 Hour	20 ppm (23 mg/m^3)	Non-Dispersive Infrared Photometry (NDIR)	35 ppm (40 mg/m^3)	—	Non-Dispersive Infrared Photometry (NDIR)
	8 Hour	9.0 ppm (10 mg/m^3)		9 ppm (10 mg/m^3)	—	
	8 Hour (Lake Tahoe)	6 ppm (7 mg/m^3)		—	—	
Nitrogen Dioxide (NO_2)[10]	1 Hour	0.18 ppm (339 µg/m^3)	Gas Phase Chemiluminescence	100 ppb (188 µg/m^3)	—	Gas Phase Chemiluminescence
	Annual Arithmetic Mean	0.030 ppm (57 µg/m^3)		0.053 ppm (100 µg/m^3)	Same as Primary Standard	
Sulfur Dioxide (SO_2)[11]	1 Hour	0.25 ppm (655 µg/m^3)	Ultraviolet Fluorescence	75 ppb (196 µg/m^3)	—	Ultraviolet Flourescence; Spectrophotometry (Pararosaniline Method)
	3 Hour	—		—	0.5 ppm (1300 µg/m^3)	
	24 Hour	0.04 ppm (105 µg/m^3)		0.14 ppm (for certain areas)[11]	—	
	Annual Arithmetic Mean	—		0.030 ppm (for certain areas)[11]	—	
Lead[12,13]	30 Day Average	1.5 µg/m^3	Atomic Absorption	—	—	High Volume Sampler and Atomic Absorption
	Calendar Quarter	—		1.5 µg/m^3 (for certain areas)[12]	Same as Primary Standard	
	Rolling 3-Month Average	—		0.15 µg/m^3		
Visibility Reducing Particles[14]	8 Hour	See footnote 14	Beta Attenuation and Transmittance through Filter Tape	No National Standards		
Sulfates	24 Hour	25 µg/m^3	Ion Chromatography			
Hydrogen Sulfide	1 Hour	0.03 ppm (42 µg/m^3)	Ultraviolet Fluorescence			
Vinyl Chloride[12]	24 Hour	0.01 ppm (26 µg/m^3)	Gas Chromatography			

See footnotes on next page ...

For more information please call ARB-PIO at (916) 322-2990

California Air Resources Board (5/4/16)

Table 1. Ambient Air Quality Standards (Continued)

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

2. National standards (other than ozone, particulate matter, and those based on annual arithmetic mean) are not to be exceeded more than once a year. The ozone standard is attained when the fourth highest 8-hour concentration measured at each site in a year, averaged over three years, is equal to or less than the standard. For PM10, the 24 hour standard is attained when the expected number of days per calendar year with a 24-hour average concentration above 150 $\mu g/m^3$ is equal to or less than one. For PM2.5, the 24 hour standard is attained when 98 percent of the daily concentrations, averaged over three years, are equal to or less than the standard. Contact the U.S. EPA for further clarification and current national policies.

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

4. Any equivalent measurement method which can be shown to the satisfaction of the ARB to give equivalent results at or near the level of the air quality standard may be used.

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

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

7. Reference method as described by the U.S. EPA. An "equivalent method" of measurement may be used but must have a "consistent relationship to the reference method" and must be approved by the U.S. EPA.

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

9. On December 14, 2012, the national annual PM2.5 primary standard was lowered from 15 $\mu g/m^3$ to 12.0 $\mu g/m^3$. The existing national 24-hour PM2.5 standards (primary and secondary) were retained at 35 $\mu g/m^3$, as was the annual secondary standard of 15 $\mu g/m^3$. The existing 24-hour PM10 standards (primary and secondary) of 150 $\mu g/m^3$ also were retained. The form of the annual primary and secondary standards is the annual mean, averaged over 3 years.

10. To attain the 1-hour national standard, the 3-year average of the annual 98th percentile of the 1-hour daily maximum concentrations at each site must not exceed 100 ppb. Note that the national 1-hour standard is in units of parts per billion (ppb). California standards are in units of parts per million (ppm). To directly compare the national 1-hour standard to the California standards the units can be converted from ppb to ppm. In this case, the national standard of 100 ppb is identical to 0.100 ppm.

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

    Note that the 1-hour national standard is in units of parts per billion (ppb). California standards are in units of parts per million (ppm). To directly compare the 1-hour national standard to the California standard the units can be converted to ppm. In this case, the national standard of 75 ppb is identical to 0.075 ppm.

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

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

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

For more information please call ARB-PIO at (916) 322-2990 **California Air Resources Board (5/4/16)**

3.2.1 Carbon Monoxide

State and federal CO standards have been set for both one-hour and eight-hour averaging times. The state one-hour standard is 20 parts per million (ppm) by volume, while the federal one-hour standard is 35 ppm. Both state and federal standards are 9 ppm for the eight-hour averaging period. CO is a public health concern because it combines readily with hemoglobin and thus reduces the amount of oxygen transported in the bloodstream.

Motor vehicles are the dominant source of CO emissions in most areas. High CO levels develop primarily during winter when periods of light winds combine with the formation of ground level temperature inversions (typically from the evening through early morning). These conditions result in reduced dispersion of vehicle emissions. Motor vehicles also exhibit increased CO emission rates at low air temperatures.

3.2.2 Ozone

Prior to 2005, both state and federal standards for ozone were set for a one-hour averaging time. The state ozone standard is 0.09 ppm, not to be exceeded. The federal one-hour standard was 0.12 ppm and was not to be exceeded more than three times in any three-year period. A federal eight-hour standard for ozone was issued in July 1997 by Executive Order of the President. The eight-hour ozone standard has been set at a concentration of 0.075 ppm ozone measured over eight hours.

As of June 15, 2005, the federal one-hour ozone standard was revoked. In setting the eight-hour ozone standard, EPA concluded that replacing the existing one-hour standard with an eight-hour standard was appropriate to provide adequate and more uniform protection of public health from both short-term (one to three hours) and prolonged (six to eight hours) exposures to ozone.

Ozone is not emitted directly into the air, but is formed by a photochemical reaction in the atmosphere. Ozone precursors, which include ROG and NO_x, react in the atmosphere in the presence of sunlight to form ozone. Because photochemical reaction rates depend on the intensity of ultraviolet light and air temperature, ozone is primarily a summer air pollution problem. Ozone is a respiratory irritant and an oxidant that increases susceptibility to respiratory infections and can cause substantial damage to vegetation and other materials. Once formed, ozone remains in the atmosphere for one or two days. It is then eliminated through chemical reaction with plants and by rainout and washout.

3.2.3 Particulate Matter

State and federal standards for particulate matter are based on micrograms per cubic meter ($\mu g/m^3$) for a 24-hour average and as an annual geometric mean.

PM_{10} is sometimes referred to as “inhalable particulate matter” or “respirable particulate matter”. The state standards for PM_{10} are 50 $\mu g/m^3$ 24-hour average, and 20 $\mu g/m^3$ annual geometric mean. The federal PM_{10} standard is a 24-hour average of 150 $\mu g/m^3$.

A federal standard for particulate matter less than 2.5 microns in diameter ($PM_{2.5}$) was issued in July 1997 by Executive Order of the President. $PM_{2.5}$ is sometimes referred to as "fine particulate matter". The $PM_{2.5}$ standard has been set at a concentration of 15 $\mu g/m^3$ annually and 35 $\mu g/m^3$ daily. The federal standards for PM_{10} are being maintained so that relatively larger, courser particulate matter continues to be regulated.

The state $PM_{2.5}$ standard is an annual average of 12 $\mu g/m^3$.

PM_{10} and $PM_{2.5}$ can reach the lungs when inhaled, resulting in health concerns related to respiratory disease. Suspended particulate matter can also affect vision or contribute to eye irritation. PM_{10} can remain in the atmosphere for up to seven days before removal by gravitational settling, rainout and washout.

3.2.4 Asbestos

In addition to criteria pollutants, a pollutant of concern for the project is asbestos. Asbestos is a term used for several types of naturally occurring fibrous minerals. Naturally occurring asbestos (NOA) is found in many parts of California. The most common type of asbestos is chrysotile, but other types are also found in California.

When rock containing asbestos is broken or crushed, asbestos fibers may be released and become airborne. Exposure to asbestos fibers may result in health issues such as lung cancer, mesothelioma (a rare cancer of the thin membranes lining the lungs, chest and abdominal cavity), and asbestosis (a non-cancerous lung disease which causes scarring of the lungs). Sources of asbestos emissions include: unpaved roads or driveways surfaced with ultramafic rock, construction activities in ultramafic rock deposits, or rock quarrying activities where ultramafic rock is present.

3.2.5 Greenhouse Gases

Relatively recently, global climate change, also known as global warming, has been recognized as an important environmental issue. Documented impacts of climate change include rising sea levels, glacier retreat, shortening of frost seasons, and increases in precipitation, among other events. Climate change is considered to be heavily influenced by the rising concentration of greenhouse gases (GHG), primarily atmospheric carbon dioxide (CO_2). Burning of fossil fuels, including oil, natural gas, gasoline and coal, is a major contributor to rising GHG levels.

3.3 AIR QUALITY MONITORING

The following tables present air quality monitoring data for four pollutants: ozone, CO, PM_{10}, and $PM_{2.5}$. **Table 2** presents monitoring data for ozone and CO. **Table 3** presents monitoring data for PM_{10} and $PM_{2.5}$. Data for the latest three-year period available are presented for the monitoring stations closest to the project site.

Table 2. Ozone and Carbon Monoxide Air Quality Monitoring Results

Pollutant Type, Station and Measurement	Air Quality Standard	Pollutant Concentration by Year		
		2014	2015	2016
Ozone at Roseville - N Sunrise Boulevard				
Highest 1-Hour Average (parts per million)	0.09	0.097	0.098	0.115
Second Highest 1-Hour Average (parts per million)	(State)	0.096	0.094	0.107
Highest 8-Hour Average (parts per million)	0.070	0.086	0.084	0.092
Second Highest 8-Hour Average (parts per million)	(State)	0.084	0.078	0.092
		2012	**2013**	**2014**
Carbon Monoxide at North Highlands - Blackfoot Way				
Highest 8-Hour Average (parts per million)	9.0	1.16	1.87	1.54
Second Highest 8-Hour Average (parts per million)	(State)	1.16	1.74	1.51

Source: California Air Resources Board website: http://www.arb.ca.gov/

Note: For carbon monoxide, recent data are not available for Placer and El Dorado Counties.
For carbon monoxide in Sacramento County, the latest data are for 2014.

Table 3. Particulate Matter Air Quality Monitoring Results

Pollutant Type, Station and Measurement	Air Quality Standard	Pollutant Concentration by Year 2014	2015	2016
Inhalable Particulate Matter (PM_{10}) at Roseville - N Sunrise Boulevard				
Highest 24-Hour Average (micrograms/cubic meter)	50	31.8	59.1	39.1
Second Highest 24-Hour Average (micrograms/cubic meter)	(State)	29.5	43.1	38.9
Annual Average (micrograms/cubic meter)	20 (State)	17.9	13.0	15.8
Fine Particulate Matter ($PM_{2.5}$) at Roseville - N Sunrise Boulevard				
Highest 24-Hour Average (micrograms/cubic meter)	35	30.7	44.1	24.4
Second Highest 24-Hour Average (micrograms/cubic meter)	(Federal)	24.8	37.7	23.1
Annual Average (micrograms/cubic meter)	12 (State)	7.8	8.0	6.8

Source: California Air Resources Board website: http://www.arb.ca.gov/

3.4 ATTAINMENT DESIGNATIONS

The current air quality attainment designations for the Sacramento Valley Basin (SVAB) portion of Placer County are summarized in **Table 4**. As shown in **Table 4**, the portion of Placer County that includes the project site is designated nonattainment for the federal and state ozone standards. The project site portion of the County is designated attainment for the federal and state carbon monoxide (CO) standards, and attainment/unclassified or attainment for nitrogen dioxide (NO_2) standards.

The project site portion of Placer County is designated nonattainment for the state PM_{10} standard, and designated attainment for the federal PM_{10} standard. The area is designated nonattainment for the federal $PM_{2.5}$ standard and attainment for the state $PM_{2.5}$ standard.

3.5 EMISSIONS INVENTORY

Table 5 presents estimates of emissions currently generated in Placer County. The information presented in **Table 5** is divided into emission source categories. **Table 6** presents a forecast of emissions expected to be generated in Placer County in the year 2035. Like **Table 5**, the information presented in **Table 6** is divided into emission source categories.

For current emissions, the major source category that generates the largest amounts of ROG emissions in Placer County is On-Road Motor Vehicles. For 2035 emissions, the major source category that generates the largest amounts of ROG emissions in Placer County is Solvent Evaporation. The largest subcategory within this category is Consumer Products.

For current emissions, the major source category that generates the largest amounts of CO emissions in Placer County is On-Road Motor Vehicles. For 2035 emissions, the major source category that generates the largest amounts of CO emissions in Placer County is Other Mobile Sources. The largest subcategory within this category is Off-Road Equipment.

For both current and 2035 emissions, the major source category that generates the largest amounts of NO_x emissions in Placer County is On-Road Motor Vehicles.

For both current and 2035 emissions, the major source category that generates the largest amounts of PM_{10} and $PM_{2.5}$ emissions in Placer County is Miscellaneous Processes. For PM_{10}, the largest subcategory within this category is Construction and Demolition. For $PM_{2.5}$, the largest subcategory within this category is Residential Fuel Combustion.

Table 4. Air Quality Attainment Status Designations
Sacramento Valley Air Basin Portion of Placer County

Pollutant	Federal Standard	State Standard
Ozone	Nonattainment	Nonattainment
Carbon Monoxide	Attainment	Attainment
Nitrogen Dioxide	Unclassified / Attainment	Attainment
Inhalable Particulate Matter (PM_{10})	Attainment	Nonattainment
Fine Particulate Matter ($PM_{2.5}$)	Nonattainment	Attainment

Source: Placer County Air Pollution Control District 2017.

Table 5. Placer County Emissions Inventory for 2012

Emission Category	Reactive Organic Gases	Carbon Monoxide	Nitrogen Oxides	Inhalable Particulate Matter (PM_{10})	Fine Particulate Matter ($PM_{2.5}$)
Fuel Combustion					
Electric Utilities	0.01	0.03	0.39	0.15	0.14
Manufacturing and Industrial	0.05	0.54	0.42	0.04	0.04
Food and Agricultural Processing	0.01	0.04	0.08	0.00	0.00
Service and Commercial	0.03	0.15	0.12	0.04	0.04
Other (Fuel Combustion)	0.03	0.04	0.13	0.00	0.00
Subtotal	**0.13**	**0.80**	**1.14**	**0.23**	**0.22**
Waste Disposal					
Sewage Treatment	0.01	- -	- -	- -	- -
Landfills	0.11	0.00	0.01	- -	- -
Incinerators	0.00	- -	- -	0.00	- -
Soil Remediation	0.00	- -	- -	- -	- -
Subtotal	**0.12**	**0.00**	**0.01**	**0.00**	**0.00**
Cleaning and Surface Coatings					
Laundering	0.03	- -	- -	- -	- -
Degreasing	0.60	- -	- -	- -	- -
Coatings and Related Process Solvents	0.69	- -	- -	0.00	0.00
Printing	0.14	- -	- -	- -	- -
Adhesives and Sealants	0.27	- -	- -	- -	- -
Subtotal	**1.73**	**0.00**	**0.00**	**0.00**	**0.00**
Petroleum Production and Marketing					
Petroleum Marketing	0.84	- -	- -	- -	- -
Other (Petroleum Production and Marketing	0.01	- -	- -	- -	- -
Subtotal	**0.85**	**0.00**	**0.00**	**0.00**	**0.00**
Industrial Processes					
Chemical	0.01	- -	- -	0.00	0.00
Food and Agriculture	0.01	0.01	0.01	0.02	0.01
Mineral Processes	0.07	0.10	0.10	0.83	0.24
Wood and Paper	0.68	0.04	0.04	0.68	0.42
Electronics	0.00	- -	- -	- -	-
Other (Industrial Processes)	0.00	0.00	0.00	0.01	0.01
Subtotal	**0.77**	**0.15**	**0.15**	**1.54**	**0.68**
Solvent Evaporation					
Consumer Products	1.90	- -	- -	- -	- -
Architectural Coatings & Related Process Solvent:	0.80	- -	- -	- -	- -
Pesticides/Fertilizers	0.10	- -	- -	- -	- -
Asphalt Paving / Roofing	0.22	- -	- -	- -	- -
Subtotal	**3.02**	**0.00**	**0.00**	**0.00**	**0.00**

Table 5. Placer County Emissions Inventory for 2012 (Continued)

Emission Category	Reactive Organic Gases	Carbon Monoxide	Nitrogen Oxides	Inhalable Particulate Matter (PM_{10})	Fine Particulate Matter ($PM_{2.5}$)
Miscellaneous Processes					
Residential Fuel Combustion	1.80	10.14	0.81	1.43	1.38
Farming Operations	0.37	- -	- -	0.30	0.04
Construction and Demolition	- -	- -	- -	4.80	0.48
Paved Road Dust	- -	- -	- -	1.82	0.27
Unpaved Road Dust	- -	- -	- -	2.32	0.23
Fugitive Windblown Dust	- -	- -	- -	0.12	0.02
Fires	0.00	0.02	0.00	0.00	0.00
Managed Burning and Disposal	0.49	5.64	0.12	0.66	0.60
Cooking	0.01	- -	- -	0.11	0.11
Other (Miscellaneous Processes)	- -	- -	- -	- -	- -
Subtotal	**2.67**	**15.80**	**0.93**	**11.56**	**3.13**
On-Road Motor Vehicles					
Light Duty Vehicles	2.96	24.31	2.36	0.40	0.18
Medium Duty Trucks	0.75	7.78	1.01	0.10	0.04
Heavy Duty Trucks	0.98	5.18	9.43	0.35	0.29
Motorcycles	0.49	2.95	0.13	0.00	0.00
Buses	0.05	0.49	0.46	0.02	0.01
Motor Homes	0.01	0.31	0.07	0.01	0.00
Subtotal	**5.24**	**41.02**	**13.46**	**0.88**	**0.52**
Other Mobile Sources					
Aircraft	0.03	0.80	0.00	0.00	0.00
Trains	0.23	0.73	3.70	0.09	0.08
Commercial Harbor Craft	0.02	0.09	0.28	0.01	0.01
Recreational Boats	2.93	9.79	0.58	0.19	0.14
Off-Road Recreational Vehicles	0.50	1.56	0.02	0.01	0.01
Off-Road Equipment	1.02	9.88	1.91	0.12	0.11
Farm Equipment	0.09	0.73	0.37	0.02	0.02
Fuel Storage and Handling	0.17	- -	- -	- -	- -
Subtotal	**4.99**	**23.58**	**6.86**	**0.44**	**0.37**
COUNTY TOTAL	**19.54**	**81.35**	**22.54**	**14.69**	**4.93**

Notes: All values are in tons per day. Dashes ("- -") indicate no data are available.
The sum of values may not equal total shown due to rounding.
Source: California Air Resources Board (CARB) website: http://arb.ca.gov

Table 6. Placer County Emissions Forecast for 2035

Emission Category	Reactive Organic Gases	Carbon Monoxide	Nitrogen Oxides	Inhalable Particulate Matter (PM_{10})	Fine Particulate Matter ($PM_{2.5}$)
Fuel Combustion					
Electric Utilities	0.01	0.03	0.57	0.24	0.22
Manufacturing and Industrial	0.05	1.08	0.79	0.08	0.07
Food and Agricultural Processing	0.00	0.04	0.02	0.00	0.00
Service and Commercial	0.04	0.17	0.13	0.04	0.04
Other (Fuel Combustion)	0.03	0.03	0.11	0.00	0.00
Subtotal	**0.13**	**1.35**	**1.62**	**0.36**	**0.33**
Waste Disposal					
Sewage Treatment	0.01	- -	- -	- -	- -
Landfills	0.14	0.00	0.01	- -	- -
Incinerators	0.00	0.00	- -	0.00	- -
Soil Remediation	0.00	- -	- -	- -	- -
Subtotal	**0.15**	**0.00**	**0.01**	**0.00**	**0.00**
Cleaning and Surface Coatings					
Laundering	0.05	- -	- -	- -	- -
Degreasing	1.11	- -	- -	- -	- -
Coatings and Related Process Solvents	1.27	- -	- -	0.00	0.00
Printing	0.18	- -	- -	- -	- -
Adhesives and Sealants	0.47	- -	- -	- -	- -
Subtotal	**3.08**	**0.00**	**0.00**	**0.00**	**0.00**
Petroleum Production and Marketing					
Petroleum Marketing	0.51	- -	- -	- -	- -
Other (Petroleum Production and Marketing	0.00	- -	- -	- -	- -
Subtotal	**0.51**	**0.00**	**0.00**	**0.00**	**0.00**
Industrial Processes					
Chemical	0.01	- -	- -	0.00	0.00
Food and Agriculture	0.01	0.02	0.01	0.04	0.01
Mineral Processes	0.13	0.16	0.16	1.44	0.43
Wood and Paper	0.85	0.05	0.05	0.92	0.58
Electronics	0.00	- -	- -	- -	-
Other (Industrial Processes)	0.00	0.00	0.01	0.05	0.02
Subtotal	**1.00**	**0.23**	**0.23**	**2.45**	**1.04**
Solvent Evaporation					
Consumer Products	2.32	- -	- -	- -	- -
Architectural Coatings & Related Process Solvent	1.06	- -	- -	- -	- -
Pesticides/Fertilizers	0.09	- -	- -	- -	- -
Asphalt Paving / Roofing	0.47	- -	- -	- -	- -
Subtotal	**3.94**	**0.00**	**0.00**	**0.00**	**0.00**

Table 6. Placer County Emissions Forecast for 2035 (Continued)

Emission Category	Reactive Organic Gases	Carbon Monoxide	Nitrogen Oxides	Inhalable Particulate Matter (PM_{10})	Fine Particulate Matter ($PM_{2.5}$)
Miscellaneous Processes					
Residential Fuel Combustion	2.36	13.28	0.87	1.86	1.80
Farming Operations	0.37	- -	- -	0.30	0.04
Construction and Demolition	- -	- -	- -	10.46	1.05
Paved Road Dust	- -	- -	- -	2.40	0.36
Unpaved Road Dust	- -	- -	- -	2.32	0.23
Fugitive Windblown Dust	- -	- -	- -	0.11	0.02
Fires	0.00	0.03	0.00	0.01	0.01
Managed Burning and Disposal	0.49	5.64	0.12	0.66	0.60
Cooking	0.01	- -	- -	0.14	0.14
Other (Miscellaneous Processes)	- -	- -	- -	- -	- -
Subtotal	**3.23**	**18.95**	**0.99**	**18.26**	**4.25**
On-Road Motor Vehicles					
Light Duty Vehicles	0.72	5.56	0.37	0.58	0.24
Medium Duty Trucks	0.24	1.36	0.11	0.08	0.03
Heavy Duty Trucks	0.16	0.99	2.59	0.18	0.07
Motorcycles	0.36	1.81	0.10	0.00	0.00
Buses	0.00	0.09	0.08	0.02	0.00
Motor Homes	0.00	0.00	0.01	0.00	0.00
Subtotal	**1.48**	**9.81**	**3.26**	**0.86**	**0.34**
Other Mobile Sources					
Aircraft	0.03	0.80	0.00	0.00	0.00
Trains	0.06	0.91	1.10	0.02	0.02
Commercial Harbor Craft	0.02	0.12	0.13	0.00	0.00
Recreational Boats	0.90	7.76	0.38	0.06	0.05
Off-Road Recreational Vehicles	0.37	2.10	0.05	0.01	0.00
Off-Road Equipment	0.87	11.85	0.80	0.05	0.04
Farm Equipment	0.04	0.73	0.13	0.01	0.01
Fuel Storage and Handling	0.08	- -	- -	- -	- -
Subtotal	**2.37**	**24.27**	**2.59**	**0.15**	**0.12**
COUNTY TOTAL	**15.92**	**54.60**	**8.71**	**22.07**	**6.11**

Notes: All values are in tons per day. Dashes ("- -") indicate no data are available.
The sum of values may not equal total shown due to rounding.
Source: California Air Resources Board (CARB) website: http://arb.ca.gov

Table 7 presents estimates of GHG emissions generated in California during the years 2000 through 2015. The data are expressed as "million tonnes of CO_2 equivalent" per year. One tonne is sometimes referred to as a "metric ton", and is equal to 2,204.6 pounds.

While CO_2 is the most common component of GHG, several different compounds are components of overall GHG. The different compounds contribute to climate change with varying intensities. The term "CO_2 equivalent" refers to a weighted composite of these several compounds, expressed as the equivalent amount of CO_2.

Table 7 presents estimates of GHG emissions disaggregated into the following seven major source categories:

- Transportation,
- Electric Power,
- Commercial and Residential,
- Industrial,
- Recycling and Waste,
- High GWP (global warming potential), and
- Agriculture.

Each major source category is further disaggregated into minor source categories.

As shown in **Table 7**, Transportation, Electric Power, and Industrial are the larger major source categories of GHG emissions in California. Other activities are relatively smaller sources of GHG emissions.

Table 8 presents estimates of GHG emissions generated in California during the years 2008 through 2020. These data are also expressed as "million tonnes of CO_2 equivalent" per year.

Table 7. California Greenhouse Gas Inventory for 2000 - 2015

California Environmental Protection Agency
Air Resources Board

California Greenhouse Gas Inventory for 2000-2015
— by Category as Defined in the 2008 Scoping Plan

million tonnes of CO2 equivalent - (based upon IPCC Fourth Assessment Report's 100-yr Global Warming Potentials

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Transportation	**176.49**	**176.67**	**183.66**	**181.03**	**182.68**	**184.48**	**184.46**	**184.41**	**173.18**	**166.37**	**163.01**	**159.68**	**159.44**	**158.14**	**160.03**	**164.63**
On Road	***162.35***	***162.70***	***168.72***	***165.43***	***166.56***	***167.36***	***166.91***	***167.00***	***157.39***	***152.85***	***149.03***	***145.92***	***145.67***	***143.86***	***144.98***	***149.42***
Passenger Vehicles	125.72	126.25	131.07	127.88	127.32	127.20	126.46	125.83	119.42	117.97	114.66	111.96	112.40	111.23	112.07	117.01
Heavy Duty Vehicles	36.63	36.45	37.65	37.55	39.24	40.16	40.45	41.17	37.97	34.88	34.37	33.96	33.27	32.63	32.90	32.41
Ships & Commercial Boats	***3.50***	***3.32***	***3.63***	***3.79***	***3.80***	***4.05***	***4.09***	***4.26***	***4.01***	***3.64***	***3.71***	***3.56***	***3.60***	***3.86***	***3.95***	***3.89***
Aviation (Intrastate)	***4.15***	***4.07***	***4.12***	***4.25***	***4.49***	***4.49***	***4.56***	***4.97***	***4.50***	***4.03***	***3.84***	***3.71***	***3.75***	***3.91***	***3.89***	***4.20***
Rail	***1.88***	***1.89***	***2.50***	***2.86***	***2.91***	***3.34***	***3.53***	***3.17***	***2.38***	***1.95***	***2.31***	***2.64***	***2.47***	***2.40***	***2.75***	***2.42***
Off Road [1]	***2.63***	***2.79***	***2.77***	***2.84***	***3.03***	***3.22***	***3.32***	***3.18***	***2.82***	***2.25***	***2.03***	***2.13***	***2.23***	***2.33***	***2.43***	***2.53***
Unspecified	***1.98***	***1.90***	***1.93***	***1.85***	***1.89***	***2.01***	***2.05***	***1.84***	***2.09***	***1.66***	***2.09***	***1.72***	***1.71***	***1.77***	***2.04***	***2.16***
Industrial	**96.24**	**94.42**	**95.69**	**94.82**	**97.31**	**95.45**	**92.90**	**89.65**	**89.97**	**87.45**	**91.01**	**90.65**	**90.90**	**93.48**	**93.77**	**91.71**
Refineries and Hydrogen Production	***28.52***	***29.10***	***29.25***	***29.89***	***29.13***	***29.81***	***29.70***	***29.27***	***28.48***	***28.37***	***30.46***	***30.12***	***29.88***	***29.22***	***29.40***	***28.21***
General Fuel Use	***20.25***	***19.08***	***20.32***	***16.53***	***17.02***	***16.00***	***15.96***	***14.77***	***15.99***	***15.56***	***17.93***	***18.78***	***18.91***	***19.31***	***19.87***	***19.65***
Natural Gas	16.82	14.62	15.18	11.97	12.80	12.72	12.38	11.56	12.37	11.46	13.46	14.50	14.48	14.36	15.56	15.08
Other Fuels	3.43	4.46	5.13	4.56	4.22	3.28	3.57	3.20	3.62	4.11	4.47	4.28	4.43	4.94	4.31	4.57
Oil & Gas: Production & Processing [2]	***19.08***	***19.36***	***18.12***	***20.68***	***20.87***	***19.60***	***17.48***	***17.56***	***18.85***	***17.75***	***16.90***	***16.88***	***16.93***	***19.27***	***19.62***	***19.83***
Fuel Use	17.53	17.76	16.51	19.03	19.20	17.91	15.75	15.78	17.05	15.92	15.01	14.91	14.87	16.99	17.18	17.22
Fugitive Emissions	1.55	1.60	1.62	1.65	1.67	1.69	1.73	1.77	1.81	1.83	1.89	1.97	2.07	2.28	2.44	2.60
Cement Plants	***9.50***	***9.28***	***9.83***	***9.90***	***10.08***	***10.03***	***9.76***	***9.25***	***8.64***	***5.73***	***5.57***	***6.14***	***6.92***	***7.20***	***7.61***	***7.56***
Clinker Production	5.52	5.28	5.82	5.87	6.03	5.96	5.81	5.66	5.28	3.60	3.46	4.08	4.85	4.93	5.27	5.17
Fuel Use	3.98	4.00	4.01	4.03	4.05	4.06	3.95	3.59	3.35	2.13	2.11	2.07	2.26	2.28	2.34	2.39
Cogeneration Heat Output	***11.69***	***10.48***	***10.65***	***10.59***	***12.92***	***12.41***	***12.16***	***11.15***	***10.40***	***12.56***	***12.61***	***11.15***	***10.81***	***10.99***	***9.64***	***8.98***
Other Fugitive and Process Emissions	***7.19***	***7.12***	***7.51***	***7.22***	***7.30***	***7.61***	***7.84***	***7.65***	***7.61***	***7.47***	***7.54***	***7.58***	***7.45***	***7.49***	***7.63***	***7.48***
Natural Gas Transmission & Distribution [5]	3.52	3.58	3.90	3.66	3.73	3.76	3.90	3.87	3.95	3.98	3.94	3.92	3.88	3.82	3.87	3.94
Manufacturing	0.29	0.29	0.24	0.24	0.25	0.25	0.23	0.23	0.20	0.17	0.20	0.18	0.18	0.18	0.16	0.18
Wastewater Treatment	1.86	1.84	1.86	1.84	1.84	1.83	1.84	1.85	1.83	1.81	1.86	1.88	1.88	1.88	1.87	1.82
Other	1.52	1.43	1.51	1.48	1.48	1.76	1.86	1.70	1.64	1.50	1.54	1.59	1.51	1.61	1.73	1.54
Electric Power	**104.84**	**122.00**	**108.64**	**112.61**	**115.20**	**107.85**	**104.53**	**113.93**	**120.14**	**101.37**	**90.34**	**88.06**	**95.09**	**89.65**	**88.24**	**83.67**
In-State Generation	***58.94***	***62.98***	***49.68***	***48.05***	***49.15***	***45.05***	***49.85***	***54.12***	***54.32***	***53.33***	***46.75***	***41.20***	***51.02***	***49.47***	***51.72***	***49.93***
Natural Gas	50.92	55.46	42.17	40.92	42.40	38.11	43.07	47.12	48.02	46.08	40.59	35.92	45.77	45.66	46.43	45.16
Other Fuels	6.84	6.36	6.36	5.98	5.59	5.77	5.63	5.85	5.15	5.90	5.05	4.03	4.44	2.91	4.40	3.65
Fugitive and Process Emissions	1.17	1.16	1.15	1.15	1.16	1.16	1.15	1.16	1.14	1.35	1.10	1.25	0.82	0.90	0.90	1.13
Imported Electricity	***45.90***	***59.02***	***58.96***	***64.56***	***66.04***	***62.80***	***54.68***	***59.81***	***65.82***	***48.04***	***43.59***	***46.86***	***44.07***	***40.17***	***36.51***	***33.74***
Unspecified Imports	14.27	25.42	26.92	32.05	32.92	30.01	27.95	32.73	37.92	14.99	13.45	15.52	17.48	11.82	13.44	11.21
Specified Imports	31.64	33.59	32.04	32.51	33.13	32.79	26.73	27.08	27.90	33.05	30.14	31.34	26.59	28.35	23.07	22.52

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Table 7. California Greenhouse Gas Inventory for 2000 – 2015 (Continued)

California Environmental Protection Agency
Air Resources Board

California Greenhouse Gas Inventory for 2000-2015
— by Category as Defined in the 2008 Scoping Plan

million tonnes of CO2 equivalent - (based upon IPCC Fourth Assessment Report's 100-yr Global Warming Potentials,

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Commercial and Residential	43.18	42.08	44.06	42.53	43.79	42.25	42.94	43.15	43.52	43.63	45.05	45.50	42.89	43.54	37.37	37.92
Residential Fuel Use	29.38	28.47	28.62	28.14	29.17	27.98	28.36	28.50	28.82	28.47	29.19	29.64	27.34	28.14	22.87	23.17
Natural Gas	27.98	27.38	27.49	26.82	27.33	25.93	26.55	26.68	26.82	26.26	26.99	27.51	25.76	26.52	21.58	21.90
Other Fuels	1.41	1.09	1.13	1.52	1.84	2.06	1.81	1.82	2.20	2.21	2.21	2.13	1.58	1.62	1.28	1.27
Commercial Fuel Use	11.47	11.31	13.11	12.84	12.70	12.55	12.83	12.82	12.99	12.89	13.58	13.71	13.41	13.30	12.51	12.77
Natural Gas	10.05	10.08	11.88	11.36	11.14	10.92	11.60	11.47	11.14	11.00	11.17	11.33	11.25	11.28	10.39	10.50
Other Fuels	1.42	1.22	1.23	1.48	1.55	1.64	1.24	1.36	1.85	1.88	2.41	2.38	2.16	2.02	2.12	2.26
Commercial Cogeneration Heat Output	1.09	1.05	1.06	0.26	0.62	0.40	0.42	0.49	0.37	0.92	0.92	0.78	0.76	0.71	0.58	0.56
Other Commercial and Residential	1.24	1.26	1.27	1.29	1.30	1.31	1.32	1.33	1.34	1.35	1.36	1.37	1.38	1.40	1.41	1.42
Agriculture	31.95	31.95	34.15	34.39	33.85	34.52	35.70	36.02	36.06	33.83	34.64	35.28	36.42	34.93	36.03	34.65
Livestock	19.62	19.89	21.17	21.61	20.81	21.46	21.81	24.13	24.13	23.41	24.00	23.84	24.47	23.49	23.81	23.25
Enteric Fermentation (Digestive Process)	10.36	10.25	10.91	11.00	10.77	11.08	11.13	12.31	12.04	11.65	12.13	11.98	12.10	11.78	11.85	11.54
Manure Management	9.26	9.64	10.25	10.60	10.04	10.39	10.68	11.82	12.09	11.75	11.86	11.86	12.38	11.71	11.96	11.71
Crop Growing & Harvesting	8.52	8.24	8.60	8.53	8.54	8.46	8.59	8.11	7.84	7.81	7.87	7.79	8.07	7.74	7.55	7.00
Fertilizers	6.25	6.25	6.40	6.38	6.23	6.24	6.20	5.96	5.82	5.74	5.78	5.67	5.93	5.65	5.72	5.28
Soil Preparation and Disturbances	2.19	1.93	2.14	2.08	2.24	2.15	2.32	2.08	1.94	2.00	2.01	2.03	2.06	2.01	1.76	1.64
Crop Residue Burning	0.08	0.06	0.06	0.07	0.07	0.07	0.07	0.07	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08
General Fuel Use	3.81	3.82	4.38	4.25	4.50	4.60	5.30	3.78	4.09	2.61	2.77	3.65	3.88	3.71	4.66	4.39
Diesel	2.52	2.69	3.04	3.00	3.17	3.40	3.86	2.68	3.18	1.75	1.96	2.52	2.47	2.53	3.54	3.66
Natural Gas	0.98	0.75	0.94	0.85	0.82	0.70	0.88	0.79	0.75	0.69	0.65	0.66	0.70	0.69	0.63	0.64
Gasoline	0.31	0.38	0.40	0.40	0.50	0.50	0.55	0.31	0.16	0.16	0.16	0.48	0.71	0.49	0.49	0.10
Other Fuels	0.01	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
High GWP	7.14	7.07	7.31	7.97	8.70	9.42	10.33	11.07	11.80	12.43	13.64	14.74	15.74	16.82	17.82	19.05
Ozone Depleting Substance (ODS) Substitutes	6.10	6.23	6.52	7.20	7.95	8.75	9.64	10.43	11.27	11.96	13.20	14.21	15.25	16.38	17.42	18.37
Electricity Grid SF6 Losses [4]	0.51	0.49	0.44	0.42	0.40	0.37	0.33	0.29	0.30	0.27	0.24	0.25	0.24	0.18	0.14	0.42
Semiconductor Manufacturing [3]	0.52	0.35	0.35	0.35	0.35	0.30	0.36	0.35	0.23	0.20	0.20	0.28	0.26	0.26	0.26	0.26
Recycling and Waste	7.35	7.51	7.46	7.60	7.60	7.78	7.86	7.94	8.11	8.27	8.37	8.47	8.49	8.52	8.59	8.73
Landfills [3]	7.22	7.36	7.31	7.43	7.42	7.59	7.65	7.71	7.88	8.02	8.11	8.19	8.20	8.22	8.28	8.40
Composting	0.13	0.15	0.16	0.17	0.18	0.20	0.21	0.22	0.24	0.25	0.26	0.27	0.29	0.30	0.31	0.33
Included Inventory Emissions	467.19	481.69	480.98	480.94	489.13	481.75	478.70	486.16	482.78	453.34	446.06	442.38	448.97	445.08	441.85	440.36

[1] Includes equipment used in construction, mining, oil drilling, industrial and airport ground operations.
[2] Reflects emissions from combustion of natural gas, diesel, and lease fuel plus fugitive emissions.
[3] These categories are listed in the Industrial sector of ARB's GHG Emission Inventory sectors.
[4] This category is listed in the Electric Power sector of ARB's GHG Emission Inventory sectors.
[5] The exceptional Aliso Canyon natural gas leak event released 1.96 $MMTCO_2e$ of unanticipated emissions in calendar year 2015 and an additional 0.52 $MMTCO_2e$ in 2016. These emissions will be mitigated in the future according to legal settlement and are presented alongside but tracked separately from routine inventory emissions.

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Source: California Air Resources Board website http://www.arb.ca.gov

Table 8. California GHG Emissions – Forecast (2009-2020)

(Mid Case) Forecast for Updated Scoping Plan - MMTCO2e (AR4)												
Scoping Plan Category	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**	**2018**	**2019**	**2020**
Transportation	**171.5**	**170.6**	**168.4**	**172.7**	**174.4**	**176.4**	**178.1**	**179.7**	**181.4**	**182.8**	**183.9**	**185.3**
On Road	***158.6***	***157.5***	***155.1***	***159.2***	***160.5***	***162.1***	***163.4***	***164.6***	***165.9***	***166.9***	***167.6***	***168.7***
Passenger Vehicles	122.5	121.5	119.0	122.1	122.9	123.5	123.9	124.5	125.2	125.6	125.7	126.2
Heavy Duty Trucks	36.1	36.0	36.1	37.0	37.7	38.7	39.5	40.1	40.7	41.3	41.9	42.5
Ships & Commercial Boats	***3.7***	***3.7***	***3.8***	***4.0***	***4.0***	***4.2***	***4.3***	***4.5***	***4.7***	***4.8***	***5.0***	***5.1***
Aviation (Intrastate)	***4.0***	***3.8***	***3.7***	***3.9***	***4.0***	***4.1***	***4.2***	***4.3***	***4.3***	***4.4***	***4.5***	***4.6***
Rail	***1.9***	***2.3***	***2.5***	***2.3***	***2.4***	***2.5***	***2.5***	***2.6***	***2.6***	***2.7***	***2.7***	***2.8***
Off Road [1]	***2.2***	***2.0***	***2.1***	***2.2***	***2.3***	***2.4***	***2.5***	***2.6***	***2.7***	***2.8***	***2.9***	***3.0***
Unspecified	***1.1***	***1.2***	***1.1***	***1.1***	***1.1***	***1.1***	***1.1***	***1.1***	***1.1***	***1.1***	***1.1***	***1.1***
Electric Power	**103.6**	**90.1**	**86.6**	**93.4**	**94.6**	**95.9**	**97.2**	**98.6**	**99.8**	**100.9**	**102.3**	**103.8**
In-State Generation	***55.5***	***46.5***	***39.7***	***46.9***	***48.1***	***49.4***	***50.7***	***52.1***	***53.3***	***54.4***	***55.8***	***57.3***
Natural Gas	48.9	40.6	34.5	41.0	42.2	43.5	44.8	46.2	47.3	48.5	49.9	51.4
Other Fuels	5.3	4.8	3.9	4.7	4.7	4.7	4.7	4.7	4.7	4.7	4.7	4.7
Fugitive and Process Emissions	1.3	1.1	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2
Imported Electricity	***48.0***	***43.6***	***46.9***	***46.5***	***46.5***	***46.5***	***46.5***	***46.5***	***46.5***	***46.5***	***46.5***	***46.5***
Unspecified Imports	15.0	13.5	15.5	14.7	14.7	14.7	14.7	14.7	14.7	14.7	14.7	14.7
Specified Imports	33.1	30.1	31.3	31.8	31.8	31.8	31.8	31.8	31.8	31.8	31.8	31.8
Commercial and Residential	**44.2**	**45.2**	**45.5**	**45.5**	**45.9**	**46.4**	**46.8**	**47.3**	**47.9**	**48.4**	**49.0**	**49.5**
Residential Fuel Use	***28.7***	***29.4***	***29.9***	***29.9***	***30.1***	***30.2***	***30.3***	***30.6***	***30.8***	***31.1***	***31.4***	***31.7***
Natural Gas	26.3	27.0	27.5	27.5	27.7	27.9	28.0	28.2	28.4	28.7	29.0	29.3
Other Fuels	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4
Commercial Fuel Use	***14.6***	***14.8***	***14.9***	***14.7***	***14.9***	***15.2***	***15.6***	***15.9***	***16.2***	***16.5***	***16.7***	***17.0***
Natural Gas	12.6	12.5	12.6	12.5	12.7	13.0	13.4	13.7	14.0	14.3	14.5	14.8
Other Fuels	2.0	2.3	2.3	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2
Commercial Cogeneration Heat Output	***0.9***	***0.9***	***0.8***	***0.9***	***0.9***	***0.9***	***0.9***	***0.9***	***0.9***	***0.9***	***0.9***	***0.9***
Industrial	**85.3**	**92.0**	**94.4**	**91.5**	**92.0**	**92.6**	**93.0**	**93.2**	**93.3**	**93.5**	**93.6**	**93.7**
Refineries	***28.3***	***30.4***	***30.1***	***29.7***	***29.7***	***29.7***	***29.7***	***29.7***	***29.7***	***29.7***	***29.7***	***29.7***
General Fuel Use	***17.6***	***20.2***	***21.6***	***21.2***	***21.7***	***22.1***	***22.4***	***22.7***	***23.0***	***23.3***	***23.6***	***23.9***
Natural Gas	11.5	13.5	14.5	14.6	15.0	15.4	15.7	16.0	16.3	16.6	16.9	17.2
Other Fuels	6.1	6.8	7.1	6.7	6.7	6.7	6.7	6.7	6.7	6.7	6.7	6.7
Oil & Gas Extraction [2]	***17.1***	***16.2***	***16.2***	***15.7***	***15.6***	***15.7***	***15.7***	***15.5***	***15.2***	***15.0***	***14.7***	***14.5***
Fuel Use	15.9	15.0	14.9	14.6	14.5	14.6	14.6	14.4	14.2	13.9	13.7	13.5
Fugitive Emissions	1.2	1.2	1.3	1.2	1.2	1.1	1.1	1.1	1.1	1.0	1.0	1.0
Cement Plants	***5.7***	***5.6***	***6.1***	***5.8***	***5.8***	***5.8***	***5.8***	***5.8***	***5.8***	***5.8***	***5.8***	***5.8***
Clinker Production	3.6	3.5	4.1	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7
Fuel Use	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1
Cogeneration Heat Output	***10.3***	***12.5***	***12.6***	***11.8***	***11.8***	***11.8***	***11.8***	***11.8***	***11.8***	***11.8***	***11.8***	***11.8***
Other Fugitive and Process Emissions	***6.3***	***7.2***	***7.7***	***7.2***	***7.3***	***7.4***	***7.5***	***7.7***	***7.8***	***7.9***	***8.0***	***8.1***
Recycling and Waste	**8.1**	**8.2**	**8.3**	**8.3**	**8.4**	**8.5**	**8.6**	**8.7**	**8.9**	**9.0**	**9.2**	**9.4**
Landfills [3]	***7.8***	***7.9***	***8.0***	***8.0***	***8.1***	***8.2***	***8.3***	***8.4***	***8.6***	***8.7***	***8.9***	***9.1***
Composting	***0.3***	***0.3***	***0.3***	***0.3***	***0.3***	***0.3***	***0.3***	***0.3***	***0.3***	***0.3***	***0.3***	***0.3***
High GWP	**14.1**	**16.1**	**17.3**	**19.1**	**20.6**	**22.2**	**23.7**	**25.3**	**26.9**	**28.5**	**30.1**	**31.5**
Ozone Depleting Substance (ODS) Substitutes	***13.5***	***15.4***	***16.6***	***18.4***	***20.0***	***21.5***	***23.1***	***24.7***	***26.3***	***27.9***	***29.4***	***30.9***
Electricity Grid SF6 Losses [4]	***0.3***	***0.2***	***0.2***	***0.2***	***0.2***	***0.2***	***0.2***	***0.2***	***0.2***	***0.2***	***0.2***	***0.2***
Semiconductor Manufacturing [3]	***0.3***	***0.5***	***0.4***	***0.4***	***0.4***	***0.4***	***0.4***	***0.4***	***0.4***	***0.4***	***0.4***	***0.4***
Agriculture	**35.0**	**34.9**	**35.4**	**34.8**	**34.9**	**35.0**	**35.1**	**35.2**	**35.4**	**35.6**	**35.8**	**36.2**
Livestock	***23.5***	***23.0***	***23.0***	***22.9***	***23.0***	***23.1***	***23.2***	***23.4***	***23.6***	***23.8***	***24.0***	***24.4***
Enteric Fermentation (Digestive Process)	11.3	11.1	11.1	11.1	11.1	11.2	11.2	11.3	11.4	11.4	11.5	11.7
Manure Management	12.2	11.8	11.9	11.8	11.9	11.9	12.0	12.1	12.2	12.3	12.5	12.7
Crop Growing & Harvesting	***8.8***	***9.1***	***8.8***	***8.9***	***8.9***	***8.9***	***8.9***	***8.9***	***8.9***	***8.9***	***8.9***	***8.9***
Fertilizers	7.3	7.6	7.2	7.4	7.4	7.4	7.4	7.4	7.4	7.4	7.4	7.4
Soil Preparation and Disturbances	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4
Crop Residue Burning	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
General Fuel Use	***2.7***	***2.8***	***3.7***	***3.0***	***3.0***	***3.0***	***3.0***	***3.0***	***3.0***	***3.0***	***3.0***	***3.0***
Diesel	1.8	2.0	2.4	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Natural Gas	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7
Gasoline	0.2	0.2	0.6	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
Other Fuels	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
TOTAL GROSS EMISSIONS	**461.8**	**457.0**	**455.9**	**465.4**	**470.8**	**476.9**	**482.4**	**488.0**	**493.5**	**498.7**	**503.9**	**509.4**
		2020 BAU Forecast Version: May 27, 2014										

Source: California Air Resources Board website http://www.arb.ca.gov

3.6 REGULATORY SETTING

Air quality within the SVAB is regulated by such agencies as the Placer County Air Pollution Control District (PCAPCD), ARB, and EPA. Each of these agencies develops rules, regulations, policies, and/or goals to attain the goals or directives imposed through legislation. Although the EPA regulations may not be superseded, both state and local regulations may be more stringent.

3.6.1 Federal Air Quality Regulations

At the federal level, EPA has been charged with implementing national air quality programs. EPA's air quality mandates are drawn primarily from the Federal Clean Air Act (FCAA), which was enacted in 1963. The FCAA was amended in 1970, 1977, and 1990.

The FCAA required EPA to establish primary and secondary NAAQS, which are shown in **Table 1**. The FCAA also required each state to prepare an air quality control plan referred to as a State Implementation Plan (SIP). The Federal Clean Air Act Amendments of 1990 (FCAAA) added requirements for states with nonattainment areas to revise their SIPs to incorporate additional control measures to reduce air pollution. The SIP is periodically modified to reflect the latest emissions inventories, planning documents, and rules and regulations of the air basins as reported by their jurisdictional agencies. EPA has responsibility to review all state SIPs to determine conformation to the mandates of the FCAAA and determine if implementation will achieve air quality goals. If the EPA determines a SIP to be inadequate, a Federal Implementation Plan (FIP) may be prepared for the nonattainment area that imposes additional control measures. Failure to submit an approvable SIP or to implement the plan within the mandated timeframe may result in sanctions being applied to transportation funding and stationary air pollution sources in the air basin.

3.6.2 State Air Quality Regulations

ARB is the agency responsible for coordination and oversight of state and local air pollution control programs in California and for implementing the California Clean Air Act (CCAA), which was adopted in 1988. The CCAA requires that all air districts in the state endeavor to achieve and maintain the CAAQS by the earliest practical date. The act specifies that districts should focus particular attention on reducing the emissions from transportation and area-wide emission sources, and provides districts with the authority to regulate indirect sources.

ARB is primarily responsible for developing and implementing air pollution control plans to achieve and maintain the NAAQS. The ARB is primarily responsibility for statewide pollution sources and produces a major part of the SIP. Local air districts are still relied upon to provide additional strategies for sources under their jurisdiction. The ARB combines these data and submits the completed SIP to EPA.

Other ARB duties include monitoring air quality (in conjunction with air monitoring networks maintained by air pollution control and air quality management districts), establishing CAAQS (which in many cases are more stringent than the NAAQS), determining and updating area

designations and maps, and setting emissions standards for new mobile sources, consumer products, small utility engines, and off-road vehicles.

Section 39610(a) of the CCAA directs the ARB to "identify each district in which transported air pollutants from upwind areas outside the district cause or contribute to a violation of the ozone standard and to identify the district of origin of transported pollutants." The information regarding the transport of air pollutants from one basin to another was to be quantified to assist interrelated basins in the preparation of plans for the attainment of CAAQS. Numerous studies conducted by the ARB have identified air basins that are impacted by pollutants transported from other air basins (as of 1993). Among the air basins affected by air pollution transport from the San Francisco Bay Area Air Basin (SFBAAB) are the MCAB, the San Joaquin Valley Air Basin, and the Sacramento Valley Air Basin.

3.6.3 Local Air Quality Management

The PCAPCD is the primary local agency responsible for protecting human health and property from the harmful effects of air pollution in the County. PCAPCD is required to adopt an *Air Quality Attainment Plan* and establish and enforce air pollution control rules and regulations in order to attain and maintain all state and federal ambient air quality standards. The PCAPCD regulates, permits, and inspects stationary sources of air pollution. Among these sources are industrial facilities, gasoline stations, auto body shops, and dry cleaners.

While the state is responsible for emission standards and controlling actual tailpipe emissions from motor vehicles, the PCAPCD is required to regulate agricultural burning and industrial emissions, implement transportation control measures and recommend mitigation measures for new growth and development designed to reduce the number of cars on the road, and promote the use of cleaner fuels.

The project site is located in the Sacramento region's non-attainment area for federal ozone standards. The PCAPCD, along with other local air districts in the Sacramento region, are required to comply with and implement the State Implementation Plan (SIP) to demonstrate when and how the region can attain the federal ozone standards. Accordingly, the Sacramento Metropolitan Air Quality Management District (SMAQMD) prepared the *Sacramento Regional 8-Hour Ozone Attainment and Reasonable Further Progress Plan* in December 2008, with input from the other air districts in the region. The SMAQMD adopted the Plan on January 22, 2009; followed by the Feather River Air Quality Management District (FRAQMD) on February 2, 2009; the El Dorado County Air Quality Management District (EDCAQMD) on February 10, 2009; the Yolo-Solano Air Quality Management District (YSAQMD) on February 11, 2009; and the PCAPCD on February 19, 2009. CARB determined that the Plan meets Clean Air Act requirements and approved the Plan on March 26, 2009 as a revision to the SIP.

The *Sacramento Regional 8-Hour Ozone Attainment and Reasonable Further Progress Plan* demonstrates how existing and new control strategies would provide the future emission reductions needed to meet the federal Clean Air Act requirements. Adoption of all reasonably available control measures is required for attainment. Measures could include, but are not

limited to the following: regional mobile incentive programs; urban forest development programs; and local regulatory measures for emission reductions related to indirect source rules, architectural coating, automotive refinishing, natural gas production and processing, asphalt concrete, and various others.

The SMAQMD held a public hearing on the 2013 Revisions to the *Sacramento Regional 8-Hour Ozone Attainment and Reasonable Further Progress Plan*. This hearing was conducted on behalf of the air districts in the Sacramento Federal Ozone Nonattainment Area, including the YSAQMD, the FRAQMD, the EDCAQMD, and the PCAPCD. The *2013 Revisions to the Sacramento Regional 8-Hour Ozone Attainment and Reasonable Further Progress Plan* was adopted on September 26, 2013 and submitted to the CARB. CARB approved the plan on November 21, 2013, and submitted it to the EPA to be included in or revise the SIP.

3.6.4 Global Climate Change and Greenhouse Gas Emissions

Federal Regulations. The following describes Federal regulations related to global climate change and GHG emissions.

> Supreme Court Ruling. The EPA is the Federal agency responsible for implementing the FCAA. The U.S. Supreme Court ruled in its decision in Massachusetts et al. v. Environmental Protection Agency et al. ([2007] 549 U.S. 05-1120), issued on April 2, 2007, that CO_2 is an air pollutant as defined under the FCAA, and that EPA has the authority to regulate emissions of GHGs.
>
> In response to the mounting issue of climate change, EPA has taken actions to regulate, monitor, and potentially reduce GHG emissions.
>
> Mandatory Greenhouse Gas Reporting Rule. On September 22, 2009, EPA issued a final rule for mandatory reporting of GHGs from large GHG emissions sources in the United States. In general, this national reporting requirement will provide EPA with accurate and timely GHG emissions data from facilities that emit 25,000 metric tons or more of CO_2 per year. This publicly available data will allow the reporters to track their own emissions, compare them to similar facilities, and aid in identifying cost effective opportunities to reduce emissions in the future. Reporting is at the facility level, except that certain suppliers of fossil fuels and industrial greenhouse gases along with vehicle and engine manufacturers will report at the corporate level. An estimated 85 percent of the total U.S. GHG emissions, from approximately 10,000 facilities, are covered by this final rule.
>
> Proposed Endangerment and Cause or Contribute Findings for Greenhouse Gases under the Clean Air Act. On April 23, 2009, EPA published their Proposed Endangerment and Cause or Contribute Findings for Greenhouse Gases under the FCAA (Endangerment Finding) in the Federal Register. The Endangerment Finding is based on Section 202(a) of the FCAA, which states that the

Administrator of EPA should regulate and develop standards for "emission[s] of air pollution from any class of classes of new motor vehicles or new motor vehicle engines, which in [its] judgment cause, or contribute to, air pollution which may reasonably be anticipated to endanger public health or welfare." The proposed rule addresses Section 202(a) in two distinct findings. The first addresses whether or not the concentrations of the six key GHGs (i.e., CO_2, methane [CH_4], nitrous oxide [N_2O], hydrofluorocarbons [HFCs], perfluorocarbons [PFCs], and sulfur hexafluoride [SF_6]) in the atmosphere threaten the public health and welfare of current and future generations. The second addresses whether or not the combined emissions of GHGs from new motor vehicles and motor vehicle engines contribute to atmospheric concentrations of GHGs and to the threat of climate change.

The Administrator proposed the finding that atmospheric concentrations of GHGs endanger the public health and welfare within the meaning of Section 202(a) of the FCAA. The evidence supporting this finding consists of human activity resulting in "high atmospheric levels" of GHG emissions, which are very likely responsible for increases in average temperatures and other climatic changes. Furthermore, the observed and projected results of climate change (e.g., higher likelihood of heat waves, wild fires, droughts, sea level rise, higher intensity storms) are a threat to the public health and welfare. Therefore, GHGs were found to endanger the public health and welfare of current and future generations.

The Administrator also proposed the finding that GHG emissions from new motor vehicles and motor vehicle engines are contributing to air pollution, which is endangering public health and welfare. The proposed finding cites that in 2006, motor vehicles were the second largest contributor to domestic GHG emissions (24 percent of total) behind electricity generation. Furthermore, in 2005, the U.S. was responsible for 18 percent of global GHG emissions. Therefore, GHG emissions from motor vehicles and motor vehicle engines were found to contribute to air pollution that endangers public health and welfare.

State Greenhouse Gas Regulations. The following describes State regulations related to global climate change and GHG emissions.

Assembly Bill 1493 (2002). In 2002, then-Governor Gray Davis signed Assembly Bill (AB) 1493. AB 1493 requires that ARB develop and adopt, by January 1, 2005, regulations that achieve "the maximum feasible reduction of greenhouse gases emitted by passenger vehicles and light-duty trucks and other vehicles determined by ARB to be vehicles whose primary use is noncommercial personal transportation in the state."

To meet the requirements of AB 1493, in 2004 ARB approved amendments to the California Code of Regulations (CCR) adding GHG emissions standards to California's existing standards for motor vehicle emissions. Amendments to CCR

Title 13, Sections 1900 and 1961 (13 CCR 1900, 1961), and adoption of Section 1961.1 (13 CCR 1961.1) require automobile manufacturers to meet fleet-average GHG emissions limits for all passenger cars, light-duty trucks within various weight criteria, and medium-duty passenger vehicle weight classes (i.e., any medium-duty vehicle with a gross vehicle weight rating less than 10,000 pounds that is designed primarily for the transportation of persons), beginning with the 2009 model year. For passenger cars and light-duty trucks with a loaded vehicle weight (LVW) of 3,750 pounds or less, the GHG emission limits for the 2016 model year are approximately 37 percent lower than the limits for the first year of the regulations, the 2009 model year. For light-duty trucks with LVW of 3,751 pounds to gross vehicle weight (GVW) of 8,500 pounds, as well as medium-duty passenger vehicles, GHG emissions would be reduced approximately 24 percent between 2009 and 2016.

In December 2004, a group of car dealerships, automobile manufacturers, and trade groups representing automobile manufacturers filed suit against ARB to prevent enforcement of 13 CCR Sections 1900 and 1961 as amended by AB 1493 and 13 CCR 1961.1 (Central Valley Chrysler-Jeep et al. v. Catherine E. Witherspoon, in Her Official Capacity as Executive Director of the California Air Resources Board, et al.). The auto-makers' suit in the U.S. District Court for the Eastern District of California, contended California's implementation of regulations that, in effect, regulate vehicle fuel economy violates various federal laws, regulations, and policies.

On December 12, 2007, the Court found that if California receives appropriate authorization from EPA (the last remaining factor in enforcing the standard), these regulations would be consistent with and have the force of federal law, thus, rejecting the automakers' claim. This authorization to implement more stringent standards in California was requested in the form of a FCAA Section 209, subsection (b) waiver in 2005. Since that time, EPA failed to act on granting California authorization to implement the standards. Governor Schwarzenegger and Attorney General Edmund G. Brown filed suit against EPA for the delay. In December 2007, EPA Administrator Stephen Johnson denied California's request for the waiver to implement AB 1493. Johnson cited the need for a national approach to reducing GHG emissions, the lack of a "need to meet compelling and extraordinary conditions", and the emissions reductions that would be achieved through the Energy Independence and Security Act of 2007 as the reasoning for the denial.

The State of California filed suit against EPA for its decision to deny the FCAA waiver. A change in presidential administration directed EPA to reexamine its position for denial of California's CAA waiver and for its past opposition to GHG emissions regulation. California received the waiver, notwithstanding the previous denial by EPA, on June 30, 2009.

Assembly Bill 32 (2006), California Global Warming Solutions Act. In September 2006, the governor of California signed AB 32 (Chapter 488, Statutes of 2006), the California Global Warming Solutions Act of 2006, which enacted Sections 38500–38599 of the California Health and Safety Code. AB 32 requires the reduction of statewide GHG emissions to 1990 levels by 2020. This equates to an approximate 15 percent reduction compared to existing statewide GHG emission levels or a 30 percent reduction from projected 2020 "business-as-usual" (BAU) emission levels. The required reduction will be accomplished through an enforceable statewide cap on GHG emissions beginning in 2012.

To effectively implement the statewide cap on GHG emissions, AB 32 directs ARB to develop and implement regulations that reduce statewide GHG emissions generated by stationary sources. Specific actions required of ARB under AB 32 include adoption of a quantified cap on GHG emissions that represent 1990 emissions levels along with disclosing how the cap was quantified, institution of a schedule to meet the emissions cap, and development of tracking, reporting, and enforcement mechanisms to ensure that the state achieves the reductions in GHG emissions needed to meet the cap.

In addition, AB 32 states that if any regulations established under AB 1493 (2002) cannot be implemented then ARB is required to develop additional, new regulations to control GHG emissions from vehicles as part of AB 32.

AB 32 Climate Change Scoping Plan. In December 2008, ARB adopted its *Climate Change Scoping Plan* (California Air Resources Board 2008), which contains the main strategies California will implement to achieve reduction of approximately 169 million metric tons (MMT) of CO_2e, or approximately 30 percent from the state's projected 2020 emission level of 596 MMT of CO_2e under a BAU scenario (this is a reduction of 42 MMT CO_2e, or almost 10 percent from 2002-2004 average emissions). The Scoping Plan also includes ARB-recommended GHG reductions for each emissions sector of the state's GHG inventory. The Scoping Plan calls for the largest reductions in GHG emissions to be achieved by implementing the following measures and standards:

- improved emissions standards for light-duty vehicles (estimated reductions of 31.7 MMT CO_2e),
- the Low-Carbon Fuel Standard (15.0 MMT CO_2e),
- energy efficiency measures in buildings and appliances and the widespread development of combined heat and power systems (26.3 MMT CO_2e), and
- a renewable portfolio standard for electricity production (21.3 MMT CO_2e).

ARB has not yet determined what amount of GHG reductions it recommends from local government operations; however, the Scoping Plan does state that land use planning and urban growth decisions will play an important role in the state's GHG reductions because local governments have primary authority to plan, zone, approve, and permit how land is developed to accommodate population growth and the changing needs of their jurisdictions (meanwhile, ARB is also developing an additional protocol for community emissions). ARB further acknowledges that decisions on how land is used will have large impacts on the GHG emissions that will result from the transportation, housing, industry, forestry, water, agriculture, electricity, and natural gas emission sectors. The Scoping Plan states that the ultimate GHG reduction assignment to local government operations is to be determined. With regard to land use planning, the Scoping Plan expects approximately 5.0 MMT CO_2e will be achieved associated with implementation of SB 375, which is discussed further below.

In 2014, ARB adopted the *First Update to the Climate Change Scoping Plan* (California Air Resources Board 2014). "The First Update identifies opportunities to leverage existing and new funds to further drive GHG emission reductions through strategic planning and targeted low carbon investments. The First Update defines ARB's climate change priorities for the next five years, and also sets the groundwork to reach long-term goals set forth in Executive Orders S-3-05 and B-16-2012. The Update highlights California's progress toward meeting the "near-term" 2020 GHG emission reduction goals defined in the initial Scoping Plan. It also evaluates how to align the State's "longer-term" GHG reduction strategies with other State policy priorities for water, waste, natural resources, clean energy, transportation, and land use." (California Air Resources Board 2016)

<u>Senate Bills 1078 and 107 and Executive Order S-14-08.</u> SB 1078 (Chapter 516, Statutes of 2002) requires retail sellers of electricity, including investor-owned utilities and community choice aggregators, to provide at least 20 percent of their supply from renewable sources by 2017. SB 107 (Chapter 464, Statutes of 2006) changed the target date to 2010. In November 2008 Governor Schwarzenegger signed Executive Order S-14-08, which expands the state's Renewable Energy Standard to 33 percent renewable power by 2020.

<u>Senate Bill 1368 (2006).</u> SB 1368 is the companion bill of AB 32 and was signed by Governor Schwarzenegger in September 2006. SB 1368 requires the California Public Utilities Commission (PUC) to establish a greenhouse gas emission performance standard for baseload generation from investor owned utilities by February 1, 2007. The California Energy Commission (CEC) must establish a similar standard for local publicly owned utilities by June 30, 2007. These standards cannot exceed the greenhouse gas emission rate from a baseload combined-cycle natural gas fired plant. The legislation further requires that all electricity provided to California, including imported electricity, must be generated from plants that meet the standards set by the PUC and CEC.

Senate Bill 97 (2007). SB 97, signed by the Governor in August 2007 (Chapter 185, Statutes of 2007; Public Resources Code, Sections 21083.05 and 21097), acknowledges climate change is a prominent environmental issue that requires analysis under CEQA. This bill directed the Governor's Office of Planning and Research (OPR) to prepare, develop, and transmit to the California Resources Agency by July 1, 2009 guidelines for mitigating GHG emissions or the effects of GHG emissions, as required by CEQA. The California Resources Agency is required to certify and adopt these guidelines by January 1, 2010.

This bill also removes, both retroactively and prospectively, as legitimate causes of action in litigation any claim of inadequate CEQA analysis of effects of GHG emissions associated with environmental review for projects funded by the Highway Safety, Traffic Reduction, Air Quality and Port Security Bond Act of 2006 (Proposition 1B) or the Disaster Preparedness and Flood Protection Bond Act of 2006 (Proposition 1E). This provision will be repealed by provision of law on January 1, 2010 at that time such projects, if any remain unapproved, will no longer enjoy protection against litigation claims based on failure to adequately address issues related to GHG emissions.

Senate Bill 375 (2008). SB 375, signed in September 2008, aligns regional transportation planning efforts, regional GHG reduction targets, and land use and housing allocation. As part of the alignment, SB 375 requires Metropolitan Planning Organizations (MPOs) to adopt a Sustainable Communities Strategy (SCS) or Alternative Planning Strategy (APS) which prescribes land use allocation in that MPO's Regional Transportation Plan (RTP). The ARB, in consultation with MPOs, is required to provide each affected region with reduction targets for GHGs emitted by passenger cars and light trucks in the region for the years 2020 and 2035. These reduction targets will be updated every eight years but can be updated every four years if advancements in emissions technologies affect the reduction strategies to achieve the targets. The ARB is also charged with reviewing each MPO's SCS or APS for consistency with its assigned GHG emission reduction targets. If MPOs do not meet the GHG reduction targets, transportation projects located in the MPO boundaries would not be eligible for funding programmed after January 1, 2012.

This bill also extends the minimum time period for the Regional Housing Needs Allocation (RNHA) cycle from five years to eight years for local governments located in an MPO that meets certain requirements. City or County land use policies (e.g., General Plans) are not required to be consistent with the RTP including associated SCSs or APSs. Projects consistent with an approved SCS or APS and categorized as "transit priority projects" would receive incentives under new provisions of CEQA.

Executive Order S-3-05 (2005). Governor Schwarzenegger signed Executive Order S-3-05 on June 1, 2005 which proclaimed California is vulnerable to the impacts of climate change. The executive order declared increased temperatures could reduce snowpack in the Sierra Nevada Mountains, further exacerbate California's air quality problems, and potentially cause a rise in sea levels. To combat those concerns, the executive order established targets for total GHG emissions which include reducing GHG emissions to the 2000 level by 2010, to the 1990 level by 2020, and to 80 percent below the 1990 level by 2050.

The executive order also directed the secretary of the California Environmental Protection Agency to coordinate a multiagency effort to reduce GHG emissions to the target levels. The secretary will submit biannual reports to the governor and legislature describing progress made toward reaching the emission targets; impacts of global warming on California's resources; and mitigation and adaptation plans to combat impacts of global warming.

To comply with the executive order, the Secretary of the California Environmental Protection Agency created the California Climate Action Team which is made up of members from various state agencies and commissions. The California Climate Action Team released its first report in March 2006 which proposed achieving the GHG emissions targets by building on voluntary actions of California businesses and actions by local governments and communities along with continued implementation of state incentive and regulatory programs.

Executive Order S-13-08. Governor Schwarzenegger signed Executive Order S-13-08 on November 14, 2008 which directs California to develop methods for adapting to climate change through preparation of a statewide plan. The executive order directs OPR, in cooperation with the California Resources Agency (CRA), to provide land use planning guidance related to sea level rise and other climate change impacts by May 30, 2009. The order also directs the CRA to develop a state Climate Adaptation Strategy by June 30, 2009 and to convene an independent panel to complete the first California Sea Level Rise Assessment Report. The assessment report is required to be completed by December 1, 2010 and required to include the following four items:

1. project the relative sea level rise specific to California by taking into account issues such as coastal erosion rates, tidal impacts, El Niño and La Niña events, storm surge, and land subsidence rates;

2. identify the range of uncertainty in selected sea level rise projections;

3. synthesize existing information on projected sea level rise impacts to state infrastructure (e.g., roads, public facilities, beaches), natural areas, and coastal and marine ecosystems; and

4. discuss future research needs relating to sea level rise in California.

Executive Order S-1-07. Governor Schwarzenegger signed Executive Order S-1-07 in 2007 which proclaimed the transportation sector as the main source of GHG emissions in California. The executive order proclaims the transportation sector accounts for over 40 percent of statewide GHG emissions. The executive order also establishes a goal to reduce the carbon intensity of transportation fuels sold in California by a minimum of 10 percent by 2020.

In particular, the executive order established a Low-Carbon Fuel Standard (LCFS) and directed the Secretary for Environmental Protection to coordinate the actions of the CEC, the ARB, the University of California, and other agencies to develop and propose protocols for measuring the "life-cycle carbon intensity" of transportation fuels. This analysis supporting development of the protocols was included in the State Implementation Plan for alternative fuels (State Alternative Fuels Plan adopted by CEC on December 24, 2007) and was submitted to ARB for consideration as an "early action" item under AB 32. The ARB adopted the LCFS on April 23, 2009.

Local Greenhouse Gas Planning. California has 35 Air Pollution Control Districts (APCD) and Air Quality Management Districts (AQMD), many of which are currently addressing climate change issues by developing significance thresholds, performance standards, and mitigations measures. On October 13, 2016, the PCAPCD Board of Directors adopted the *Placer County Air Pollution Control District Policy – Review of Land Use Projects Under CEQA* (Placer County Air Pollution Control District 2016a). The policy establishes thresholds of significance for criteria pollutants as well as GHG emissions, and the review principles which serve as guidelines for the District staff when the District acts as a commenting agency to review and comment on the environmental documents prepared by CEQA lead agencies.

Significance thresholds for both criteria pollutants and GHG emissions are described in more detail later in this Air Quality Study.

3.7 TOPOGRAPHY AND METEOROLOGY

Air quality is affected by the rate, amount, and location of pollutant emissions and the associated meteorological conditions that influence pollutant movement and dispersal. Atmospheric conditions (for example, wind speed, wind direction, and air temperature) in combination with local surface topography (for example, geographic features such as mountains and valleys) determine how air pollutant emissions affect local air quality.

The Proposed Project is located in western Placer County, which falls within the SVAB and is within the jurisdictional boundaries of the PCAPCD. The climate is characterized by hot, dry summers and cool, rainy winters. Most precipitation in the SVAB results from air masses moving in from the Pacific Ocean during the winter months. Storms usually move through the area from the west or northwest. Over half the total annual precipitation falls during the winter rainy season (November through February), while the average winter temperature is a moderate

49 degrees Fahrenheit (49°F). Winter weather in the SVAB typically includes periods of dense and persistent low-level fog, which is most prevalent between storms. From May to October, the region's intense heat and sunlight lead to high ozone concentrations. During the summer, daytime temperatures can exceed 100°F, while the average daytime temperatures from April through October are between 70°F and 90°F with extremely low humidity.

Prevailing winds are from the south and southwest, and as a result, air quality in the western Placer County is influenced by mobile and stationary air pollution sources located upwind in the Sacramento Metropolitan Area. The inland location and surrounding mountains to the west shelter the valley from much of the ocean breeze that keeps the coastal regions moderate in temperature. The only breach in the mountain barrier is the Carquinez Strait, which exposes the midsection of the valley to the coastal air mass. Air flow into the SVAB through the Carquinez Strait also carries pollutants from the San Francisco Bay Area.

Air quality in Placer County is also affected by inversion layers, which occur when a layer of warm air traps a layer of cold air, preventing vertical dispersion of air contaminants. The presence of an inversion layer results in higher concentrations of pollutants near ground level. Inversions occur primarily in the autumn and summer, formed by warm air subsiding in a region of high pressure with accompanying light winds that do not provide adequate dispersion of air pollutants (Environmental Science Associates, 2015).

The project site is characterized as an urban site due to development in the Granite Bay and surrounding areas.

Air quality in the project area is influenced by pollutant transport from upwind areas, such as the Sacramento and San Francisco Bay metropolitan areas, and also by local emissions sources, such as wood burning stoves and fireplaces during the winter months and vehicles using area roadways and Interstate 80.

SECTION 4
SHORT-TERM CONSTRUCTION IMPACTS

Implementation of the Huntington Senior Apartments Project would result in construction activity, which would generate air pollutant emissions. Construction activities such as grading, excavation and travel on unpaved surfaces would generate dust, and can lead to elevated concentrations of PM_{10} and $PM_{2.5}$. The operation of construction equipment results in exhaust emissions. A substantial portion of the construction equipment is powered by diesel engines, which produce relatively high levels of NO_x emissions. Construction activity could also potentially entrain NOA, if present in the soil.

4.1 SIGNIFICANCE THRESHOLDS

Significance thresholds applied to construction-related emissions are from the *Placer County Air Pollution Control District Policy – Review of Land Use Projects Under CEQA* (Placer County Air Pollution Control District 2016a), and from *Placer County Air Pollution Control District Policy – California Environmental Quality Act Thresholds of Significance* (Placer County Air Pollution Control District 2016b).

4.1.1 Criteria Pollutant Emissions

To evaluate ozone and other air pollutant emissions, the PCAPCD has established significance thresholds for emissions of ozone precursors ROG and NO_x, and PM_{10}. As a CEQA lead agency, the City of Roseville uses the PCAPCD significance thresholds listed in the enclosed **Table 9** as air quality standards in the evaluation of air quality impacts associated with proposed development projects. For construction-related criteria pollutant emissions, the thresholds are:

- 82 pounds per day (ppd) of ROG,
- 82 ppd of NO_x, and
- 82 ppd of PM_{10}.

If the Proposed Project's emissions exceed the above pollutant thresholds, the project would be considered to have a potentially significant effect on air quality.

Table 9. Placer County Air Pollution Control District Criteria Pollutant Significance Thresholds

Pollutant	Construction Phase Thresholds	Operational Phase Project-Level Thresholds	Operational Phase Cumulative-Level Thresholds
Reactive Organic Gases (ROG)	82	55	55
Nitrogen Oxides (NO_x)	82	55	55
Inhalable Particulate Matter (PM_{10})	82	82	82

Source: Placer County Air Pollution Control District 2016a.
Note: All thresholds are expressed in pounds per day.

4.1.2 Naturally Occurring Asbestos

Naturally occurring asbestos (NOA) has been identified as a toxic air contaminant (TAC) by the ARB. No quantitative significance thresholds have been set for NOA. However, the PCAPCD website (http://placerair.org/noa/noamapsandresources) provides a map that may be used as a screening-level indicator of the likelihood of NOA being present on the project site. The map, *Relative Likelihood for the Presence of Naturally Occurring Asbestos in Placer County* (California Department of Conservation 2008) shows the locations considered to be subject to elevated risk of containing NOA.

If a project site is located outside of areas considered to be subject to elevated risk of containing NOA, it may be considered to have a relatively lower probability of containing NOA and, in this Air Quality Study, will be considered to have a less-than-significant impact.

If a project site is located within an area considered to be subject to elevated risk of containing NOA, it may be considered to have an elevated probability of containing NOA and, in this Air Quality Study, will be considered to have a significant impact.

Implementation of mitigation measures to reduce asbestos emissions during construction activities will be considered to reduce the impact to a less-than-significant level.

4.2 METHODOLOGY

The following describes methods used to assess project-related construction impacts.

4.2.1 Ozone Precursors

Implementation of the Huntington Senior Apartments Project would contribute to increases of ROG, NO_x, and PM_{10} emissions in the study area. As recommended in the PCAPCD document *CEQA Air Quality Handbook – Assessing and Mitigating Air Quality Impacts Under CEQA* (Placer County Air Pollution Control District 2017), short-term construction-related and long-term operational emissions associated with the project were estimated using the CalEEMod emissions modeling program (California Air Pollution Control Officers Association 2016). CalEEMod is a land use emissions computer model designed to provide a platform for government agencies, land use planners, and environmental professionals to quantify potential criteria pollutant and GHG emissions associated with both construction and operation of a variety of land use projects. The model quantifies direct emissions from construction and operation (including vehicle use), as well as indirect emissions, such as GHG emissions from energy use, solid waste disposal, vegetation planting and/or removal, and water use.

The CalEEMod emissions model contains default data characterizing the construction and operation of land use development projects, such as the Huntington Senior Apartments Project. The CalEEMod default values were used except where:

- project-specific data are available, and
- updated technical data are available.

Project-specific data included the export of earthen material, and equipment used to move the earthen material. Updated technical data included use of vehicle trip generation rates for senior adult housing (Institute of Transportation Engineers 2017), and rates associated with consumption of electricity (Pacific Gas and Electric Company 2015).

More detailed information on the CalEEMod model is available at the internet website http://caleemod.com/. Output files from the CalEEMod model, as applied to the Huntington Senior Apartments Project, are presented in the *Technical Appendix* of this Air Quality Study.

4.2.2 Naturally-Occurring Asbestos

As noted above, the map *Relative Likelihood for the Presence of Naturally Occurring Asbestos in Placer County* (California Department of Conservation 2008) is used in this Air Quality Study as a source of information on the potential for NOA to be present on the project site.

4.3 IMPACTS

The following is a description of construction-related impacts of the Huntington Senior Apartments Project.

4.3.1 Ozone Precursors

Construction of the Huntington Senior Apartments Project would result in the generation of ozone precursor emissions ROG and NO_x, and PM_{10}. **Table 10** shows the amount of emissions generated by construction of the project. Construction of each phase of the Proposed Project would not exceed the 82 ppd significance thresholds for ROG, NO_x, and PM_{10}. This impact is considered less than significant, and no mitigation measures are required.

4.3.2 Naturally Occurring Asbestos

The map, *Relative Likelihood for the Presence of Naturally Occurring Asbestos in Placer County* (California Department of Conservation 2008) shows no areas more likely to contain NOA in the vicinity of the project site. The nearest locations considered to be subject to elevated risk of containing NOA are approximately 5.6 miles to the northeast along the north fork of Folsom Lake. Because the NOA screening map shows no areas more likely to contain NOA in the vicinity of the project site, this impact is considered less than significant, and no mitigation measures are required.

Table 10. Construction-Related Criteria Pollutant Emissions

Pollutant	Project-Related Emissions	Construction Phase Significance Thresholds	Significant Impact?
Reactive Organic Gases (ROG)	74.39	82	No
Nitrogen Oxides (NO_x)	69.99	82	No
Inhalable Particulate Matter (PM_{10})	12.36	82	No

Sources: KD Anderson & Associates 2019, CalEEMod emissions model.
Thresholds from Placer County Air Pollution Control District 2016a.

Notes: All values are expressed in pounds per day.
Values shown are maximums of all construction phases.
Values shown are the maximum of summer and winter values.

SECTION 5
LONG-TERM OPERATIONAL IMPACTS

This section of this Air Quality Study presents an assessment of the long-term operational impacts of the Huntington Senior Apartments Project. Operation of the Proposed Project has the potential to have an effect on air quality by generating vehicle trips, by resulting in on-site activities (e.g., use of landscaping equipment), and by locating sensitive receptors in the vicinity of air pollutant emissions sources.

5.1 SIGNIFICANCE THRESHOLDS

Significance thresholds applied to operational air quality impacts are from the *Placer County Air Pollution Control District Policy – Review of Land Use Projects Under CEQA* (Placer County Air Pollution Control District 2016a), and from the *CEQA Air Quality Handbook – Assessing and Mitigating Air Quality Impacts Under CEQA* (Placer County Air Pollution Control District 2017).

5.1.1 Criteria Pollutant Emissions – Project-Level Thresholds

Operational criteria pollutant emissions (ROG, NO_x, and PM_{10}) are considered a significant impact in this Air Quality Study if implementation of the Proposed Project would generate emissions exceeding the project-level thresholds shown in **Table 9**. These emission levels are:

- 55 ppd of ROG,
- 55 ppd of NO_x, or
- 82 ppd of PM_{10}.

The Huntington Senior Apartments Project is considered to have a significant impact in this Air Quality Study if implementation of the project would generate criteria pollutant emissions exceeding the values listed above.

5.1.2 Criteria Pollutant Emissions – Cumulative-Level Thresholds

Table 9 presents two sets of operational significance thresholds for ROG, NO_x, and PM_{10}: project-level thresholds and cumulative-level thresholds. In describing project-level thresholds, the PCAPCD *CEQA Air Quality Handbook* states,

> "An EIR process may be recommended by the District to the lead agency if the project related emissions cannot be mitigated to a less than significant level and the project cannot achieve the thresholds described below."

Conversely, in describing cumulative impact thresholds, the handbook states,

> "The District does not recommend the use of this cumulative threshold to determine the need for an EIR. Rather, this threshold is used by the District to recommend mitigation measures to offset the project's cumulative air quality impacts."

As shown in **Table 9**, cumulative-level thresholds are:

- 55 ppd of ROG,
- 55 ppd of NO_x, or
- 82 ppd of PM_{10}.

5.1.3 Freeways and High Traffic Volume Roads

As described in the PCAPCD document *CEQA Air Quality Handbook – Assessing and Mitigating Air Quality Impacts Under CEQA* (Placer County Air Pollution Control District 2012), high traffic volume freeways and roads are considered a source of toxic air contaminant (TAC) emissions. Table 6-1 of the handbook defines high traffic volume freeways and roads as those with more than 100,000 vehicles per day in urban areas and 50,000 vehicles per day in rural areas. The Huntington Senior Apartments project site is considered to be in an urban area.

According to Table 6-1 of the handbook, the recommended minimum separation between high traffic volume freeways and roads and sensitive receptors is 500 feet. Sensitive receptors include residential dwelling units, schools, and medical facilities. In this Air Quality Study, proposed land uses with sensitive receptors proposed within 500 of high traffic volume freeways and roads are considered to have a significant impact.

5.2 METHODOLOGY

The following describes methods used to assess project-related operational impacts.

5.2.1 Criteria Pollutant Emissions

The amount of project-related criteria pollutant emissions was calculated using the CalEEMod emissions model (California Air Pollution Control Officers Association 2016). CalEEMod is a land use emissions computer model designed to provide a platform for government agencies, land use planners, and environmental professionals to quantify potential criteria pollutant and GHG emissions associated with both construction and operation of a variety of land use projects. The model quantifies direct emissions from construction and operation (including vehicle use),

as well as indirect emissions, such as GHG emissions from energy use, solid waste disposal, vegetation planting and/or removal, and water use.

More detailed information on the CalEEMod model is available at the internet website http://caleemod.com/.

Output files from the CalEEMod model are presented in the *Technical Appendix*.

5.2.2 Freeways and High Traffic Volume Roads

Traffic volumes for freeways are from the Caltrans document *2016 Traffic Volumes on California State Highways* (Caltrans 2018). Traffic volumes for roadways are from the *Final Environmental Impact Report – Amoruso Ranch Specific Plan* (City of Roseville 2016).

5.3 IMPACTS

The following is a description of operational impacts of the Huntington Senior Apartments Project.

5.3.1 Criteria Pollutant Emissions – Project-Level Thresholds

Project-level estimates of long-term operational criteria pollutant emissions are presented in **Table 11**. As shown in **Table 11**, ROG, NO_x, and PM_{10} emissions associated with operation of the Proposed Project would be below the PCAPCD project-level significance threshold. As a result, the long-term operational project-level impact of the Proposed Project on criteria pollutant emissions is considered less than significant. No mitigation measures are required.

5.3.2 Criteria Pollutant Emissions – Cumulative-Level Thresholds

Cumulative-level estimates of long-term operational criteria pollutant emissions are presented in **Table 12**. As shown in **Table 12**, ROG, NO_x, and PM_{10} emissions associated with operation of the Proposed Project would be below the PCAPCD cumulative-level significance threshold. As a result, the long-term operational cumulative-level impact of the Proposed Project on criteria pollutant emissions is considered less than significant. No mitigation measures are required.

Table 11. Operational Criteria Pollutant Emissions

Pollutant	Project-Related Emissions	Operational Phase Project-Level Significance Thresholds	Significant Impact?
Reactive Organic Gases (ROG)	2.77	55	No
Nitrogen Oxides (NO_x)	4.19	55	No
Inhalable Particulate Matter (PM_{10})	1.72	82	No

Sources: KD Anderson & Associates 2019, CalEEMod emissions model.
Thresholds from Placer County Air Pollution Control District 2016a.

Notes: All values are expressed in pounds per day.
Values shown are the maximum of summer and winter values.

Table 12. Operational Cumulative-Level Criteria Pollutant Emissions

Pollutant	Project-Related Emissions	Operational Phase Cumulative-Level Thresholds	Exceeds Cumulative Thresholds?
Reactive Organic Gases (ROG)	2.77	55	No
Nitrogen Oxides (NO_x)	4.01	55	No
Inhalable Particulate Matter (PM_{10})	1.72	82	No

Sources: KD Anderson & Associates 2019, CalEEMod emissions model.
Thresholds from Placer County Air Pollution Control District 2016a.

Notes: All values are expressed in pounds per day.
All values shown are summer (ozone season) values.

5.3.3 Freeways and High Traffic Volume Roads

Douglas Boulevard is an east-west arterial roadway located approximately 400 feet north of the Huntington Senior Apartments project site. Figure 4.3-4 of the *Final Environmental Impact Report – Amoruso Ranch Specific Plan* shows existing traffic volumes on the portion of Douglas Boulevard nearest to the project site are 48,000 vehicles per day. Figure 4.3-8 shows future forecasted 2035 Cumulative Plus Project Conditions traffic volumes would be 54,600 vehicles per day. While this roadway is within 500 feet of the project site, traffic volumes on this roadway are less than 100,000 vehicles per day. As a result, this impact is considered less-than-significant. No mitigation measures are required.

Interstate 80 is a southwest-northeast freeway located approximately 4,000 feet northwest of the Huntington Senior Apartments project site. The Caltrans document *2016 Traffic Volumes on California State Highways* shows traffic volumes on I-80 at the Douglas Boulevard interchange being 190,2000 vehicles per day. While the traffic volume on I-80 is greater than 100,000 vehicles per day, this roadway is located more than 500 feet from the project site. As a result, this impact is considered less-than-significant. No mitigation measures are required.

SECTION 6
LOCAL CARBON MONOXIDE IMPACT ANALYSIS

The potential impact of the Huntington Senior Apartments Project on local CO levels was assessed by applying screening procedures described in the PCAPCD *CEQA Air Quality Handbook—Assessing and Mitigating Air Quality Impacts Under CEQA* (Placer County Air Pollution Control District 2017) and then, if indicated by the screening procedures, conducting detailed microscale air quality dispersion modeling.

6.1 SIGNIFICANCE THRESHOLDS

The screening procedure applied in this Air Quality Study focuses on the effects of the Proposed Project on traffic operations. Since elevated CO concentrations are associated with traffic congestion, a project is considered to have no potential for significant impacts on CO concentrations if it does not substantially contribute to excessive traffic congestion.

The PCAPCD *CEQA Air Quality Handbook—Assessing and Mitigating Air Quality Impacts Under CEQA* presents a screening method for assessing the potential for violations of the CO air quality standards. The handbook states,

> "When a project's CO emissions from vehicle operation are more than 550 lbs/day **and** if either of the following scenarios is true for any intersection affected by the project traffic, the project should conduct a site-specific CO dispersion modeling analysis to evaluate the potential local CO emission impact at roadway intersections:
>
> - "A traffic study for the project indicates that the peak-hour LOS on one or more streets or at one or more intersections (both signalized and non-signalized) in the project vicinity will be degraded from an acceptable LOS (e.g., A, B, C, or D) to an unacceptable LOS (e.g., E or F); or
>
> - "A traffic study indicates that the project will substantially worsen an already existing unacceptable peak-hour LOS on one or more streets or at one or more intersections in the project vicinity. 'Substantially worsen' includes situations where a delay would increase by 10 seconds or more when project-generated traffic is included.

> "If a project is identified to have potential CO impacts, for any intersection affected by the project which already has traffic mitigation incorporated, the District would recommend the applicant/consultant conduct a CO dispersion modeling analysis using the CALINE-4 dispersion model to identify potential CO concentrations at the impacted street(s) or intersection(s)."

In this Air Quality Study, if a project does not meet the PCPAPCD screening thresholds for CO emissions the project will be considered to have a less than significant impact on CO emissions.

6.2 METHODOLOGY

Implementation of the Huntington Senior Apartments Project would generate CO emissions in the study area. Long-term operational emissions associated with the project were estimated using the CalEEMod emissions modeling program (California Air Pollution Control Officers Association 2016). CalEEMod is a land use emissions computer model designed to provide a platform for government agencies, land use planners, and environmental professionals to quantify potential emissions associated with both construction and operation of a variety of land use projects. The model quantifies direct emissions (including vehicle use), as well as indirect emissions from sources such as energy use, dispersed area sources, solid waste disposal, and water use.

More detailed information on the CalEEMod model is available at the internet website http://caleemod.com/. Output files from the CalEEMod model, as applied to the Huntington Senior Apartments Project, are presented in the Technical Appendix of this Air Quality Study.

6.3 IMPACTS

The following is a description of local CO impacts of the Huntington Senior Apartments Project.

Long-term operation of the Huntington Senior Apartments Project would result in the generation of CO emissions. Operation of the Proposed Project would generate 13.27 ppd of CO. The generation of CO emissions by the Proposed Project would be less than the PCAPCD 550 ppd screening threshold. Therefore, this impact is considered less than significant, and no mitigation measures are required.

SECTION 7
GLOBAL CLIMATE CHANGE AND GREENHOUSE GASES

This section of this Air Quality Study describes the effects of the Huntington Senior Apartments Project on global climate change and GHG emissions. The Proposed Project would generate GHG emissions associated with both short-term construction activity and long-term operation.

7.1 SIGNIFICANCE THRESHOLDS

To evaluate the impacts of projects on global climate change, the PCAPCD has established significance thresholds for GHG emissions. Significance thresholds used in this Air Quality Study are from the PCAPCD document *Placer County Air Pollution Control District Policy – Review of Land Use Projects Under CEQA* (Placer County Air Pollution Control District 2016a). The PCAPCD GHG emissions thresholds are shown in **Table 13**. The thresholds shown in **Table 13** are expressed in metric tons of CO_2 equivalent units of measure (MT CO_2e), based on the global warming potential of the individual pollutants.

The PCAPCD document *Placer County Air Pollution Control District Policy – California Environmental Quality Act Thresholds of Significance* (Placer County Air Pollution Control District 2016b) notes the following in describing how each of the thresholds in **Table 13** should be applied.

1. "Bright‐line Threshold of 10,000 metric tons of CO2e per year for the construction and operational phases of land use projects as well as the stationary source projects

2. "Efficiency Matrix for the operational phase of land use development projects when emissions exceed the De Minimis Level, and

3. "De Minimis Level for the operational phases of 1,100 metric tons of CO2e per year."

Table 13.
Placer County Air Pollution Control District
Greenhouse Gas Significance Thresholds

Greenhouse Gas Thresholds			
Bright-line Threshold **10,000** MT CO2e/yr			
Efficiency Matrix			
Residential		**Non-residential**	
Urban	**Rural**	**Urban**	**Rural**
(MT CO2e/capita)		(MT CO2e/1,000sf)	
4.5	**5.5**	**26.5**	**27.3**
De Minimis Level **1,100** MT CO2e/yr			

Source: Placer County Air Pollution Control District 2016a.

The *Placer County Air Pollution Control District Policy – California Environmental Quality Act Thresholds of Significance* notes the following in describing how each of the thresholds should be used in determining the significance of GHG emissions:

- "GHG emissions from projects that exceed 10,000 MT CO2e/yr would be deemed to have a cumulatively considerable contribution to global climate change."

- "The De Minimis Level for the operational phases of 1,100 MT CO2e/yr represents an emissions level which can be considered as less than cumulatively considerable and be excluded from the further GHG impact analysis."

- "Projects with GHG emissions which exceed the De Minimis Level of 1,100 MT CO2e/yr, but less than 10,000 MT CO2e/yr can still be found less than cumulatively considerable when the result of project related efficiency analysis would meet one of conditions in the efficiency matrix for the applicable land use setting and land use type provided."

If Project-related GHG emissions exceed the thresholds listed above, the Proposed Project is considered to have a significant impact on GHG emissions, and measures to reduce or offset the GHG emissions should be considered. Measures that reduce the amount of GHG emissions to less than the thresholds are considered to reduce the impact to less than significant levels.

7.2 METHODOLOGY

Implementation of the Huntington Senior Apartments Project would generate GHG emissions in the study area. Both short-term construction-related emissions and long-term operational emissions associated with the project were estimated using the CalEEMod emissions modeling program (California Air Pollution Control Officers Association 2016). CalEEMod is a land use emissions computer model designed to provide a platform for government agencies, land use planners, and environmental professionals to quantify potential emissions associated with both construction and operation of a variety of land use projects. The model quantifies direct emissions (including vehicle use), as well as indirect emissions, such as GHG emissions from energy use, solid waste disposal, vegetation planting and/or removal, and water use.

More detailed information on the CalEEMod model is available at the internet website http://caleemod.com/. Output files from the CalEEMod model, as applied to the Huntington Senior Apartments Project, are presented in the *Technical Appendix* of this Air Quality Study.

7.3 IMPACTS

Table 14 presents construction-related and operational GHG emissions associated with the Huntington Senior Apartments Project. The following describes the impact of the Proposed Project on global climate change and GHG emissions.

7.3.1 Construction-Related Emissions. Construction of the Huntington Senior Apartments Project would result in the generation of GHG emissions. As shown in **Table 14**, construction of the Proposed Project would generate 458.08 MT of CO_2e in 2019 and 348.11 MT of CO_2e in 2020. GHG emissions generated by construction of the Proposed Project would be less than the Bright‐line Threshold of 10,000 MT CO_2e per year adopted by the PCAPCD. Therefore, this impact is considered less than significant, and no mitigation measures are required.

7.3.2 Operational Emissions. Long-term operation of the Huntington Senior Apartments Project would result in the generation of GHG emissions. As shown in **Table 14**, operation of the Proposed Project is estimated to generate 498.66 MT CO_2e per year. The generation of GHG emissions by Proposed Project would be less than the 1,100 MT CO_2e per year De Minimis Level significance threshold adopted by the PCAPCD. Therefore, this impact is considered less than significant, and no mitigation measures are required.

Table 14. Greenhouse Gas Emissions

Emissions Category	Carbon Dioxide (CO_2)	Methane (CH_4)	Nitrous Oxide (N_2O)	Carbon Dioxide Equivalent (CO_2e)
Construction-Related Emissions				
2019 Construction Emissions	456.52	0.06	0.00	458.08
2020 Construction Emissions	346.30	0.07	0.00	348.11
Operational Emissions				
Area Source	0.92	0.00	0.00	0.95
Energy	100.50	0.01	0.00	101.21
Mobile Source	366.52	0.02	0.00	366.89
Waste	7.10	0.42	0.00	17.58
Water	6.82	0.16	0.00	12.04
Total Operational Emissions	481.85	0.60	0.01	498.66

Source: Emissions values are from the CalEEMod Emissions Model (http:/www/caleemod.com)
Notes: All values are in metric tons per year (MT/yr).
Total may not equal sum of components due to rounding.

REFERENCES

Publications Cited

California Air Resources Board. 2008. Climate Change Scoping Plan. Sacramento, CA.

California Air Resources Board. 2014. First Update to the Climate Change Scoping Plan. Sacramento, CA.

California Air Resources Board. 2018. California Air Resources Board Website http://www.arb.ca.gov.

California Department of Conservation. 2008. California Geologic Survey. Relative Likelihood for the Presence of Naturally Occurring Asbestos in Placer County. Sacramento, CA.

California Air Pollution Control Officers Association. 2016. CalEEMod – California Emissions Estimator Model User's Guide – Version 2016.3.1. Sacramento, CA.

Caltrans. 2018. 2016 Traffic Volumes on California State Highways. http://www.dot.ca.gov/trafficops/census/

Environmental Science Associates. 2015. Park at Granite Bay Draft Environmental Impact Report.

Institute of Transportation Engineers. 2017. Trip Generation Manual, 10th Edition. Washington, DC.

Pacific Gas and Electric Company. 2015. Greenhouse Gas Emission Factors: Guidance for PG&E Customers – November 2015. https://www.pge.com/includes/docs/pdfs/shared/environment/calculator/pge_ghg_emission_factor_info_sheet.pdf

Placer County Air Pollution Control District. 2017. CEQA Air Quality Handbook – Assessing and Mitigating Air Quality Impacts Under CEQA. Auburn, CA.

Placer County Air Pollution Control District. 2016a. Placer County Air Pollution Control District Policy – Review of Land Use Projects Under CEQA. Auburn, CA.

Placer County Air Pollution Control District. 2016b. Placer County Air Pollution Control District Policy – California Environmental Quality Act Thresholds of Significance. Auburn, CA.

Roseville, City of. 2016. Final Environmental Impact Report – Amoruso Ranch Specific Plan. Roseville, CA.

Personal Communications

Shields, Kyrsten. Principal. Foothill Associates. March 2, 2018 and January 30, 2019 E-mail messages to Wayne Shijo, KD Anderson & Associates.

TECHNICAL APPENDIX
(Separate Electronic File)

TECHNICAL APPENDIX

CalEEMod Model Output Files

The following CalEEMod emissions model output files are presented below:

CalEEMod Model Output File
Annual Period

CalEEMod Model Output File
Daily Summer Period

CalEEMod Model Output File
Daily Winter Period

CalEEMod Model Output File
Annual Period

Huntington Senior Apartments

Placer-Sacramento County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Parking Lot	37.85	1000sqft	0.87	37,850.00	0
Retirement Community	76.00	Dwelling Unit	15.20	76,000.00	217

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	74
Climate Zone	2			**Operational Year**	2020
Utility Company	Roseville Electric				
CO2 Intensity (lb/MWhr)	307	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - PG&E supplied CO2 intensity factor for 2019 307 lb/MWh (per 2015)

Land Use - E-mail message per Foothill Associates 19 Feb 2018

Construction Phase - Projected schedule 12 months. Adjusted default schedule by 2/3

Off-road Equipment - Hours adjusted for new construction phase schedule

Off-road Equipment - Hours adjusted for new construction phase schedule

Off-road Equipment - Hours adjusted for new construction phase schedule (8.8 hr/day). City-required notation of specialized equipment 966C Caterpillar front-end loader 170 HP

Off-road Equipment - Hours adjusted for new construction phase schedule

Off-road Equipment - Hours adjusted for new construction phase schedule extended for soil export (2.9 hr/day)

Trips and VMT - Hauling trips incl soil export. Trip length extended per 1/30/19 E-mail message from Foothill Associates. 24 CY per truck per 2/19/18 E-mail message from Foothill Associates.

Grading - Per Foothill Associates E-mail message 2 March 2018

Architectural Coating -

Vehicle Trips - ITE Trip Generation Manual 10th Edition rates used (weekday = 3.7, Saturday = 3.23, Sunday = 3.14)

Vehicle Emission Factors -

Vehicle Emission Factors -

Vehicle Emission Factors -

Woodstoves - No fireplaces in project

Area Coating -

Energy Use -

Area Mitigation -

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	10.00	28.00
tblConstructionPhase	NumDays	30.00	27.00
tblConstructionPhase	NumDays	300.00	200.00
tblConstructionPhase	NumDays	20.00	13.00
tblConstructionPhase	NumDays	20.00	13.00

tblConstructionPhase	PhaseEndDate	8/14/2019	9/9/2019
tblConstructionPhase	PhaseEndDate	9/25/2019	10/16/2019
tblConstructionPhase	PhaseEndDate	11/18/2020	7/22/2020
tblConstructionPhase	PhaseEndDate	12/16/2020	8/10/2020
tblConstructionPhase	PhaseEndDate	1/13/2021	8/27/2020
tblConstructionPhase	PhaseStartDate	8/15/2019	9/10/2019
tblConstructionPhase	PhaseStartDate	9/26/2019	10/17/2019
tblConstructionPhase	PhaseStartDate	11/19/2020	7/23/2020
tblConstructionPhase	PhaseStartDate	12/17/2020	8/11/2020
tblFireplaces	FireplaceDayYear	82.00	0.00
tblFireplaces	FireplaceHourDay	3.00	0.00
tblFireplaces	FireplaceWoodMass	3,078.40	0.00
tblFireplaces	NumberGas	41.80	0.00
tblFireplaces	NumberNoFireplace	7.60	76.00
tblFireplaces	NumberWood	26.60	0.00
tblGrading	AcresOfGrading	74.25	75.00
tblGrading	MaterialExported	0.00	30,672.00
tblOffRoadEquipment	HorsePower	97.00	170.00
tblOffRoadEquipment	UsageHours	8.00	2.90
tblOffRoadEquipment	UsageHours	8.00	2.90
tblOffRoadEquipment	UsageHours	8.00	8.80
tblOffRoadEquipment	UsageHours	8.00	8.80
tblOffRoadEquipment	UsageHours	8.00	8.80
tblOffRoadEquipment	UsageHours	8.00	8.80
tblOffRoadEquipment	UsageHours	8.00	8.80
tblOffRoadEquipment	UsageHours	7.00	11.00
tblOffRoadEquipment	UsageHours	8.00	12.00

tblOffRoadEquipment	UsageHours	8.00	12.00
tblOffRoadEquipment	UsageHours	7.00	11.00
tblOffRoadEquipment	UsageHours	8.00	12.00
tblOffRoadEquipment	UsageHours	8.00	12.00
tblOffRoadEquipment	UsageHours	8.00	12.00
tblOffRoadEquipment	UsageHours	8.00	12.00
tblOffRoadEquipment	UsageHours	6.00	9.00
tblProjectCharacteristics	CO2IntensityFactor	793.8	307
tblTripsAndVMT	HaulingTripLength	20.00	50.00
tblTripsAndVMT	HaulingTripNumber	3,834.00	2,556.00
tblVehicleTrips	ST_TR	2.03	3.23
tblVehicleTrips	SU_TR	1.95	3.14
tblVehicleTrips	WD_TR	2.40	3.70
tblWoodstoves	WoodstoveDayYear	82.00	0.00
tblWoodstoves	WoodstoveWoodMass	3,019.20	0.00

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2019	0.2265	2.7367	1.5605	4.9700e-003	0.2980	0.1052	0.4031	0.1247	0.0980	0.2227	0.0000	456.5168	456.5168	0.0627	0.0000	458.0843
2020	0.7570	2.4424	2.2099	3.9700e-003	0.0489	0.1344	0.1832	0.0132	0.1262	0.1394	0.0000	346.2956	346.2956	0.0726	0.0000	348.1110
Maximum	**0.7570**	**2.7367**	**2.2099**	**4.9700e-003**	**0.2980**	**0.1344**	**0.4031**	**0.1247**	**0.1262**	**0.2227**	**0.0000**	**456.5168**	**456.5168**	**0.0726**	**0.0000**	**458.0843**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2019	0.2265	2.7367	1.5605	4.9700e-003	0.2980	0.1052	0.4031	0.1247	0.0980	0.2227	0.0000	456.5166	456.5166	0.0627	0.0000	458.0840
2020	0.7570	2.4424	2.2099	3.9700e-003	0.0489	0.1344	0.1832	0.0132	0.1262	0.1394	0.0000	346.2952	346.2952	0.0726	0.0000	348.1106
Maximum	**0.7570**	**2.7367**	**2.2099**	**4.9700e-003**	**0.2980**	**0.1344**	**0.4031**	**0.1247**	**0.1262**	**0.2227**	**0.0000**	**456.5166**	**456.5166**	**0.0726**	**0.0000**	**458.0840**

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

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
1	**8-1-2019**	**10-31-2019**	2.1048	2.1048
2	**11-1-2019**	**1-31-2020**	1.2236	1.2236
3	**2-1-2020**	**4-30-2020**	1.1221	1.1221
4	**5-1-2020**	**7-31-2020**	1.1090	1.1090
5	**8-1-2020**	**9-30-2020**	0.5507	0.5507
		Highest	2.1048	2.1048

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.3646	6.5500e-003	0.5665	3.0000e-005		3.1100e-003	3.1100e-003		3.1100e-003	3.1100e-003	0.0000	0.9225	0.9225	9.0000e-004	0.0000	0.9450
Energy	4.9600e-003	0.0424	0.0180	2.7000e-004		3.4300e-003	3.4300e-003		3.4300e-003	3.4300e-003	0.0000	100.4951	100.4951	5.8000e-003	1.9000e-003	101.2076
Mobile	0.0954	0.6698	1.1210	3.9900e-003	0.2875	4.3900e-003	0.2919	0.0773	4.1400e-003	0.0815	0.0000	366.5164	366.5164	0.0150	0.0000	366.8924
Waste						0.0000	0.0000		0.0000	0.0000	7.0966	0.0000	7.0966	0.4194	0.0000	17.5814
Water						0.0000	0.0000		0.0000	0.0000	1.5710	5.2526	6.8235	0.1619	3.9100e-003	12.0357
Total	**0.4650**	**0.7187**	**1.7056**	**4.2900e-003**	**0.2875**	**0.0109**	**0.2984**	**0.0773**	**0.0107**	**0.0880**	**8.6675**	**473.1865**	**481.8540**	**0.6030**	**5.8100e-003**	**498.6621**

2.2 Overall Operational

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.3646	6.5500e-003	0.5665	3.0000e-005		3.1100e-003	3.1100e-003		3.1100e-003	3.1100e-003	0.0000	0.9225	0.9225	9.0000e-004	0.0000	0.9450
Energy	4.9600e-003	0.0424	0.0180	2.7000e-004		3.4300e-003	3.4300e-003		3.4300e-003	3.4300e-003	0.0000	100.4951	100.4951	5.8000e-003	1.9000e-003	101.2076
Mobile	0.0954	0.6698	1.1210	3.9900e-003	0.2875	4.3900e-003	0.2919	0.0773	4.1400e-003	0.0815	0.0000	366.5164	366.5164	0.0150	0.0000	366.8924
Waste						0.0000	0.0000		0.0000	0.0000	7.0966	0.0000	7.0966	0.4194	0.0000	17.5814
Water						0.0000	0.0000		0.0000	0.0000	1.5710	5.2526	6.8235	0.1619	3.9100e-003	12.0357
Total	**0.4650**	**0.7187**	**1.7056**	**4.2900e-003**	**0.2875**	**0.0109**	**0.2984**	**0.0773**	**0.0107**	**0.0880**	**8.6675**	**473.1865**	**481.8540**	**0.6030**	**5.8100e-003**	**498.6621**

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

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	8/1/2019	9/9/2019	5	28	
2	Grading	Grading	9/10/2019	10/16/2019	5	27	
3	Building Construction	Building Construction	10/17/2019	7/22/2020	5	200	
4	Paving	Paving	7/23/2020	8/10/2020	5	13	
5	Architectural Coating	Architectural Coating	8/11/2020	8/27/2020	5	13	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 75

Acres of Paving: 0.87

Residential Indoor: 153,900; Residential Outdoor: 51,300; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 2,271 (Architectural Coating – sqft)

OffRoad Equipment

Huntington Senior Apartments - Placer-Sacramento County, Annual

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation	Rubber Tired Dozers	3	2.90	247	0.40
Site Preparation	Tractors/Loaders/Backhoes	4	2.90	97	0.37
Grading	Excavators	2	8.80	158	0.38
Grading	Graders	1	8.80	187	0.41
Grading	Rubber Tired Dozers	1	8.80	247	0.40
Grading	Scrapers	2	8.80	367	0.48
Grading	Tractors/Loaders/Backhoes	2	8.80	170	0.37
Building Construction	Cranes	1	11.00	231	0.29
Building Construction	Forklifts	3	12.00	89	0.20
Building Construction	Generator Sets	1	12.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	3	11.00	97	0.37
Building Construction	Welders	1	12.00	46	0.45
Paving	Pavers	2	12.00	130	0.42
Paving	Paving Equipment	2	12.00	132	0.36
Paving	Rollers	2	12.00	80	0.38
Architectural Coating	Air Compressors	1	9.00	78	0.48

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	7	18.00	0.00	2,556.00	10.80	7.30	50.00	LD_Mix	HDT_Mix	HHDT
Grading	8	20.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	71.00	14.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	14.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Site Preparation - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0934	0.0000	0.0934	0.0507	0.0000	0.0507	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0220	0.2313	0.1120	1.9000e-004		0.0121	0.0121		0.0112	0.0112	0.0000	17.3406	17.3406	5.4900e-003	0.0000	17.4778
Total	**0.0220**	**0.2313**	**0.1120**	**1.9000e-004**	**0.0934**	**0.0121**	**0.1056**	**0.0507**	**0.0112**	**0.0618**	**0.0000**	**17.3406**	**17.3406**	**5.4900e-003**	**0.0000**	**17.4778**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0236	0.7424	0.1270	2.3700e-003	0.0537	3.8000e-003	0.0575	0.0148	3.6400e-003	0.0184	0.0000	225.3632	225.3632	4.2000e-003	0.0000	225.4682
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	9.5000e-004	6.9000e-004	7.3000e-003	2.0000e-005	1.9800e-003	1.0000e-005	1.9900e-003	5.3000e-004	1.0000e-005	5.4000e-004	0.0000	1.7644	1.7644	5.0000e-005	0.0000	1.7657
Total	**0.0245**	**0.7431**	**0.1343**	**2.3900e-003**	**0.0557**	**3.8100e-003**	**0.0595**	**0.0153**	**3.6500e-003**	**0.0190**	**0.0000**	**227.1276**	**227.1276**	**4.2500e-003**	**0.0000**	**227.2338**

3.2 Site Preparation - 2019

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0934	0.0000	0.0934	0.0507	0.0000	0.0507	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0220	0.2313	0.1120	1.9000e-004		0.0121	0.0121		0.0112	0.0112	0.0000	17.3406	17.3406	5.4900e-003	0.0000	17.4778
Total	**0.0220**	**0.2313**	**0.1120**	**1.9000e-004**	**0.0934**	**0.0121**	**0.1056**	**0.0507**	**0.0112**	**0.0618**	**0.0000**	**17.3406**	**17.3406**	**5.4900e-003**	**0.0000**	**17.4778**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0236	0.7424	0.1270	2.3700e-003	0.0537	3.8000e-003	0.0575	0.0148	3.6400e-003	0.0184	0.0000	225.3632	225.3632	4.2000e-003	0.0000	225.4682
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	9.5000e-004	6.9000e-004	7.3000e-003	2.0000e-005	1.9800e-003	1.0000e-005	1.9900e-003	5.3000e-004	1.0000e-005	5.4000e-004	0.0000	1.7644	1.7644	5.0000e-005	0.0000	1.7657
Total	**0.0245**	**0.7431**	**0.1343**	**2.3900e-003**	**0.0557**	**3.8100e-003**	**0.0595**	**0.0153**	**3.6500e-003**	**0.0190**	**0.0000**	**227.1276**	**227.1276**	**4.2500e-003**	**0.0000**	**227.2338**

3.3 Grading - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.1292	0.0000	0.1292	0.0535	0.0000	0.0535	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0724	0.8319	0.5301	9.9000e-004		0.0354	0.0354		0.0325	0.0325	0.0000	88.7152	88.7152	0.0281	0.0000	89.4169
Total	**0.0724**	**0.8319**	**0.5301**	**9.9000e-004**	**0.1292**	**0.0354**	**0.1646**	**0.0535**	**0.0325**	**0.0860**	**0.0000**	**88.7152**	**88.7152**	**0.0281**	**0.0000**	**89.4169**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.0200e-003	7.4000e-004	7.8200e-003	2.0000e-005	2.1200e-003	1.0000e-005	2.1300e-003	5.6000e-004	1.0000e-005	5.8000e-004	0.0000	1.8905	1.8905	5.0000e-005	0.0000	1.8918
Total	**1.0200e-003**	**7.4000e-004**	**7.8200e-003**	**2.0000e-005**	**2.1200e-003**	**1.0000e-005**	**2.1300e-003**	**5.6000e-004**	**1.0000e-005**	**5.8000e-004**	**0.0000**	**1.8905**	**1.8905**	**5.0000e-005**	**0.0000**	**1.8918**

3.3 Grading - 2019

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.1292	0.0000	0.1292	0.0535	0.0000	0.0535	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0724	0.8319	0.5301	9.9000e-004		0.0354	0.0354		0.0325	0.0325	0.0000	88.7151	88.7151	0.0281	0.0000	89.4168
Total	**0.0724**	**0.8319**	**0.5301**	**9.9000e-004**	**0.1292**	**0.0354**	**0.1646**	**0.0535**	**0.0325**	**0.0860**	**0.0000**	**88.7151**	**88.7151**	**0.0281**	**0.0000**	**89.4168**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.0200e-003	7.4000e-004	7.8200e-003	2.0000e-005	2.1200e-003	1.0000e-005	2.1300e-003	5.6000e-004	1.0000e-005	5.8000e-004	0.0000	1.8905	1.8905	5.0000e-005	0.0000	1.8918
Total	**1.0200e-003**	**7.4000e-004**	**7.8200e-003**	**2.0000e-005**	**2.1200e-003**	**1.0000e-005**	**2.1300e-003**	**5.6000e-004**	**1.0000e-005**	**5.8000e-004**	**0.0000**	**1.8905**	**1.8905**	**5.0000e-005**	**0.0000**	**1.8918**

3.4 Building Construction - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0977	0.8757	0.7107	1.1200e-003		0.0535	0.0535		0.0502	0.0502	0.0000	97.5041	97.5041	0.0239	0.0000	98.1021
Total	**0.0977**	**0.8757**	**0.7107**	**1.1200e-003**		**0.0535**	**0.0535**		**0.0502**	**0.0502**	**0.0000**	**97.5041**	**97.5041**	**0.0239**	**0.0000**	**98.1021**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	1.6700e-003	0.0487	0.0101	1.1000e-004	2.4700e-003	2.9000e-004	2.7600e-003	7.1000e-004	2.8000e-004	1.0000e-003	0.0000	10.5166	10.5166	5.5000e-004	0.0000	10.5304
Worker	7.2500e-003	5.2500e-003	0.0556	1.5000e-004	0.0151	1.0000e-004	0.0152	4.0100e-003	9.0000e-005	4.1000e-003	0.0000	13.4223	13.4223	3.7000e-004	0.0000	13.4315
Total	**8.9200e-003**	**0.0540**	**0.0656**	**2.6000e-004**	**0.0175**	**3.9000e-004**	**0.0179**	**4.7200e-003**	**3.7000e-004**	**5.1000e-003**	**0.0000**	**23.9389**	**23.9389**	**9.2000e-004**	**0.0000**	**23.9620**

3.4 Building Construction - 2019

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0977	0.8757	0.7107	1.1200e-003		0.0535	0.0535		0.0502	0.0502	0.0000	97.5040	97.5040	0.0239	0.0000	98.1019
Total	**0.0977**	**0.8757**	**0.7107**	**1.1200e-003**		**0.0535**	**0.0535**		**0.0502**	**0.0502**	**0.0000**	**97.5040**	**97.5040**	**0.0239**	**0.0000**	**98.1019**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	1.6700e-003	0.0487	0.0101	1.1000e-004	2.4700e-003	2.9000e-004	2.7600e-003	7.1000e-004	2.8000e-004	1.0000e-003	0.0000	10.5166	10.5166	5.5000e-004	0.0000	10.5304
Worker	7.2500e-003	5.2500e-003	0.0556	1.5000e-004	0.0151	1.0000e-004	0.0152	4.0100e-003	9.0000e-005	4.1000e-003	0.0000	13.4223	13.4223	3.7000e-004	0.0000	13.4315
Total	**8.9200e-003**	**0.0540**	**0.0656**	**2.6000e-004**	**0.0175**	**3.9000e-004**	**0.0179**	**4.7200e-003**	**3.7000e-004**	**5.1000e-003**	**0.0000**	**23.9389**	**23.9389**	**9.2000e-004**	**0.0000**	**23.9620**

3.4 Building Construction - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.2371	2.1543	1.8858	3.0200e-003		0.1252	0.1252		0.1176	0.1176	0.0000	259.6605	259.6605	0.0638	0.0000	261.2562
Total	**0.2371**	**2.1543**	**1.8858**	**3.0200e-003**		**0.1252**	**0.1252**		**0.1176**	**0.1176**	**0.0000**	**259.6605**	**259.6605**	**0.0638**	**0.0000**	**261.2562**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	3.7600e-003	0.1216	0.0240	3.0000e-004	6.6700e-003	5.3000e-004	7.2000e-003	1.9300e-003	5.1000e-004	2.4400e-003	0.0000	28.2107	28.2107	1.3800e-003	0.0000	28.2453
Worker	0.0180	0.0126	0.1345	3.9000e-004	0.0407	2.7000e-004	0.0410	0.0108	2.5000e-004	0.0111	0.0000	35.1298	35.1298	8.7000e-004	0.0000	35.1515
Total	**0.0217**	**0.1341**	**0.1585**	**6.9000e-004**	**0.0474**	**8.0000e-004**	**0.0482**	**0.0128**	**7.6000e-004**	**0.0135**	**0.0000**	**63.3406**	**63.3406**	**2.2500e-003**	**0.0000**	**63.3967**

3.4 Building Construction - 2020

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.2371	2.1543	1.8858	3.0200e-003		0.1252	0.1252		0.1176	0.1176	0.0000	259.6601	259.6601	0.0638	0.0000	261.2559
Total	**0.2371**	**2.1543**	**1.8858**	**3.0200e-003**		**0.1252**	**0.1252**		**0.1176**	**0.1176**	**0.0000**	**259.6601**	**259.6601**	**0.0638**	**0.0000**	**261.2559**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	3.7600e-003	0.1216	0.0240	3.0000e-004	6.6700e-003	5.3000e-004	7.2000e-003	1.9300e-003	5.1000e-004	2.4400e-003	0.0000	28.2107	28.2107	1.3800e-003	0.0000	28.2453
Worker	0.0180	0.0126	0.1345	3.9000e-004	0.0407	2.7000e-004	0.0410	0.0108	2.5000e-004	0.0111	0.0000	35.1298	35.1298	8.7000e-004	0.0000	35.1515
Total	**0.0217**	**0.1341**	**0.1585**	**6.9000e-004**	**0.0474**	**8.0000e-004**	**0.0482**	**0.0128**	**7.6000e-004**	**0.0135**	**0.0000**	**63.3406**	**63.3406**	**2.2500e-003**	**0.0000**	**63.3967**

3.5 Paving - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0132	0.1371	0.1429	2.2000e-004		7.3400e-003	7.3400e-003		6.7500e-003	6.7500e-003	0.0000	19.5275	19.5275	6.3200e-003	0.0000	19.6854
Paving	1.1400e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0144**	**0.1371**	**0.1429**	**2.2000e-004**		**7.3400e-003**	**7.3400e-003**		**6.7500e-003**	**6.7500e-003**	**0.0000**	**19.5275**	**19.5275**	**6.3200e-003**	**0.0000**	**19.6854**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.4000e-004	2.4000e-004	2.5300e-003	1.0000e-005	7.7000e-004	1.0000e-005	7.7000e-004	2.0000e-004	0.0000	2.1000e-004	0.0000	0.6608	0.6608	2.0000e-005	0.0000	0.6613
Total	**3.4000e-004**	**2.4000e-004**	**2.5300e-003**	**1.0000e-005**	**7.7000e-004**	**1.0000e-005**	**7.7000e-004**	**2.0000e-004**	**0.0000**	**2.1000e-004**	**0.0000**	**0.6608**	**0.6608**	**2.0000e-005**	**0.0000**	**0.6613**

3.5 Paving - 2020

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0132	0.1371	0.1429	2.2000e-004		7.3400e-003	7.3400e-003		6.7500e-003	6.7500e-003	0.0000	19.5275	19.5275	6.3200e-003	0.0000	19.6854
Paving	1.1400e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0144**	**0.1371**	**0.1429**	**2.2000e-004**		**7.3400e-003**	**7.3400e-003**		**6.7500e-003**	**6.7500e-003**	**0.0000**	**19.5275**	**19.5275**	**6.3200e-003**	**0.0000**	**19.6854**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.4000e-004	2.4000e-004	2.5300e-003	1.0000e-005	7.7000e-004	1.0000e-005	7.7000e-004	2.0000e-004	0.0000	2.1000e-004	0.0000	0.6608	0.6608	2.0000e-005	0.0000	0.6613
Total	**3.4000e-004**	**2.4000e-004**	**2.5300e-003**	**1.0000e-005**	**7.7000e-004**	**1.0000e-005**	**7.7000e-004**	**2.0000e-004**	**0.0000**	**2.1000e-004**	**0.0000**	**0.6608**	**0.6608**	**2.0000e-005**	**0.0000**	**0.6613**

3.6 Architectural Coating - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.4808					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	2.3600e-003	0.0164	0.0179	3.0000e-005		1.0800e-003	1.0800e-003		1.0800e-003	1.0800e-003	0.0000	2.4894	2.4894	1.9000e-004	0.0000	2.4942
Total	**0.4832**	**0.0164**	**0.0179**	**3.0000e-005**		**1.0800e-003**	**1.0800e-003**		**1.0800e-003**	**1.0800e-003**	**0.0000**	**2.4894**	**2.4894**	**1.9000e-004**	**0.0000**	**2.4942**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.2000e-004	2.2000e-004	2.3600e-003	1.0000e-005	7.1000e-004	0.0000	7.2000e-004	1.9000e-004	0.0000	1.9000e-004	0.0000	0.6168	0.6168	2.0000e-005	0.0000	0.6172
Total	**3.2000e-004**	**2.2000e-004**	**2.3600e-003**	**1.0000e-005**	**7.1000e-004**	**0.0000**	**7.2000e-004**	**1.9000e-004**	**0.0000**	**1.9000e-004**	**0.0000**	**0.6168**	**0.6168**	**2.0000e-005**	**0.0000**	**0.6172**

3.6 Architectural Coating - 2020

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.4808					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	2.3600e-003	0.0164	0.0179	3.0000e-005		1.0800e-003	1.0800e-003		1.0800e-003	1.0800e-003	0.0000	2.4894	2.4894	1.9000e-004	0.0000	2.4942
Total	**0.4832**	**0.0164**	**0.0179**	**3.0000e-005**		**1.0800e-003**	**1.0800e-003**		**1.0800e-003**	**1.0800e-003**	**0.0000**	**2.4894**	**2.4894**	**1.9000e-004**	**0.0000**	**2.4942**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.2000e-004	2.2000e-004	2.3600e-003	1.0000e-005	7.1000e-004	0.0000	7.2000e-004	1.9000e-004	0.0000	1.9000e-004	0.0000	0.6168	0.6168	2.0000e-005	0.0000	0.6172
Total	**3.2000e-004**	**2.2000e-004**	**2.3600e-003**	**1.0000e-005**	**7.1000e-004**	**0.0000**	**7.2000e-004**	**1.9000e-004**	**0.0000**	**1.9000e-004**	**0.0000**	**0.6168**	**0.6168**	**2.0000e-005**	**0.0000**	**0.6172**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.0954	0.6698	1.1210	3.9900e-003	0.2875	4.3900e-003	0.2919	0.0773	4.1400e-003	0.0815	0.0000	366.5164	366.5164	0.0150	0.0000	366.8924
Unmitigated	0.0954	0.6698	1.1210	3.9900e-003	0.2875	4.3900e-003	0.2919	0.0773	4.1400e-003	0.0815	0.0000	366.5164	366.5164	0.0150	0.0000	366.8924

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Parking Lot	0.00	0.00	0.00		
Retirement Community	281.20	245.48	238.64	773,476	773,476
Total	281.20	245.48	238.64	773,476	773,476

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Parking Lot	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0
Retirement Community	10.80	7.30	7.50	42.60	21.00	36.40	86	11	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Parking Lot	0.489257	0.041257	0.220156	0.132626	0.025790	0.006586	0.027831	0.045583	0.001467	0.001229	0.006102	0.000783	0.001333
Retirement Community	0.489257	0.041257	0.220156	0.132626	0.025790	0.006586	0.027831	0.045583	0.001467	0.001229	0.006102	0.000783	0.001333

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	51.4269	51.4269	4.8600e-003	1.0100e-003	51.8479
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	51.4269	51.4269	4.8600e-003	1.0100e-003	51.8479
NaturalGas Mitigated	4.9600e-003	0.0424	0.0180	2.7000e-004		3.4300e-003	3.4300e-003		3.4300e-003	3.4300e-003	0.0000	49.0682	49.0682	9.4000e-004	9.0000e-004	49.3598
NaturalGas Unmitigated	4.9600e-003	0.0424	0.0180	2.7000e-004		3.4300e-003	3.4300e-003		3.4300e-003	3.4300e-003	0.0000	49.0682	49.0682	9.4000e-004	9.0000e-004	49.3598

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Retirement Community	919503	4.9600e-003	0.0424	0.0180	2.7000e-004		3.4300e-003	3.4300e-003		3.4300e-003	3.4300e-003	0.0000	49.0682	49.0682	9.4000e-004	9.0000e-004	49.3598
Total		**4.9600e-003**	**0.0424**	**0.0180**	**2.7000e-004**		**3.4300e-003**	**3.4300e-003**		**3.4300e-003**	**3.4300e-003**	**0.0000**	**49.0682**	**49.0682**	**9.4000e-004**	**9.0000e-004**	**49.3598**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Retirement Community	919503	4.9600e-003	0.0424	0.0180	2.7000e-004		3.4300e-003	3.4300e-003		3.4300e-003	3.4300e-003	0.0000	49.0682	49.0682	9.4000e-004	9.0000e-004	49.3598
Total		**4.9600e-003**	**0.0424**	**0.0180**	**2.7000e-004**		**3.4300e-003**	**3.4300e-003**		**3.4300e-003**	**3.4300e-003**	**0.0000**	**49.0682**	**49.0682**	**9.4000e-004**	**9.0000e-004**	**49.3598**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Parking Lot	13247.5	1.8448	1.7000e-004	4.0000e-005	1.8599
Retirement Community	356058	49.5822	4.6800e-003	9.7000e-004	49.9880
Total		**51.4269**	**4.8500e-003**	**1.0100e-003**	**51.8479**

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Parking Lot	13247.5	1.8448	1.7000e-004	4.0000e-005	1.8599
Retirement Community	356058	49.5822	4.6800e-003	9.7000e-004	49.9880
Total		**51.4269**	**4.8500e-003**	**1.0100e-003**	**51.8479**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.3646	6.5500e-003	0.5665	3.0000e-005		3.1100e-003	3.1100e-003		3.1100e-003	3.1100e-003	0.0000	0.9225	0.9225	9.0000e-004	0.0000	0.9450
Unmitigated	0.3646	6.5500e-003	0.5665	3.0000e-005		3.1100e-003	3.1100e-003		3.1100e-003	3.1100e-003	0.0000	0.9225	0.9225	9.0000e-004	0.0000	0.9450

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0481					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.2993					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0173	6.5500e-003	0.5665	3.0000e-005		3.1100e-003	3.1100e-003		3.1100e-003	3.1100e-003	0.0000	0.9225	0.9225	9.0000e-004	0.0000	0.9450
Total	**0.3646**	**6.5500e-003**	**0.5665**	**3.0000e-005**		**3.1100e-003**	**3.1100e-003**		**3.1100e-003**	**3.1100e-003**	**0.0000**	**0.9225**	**0.9225**	**9.0000e-004**	**0.0000**	**0.9450**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0481					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.2993					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0173	6.5500e-003	0.5665	3.0000e-005		3.1100e-003	3.1100e-003		3.1100e-003	3.1100e-003	0.0000	0.9225	0.9225	9.0000e-004	0.0000	0.9450
Total	**0.3646**	**6.5500e-003**	**0.5665**	**3.0000e-005**		**3.1100e-003**	**3.1100e-003**		**3.1100e-003**	**3.1100e-003**	**0.0000**	**0.9225**	**0.9225**	**9.0000e-004**	**0.0000**	**0.9450**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	6.8235	0.1619	3.9100e-003	12.0357
Unmitigated	6.8235	0.1619	3.9100e-003	12.0357

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
Retirement Community	4.95171 / 3.12173	6.8235	0.1619	3.9100e-003	12.0357
Total		**6.8235**	**0.1619**	**3.9100e-003**	**12.0357**

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
Retirement Community	4.95171 / 3.12173	6.8235	0.1619	3.9100e-003	12.0357
Total		**6.8235**	**0.1619**	**3.9100e-003**	**12.0357**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	7.0966	0.4194	0.0000	17.5814
Unmitigated	7.0966	0.4194	0.0000	17.5814

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Retirement Community	34.96	7.0966	0.4194	0.0000	17.5814
Total		**7.0966**	**0.4194**	**0.0000**	**17.5814**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Retirement Community	34.96	7.0966	0.4194	0.0000	17.5814
Total		**7.0966**	**0.4194**	**0.0000**	**17.5814**

9.0 Operational Offroad

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

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

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

Boilers

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

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

CalEEMod Model Output File
Daily Summer Period

Huntington Senior Apartments

Placer-Sacramento County, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Parking Lot	37.85	1000sqft	0.87	37,850.00	0
Retirement Community	76.00	Dwelling Unit	15.20	76,000.00	217

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	74
Climate Zone	2			**Operational Year**	2020
Utility Company	Roseville Electric				
CO2 Intensity (lb/MWhr)	307	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Huntington Senior Apartments - Placer-Sacramento County, Summer

Project Characteristics - PG&E supplied CO2 intensity factor for 2019 307 lb/MWh (per 2015)

Land Use - E-mail message per Foothill Associates 19 Feb 2018

Construction Phase - Projected schedule 12 months. Adjusted default schedule by 2/3

Off-road Equipment - Hours adjusted for new construction phase schedule

Off-road Equipment - Hours adjusted for new construction phase schedule

Off-road Equipment - Hours adjusted for new construction phase schedule (8.8 hr/day). City-required notation of specialized equipment 966C Caterpillar front-end loader 170 HP

Off-road Equipment - Hours adjusted for new construction phase schedule

Off-road Equipment - Hours adjusted for new construction phase schedule extended for soil export (2.9 hr/day)

Trips and VMT - Hauling trips incl soil export. Trip length extended per 1/30/19 E-mail message from Foothill Associates. 24 CY per truck per 2/19/18 E-mail message from Foothill Associates.

Grading - Per Foothill Associates E-mail message 2 March 2018

Architectural Coating -

Vehicle Trips - ITE Trip Generation Manual 10th Edition rates used (weekday = 3.7, Saturday = 3.23, Sunday = 3.14)

Vehicle Emission Factors -

Vehicle Emission Factors -

Vehicle Emission Factors -

Woodstoves - No fireplaces in project

Area Coating -

Energy Use -

Area Mitigation -

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	10.00	28.00
tblConstructionPhase	NumDays	30.00	27.00
tblConstructionPhase	NumDays	300.00	200.00
tblConstructionPhase	NumDays	20.00	13.00
tblConstructionPhase	NumDays	20.00	13.00

tblConstructionPhase	PhaseEndDate	8/14/2019	9/9/2019
tblConstructionPhase	PhaseEndDate	9/25/2019	10/16/2019
tblConstructionPhase	PhaseEndDate	11/18/2020	7/22/2020
tblConstructionPhase	PhaseEndDate	12/16/2020	8/10/2020
tblConstructionPhase	PhaseEndDate	1/13/2021	8/27/2020
tblConstructionPhase	PhaseStartDate	8/15/2019	9/10/2019
tblConstructionPhase	PhaseStartDate	9/26/2019	10/17/2019
tblConstructionPhase	PhaseStartDate	11/19/2020	7/23/2020
tblConstructionPhase	PhaseStartDate	12/17/2020	8/11/2020
tblFireplaces	FireplaceDayYear	82.00	0.00
tblFireplaces	FireplaceHourDay	3.00	0.00
tblFireplaces	FireplaceWoodMass	3,078.40	0.00
tblFireplaces	NumberGas	41.80	0.00
tblFireplaces	NumberNoFireplace	7.60	76.00
tblFireplaces	NumberWood	26.60	0.00
tblGrading	AcresOfGrading	74.25	75.00
tblGrading	MaterialExported	0.00	30,672.00
tblOffRoadEquipment	HorsePower	97.00	170.00
tblOffRoadEquipment	UsageHours	8.00	2.90
tblOffRoadEquipment	UsageHours	8.00	2.90
tblOffRoadEquipment	UsageHours	8.00	8.80
tblOffRoadEquipment	UsageHours	8.00	8.80
tblOffRoadEquipment	UsageHours	8.00	8.80
tblOffRoadEquipment	UsageHours	8.00	8.80
tblOffRoadEquipment	UsageHours	8.00	8.80
tblOffRoadEquipment	UsageHours	7.00	11.00
tblOffRoadEquipment	UsageHours	8.00	12.00

tblOffRoadEquipment	UsageHours	8.00	12.00
tblOffRoadEquipment	UsageHours	7.00	11.00
tblOffRoadEquipment	UsageHours	8.00	12.00
tblOffRoadEquipment	UsageHours	8.00	12.00
tblOffRoadEquipment	UsageHours	8.00	12.00
tblOffRoadEquipment	UsageHours	8.00	12.00
tblOffRoadEquipment	UsageHours	6.00	9.00
tblProjectCharacteristics	CO2IntensityFactor	793.8	307
tblTripsAndVMT	HaulingTripLength	20.00	50.00
tblTripsAndVMT	HaulingTripNumber	3,834.00	2,556.00
tblVehicleTrips	ST_TR	2.03	3.23
tblVehicleTrips	SU_TR	1.95	3.14
tblVehicleTrips	WD_TR	2.40	3.70
tblWoodstoves	WoodstoveDayYear	82.00	0.00
tblWoodstoves	WoodstoveWoodMass	3,019.20	0.00

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2019	5.4455	67.5244	39.9189	0.1854	10.8104	2.6206	12.3550	4.7513	2.4110	6.4139	0.0000	19,338.9004	19,338.9004	2.2965	0.0000	19,357.7188
2020	74.3890	31.3027	28.2146	0.0513	0.6781	1.7253	2.4034	0.1820	1.6215	1.8036	0.0000	4,934.2379	4,934.2379	1.0741	0.0000	4,959.1826
Maximum	**74.3890**	**67.5244**	**39.9189**	**0.1854**	**10.8104**	**2.6206**	**12.3550**	**4.7513**	**2.4110**	**6.4139**	**0.0000**	**19,338.9004**	**19,338.9004**	**2.2965**	**0.0000**	**19,357.7188**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2019	5.4455	67.5244	39.9189	0.1854	10.8104	2.6206	12.3550	4.7513	2.4110	6.4139	0.0000	19,338.9004	19,338.9004	2.2965	0.0000	19,357.7188
2020	74.3890	31.3027	28.2146	0.0513	0.6781	1.7253	2.4034	0.1820	1.6215	1.8036	0.0000	4,934.2379	4,934.2379	1.0741	0.0000	4,959.1826
Maximum	**74.3890**	**67.5244**	**39.9189**	**0.1854**	**10.8104**	**2.6206**	**12.3550**	**4.7513**	**2.4110**	**6.4139**	**0.0000**	**19,338.9004**	**19,338.9004**	**2.2965**	**0.0000**	**19,357.7188**

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

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	2.0952	0.0728	6.2948	3.3000e-004		0.0346	0.0346		0.0346	0.0346	0.0000	11.2983	11.2983	0.0110	0.0000	11.5740
Energy	0.0272	0.2322	0.0988	1.4800e-003		0.0188	0.0188		0.0188	0.0188		296.3748	296.3748	5.6800e-003	5.4300e-003	298.1360
Mobile	0.6500	3.7065	6.8772	0.0243	1.7193	0.0250	1.7443	0.4608	0.0236	0.4843		2,463.4684	2,463.4684	0.0950		2,465.8430
Total	**2.7723**	**4.0115**	**13.2709**	**0.0262**	**1.7193**	**0.0784**	**1.7977**	**0.4608**	**0.0770**	**0.5377**	**0.0000**	**2,771.1414**	**2,771.1414**	**0.1117**	**5.4300e-003**	**2,775.5530**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	2.0952	0.0728	6.2948	3.3000e-004		0.0346	0.0346		0.0346	0.0346	0.0000	11.2983	11.2983	0.0110	0.0000	11.5740
Energy	0.0272	0.2322	0.0988	1.4800e-003		0.0188	0.0188		0.0188	0.0188		296.3748	296.3748	5.6800e-003	5.4300e-003	298.1360
Mobile	0.6500	3.7065	6.8772	0.0243	1.7193	0.0250	1.7443	0.4608	0.0236	0.4843		2,463.4684	2,463.4684	0.0950		2,465.8430
Total	**2.7723**	**4.0115**	**13.2709**	**0.0262**	**1.7193**	**0.0784**	**1.7977**	**0.4608**	**0.0770**	**0.5377**	**0.0000**	**2,771.1414**	**2,771.1414**	**0.1117**	**5.4300e-003**	**2,775.5530**

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

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	8/1/2019	9/9/2019	5	28	
2	Grading	Grading	9/10/2019	10/16/2019	5	27	
3	Building Construction	Building Construction	10/17/2019	7/22/2020	5	200	
4	Paving	Paving	7/23/2020	8/10/2020	5	13	
5	Architectural Coating	Architectural Coating	8/11/2020	8/27/2020	5	13	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 75

Acres of Paving: 0.87

Residential Indoor: 153,900; Residential Outdoor: 51,300; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 2,271 (Architectural Coating – sqft)

OffRoad Equipment

Huntington Senior Apartments - Placer-Sacramento County, Summer

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation	Rubber Tired Dozers	3	2.90	247	0.40
Site Preparation	Tractors/Loaders/Backhoes	4	2.90	97	0.37
Grading	Excavators	2	8.80	158	0.38
Grading	Graders	1	8.80	187	0.41
Grading	Rubber Tired Dozers	1	8.80	247	0.40
Grading	Scrapers	2	8.80	367	0.48
Grading	Tractors/Loaders/Backhoes	2	8.80	170	0.37
Building Construction	Cranes	1	11.00	231	0.29
Building Construction	Forklifts	3	12.00	89	0.20
Building Construction	Generator Sets	1	12.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	3	11.00	97	0.37
Building Construction	Welders	1	12.00	46	0.45
Paving	Pavers	2	12.00	130	0.42
Paving	Paving Equipment	2	12.00	132	0.36
Paving	Rollers	2	12.00	80	0.38
Architectural Coating	Air Compressors	1	9.00	78	0.48

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	7	18.00	0.00	2,556.00	10.80	7.30	50.00	LD_Mix	HDT_Mix	HHDT
Grading	8	20.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	71.00	14.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	14.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Site Preparation - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					6.6729	0.0000	6.6729	3.6186	0.0000	3.6186			0.0000			0.0000
Off-Road	1.5714	16.5201	7.9978	0.0138		0.8665	0.8665		0.7972	0.7972		1,365.3392	1,365.3392	0.4320		1,376.1386
Total	**1.5714**	**16.5201**	**7.9978**	**0.0138**	**6.6729**	**0.8665**	**7.5394**	**3.6186**	**0.7972**	**4.4158**		**1,365.3392**	**1,365.3392**	**0.4320**		**1,376.1386**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	1.6730	50.9609	8.8609	0.1701	3.9896	0.2704	4.2600	1.0935	0.2587	1.3521		17,821.3417	17,821.3417	0.3166		17,829.2573
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0763	0.0434	0.5866	1.5300e-003	0.1479	9.6000e-004	0.1488	0.0392	8.8000e-004	0.0401		152.2195	152.2195	4.1400e-003		152.3229
Total	**1.7493**	**51.0043**	**9.4475**	**0.1716**	**4.1375**	**0.2714**	**4.4088**	**1.1327**	**0.2596**	**1.3922**		**17,973.5612**	**17,973.5612**	**0.3208**		**17,981.5802**

3.2 Site Preparation - 2019

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					6.6729	0.0000	6.6729	3.6186	0.0000	3.6186			0.0000			0.0000
Off-Road	1.5714	16.5201	7.9978	0.0138		0.8665	0.8665		0.7972	0.7972	0.0000	1,365.3392	1,365.3392	0.4320		1,376.1386
Total	**1.5714**	**16.5201**	**7.9978**	**0.0138**	**6.6729**	**0.8665**	**7.5394**	**3.6186**	**0.7972**	**4.4158**	**0.0000**	**1,365.3392**	**1,365.3392**	**0.4320**		**1,376.1386**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	1.6730	50.9609	8.8609	0.1701	3.9896	0.2704	4.2600	1.0935	0.2587	1.3521		17,821.3417	17,821.3417	0.3166		17,829.2573
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0763	0.0434	0.5866	1.5300e-003	0.1479	9.6000e-004	0.1488	0.0392	8.8000e-004	0.0401		152.2195	152.2195	4.1400e-003		152.3229
Total	**1.7493**	**51.0043**	**9.4475**	**0.1716**	**4.1375**	**0.2714**	**4.4088**	**1.1327**	**0.2596**	**1.3922**		**17,973.5612**	**17,973.5612**	**0.3208**		**17,981.5802**

3.3 Grading - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					9.5701	0.0000	9.5701	3.9593	0.0000	3.9593			0.0000			0.0000
Off-Road	5.3607	61.6249	39.2671	0.0732		2.6195	2.6195		2.4100	2.4100		7,243.8315	7,243.8315	2.2919		7,301.1283
Total	**5.3607**	**61.6249**	**39.2671**	**0.0732**	**9.5701**	**2.6195**	**12.1897**	**3.9593**	**2.4100**	**6.3693**		**7,243.8315**	**7,243.8315**	**2.2919**		**7,301.1283**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0848	0.0482	0.6518	1.7000e-003	0.1643	1.0700e-003	0.1654	0.0436	9.8000e-004	0.0446		169.1328	169.1328	4.6000e-003		169.2477
Total	**0.0848**	**0.0482**	**0.6518**	**1.7000e-003**	**0.1643**	**1.0700e-003**	**0.1654**	**0.0436**	**9.8000e-004**	**0.0446**		**169.1328**	**169.1328**	**4.6000e-003**		**169.2477**

3.3 Grading - 2019

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					9.5701	0.0000	9.5701	3.9593	0.0000	3.9593			0.0000			0.0000
Off-Road	5.3607	61.6249	39.2671	0.0732		2.6195	2.6195		2.4100	2.4100	0.0000	7,243.8315	7,243.8315	2.2919		7,301.1283
Total	**5.3607**	**61.6249**	**39.2671**	**0.0732**	**9.5701**	**2.6195**	**12.1897**	**3.9593**	**2.4100**	**6.3693**	**0.0000**	**7,243.8315**	**7,243.8315**	**2.2919**		**7,301.1283**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0848	0.0482	0.6518	1.7000e-003	0.1643	1.0700e-003	0.1654	0.0436	9.8000e-004	0.0446		169.1328	169.1328	4.6000e-003		169.2477
Total	**0.0848**	**0.0482**	**0.6518**	**1.7000e-003**	**0.1643**	**1.0700e-003**	**0.1654**	**0.0436**	**9.8000e-004**	**0.0446**		**169.1328**	**169.1328**	**4.6000e-003**		**169.2477**

3.4 Building Construction - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	3.6169	32.4319	26.3207	0.0413		1.9800	1.9800		1.8606	1.8606		3,980.7350	3,980.7350	0.9765		4,005.1485
Total	**3.6169**	**32.4319**	**26.3207**	**0.0413**		**1.9800**	**1.9800**		**1.8606**	**1.8606**		**3,980.7350**	**3,980.7350**	**0.9765**		**4,005.1485**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0607	1.7730	0.3406	4.1600e-003	0.0948	0.0108	0.1056	0.0273	0.0103	0.0376		435.4299	435.4299	0.0214		435.9644
Worker	0.3010	0.1712	2.3139	6.0300e-003	0.5833	3.7900e-003	0.5870	0.1547	3.4900e-003	0.1582		600.4214	600.4214	0.0163		600.8293
Total	**0.3616**	**1.9443**	**2.6545**	**0.0102**	**0.6781**	**0.0146**	**0.6927**	**0.1820**	**0.0138**	**0.1958**		**1,035.8513**	**1,035.8513**	**0.0377**		**1,036.7937**

3.4 Building Construction - 2019

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	3.6169	32.4319	26.3207	0.0413		1.9800	1.9800		1.8606	1.8606	0.0000	3,980.7350	3,980.7350	0.9765		4,005.1485
Total	**3.6169**	**32.4319**	**26.3207**	**0.0413**		**1.9800**	**1.9800**		**1.8606**	**1.8606**	**0.0000**	**3,980.7350**	**3,980.7350**	**0.9765**		**4,005.1485**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0607	1.7730	0.3406	4.1600e-003	0.0948	0.0108	0.1056	0.0273	0.0103	0.0376		435.4299	435.4299	0.0214		435.9644
Worker	0.3010	0.1712	2.3139	6.0300e-003	0.5833	3.7900e-003	0.5870	0.1547	3.4900e-003	0.1582		600.4214	600.4214	0.0163		600.8293
Total	**0.3616**	**1.9443**	**2.6545**	**0.0102**	**0.6781**	**0.0146**	**0.6927**	**0.1820**	**0.0138**	**0.1958**		**1,035.8513**	**1,035.8513**	**0.0377**		**1,036.7937**

3.4 Building Construction - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	3.2474	29.5107	25.8324	0.0413		1.7144	1.7144		1.6113	1.6113		3,920.9130	3,920.9130	0.9638		3,945.0085
Total	**3.2474**	**29.5107**	**25.8324**	**0.0413**		**1.7144**	**1.7144**		**1.6113**	**1.6113**		**3,920.9130**	**3,920.9130**	**0.9638**		**3,945.0085**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0503	1.6403	0.2987	4.1300e-003	0.0948	7.1900e-003	0.1020	0.0273	6.8800e-003	0.0342		432.0746	432.0746	0.0197		432.5669
Worker	0.2757	0.1516	2.0834	5.8400e-003	0.5833	3.7100e-003	0.5870	0.1547	3.4200e-003	0.1581		581.2503	581.2503	0.0143		581.6072
Total	**0.3261**	**1.7919**	**2.3822**	**9.9700e-003**	**0.6781**	**0.0109**	**0.6890**	**0.1820**	**0.0103**	**0.1923**		**1,013.3249**	**1,013.3249**	**0.0340**		**1,014.1741**

3.4 Building Construction - 2020

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	3.2474	29.5107	25.8324	0.0413		1.7144	1.7144		1.6113	1.6113	0.0000	3,920.9130	3,920.9130	0.9638		3,945.0085
Total	**3.2474**	**29.5107**	**25.8324**	**0.0413**		**1.7144**	**1.7144**		**1.6113**	**1.6113**	**0.0000**	**3,920.9130**	**3,920.9130**	**0.9638**		**3,945.0085**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0503	1.6403	0.2987	4.1300e-003	0.0948	7.1900e-003	0.1020	0.0273	6.8800e-003	0.0342		432.0746	432.0746	0.0197		432.5669
Worker	0.2757	0.1516	2.0834	5.8400e-003	0.5833	3.7100e-003	0.5870	0.1547	3.4200e-003	0.1581		581.2503	581.2503	0.0143		581.6072
Total	**0.3261**	**1.7919**	**2.3822**	**9.9700e-003**	**0.6781**	**0.0109**	**0.6890**	**0.1820**	**0.0103**	**0.1923**		**1,013.3249**	**1,013.3249**	**0.0340**		**1,014.1741**

3.5 Paving - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.0348	21.0984	21.9781	0.0342		1.1292	1.1292		1.0389	1.0389		3,311.6002	3,311.6002	1.0710		3,338.3761
Paving	0.1753					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**2.2102**	**21.0984**	**21.9781**	**0.0342**		**1.1292**	**1.1292**		**1.0389**	**1.0389**		**3,311.6002**	**3,311.6002**	**1.0710**		**3,338.3761**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0583	0.0320	0.4402	1.2300e-003	0.1232	7.8000e-004	0.1240	0.0327	7.2000e-004	0.0334		122.7994	122.7994	3.0200e-003		122.8748
Total	**0.0583**	**0.0320**	**0.4402**	**1.2300e-003**	**0.1232**	**7.8000e-004**	**0.1240**	**0.0327**	**7.2000e-004**	**0.0334**		**122.7994**	**122.7994**	**3.0200e-003**		**122.8748**

3.5 Paving - 2020

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.0348	21.0983	21.9781	0.0342		1.1292	1.1292		1.0389	1.0389	0.0000	3,311.6002	3,311.6002	1.0710		3,338.3761
Paving	0.1753					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**2.2102**	**21.0983**	**21.9781**	**0.0342**		**1.1292**	**1.1292**		**1.0389**	**1.0389**	**0.0000**	**3,311.6002**	**3,311.6002**	**1.0710**		**3,338.3761**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0583	0.0320	0.4402	1.2300e-003	0.1232	7.8000e-004	0.1240	0.0327	7.2000e-004	0.0334		122.7994	122.7994	3.0200e-003		122.8748
Total	**0.0583**	**0.0320**	**0.4402**	**1.2300e-003**	**0.1232**	**7.8000e-004**	**0.1240**	**0.0327**	**7.2000e-004**	**0.0334**		**122.7994**	**122.7994**	**3.0200e-003**		**122.8748**

3.6 Architectural Coating - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	73.9714					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.3633	2.5258	2.7471	4.4600e-003		0.1664	0.1664		0.1664	0.1664		422.1721	422.1721	0.0327		422.9892
Total	**74.3347**	**2.5258**	**2.7471**	**4.4600e-003**		**0.1664**	**0.1664**		**0.1664**	**0.1664**		**422.1721**	**422.1721**	**0.0327**		**422.9892**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0544	0.0299	0.4108	1.1500e-003	0.1150	7.3000e-004	0.1157	0.0305	6.7000e-004	0.0312		114.6127	114.6127	2.8100e-003		114.6831
Total	**0.0544**	**0.0299**	**0.4108**	**1.1500e-003**	**0.1150**	**7.3000e-004**	**0.1157**	**0.0305**	**6.7000e-004**	**0.0312**		**114.6127**	**114.6127**	**2.8100e-003**		**114.6831**

3.6 Architectural Coating - 2020

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	73.9714					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.3633	2.5258	2.7471	4.4600e-003		0.1664	0.1664		0.1664	0.1664	0.0000	422.1721	422.1721	0.0327		422.9892
Total	**74.3347**	**2.5258**	**2.7471**	**4.4600e-003**		**0.1664**	**0.1664**		**0.1664**	**0.1664**	**0.0000**	**422.1721**	**422.1721**	**0.0327**		**422.9892**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0544	0.0299	0.4108	1.1500e-003	0.1150	7.3000e-004	0.1157	0.0305	6.7000e-004	0.0312		114.6127	114.6127	2.8100e-003		114.6831
Total	**0.0544**	**0.0299**	**0.4108**	**1.1500e-003**	**0.1150**	**7.3000e-004**	**0.1157**	**0.0305**	**6.7000e-004**	**0.0312**		**114.6127**	**114.6127**	**2.8100e-003**		**114.6831**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.6500	3.7065	6.8772	0.0243	1.7193	0.0250	1.7443	0.4608	0.0236	0.4843		2,463.4684	2,463.4684	0.0950		2,465.8430
Unmitigated	0.6500	3.7065	6.8772	0.0243	1.7193	0.0250	1.7443	0.4608	0.0236	0.4843		2,463.4684	2,463.4684	0.0950		2,465.8430

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Parking Lot	0.00	0.00	0.00		
Retirement Community	281.20	245.48	238.64	773,476	773,476
Total	281.20	245.48	238.64	773,476	773,476

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Parking Lot	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0
Retirement Community	10.80	7.30	7.50	42.60	21.00	36.40	86	11	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Parking Lot	0.489257	0.041257	0.220156	0.132626	0.025790	0.006586	0.027831	0.045583	0.001467	0.001229	0.006102	0.000783	0.001333
Retirement Community	0.489257	0.041257	0.220156	0.132626	0.025790	0.006586	0.027831	0.045583	0.001467	0.001229	0.006102	0.000783	0.001333

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.0272	0.2322	0.0988	1.4800e-003		0.0188	0.0188		0.0188	0.0188		296.3748	296.3748	5.6800e-003	5.4300e-003	298.1360
NaturalGas Unmitigated	0.0272	0.2322	0.0988	1.4800e-003		0.0188	0.0188		0.0188	0.0188		296.3748	296.3748	5.6800e-003	5.4300e-003	298.1360

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Retirement Community	2519.19	0.0272	0.2322	0.0988	1.4800e-003		0.0188	0.0188		0.0188	0.0188		296.3748	296.3748	5.6800e-003	5.4300e-003	298.1360
Total		**0.0272**	**0.2322**	**0.0988**	**1.4800e-003**		**0.0188**	**0.0188**		**0.0188**	**0.0188**		**296.3748**	**296.3748**	**5.6800e-003**	**5.4300e-003**	**298.1360**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Retirement Community	2.51919	0.0272	0.2322	0.0988	1.4800e-003		0.0188	0.0188		0.0188	0.0188		296.3748	296.3748	5.6800e-003	5.4300e-003	298.1360
Total		**0.0272**	**0.2322**	**0.0988**	**1.4800e-003**		**0.0188**	**0.0188**		**0.0188**	**0.0188**		**296.3748**	**296.3748**	**5.6800e-003**	**5.4300e-003**	**298.1360**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	2.0952	0.0728	6.2948	3.3000e-004		0.0346	0.0346		0.0346	0.0346	0.0000	11.2983	11.2983	0.0110	0.0000	11.5740
Unmitigated	2.0952	0.0728	6.2948	3.3000e-004		0.0346	0.0346		0.0346	0.0346	0.0000	11.2983	11.2983	0.0110	0.0000	11.5740

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.2635					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	1.6398					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.1919	0.0728	6.2948	3.3000e-004		0.0346	0.0346		0.0346	0.0346		11.2983	11.2983	0.0110		11.5740
Total	**2.0952**	**0.0728**	**6.2948**	**3.3000e-004**		**0.0346**	**0.0346**		**0.0346**	**0.0346**	**0.0000**	**11.2983**	**11.2983**	**0.0110**	**0.0000**	**11.5740**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.2635					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	1.6398					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.1919	0.0728	6.2948	3.3000e-004		0.0346	0.0346		0.0346	0.0346		11.2983	11.2983	0.0110		11.5740
Total	**2.0952**	**0.0728**	**6.2948**	**3.3000e-004**		**0.0346**	**0.0346**		**0.0346**	**0.0346**	**0.0000**	**11.2983**	**11.2983**	**0.0110**	**0.0000**	**11.5740**

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

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

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

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

Boilers

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

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

CalEEMod Model Output File
Daily Winter Period

Huntington Senior Apartments

Placer-Sacramento County, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Parking Lot	37.85	1000sqft	0.87	37,850.00	0
Retirement Community	76.00	Dwelling Unit	15.20	76,000.00	217

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	74
Climate Zone	2			**Operational Year**	2020
Utility Company	Roseville Electric				
CO2 Intensity (lb/MWhr)	307	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Huntington Senior Apartments - Placer-Sacramento County, Winter

Project Characteristics - PG&E supplied CO2 intensity factor for 2019 307 lb/MWh (per 2015)

Land Use - E-mail message per Foothill Associates 19 Feb 2018

Construction Phase - Projected schedule 12 months. Adjusted default schedule by 2/3

Off-road Equipment - Hours adjusted for new construction phase schedule

Off-road Equipment - Hours adjusted for new construction phase schedule

Off-road Equipment - Hours adjusted for new construction phase schedule (8.8 hr/day). City-required notation of specialized equipment 966C Caterpillar front-end loader 170 HP

Off-road Equipment - Hours adjusted for new construction phase schedule

Off-road Equipment - Hours adjusted for new construction phase schedule extended for soil export (2.9 hr/day)

Trips and VMT - Hauling trips incl soil export. Trip length extended per 1/30/19 E-mail message from Foothill Associates. 24 CY per truck per 2/19/18 E-mail message from Foothill Associates.

Grading - Per Foothill Associates E-mail message 2 March 2018

Architectural Coating -

Vehicle Trips - ITE Trip Generation Manual 10th Edition rates used (weekday = 3.7, Saturday = 3.23, Sunday = 3.14)

Vehicle Emission Factors -

Vehicle Emission Factors -

Vehicle Emission Factors -

Woodstoves - No fireplaces in project

Area Coating -

Energy Use -

Area Mitigation -

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	10.00	28.00
tblConstructionPhase	NumDays	30.00	27.00
tblConstructionPhase	NumDays	300.00	200.00
tblConstructionPhase	NumDays	20.00	13.00
tblConstructionPhase	NumDays	20.00	13.00

tblConstructionPhase	PhaseEndDate	8/14/2019	9/9/2019
tblConstructionPhase	PhaseEndDate	9/25/2019	10/16/2019
tblConstructionPhase	PhaseEndDate	11/18/2020	7/22/2020
tblConstructionPhase	PhaseEndDate	12/16/2020	8/10/2020
tblConstructionPhase	PhaseEndDate	1/13/2021	8/27/2020
tblConstructionPhase	PhaseStartDate	8/15/2019	9/10/2019
tblConstructionPhase	PhaseStartDate	9/26/2019	10/17/2019
tblConstructionPhase	PhaseStartDate	11/19/2020	7/23/2020
tblConstructionPhase	PhaseStartDate	12/17/2020	8/11/2020
tblFireplaces	FireplaceDayYear	82.00	0.00
tblFireplaces	FireplaceHourDay	3.00	0.00
tblFireplaces	FireplaceWoodMass	3,078.40	0.00
tblFireplaces	NumberGas	41.80	0.00
tblFireplaces	NumberNoFireplace	7.60	76.00
tblFireplaces	NumberWood	26.60	0.00
tblGrading	AcresOfGrading	74.25	75.00
tblGrading	MaterialExported	0.00	30,672.00
tblOffRoadEquipment	HorsePower	97.00	170.00
tblOffRoadEquipment	UsageHours	8.00	2.90
tblOffRoadEquipment	UsageHours	8.00	2.90
tblOffRoadEquipment	UsageHours	8.00	8.80
tblOffRoadEquipment	UsageHours	8.00	8.80
tblOffRoadEquipment	UsageHours	8.00	8.80
tblOffRoadEquipment	UsageHours	8.00	8.80
tblOffRoadEquipment	UsageHours	8.00	8.80
tblOffRoadEquipment	UsageHours	7.00	11.00
tblOffRoadEquipment	UsageHours	8.00	12.00

tblOffRoadEquipment	UsageHours	8.00	12.00
tblOffRoadEquipment	UsageHours	7.00	11.00
tblOffRoadEquipment	UsageHours	8.00	12.00
tblOffRoadEquipment	UsageHours	8.00	12.00
tblOffRoadEquipment	UsageHours	8.00	12.00
tblOffRoadEquipment	UsageHours	8.00	12.00
tblOffRoadEquipment	UsageHours	6.00	9.00
tblProjectCharacteristics	CO2IntensityFactor	793.8	307
tblTripsAndVMT	HaulingTripLength	20.00	50.00
tblTripsAndVMT	HaulingTripNumber	3,834.00	2,556.00
tblVehicleTrips	ST_TR	2.03	3.23
tblVehicleTrips	SU_TR	1.95	3.14
tblVehicleTrips	WD_TR	2.40	3.70
tblWoodstoves	WoodstoveDayYear	82.00	0.00
tblWoodstoves	WoodstoveWoodMass	3,019.20	0.00

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2019	5.4427	69.9907	39.8558	0.1835	10.8104	2.6206	12.3550	4.7513	2.4110	6.4139	0.0000	19,138.8024	19,138.8024	2.2961	0.0000	19,158.4098
2020	74.3872	31.3580	28.0609	0.0505	0.6781	1.7255	2.4036	0.1820	1.6217	1.8037	0.0000	4,855.9618	4,855.9618	1.0738	0.0000	4,880.9384
Maximum	**74.3872**	**69.9907**	**39.8558**	**0.1835**	**10.8104**	**2.6206**	**12.3550**	**4.7513**	**2.4110**	**6.4139**	**0.0000**	**19,138.8024**	**19,138.8024**	**2.2961**	**0.0000**	**19,158.4098**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2019	5.4427	69.9907	39.8558	0.1835	10.8104	2.6206	12.3550	4.7513	2.4110	6.4139	0.0000	19,138.8024	19,138.8024	2.2961	0.0000	19,158.4098
2020	74.3872	31.3580	28.0609	0.0505	0.6781	1.7255	2.4036	0.1820	1.6217	1.8037	0.0000	4,855.9618	4,855.9618	1.0738	0.0000	4,880.9384
Maximum	**74.3872**	**69.9907**	**39.8558**	**0.1835**	**10.8104**	**2.6206**	**12.3550**	**4.7513**	**2.4110**	**6.4139**	**0.0000**	**19,138.8024**	**19,138.8024**	**2.2961**	**0.0000**	**19,158.4098**

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

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	2.0952	0.0728	6.2948	3.3000e-004		0.0346	0.0346		0.0346	0.0346	0.0000	11.2983	11.2983	0.0110	0.0000	11.5740
Energy	0.0272	0.2322	0.0988	1.4800e-003		0.0188	0.0188		0.0188	0.0188		296.3748	296.3748	5.6800e-003	5.4300e-003	298.1360
Mobile	0.5323	3.8839	6.6736	0.0224	1.7193	0.0253	1.7447	0.4608	0.0239	0.4847		2,263.9631	2,263.9631	0.0982		2,266.4187
Total	**2.6547**	**4.1889**	**13.0672**	**0.0242**	**1.7193**	**0.0787**	**1.7980**	**0.4608**	**0.0773**	**0.5381**	**0.0000**	**2,571.6362**	**2,571.6362**	**0.1149**	**5.4300e-003**	**2,576.1287**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	2.0952	0.0728	6.2948	3.3000e-004		0.0346	0.0346		0.0346	0.0346	0.0000	11.2983	11.2983	0.0110	0.0000	11.5740
Energy	0.0272	0.2322	0.0988	1.4800e-003		0.0188	0.0188		0.0188	0.0188		296.3748	296.3748	5.6800e-003	5.4300e-003	298.1360
Mobile	0.5323	3.8839	6.6736	0.0224	1.7193	0.0253	1.7447	0.4608	0.0239	0.4847		2,263.9631	2,263.9631	0.0982		2,266.4187
Total	**2.6547**	**4.1889**	**13.0672**	**0.0242**	**1.7193**	**0.0787**	**1.7980**	**0.4608**	**0.0773**	**0.5381**	**0.0000**	**2,571.6362**	**2,571.6362**	**0.1149**	**5.4300e-003**	**2,576.1287**

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

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	8/1/2019	9/9/2019	5	28	
2	Grading	Grading	9/10/2019	10/16/2019	5	27	
3	Building Construction	Building Construction	10/17/2019	7/22/2020	5	200	
4	Paving	Paving	7/23/2020	8/10/2020	5	13	
5	Architectural Coating	Architectural Coating	8/11/2020	8/27/2020	5	13	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 75

Acres of Paving: 0.87

Residential Indoor: 153,900; Residential Outdoor: 51,300; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 2,271 (Architectural Coating – sqft)

OffRoad Equipment

Huntington Senior Apartments - Placer-Sacramento County, Winter

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation	Rubber Tired Dozers	3	2.90	247	0.40
Site Preparation	Tractors/Loaders/Backhoes	4	2.90	97	0.37
Grading	Excavators	2	8.80	158	0.38
Grading	Graders	1	8.80	187	0.41
Grading	Rubber Tired Dozers	1	8.80	247	0.40
Grading	Scrapers	2	8.80	367	0.48
Grading	Tractors/Loaders/Backhoes	2	8.80	170	0.37
Building Construction	Cranes	1	11.00	231	0.29
Building Construction	Forklifts	3	12.00	89	0.20
Building Construction	Generator Sets	1	12.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	3	11.00	97	0.37
Building Construction	Welders	1	12.00	46	0.45
Paving	Pavers	2	12.00	130	0.42
Paving	Paving Equipment	2	12.00	132	0.36
Paving	Rollers	2	12.00	80	0.38
Architectural Coating	Air Compressors	1	9.00	78	0.48

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	7	18.00	0.00	2,556.00	10.80	7.30	50.00	LD_Mix	HDT_Mix	HHDT
Grading	8	20.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	71.00	14.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	14.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Site Preparation - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					6.6729	0.0000	6.6729	3.6186	0.0000	3.6186			0.0000			0.0000
Off-Road	1.5714	16.5201	7.9978	0.0138		0.8665	0.8665		0.7972	0.7972		1,365.3392	1,365.3392	0.4320		1,376.1386
Total	**1.5714**	**16.5201**	**7.9978**	**0.0138**	**6.6729**	**0.8665**	**7.5394**	**3.6186**	**0.7972**	**4.4158**		**1,365.3392**	**1,365.3392**	**0.4320**		**1,376.1386**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	1.7025	53.4161	9.3746	0.1684	3.9896	0.2733	4.2629	1.0935	0.2615	1.3549		17,637.9402	17,637.9402	0.3485		17,646.6532
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0738	0.0545	0.5298	1.3600e-003	0.1479	9.6000e-004	0.1488	0.0392	8.8000e-004	0.0401		135.5231	135.5231	3.7900e-003		135.6179
Total	**1.7763**	**53.4706**	**9.9044**	**0.1697**	**4.1375**	**0.2743**	**4.4117**	**1.1327**	**0.2624**	**1.3951**		**17,773.4633**	**17,773.4633**	**0.3523**		**17,782.2712**

3.2 Site Preparation - 2019

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					6.6729	0.0000	6.6729	3.6186	0.0000	3.6186			0.0000			0.0000
Off-Road	1.5714	16.5201	7.9978	0.0138		0.8665	0.8665		0.7972	0.7972	0.0000	1,365.3392	1,365.3392	0.4320		1,376.1386
Total	**1.5714**	**16.5201**	**7.9978**	**0.0138**	**6.6729**	**0.8665**	**7.5394**	**3.6186**	**0.7972**	**4.4158**	**0.0000**	**1,365.3392**	**1,365.3392**	**0.4320**		**1,376.1386**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	1.7025	53.4161	9.3746	0.1684	3.9896	0.2733	4.2629	1.0935	0.2615	1.3549		17,637.9402	17,637.9402	0.3485		17,646.6532
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0738	0.0545	0.5298	1.3600e-003	0.1479	9.6000e-004	0.1488	0.0392	8.8000e-004	0.0401		135.5231	135.5231	3.7900e-003		135.6179
Total	**1.7763**	**53.4706**	**9.9044**	**0.1697**	**4.1375**	**0.2743**	**4.4117**	**1.1327**	**0.2624**	**1.3951**		**17,773.4633**	**17,773.4633**	**0.3523**		**17,782.2712**

3.3 Grading - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					9.5701	0.0000	9.5701	3.9593	0.0000	3.9593			0.0000			0.0000
Off-Road	5.3607	61.6249	39.2671	0.0732		2.6195	2.6195		2.4100	2.4100		7,243.8315	7,243.8315	2.2919		7,301.1283
Total	**5.3607**	**61.6249**	**39.2671**	**0.0732**	**9.5701**	**2.6195**	**12.1897**	**3.9593**	**2.4100**	**6.3693**		**7,243.8315**	**7,243.8315**	**2.2919**		**7,301.1283**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0820	0.0605	0.5887	1.5100e-003	0.1643	1.0700e-003	0.1654	0.0436	9.8000e-004	0.0446		150.5812	150.5812	4.2200e-003		150.6866
Total	**0.0820**	**0.0605**	**0.5887**	**1.5100e-003**	**0.1643**	**1.0700e-003**	**0.1654**	**0.0436**	**9.8000e-004**	**0.0446**		**150.5812**	**150.5812**	**4.2200e-003**		**150.6866**

3.3 Grading - 2019

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					9.5701	0.0000	9.5701	3.9593	0.0000	3.9593			0.0000			0.0000
Off-Road	5.3607	61.6249	39.2671	0.0732		2.6195	2.6195		2.4100	2.4100	0.0000	7,243.8315	7,243.8315	2.2919		7,301.1283
Total	**5.3607**	**61.6249**	**39.2671**	**0.0732**	**9.5701**	**2.6195**	**12.1897**	**3.9593**	**2.4100**	**6.3693**	**0.0000**	**7,243.8315**	**7,243.8315**	**2.2919**		**7,301.1283**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0820	0.0605	0.5887	1.5100e-003	0.1643	1.0700e-003	0.1654	0.0436	9.8000e-004	0.0446		150.5812	150.5812	4.2200e-003		150.6866
Total	**0.0820**	**0.0605**	**0.5887**	**1.5100e-003**	**0.1643**	**1.0700e-003**	**0.1654**	**0.0436**	**9.8000e-004**	**0.0446**		**150.5812**	**150.5812**	**4.2200e-003**		**150.6866**

3.4 Building Construction - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	3.6169	32.4319	26.3207	0.0413		1.9800	1.9800		1.8606	1.8606		3,980.7350	3,980.7350	0.9765		4,005.1485
Total	**3.6169**	**32.4319**	**26.3207**	**0.0413**		**1.9800**	**1.9800**		**1.8606**	**1.8606**		**3,980.7350**	**3,980.7350**	**0.9765**		**4,005.1485**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0640	1.7964	0.4109	4.0200e-003	0.0948	0.0111	0.1059	0.0273	0.0106	0.0379		420.9656	420.9656	0.0241		421.5681
Worker	0.2912	0.2148	2.0898	5.3700e-003	0.5833	3.7900e-003	0.5870	0.1547	3.4900e-003	0.1582		534.5632	534.5632	0.0150		534.9374
Total	**0.3552**	**2.0112**	**2.5007**	**9.3900e-003**	**0.6781**	**0.0149**	**0.6929**	**0.1820**	**0.0141**	**0.1961**		**955.5288**	**955.5288**	**0.0391**		**956.5055**

3.4 Building Construction - 2019

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	3.6169	32.4319	26.3207	0.0413		1.9800	1.9800		1.8606	1.8606	0.0000	3,980.7350	3,980.7350	0.9765		4,005.1485
Total	**3.6169**	**32.4319**	**26.3207**	**0.0413**		**1.9800**	**1.9800**		**1.8606**	**1.8606**	**0.0000**	**3,980.7350**	**3,980.7350**	**0.9765**		**4,005.1485**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0640	1.7964	0.4109	4.0200e-003	0.0948	0.0111	0.1059	0.0273	0.0106	0.0379		420.9656	420.9656	0.0241		421.5681
Worker	0.2912	0.2148	2.0898	5.3700e-003	0.5833	3.7900e-003	0.5870	0.1547	3.4900e-003	0.1582		534.5632	534.5632	0.0150		534.9374
Total	**0.3552**	**2.0112**	**2.5007**	**9.3900e-003**	**0.6781**	**0.0149**	**0.6929**	**0.1820**	**0.0141**	**0.1961**		**955.5288**	**955.5288**	**0.0391**		**956.5055**

3.4 Building Construction - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	3.2474	29.5107	25.8324	0.0413		1.7144	1.7144		1.6113	1.6113		3,920.9130	3,920.9130	0.9638		3,945.0085
Total	**3.2474**	**29.5107**	**25.8324**	**0.0413**		**1.7144**	**1.7144**		**1.6113**	**1.6113**		**3,920.9130**	**3,920.9130**	**0.9638**		**3,945.0085**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0533	1.6573	0.3622	3.9900e-003	0.0948	7.3900e-003	0.1022	0.0273	7.0700e-003	0.0344		417.5832	417.5832	0.0223		418.1399
Worker	0.2667	0.1900	1.8663	5.2000e-003	0.5833	3.7100e-003	0.5870	0.1547	3.4200e-003	0.1581		517.4656	517.4656	0.0130		517.7900
Total	**0.3200**	**1.8473**	**2.2285**	**9.1900e-003**	**0.6781**	**0.0111**	**0.6892**	**0.1820**	**0.0105**	**0.1925**		**935.0487**	**935.0487**	**0.0352**		**935.9299**

3.4 Building Construction - 2020

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	3.2474	29.5107	25.8324	0.0413		1.7144	1.7144		1.6113	1.6113	0.0000	3,920.9130	3,920.9130	0.9638		3,945.0085
Total	**3.2474**	**29.5107**	**25.8324**	**0.0413**		**1.7144**	**1.7144**		**1.6113**	**1.6113**	**0.0000**	**3,920.9130**	**3,920.9130**	**0.9638**		**3,945.0085**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0533	1.6573	0.3622	3.9900e-003	0.0948	7.3900e-003	0.1022	0.0273	7.0700e-003	0.0344		417.5832	417.5832	0.0223		418.1399
Worker	0.2667	0.1900	1.8663	5.2000e-003	0.5833	3.7100e-003	0.5870	0.1547	3.4200e-003	0.1581		517.4656	517.4656	0.0130		517.7900
Total	**0.3200**	**1.8473**	**2.2285**	**9.1900e-003**	**0.6781**	**0.0111**	**0.6892**	**0.1820**	**0.0105**	**0.1925**		**935.0487**	**935.0487**	**0.0352**		**935.9299**

3.5 Paving - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.0348	21.0984	21.9781	0.0342		1.1292	1.1292		1.0389	1.0389		3,311.6002	3,311.6002	1.0710		3,338.3761
Paving	0.1753					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**2.2102**	**21.0984**	**21.9781**	**0.0342**		**1.1292**	**1.1292**		**1.0389**	**1.0389**		**3,311.6002**	**3,311.6002**	**1.0710**		**3,338.3761**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0563	0.0401	0.3943	1.1000e-003	0.1232	7.8000e-004	0.1240	0.0327	7.2000e-004	0.0334		109.3237	109.3237	2.7400e-003		109.3922
Total	**0.0563**	**0.0401**	**0.3943**	**1.1000e-003**	**0.1232**	**7.8000e-004**	**0.1240**	**0.0327**	**7.2000e-004**	**0.0334**		**109.3237**	**109.3237**	**2.7400e-003**		**109.3922**

3.5 Paving - 2020

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.0348	21.0983	21.9781	0.0342		1.1292	1.1292		1.0389	1.0389	0.0000	3,311.6002	3,311.6002	1.0710		3,338.3761
Paving	0.1753					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**2.2102**	**21.0983**	**21.9781**	**0.0342**		**1.1292**	**1.1292**		**1.0389**	**1.0389**	**0.0000**	**3,311.6002**	**3,311.6002**	**1.0710**		**3,338.3761**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0563	0.0401	0.3943	1.1000e-003	0.1232	7.8000e-004	0.1240	0.0327	7.2000e-004	0.0334		109.3237	109.3237	2.7400e-003		109.3922
Total	**0.0563**	**0.0401**	**0.3943**	**1.1000e-003**	**0.1232**	**7.8000e-004**	**0.1240**	**0.0327**	**7.2000e-004**	**0.0334**		**109.3237**	**109.3237**	**2.7400e-003**		**109.3922**

3.6 Architectural Coating - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	73.9714					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.3633	2.5258	2.7471	4.4600e-003		0.1664	0.1664		0.1664	0.1664		422.1721	422.1721	0.0327		422.9892
Total	**74.3347**	**2.5258**	**2.7471**	**4.4600e-003**		**0.1664**	**0.1664**		**0.1664**	**0.1664**		**422.1721**	**422.1721**	**0.0327**		**422.9892**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0526	0.0375	0.3680	1.0200e-003	0.1150	7.3000e-004	0.1157	0.0305	6.7000e-004	0.0312		102.0355	102.0355	2.5600e-003		102.0994
Total	**0.0526**	**0.0375**	**0.3680**	**1.0200e-003**	**0.1150**	**7.3000e-004**	**0.1157**	**0.0305**	**6.7000e-004**	**0.0312**		**102.0355**	**102.0355**	**2.5600e-003**		**102.0994**

3.6 Architectural Coating - 2020

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	73.9714					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.3633	2.5258	2.7471	4.4600e-003		0.1664	0.1664		0.1664	0.1664	0.0000	422.1721	422.1721	0.0327		422.9892
Total	**74.3347**	**2.5258**	**2.7471**	**4.4600e-003**		**0.1664**	**0.1664**		**0.1664**	**0.1664**	**0.0000**	**422.1721**	**422.1721**	**0.0327**		**422.9892**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0526	0.0375	0.3680	1.0200e-003	0.1150	7.3000e-004	0.1157	0.0305	6.7000e-004	0.0312		102.0355	102.0355	2.5600e-003		102.0994
Total	**0.0526**	**0.0375**	**0.3680**	**1.0200e-003**	**0.1150**	**7.3000e-004**	**0.1157**	**0.0305**	**6.7000e-004**	**0.0312**		**102.0355**	**102.0355**	**2.5600e-003**		**102.0994**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.5323	3.8839	6.6736	0.0224	1.7193	0.0253	1.7447	0.4608	0.0239	0.4847		2,263.9631	2,263.9631	0.0982		2,266.4187
Unmitigated	0.5323	3.8839	6.6736	0.0224	1.7193	0.0253	1.7447	0.4608	0.0239	0.4847		2,263.9631	2,263.9631	0.0982		2,266.4187

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Parking Lot	0.00	0.00	0.00		
Retirement Community	281.20	245.48	238.64	773,476	773,476
Total	281.20	245.48	238.64	773,476	773,476

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Parking Lot	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0
Retirement Community	10.80	7.30	7.50	42.60	21.00	36.40	86	11	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Parking Lot	0.489257	0.041257	0.220156	0.132626	0.025790	0.006586	0.027831	0.045583	0.001467	0.001229	0.006102	0.000783	0.001333
Retirement Community	0.489257	0.041257	0.220156	0.132626	0.025790	0.006586	0.027831	0.045583	0.001467	0.001229	0.006102	0.000783	0.001333

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.0272	0.2322	0.0988	1.4800e-003		0.0188	0.0188		0.0188	0.0188		296.3748	296.3748	5.6800e-003	5.4300e-003	298.1360
NaturalGas Unmitigated	0.0272	0.2322	0.0988	1.4800e-003		0.0188	0.0188		0.0188	0.0188		296.3748	296.3748	5.6800e-003	5.4300e-003	298.1360

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Retirement Community	2519.19	0.0272	0.2322	0.0988	1.4800e-003		0.0188	0.0188		0.0188	0.0188		296.3748	296.3748	5.6800e-003	5.4300e-003	298.1360
Total		**0.0272**	**0.2322**	**0.0988**	**1.4800e-003**		**0.0188**	**0.0188**		**0.0188**	**0.0188**		**296.3748**	**296.3748**	**5.6800e-003**	**5.4300e-003**	**298.1360**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Retirement Community	2.51919	0.0272	0.2322	0.0988	1.4800e-003		0.0188	0.0188		0.0188	0.0188		296.3748	296.3748	5.6800e-003	5.4300e-003	298.1360
Total		**0.0272**	**0.2322**	**0.0988**	**1.4800e-003**		**0.0188**	**0.0188**		**0.0188**	**0.0188**		**296.3748**	**296.3748**	**5.6800e-003**	**5.4300e-003**	**298.1360**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	2.0952	0.0728	6.2948	3.3000e-004		0.0346	0.0346		0.0346	0.0346	0.0000	11.2983	11.2983	0.0110	0.0000	11.5740
Unmitigated	2.0952	0.0728	6.2948	3.3000e-004		0.0346	0.0346		0.0346	0.0346	0.0000	11.2983	11.2983	0.0110	0.0000	11.5740

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.2635					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	1.6398					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.1919	0.0728	6.2948	3.3000e-004		0.0346	0.0346		0.0346	0.0346		11.2983	11.2983	0.0110		11.5740
Total	**2.0952**	**0.0728**	**6.2948**	**3.3000e-004**		**0.0346**	**0.0346**		**0.0346**	**0.0346**	**0.0000**	**11.2983**	**11.2983**	**0.0110**	**0.0000**	**11.5740**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.2635					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	1.6398					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.1919	0.0728	6.2948	3.3000e-004		0.0346	0.0346		0.0346	0.0346		11.2983	11.2983	0.0110		11.5740
Total	**2.0952**	**0.0728**	**6.2948**	**3.3000e-004**		**0.0346**	**0.0346**		**0.0346**	**0.0346**	**0.0000**	**11.2983**	**11.2983**	**0.0110**	**0.0000**	**11.5740**

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

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

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

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

Boilers

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

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Attachment 3

Biological Resources Assessment [for the] *±3.34-Acre Huntington Senior Apartments, City of Roseville, Placer County, California*, prepared by Foothill Associates

January 29, 2019

Biological Resources Assessment

±3.34-Acre Huntington Senior Apartments Project
City of Roseville, Placer County, California

Prepared for:

Stamas Corporation

January 29, 2019

Prepared by:

FOOTHILL ASSOCIATES

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Executive Summary

Foothill Associates' biologists Zachary Neider and Marisa Brilts conducted a biological resources assessment on December 27, 2017 on the Huntington Senior Apartments Project, Assessor's Parcel Number (APN) 048-260-030, located within the City of Roseville, Placer County, California. The site is located at 1650 Huntington Drive, south of Douglas Boulevard and west of Rocky Ridge Drive. The purpose of this document is to describe baseline conditions on the parcel by summarizing the general biological resources, assessing the suitability of the site to support special-status species and sensitive habitat types, and to provide recommendations for regulatory permitting or further analysis that may be required prior to development activities occurring on the site.

The 3.34-acre Huntington Senior Apartments site (Study Area) is largely composed of disturbed soils, non-native annual grassland, oak woodland, and a section of riparian habitat associated with an off-site perennial drainage in the southeastern portion of the Study Area. Land uses surrounding the Study Area include single-family residential and commercial/professional development.

Known or potential biological constraints in the Study Area include the following:

- Potential aestivation habitat for western pond turtle (*Actinemys marmorata*) and western spadefoot (*Spea hammondii*);
- Potential roosting and foraging habitat for pallid bat (*Antrozous pallidus*) and silver haired bat (*Lasionycteris noctivagans*);
- Potential nesting and foraging habitat for migratory birds and other birds of prey including: Cooper's hawk (*Accipiter cooperii*), grasshopper sparrow (*Ammodramus savannarum*), white-tailed kite (*Elanus leucurus*), song sparrow ("Modesto" population) (*Melospiza melodia*), and purple martin (*Progne subis*);
- Riparian habitat; and
- Protected oak trees.

1.0 INTRODUCTION

This report summarizes the findings of a biological resources assessment completed for the ±3.34-acre Huntington Senior Apartments Project site, located within the City of Roseville, Placer County, California. This document addresses the onsite physical features, as well as plant communities present and the common plant and wildlife species occurring, or potentially occurring, in the Study Area. Furthermore, the suitability of habitats to support special-status species and sensitive habitats are analyzed and recommendations are provided for any regulatory permitting or further analysis required prior to development activities occurring on the site.

1.1. Project Description

The project proponent is proposing to construct a multi-family, senior, age restricted (55+) apartment complex consisting of 10 apartment buildings composed of 48 one-bedroom units and 28 two-bedroom units, a community clubhouse, and associated parking. Five of the proposed 76 apartment units will be designated as affordable housing units (Proposed Project).

The proposed project would include single-, two-, and three-story buildings. The single-story buildings along with a single-story community clubhouse are proposed along the southern boundary of the site adjacent to existing single-family residences. The two and three-story buildings are proposed adjacent to Strauch Drive and the existing Rocky Ridge Plaza and would be staggered from Huntington Drive.

1.1.1. Community Clubhouse

The Proposed Project would include a community clubhouse for resident use and professional office space for property management along with amenities such as a mail room, gym facility, library, community room for group activities, kitchen, dog grooming, and restroom facilities. A paratransit stop would be located in front of the clubhouse for individuals with disabilities utilizing the Roseville American Disabilities Act (ADA) Paratransit Service.

1.1.2. Bio Retention Facilities

Development of the Proposed Project would attenuate storm water onsite. Project development would include several bio-retention facilities located adjacent to paved areas. The bio-retention facilities would include plantings to help retain and treat storm water runoff from impervious surfaces during high flow storm events. A 1,418 square feet vegetative swale would be constructed adjacent to the project entrance along Strauch Drive. Trees would be planted in planter spaces throughout the site and in bio retention facilities and would include 31 California native trees.

1.1.3. Parking

The Proposed Project would include 91 parking spaces for residents and guests which would consist of nine accessible ADA-compliant spaces, two compact spaces, and 80 standard parking spaces. Runoff from the parking areas will be routed through bio-retention facilities prior to entering the City of Roseville storm drain system.

1.1.4. Landscaping

An outdoor garden would be located within the center of the complex along with a designated sitting area. Landscaping will consist of trees and shrubs, and other flora native to the area. Maximum consideration will be given to those plants that are drought resistant, and that require the least amount of maintenance. Two additional sitting areas will be located in the complex adjacent to housing and landscape areas.

1.1.5. Utilities

Project development would include trash enclosures and an elevator and elevator machine room. Lighting for safety, security, and public use would also be installed on the site (i.e. sconce lighting, pole lighting). Lighting design would comply with all local and state codes (e.g. Title 24).

1.1.6. Construction, Grading, and Staging

Project construction is planned to commence during summer 2019 and would involve a combination of standard types of construction equipment, including, but not limited to, backhoe/skiploader, grader, excavator, compactor/roller, asphalt paver, and trucks. All staging for construction equipment will occur on the project site. Proposed Project development will require leveling the site and exporting approximately 27,295 cubic yards of fill to an environmental approved site with an approved Grading Plan within 50 miles of the Project site. The maximum elevation of the site is currently 202 feet mean sea level (MSL), and will be lowered to between 170 and 180 feet MSL. The highest point of the graded site would be at the corner of Strauch Drive and Huntington Drive, with the site gradually sloping down to the southern side of the site. The elevation of the three neighboring single-family properties to the south is between 167 feet MSL at Huntington Drive and gradually increasing to 177 feet MSL on the parcel closest to Rocky Ridge Drive. The Proposed Project elevation will closely match the existing grade of the adjacent single-family homes on Huntington Drive, but as proposed will gradually become lower than the adjacent residential properties. Low-level concrete masonry walls (approximately 2 to 2.5 feet in height) will be constructed to retain soils due to this grade difference. A concrete masonry wall (approximately 2.5 feet in height) will be included for a portion of Huntington Drive near Strauch Drive, because the site will be slightly higher than the roadway.

A 6-foot-high concrete masonry wall would be constructed along the southern project boundary adjacent to existing single-family residential and will be complimentary in color to the buildings.

1.1.7. Entitlements

Development of the Proposed Project would require a Rezone and General Plan Amendment to change existing CC and MDR land use designations to High Density Residential (HDR). A lot line adjustment is proposed along the northwestern corner and southeastern edge of the site. In addition, a Tree Permit would be required to remove up ten onsite oak trees.

2.0 REGULATORY FRAMEWORK

Federal, State, and local environmental laws, regulations, and policies relevant to the California Environmental Quality Act (CEQA) review process are summarized below. The CEQA significance criteria are also included in this section.

2.1. Federal Regulations

2.1.1. Federal Endangered Species Act

The U.S. Congress passed the Federal Endangered Species Act (FESA) in 1973 to protect those species that are endangered or threatened with extinction. FESA is intended to operate in conjunction with the National Environmental Policy Act (NEPA) to help protect the ecosystems upon which endangered and threatened species depend.

FESA prohibits the "take" of endangered or threatened wildlife species. "Take" is defined to include harassing, harming, pursuing, hunting, shooting, wounding, killing, trapping, capturing, or collecting wildlife species or any attempt to engage in such conduct (FESA Section 3 [(3)(19)]). Harm is further defined to include significant habitat modification or degradation that results in death or injury to listed species by significantly impairing behavioral patterns (50 CFR §17.3). Harass is defined as actions that create the likelihood of injury to listed species to such an extent as to significantly disrupt normal behavior patterns (50 CFR §17.3). Actions that result in take can result in civil or criminal penalties.

In the context of the proposed project, FESA consultation with the U.S. Fish and Wildlife Service (USFWS) or the National Marine Fisheries Service (NMFS) would be initiated if development resulted in take of a threatened or endangered species or if issuance of a Section 404 permit or other federal agency action could result in take of an endangered species or adversely modify critical habitat of such a species.

2.1.2. Migratory Bird Treaty Act

Raptors (birds of prey), migratory birds, and other avian species are protected by a number of State and federal laws. The federal Migratory Bird Treaty Act (MBTA) prohibits the killing, possessing, or trading of migratory birds except in accordance with regulations prescribed by the Secretary of Interior.

2.1.3. The Bald and Golden Eagle Protection Act

The Bald and Golden Eagle Protection Act (Eagle Act) prohibits the taking or possession of and commerce in bald and golden eagles with limited exceptions. Under the Eagle Act, it is a violation to "*take, possess, sell, purchase, barter, offer to sell, transport, export or import, at any time or in any manner, any bald eagle commonly known as the American eagle, or golden eagle, alive or dead, or any part, nest, or egg, thereof.*" Take is defined to include pursue, shoot, shoot at, poison, wound, kill, capture, trap, collect, destroy, molest, and disturb. Disturb is further defined in 50 CFR Part 22.3 as "*to agitate or bother a bald or golden eagle to a degree that causes, or is likely to cause, based on the best scientific information available (1) injury to*

an eagle, (2) a decrease in its productivity, by substantially interfering with normal breeding, feeding, or sheltering behavior, or (3) nest abandonment, by substantially interfering with normal breeding, feeding, or sheltering behavior."

2.2. State Jurisdiction

2.2.1. California Endangered Species Act

The State of California enacted the California Endangered Species Act (CESA) in 1984. CESA is similar to the FESA but pertains to State-listed endangered and threatened species. CESA requires state agencies to consult with the California Department of Fish and Wildlife (CDFW), when preparing CEQA documents. The purpose is to ensure that the State lead agency actions do not jeopardize the continued existence of a listed species or result in the destruction, or adverse modification of habitat essential to the continued existence of those species, if there are reasonable and prudent alternatives available (Fish and Game Code §2080). CESA directs agencies to consult with CDFW on projects or actions that could affect listed species, directs CDFW to determine whether jeopardy would occur and allows CDFW to identify "reasonable and prudent alternatives" to the project consistent with conserving the species. CESA allows CDFW to authorize exceptions to the State's prohibition against take of a listed species if the "take" of a listed species is incidental to carrying out an otherwise lawful project that has been approved under CEQA (Fish & Game Code § 2081).

2.2.2. California Department of Fish and Game Codes

A number of species have been designated "fully protected" species under Sections 5515, 5050, 3511, and 4700 of the Fish and Game Code, but are not listed as endangered (Section 2062) or threatened (Section 2067) species under CESA. Except for take related to scientific research, all take of fully protected species is prohibited. The California Fish and Game Code defines take as "*hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture, or kill.*" Additionally, Section 3503 of the California Fish and Game Code prohibits the killing of birds or the destruction of bird nests.

2.2.3. Native Plant Protection Act

The Native Plant Protection Act (NPPA), enacted in 1977, allows the Fish and Game Commission to designate plants as rare or endangered. There are 64 species, subspecies, and varieties of plants protected under the NPPA. The NPPA prohibits take of endangered or rare native plants, with some exceptions for agricultural and nursery operations and emergencies. Vegetation removal from canals, roads, and other sites, changes in land use, and certain other situations require proper advance notification to CDFW.

2.3. Jurisdictional Waters

2.3.1. Federal Jurisdiction

The U.S. Army Corps of Engineers (Corps) regulates discharge of dredge or fill material into waters of the U.S. under Section 404 of the Clean Water Act (CWA). "Discharges of fill material"

is defined as the addition of fill material into waters of the U.S., including, but not limited to the following: placement of fill that is necessary for the construction of any structure, or impoundment requiring rock, sand, dirt, or other material for its construction; site-development fills for recreational, industrial, commercial, residential, and other uses; causeways or road fills; fill for intake and outfall pipes and subaqueous utility lines [33 C.F.R. §328.2(f)].

Waters of the U.S. include a range of wet environments such as lakes, rivers, streams (including intermittent streams), mudflats, sandflats, wetlands, sloughs, and wet meadows. Boundaries between jurisdictional waters and uplands are determined in a variety of ways depending on which type of waters is present. Methods for delineating wetlands and non-tidal waters are described below.

- Wetlands are defined as "*those areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support and under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions*" [33 C.F.R. §328.3(b)]. Presently, to be a wetland, a site must exhibit three wetland criteria: hydrophytic vegetation, hydric soils, and wetland hydrology existing under the "normal circumstances" for the site.
- The lateral extent of non-tidal waters is determined by delineating the ordinary high-water mark (OHWM) [33 C.F.R. §328.4(c)(1)]. The OHWM is defined by the Corps as "*that line on shore established by the fluctuations of water and indicated by physical character of the soil, destruction of terrestrial vegetation, the presence of litter and debris, or other appropriate means that consider the characteristics of the surrounding areas*" [33 C.F.R. §328.3(e)].

An aquatic feature is determined to be a water of the U.S. based on nexus with a traditionally navigable water pursuant to the Supreme Court's decision in the consolidated cases Rapanos v. United States and Carabell v. United States (126 S. Ct. 2208) and agency guidance subsequent to this decision. Under these rules, the Corps asserts jurisdiction over wetlands adjacent to traditional navigable waters, relatively permanent non-navigable tributaries (i.e., waters that have a continuous flow at least three months out of the year), and wetlands that abut relatively permanent tributaries. The Corps determines jurisdiction over waters that are non-navigable tributaries that are not relatively permanent, and wetlands adjacent to these tributaries, by making a determination whether such waters "significantly affect the chemical, physical, and biological integrity of other jurisdictional waters more readily understood as "navigable." Finally, the Corps generally does not consider the following to be "waters of the United States": swales or erosional features (e.g., gullies, small washes characterized by low volume, infrequent or short duration flow) and ditches "wholly in and draining only uplands…which do not carry a relatively permanent flow of water." Navigable waters of the United States are defined as waters that have been used in the past, are now used, or are susceptible to use as a means to transport interstate or foreign commerce up to the head of navigation.

2.3.2. State Jurisdiction

Regional Water Quality Control Boards

Discharges of fill or waste material to waters of the State are regulated by the State Water Resources Control Board (SWRCB) through its Regional Water Quality Control Boards (RWQCB) under Section 401 of the CWA and the Porter-Cologne Water Quality Control Act (contained in the California Water Code). All waters of the U.S. are also considered waters of the State. In addition, other aquatic features that are not subject to Corps' jurisdiction, such as roadside ditches or isolated wetlands, may be considered waters of the State. This determination will be made by RWQCB staff on a case-by-case basis.

Section 401 of the CWA requires an applicant to obtain "water quality certification" to ensure compliance with State water quality standards before certain federal licenses or permits may be issued. Section 13260(a) of the Porter-Cologne Water Quality Control Act requires any person discharging waste, including dredged or fill material, or proposing to discharge waste, other than to a community sewer system, within any region that could affect the quality of the waters of the State (all surface and subsurface waters) to file a report of waste discharge. The permits subject to Section 401 include CWA Section 404 permits issued by the Corps. Waste discharge requirements under the Porter-Cologne Water Quality Control Act were typically waived for projects that required certification. Discharges to waters of the State that are not subject to a CWA Section 404 permit rely on the report of waste discharge process.

California Department of Fish and Wildlife

The CDFW is a trustee agency that has jurisdiction under Section 1600 *et seq.* of the California Fish and Game Code. Under Sections 1602 and 1603, a private party must notify CDFW if a proposed project will "*substantially divert or obstruct the natural flow or substantially change the bed, channel, or bank of any river, stream, or lake designated by the department, or use any material from the streambeds…except when the department has been notified pursuant to Section 1601.*" Additionally, CDFW asserts jurisdiction over native riparian habitat adjacent to aquatic features, including native trees over 4-inches in diameter at breast height (DBH). If an existing fish or wildlife resource may be substantially adversely affected by the activity, CDFW may propose reasonable measures that will allow protection of those resources. If these measures are agreeable to the parties involved, they may enter into an agreement with CDFW identifying the approved activities and associated mitigation measures. Generally, CDFW recommends submitting an application for a Streambed Alteration Agreement (SAA) for any work done within the lateral limit of water flow or the edge of riparian vegetation, whichever is greater.

2.4. CEQA Significance

Section 15064.7 of the CEQA Guidelines encourages local agencies to develop and publish the thresholds that the agency uses in determining the significance of environmental effects caused by projects under its review. However, agencies may also rely upon the guidance provided by the expanded Initial Study Checklist contained in Appendix G of the CEQA Guidelines. Appendix G provides examples of impacts that would normally be considered significant. Based on these

examples, impacts to biological resources would normally be considered significant if the project would:

- 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 CDFW or USFWS;
- 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 CDFW or USFWS;
- Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the CWA (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means;
- 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;
- Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance; and
- Conflict with the provisions of an adopted Habitat Conservation Plan (HCP), Natural Community Conservation Plan (NCCP), or other approved local, regional or state habitat conservation plan.

An evaluation of whether or not an impact on biological resources would be substantial must consider both the resource itself and how that resource fits into a regional or local context. Substantial impacts would be those that would diminish, or result in the loss of, an important biological resource, or those that would obviously conflict with local, State, or federal resource conservation plans, goals, or regulations. Impacts are sometimes locally important but not significant according to CEQA. The reason for this is that although the impacts would result in an adverse alteration of existing conditions, they would not substantially diminish, or result in the permanent loss of, an important resource on a population-wide or region-wide basis.

2.4.1. California Native Plant Society

The California Native Plant Society (CNPS) maintains a rank of plant species native to California that have low population numbers, limited distribution, or are otherwise threatened with extinction. This information is published in the *Inventory of Rare and Endangered Vascular Plants of California*. Potential impacts to populations of CNPS-ranked plants receive consideration under CEQA review. The following identifies the definitions of the CNPS ranks:

- Rank 1A: Plants presumed Extinct in California
- Rank 1B: Plants Rare, Threatened, or Endangered in California and elsewhere
- Rank 2: Plants Rare, Threatened, or Endangered in California, but more numerous elsewhere

- Rank 3: Plants about which we need more information – A Review List
- Rank 4: Plants of limited distribution – A Watch List

All plants appearing on CNPS Rank 1 or 2 are considered to meet CEQA Guidelines Section 15380 criteria. While only some of the plants ranked 3 and 4 meet the definitions of threatened or endangered species, the CNPS recommends that all Rank 3 and Rank 4 plants be evaluated for consideration under CEQA.

2.4.2. California Department of Fish and Wildlife Species of Concern

Some additional fish, amphibian, reptile, bird, and mammal species may receive consideration by CDFW and lead agencies during the CEQA process, in addition to species that are formally listed under FESA and CESA or are fully protected. These species are included on the *Special Animals List*, which is maintained by CDFW. This list tracks species in California whose numbers, reproductive success, or habitat may be in decline. In addition to "Species of Special Concern" (SSC), the *Special Animals List* includes species that are tracked in the California Natural Diversity Database (CNDDB), but warrant no legal protection. These species are identified as "California Special Animals" (CSA).

2.5. City of Roseville Policies and Regulations

2.5.1. City of Roseville General Plan

The *City of Roseville's General Plan, Open Space and Conservation Element* outlines specific goals, policies, and implementation measures pertaining to the protection of vegetation and wildlife (City of Roseville 2004). The three primary goals are:

Goal 1: *Preserve, protect, and enhance a significant system of interconnected natural habitat areas, including creek and riparian corridors, oak woodlands, wetlands, and adjacent grassland areas.*

Goal 2: *Maintain healthy and well-managed habitat areas in conjunction with one-another, maximizing the potential for compatible open space, recreation, and visual experiences.*

Goal 3: *Protect special-status species and other species that are sensitive to human activities.*

2.5.2. City of Roseville Tree Ordinance

The City of Roseville regulates the removal of or impact to protected trees under Chapter 19.66 of the Roseville Municipal Code. Protected trees are defined as any native oak tree, valley oak (*Quercus lobata*), interior live oak (*Quercus wislizeni*), blue oak (*Quercus douglasii*), or hybrid of these species, with a trunk diameter equal to or greater than six inches at breast height (DBH), which is at 54" above grade. No work that might impact the tree, including grading, trenching, or irrigation, is allowed within the protected zone of a protected tree, defined as the dripline radius plus one foot, without a tree permit. No permit is required for the removal of a protected tree under the following situations:

1. Trees damaged by thunderstorm, windstorm, flood, earthquake, fire or other natural cause and determined by a peace officer, fire fighter, public utility official, civil defense official or city code enforcement officer, acting in his or her official capacity, to present a danger to persons or property. Upon discovery of a condition justifying removal, the officer or official making the determination shall immediately provide written notification of the condition and action taken to the planning director.

2. When removal is determined to be necessary by fire department personnel actively engaged in fighting a fire.

3. When compliance would interfere with activities of a public utility necessary to comply with applicable safety regulations and/or necessary to repair or avoid the interruptions of services provided by such a utility. Unless there is an imminent threat to the public health, safety or welfare, the Planning Director shall be notified prior to the removal by a public utility of a protected tree.

4. The Planning Director may allow removal of a protected tree which has been certified by an arborist to be a dead tree. An arborist-certified dead tree may be removed without any replacement or mitigation requirements.

5. A protected tree located on property developed with a single-family or two-family dwelling which has been granted occupancy.

6. When a protected living tree presents a hazard to health and safety or structures due to its structural condition and location, the tree may be removed without any replacement or mitigation requirements. The hazardous condition of the tree must be determined by an arborist. The Planning Director must review the arborist's determination and consider the location of the protected tree prior to approving removal.

3.0 METHODS

Available information pertaining to the natural resources of the region was reviewed. All references reviewed for this assessment are listed in the **References** section. The following site-specific information was reviewed:

- California Department of Fish and Wildlife (CDFW). 2018. *California Natural Diversity Data Base* (*Citrus Heights, Folsom, Buffalo Creek, Carmichael, Pleasant Grove, Rio Linda, Sacramento East, Roseville, and Rocklin* quadrangles U.S. Geological Survey (USGS) 7.5-minute series quadrangles), Sacramento, CA. [Accessed on 10/11/2018];
- California Native Plant Society (CNPS). 2017. *Inventory of Rare and Endangered Plants* (online edition, v8-03 0.39) (*Citrus Heights, Folsom, Buffalo Creek, Carmichael, Pleasant Grove, Rio Linda, Sacramento East, Roseville, and Rocklin* quadrangles). [Accessed on 12/19/2017];
- U.S. Fish and Wildlife Service (USFWS). 2017. *Information for Planning and Conservation* (IPaC) *Trust Resource Report*: *Huntington Senior Apartments, Roseville, Placer County, California.* [Accessed on 12/19/2017];
- U.S. Department of Agriculture (USDA), Natural Resources Conservation Service (NRCS). 2017. *Web Soil Survey*. Available online at: http://websoilsurvey.sc.egov.usda.gov. Accessed [12/19/2017];
- U.S. Department of Agriculture (USDA), Natural Resource Conservation Service (NRCS). 1980. *Placer County, California – Western Part*. USDA, NRCS, in cooperation with the Regents of the University of California (Agricultural Experiment Station); and
- U.S. Geological Survey (USGS). 2015. *Citrus Heights, California*. 7.5-minute series topographic quadrangle. United States Department of Interior.

Prior to conducting the site survey, existing information was reviewed and the results of the records search and five-mile radius California Natural Diversity Database (CNNDB) query were summarized in a table (**Appendix A**). The field survey of the Study Area was conducted on December 27, 2017. The weather was partly cloudy with temperatures ranging from approximately 43 to 50 degrees Fahrenheit. The Study Area was systematically surveyed on foot with binoculars to ensure total search coverage, with special attention given to identifying those portions of the Study Area with the potential for supporting special-status species and sensitive habitats. During the field surveys, the biologists recorded plant and wildlife species observed (**Appendix B**), as well as characterized biological communities occurring onsite. Following the site survey, the potential for each species identified in the records search to occur in the Study Area was determined based on the site surveys, soils, and species-specific information.

Additionally, a tree survey was conducted on the site. The detailed results are contained under separate cover, but are summarized in this report.

4.0 RESULTS

4.1. Site Location and Description

The ±3.34-acre Study Area is located in the City of Roseville in Placer County, California along Huntington Drive, south of Douglas Boulevard and west of Rocky Ridge Drive. Land uses immediately surrounding the Study Area include single-family residential development to the south and west, a small area of undeveloped oak woodland to the northeast, and commercial/professional development to the northwest and northeast, adjacent to the off-site oak woodland. The Study Area is bounded on the north and west by Huntington Drive, on the east by Strauch Drive, and on the south by residential development. The Study Area is located within Township 10 North, Range 7 East, Section 7 of the USGS 7.5-minute series *Citrus Heights* quadrangle. The approximate location of the center of the Study Area is 38° 44’ 32.459” North, 121° 15’ 17.824” West (**Figure 1**).

4.2. Physical Features

4.2.1. Topography and Drainage

The topography of the Study Area is generally undulating along the outside borders, giving rise to an eroded soil mound in the center of the Study Area composed of sandy soils dominated by non-native grasses. Elevations range from approximately 170 feet (52 meters) above MSL in the southeast to 198 feet (60 meters) MSL in the center of the Study Area. A perennial drainage occurs approximately 40 feet to the east of the Study Area, off-site, running north to south and paralleling the southeastern boundary of the Study Area. This feature exhibits a defined bed and bank and an ordinary high-water mark, and therefore, may be considered a jurisdictional feature.

The Study Area is located in the Linda Creek-Cirby Creek Sub-Watershed Hydrologic Unit Code (HUC) 12-180201110105. In general, the site drains to the south and southeast, and water conveyed through this sub-watershed drains into Cirby Creek, followed by drainage into Dry Creek and ultimately to the Sacramento River, a navigable water of the U.S.

4.2.2. Soils

The Natural Resources Conservation Service (NRCS) mapped two soil units within the Study Area (**Figure 2**): **Cometa-Fiddyment Complex, 1 to 5 Percent Slopes** and **Inks-Exchequer Complex, 2 to 25 Percent Slopes**. The general characteristics and properties associated with these soils are described below (USDA, NRCS 1980 and 2017).

- **(141) Cometa-Fiddyment Complex, 1 to 5 Percent Slopes**: This soil complex is found on low terraces at an elevation of 75 to 200 feet above MSL. The Cometa series is a deep, well drained claypan soil that formed in alluvium, mainly from granitic sources. Permeability is very slow and surface runoff is slow. The hazard of erosion is slight. The Fiddyment series is a moderately deep, well-drained soil over a hardpan formed in old valley siltstone. Permeability is very slow and surface runoff is slow. The hazard of

erosion is slight. Typically, vegetation on this soil unit consists mainly of non-native grasses and herbaceous plant species. The hydric soils list for Placer County identifies one hydric inclusion occurring within this soil type: Alamo, located within depressions. This soil type covers a majority of the Study Area.

- **(154) Inks-Exchequer Complex, 2 to 25 Percent Slopes**: This soil unit is on long, broad volcanic ridges and side slopes at elevations of 200 to 1,200 feet above MSL. The Inks series is a shallow, well-drained cobbly soil that formed in residuum from andesitic conglomerate. Permeability is moderate and surface runoff is medium. The hazard of erosion is slight or moderate. The Exchequer series is a shallow, somewhat excessively-drained and stony soil that formed in residuum from hard andesitic breccia. Permeability is moderate and surface runoff is medium. The hazard of erosion is slight or moderate. Natural vegetation for this complex is annual grasses, forbs, and blue and live oak. The hydric soils list for Placer County identifies one hydric inclusion occurring within this soil type: Alamo variant, located within depressions. This soil type is located in the northwestern portion of the Study Area.

4.3. Biological Communities

Four major biological communities, including non-native annual grassland, disturbed/developed, mixed oak woodland, and riparian habitat occur within the Study Area. These communities provide habitat to a number of common species of wildlife and may provide suitable habitat for special-status species. A comprehensive list of plants and wildlife observed within the Study Area is provided in **Appendix B**. The location and extent of each biological community are depicted in **Figure 3**. Representative site photographs are included in **Appendix C**.

4.3.1. Non-Native Annual Grassland

A total of 1.74 acres of non-native annual grassland exists within the Study Area and is characterized primarily by an assemblage of non-native grasses and herbaceous species. Dominant vegetation present within the annual grassland within the Study Area includes wild oat (*Avena fatua*), ripgut brome (*Bromus diandrus*), soft brome (*Bromus hordeaceus*), long-beaked filaree (*Erodium botrys*), Italian rye grass (*Festuca perennis*), dove's foot geranium (*Geranium molle*), rose clover (*Trifolium hirtum*), and winter vetch (*Vicia villosa*).

Annual grassland habitat supports breeding, foraging, and shelter habitat for several species of wildlife. No wildlife was observed within this community during the December 2017 survey. Species expected to occur within this community includes red-tailed hawk (*Buteo jamaicensis*), black-tailed jackrabbit (*Lepus californicus*), and gopher snake (*Pituophis melanoleucus*).

4.3.2. Disturbed/Developed

Disturbed/developed areas occur throughout much of the Study Area and comprises approximately 1.01 acres. Disturbed/developed areas include a network of dirt roads traversing the Study Area and includes a soil mound. Soil composition of this soil mound is coarse, sandy, soils that are not consistent with the native soils within the Study Area. Multiple upland

erosional swales cover this feature on all sides (**Appendix C**). Vegetation within this community is sparse or non-existent, and where present, is similar to those species described in **Section 4.3.1**.

4.3.3. Mixed Oak Woodland

A total of 0.58 acres of mixed oak woodland occurs within the Study Area. This vegetative community is characterized primarily by blue oaks (*Quercus douglasii*) and interior live oaks (*Quercus wislizeni*) interspersed with almond (*Prunus dulcis*), potentially from a remnant orchard. The herbaceous understory consists of Italian rye, miner's lettuce (*Claytonia parviflora*), dove's foot geranium, rose clover, and winter vetch.

Mixed oak woodland habitat supports breeding, foraging, and shelter habitat for several species of wildlife. Species observed in the Study Area within this community included California scrub jay (*Aphelocoma californica*), acorn woodpecker (*Melanerpes formicivorus*), northern mockingbird (*Mimus polyglottos*), and mourning dove (*Zenaida macroura*).

4.3.4. Riparian

A total of approximately 0.01 acres of riparian habitat occurs along the southeastern boundary of the Study Area. This vegetative community is dominated by red willow (*Salix laevigata*) and Himalayan blackberry (*Rubus armeniacus*). This habitat is associated with the off-site perennial drainage mentioned in **Section 4.2.1**.

Riparian habitat supports breeding, foraging, and shelter habitat for several species of wildlife. Species observed in the Study Area within this community included: black-tailed jackrabbit, scrub jay, Anna's hummingbird (*Calypte anna*), and black phoebe (*Sayornis nigricans*).

4.4. Special-Status Species

Special-status species are plant and animal species that have been afforded special recognition by federal, State, or local resource agencies or organizations. Listed and special-status species are of relatively limited distribution and may require specialized habitat conditions. Special-status species are defined as meeting one or more of the following criteria:

- Listed or proposed for listing under CESA or FESA;
- Protected under other regulations (e.g. Migratory Bird Treaty Act);
- Included on the CDFW Special Animals List;
- Identified as Rank 1 to 4 by CNPS; or
- Receive consideration during environmental review under CEQA.

Special-status species considered for this analysis are based on queries of the CNDDB, the USFWS, and CNPS ranked species (online versions) for the *Citrus Heights* and eight surrounding quadrangles. **Appendix A** includes the common name and scientific name for each species, regulatory status (federal, State, local, CNPS), habitat descriptions, and potential for occurrence

in the Study Area. The following set of criteria has been used to determine each species' potential for occurrence in the Study Area:

- **Present**: Species known to occur within the Study Area based on CNDDB records and/or observed within the Study Area during the biological surveys.
- **High**: Species known to occur on or in the vicinity of the Study Area (based on CNDDB records within five miles and/or based on professional expertise specific to the Study Area or species) and there is suitable habitat within the Study Area.
- **Low**: Species known to occur in the vicinity of the Study Area and there is marginal habitat within the Study Area **-OR-** Species is not known to occur in the vicinity of the Study Area, however, there is suitable habitat on the Study Area.
- **None**: Species is not known to occur on or in the vicinity of the Study Area and there is no suitable habitat within the Study Area -**OR-** Species was surveyed for during the appropriate season with negative results **-OR-** The Study Area occurs outside of the known elevation or geographic ranges.

Only those species that are known to be *present* or have a *high* or *low* potential for occurrence are discussed further in the following sections.

4.4.1. Listed and Special-Status Plants

According to the records search, 14 special-status plant species have the potential to occur on or in the vicinity of the Study Area. Based on field observations and literature review, no special-status plant species were determined to have the potential to occur within the Study area (**Appendix A**).

4.4.2. Listed and Special-Status Wildlife

According to the records search, 36 special-status wildlife species have the potential to occur on or in the vicinity of the Study Area. Based on field observations and literature review, 10 species were determined to have the potential for occurrence to occur in the Study Area. Species that are considered to have a *high* potential to occur within the Study Area include pallid bat, purple martin, Cooper's hawk, white-tailed kite, silver-haired bat, western spadefoot, and western pond turtle. Species that are considered to have a *low* potential to occur within the Study Area include grasshopper sparrow and song sparrow ("Modesto" population).

Wildlife Species with a High Potential for Occurrence

<u>Pallid Bat – California Species of Special Concern</u>

Pallid bat is a California Species of Special Concern. This species is mostly found in desert habitats, including scrub and canyons with rocky outcrops, and in oak woodland, savannah, and riparian habitats generally below 2,000 meters (6,562 feet). Maternity roosts occur in rock crevices, in buildings, and in other man-made structures. Day roosting sites include caves, crevices, mines, and occasionally in hollow trees and buildings, while nighttime roosts may occur in more open areas, such as porches or open buildings (Zeiner *et. al.* 1990). The species

was not observed onsite during the December 2017 biological survey. There is one CNDDB record of this species listed within five miles of the Study Area (CDFW 2018). The mixed oak woodland within the Study Area provides day roosting habitat for this species. Therefore, this species has a *high* potential to occur within the Study Area.

Silver-Haired Bat – California Species of Special Concern

Silver-haired bat a California Species of Special Concern. This species occurs primarily in forested habitats, often coniferous, which are adjacent to lakes, ponds, or streams, including areas altered by human disturbance. During migration and summer, females roost alone or in maternity colonies, while males roost alone. Breeding occurs in late summer and early fall, and the young are born from June to July. Summer roosts and nursery sites occur in coniferous or deciduous tree foliage, within tree cavities, or under loose bark, and sometimes in buildings. Overwintering sites can include caves, mines, houses, rock crevices, under loose bark and in hollow trees. This species may enter a torpid state during periods of reduced food availability, or may hibernate during winter (NatureServe 2017). The species was not observed onsite during the December 2017 biological survey. There is one CNDDB record of this species listed within five miles of the Study Area (CDFW 2018). The mixed oak woodland within the Study Area provides roosting habitat for this species. Therefore, this species has a *high* potential to occur within the Study Area.

Nesting Birds

The nests of most birds are protected under the MBTA. Additionally, the USFWS and CDFW identified a number of avian species of conservation concern that do not have specific statutory protection. Avian species forage and nest in a variety of habitats throughout Placer County. The mixed oak woodland and non-native annual grassland within the Study Area provides suitable nesting and foraging habitat for protected birds including purple martin, Cooper's hawk, and white-tailed kite. Purple martin and white-tailed kite have known occurrences within five miles of the Study Area. Cooper's hawk is known to occur in the vicinity and observations of this species often go unreported to the CNDDB database. Therefore, these species have a *high* potential to occur within the Study Area. Other migratory bird species that have a *low* potential for occurrence within the Study Area include grasshopper sparrow and song sparrow ("Modesto" population).

Western Pond Turtle – California Species of Special Concern

Western pond turtle is a California Species of Special Concern. This species is typically found along quiet streams and ponds with basking sites and muddy bottoms, feeding on aquatic plants, fishes, and invertebrates (Zeiner *et al.* 1988 and Rosenberg *et. al*. 2009). They are generally associated with permanent or nearly permanent water sources (Californiaherps 2017) and prefer areas of deep water with low velocity and high temperatures (Reese and Hartwell 1997). Upland habitats adjacent to creeks and ponds are used throughout the year for nesting and overwintering. Turtles may also overwinter within a pond by burrowing into the mud on the pond bottom (Californiaherps 2017 and Riensche *et al.* 2013). Although studies have shown that the typical terrestrial use area can extend up to 500 meters from the edge of the aquatic habitat, the weighted average of recorded terrestrial use is 94 meters, or approximately 300

feet from suitable aquatic habitat. Western pond turtles prefer to overwinter in areas with moderate woody vegetation and leaf litter, and are unlikely to use annual grasslands (Reese and Hartwell 1997, Davis 1998, Pilliod *et al.* 2013). Eggs are laid between May and August and hatch in approximately 80 days. Hatchlings often stay in or around the nest through the winter. Nests are generally found within 30 meters (100 feet) of water in areas with little vegetative cover and good sun exposure (Rathbun *et al*. 2002). Little is known about dispersal patterns of western pond turtles, but genetic analysis shows most movement is along drainages (Riensche *et al.* 2013). This species was not observed during the December 2017 biological survey. The riparian habitat, mixed oak woodlands, and non-native annual grassland within the Study Area provide upland, wintering habitat for the species. Additionally, the off-site perennial drainage provides suitable aquatic habitat and therefore potential access to the Study Area. There is one CNDDB record for this species listed within five miles of the Study Area (CDFW 2018). Therefore, this species has a *high* potential to occur within the Study Area.

<u>Western Spadefoot – California Species of Special Concern</u>

Western spadefoot (*Spea hammondii*) occurs throughout the Central Valley and on the coast from Point Conception, south to the Mexican border. This species occurs from sea level up to 4,500 feet above MSL in the southern Sierra foothills. Western spadefoot individuals are most commonly found in grassland habitats with temporary pools of water, but they have also been found in open chaparral and valley-foothill pine-oak woodlands (Stebbins 2003). This species spends most of the year underground, where members seek refuge from desiccation by constructing and residing in small burrows. This species often breeds in temporary pools and quiet streams between the months of January and May that remain inundated for at least six weeks. The annual grassland and associated burrows within the Study Area provide aestivation habitat for this species. There are three CNDDB records of this species listed within five miles of the Study Area (CDFW 2018). Therefore, this species has a *high* potential to occur within the Study Area.

4.5. Sensitive Habitats

Sensitive habitats include those that are of special concern to resource agencies or those that are protected under CEQA, Section 1600 of the California Fish and Game Code, which include riparian areas, and/or Sections 401 and 404 of the Clean Water Act, which include wetlands and other waters of the U.S. Additionally, sensitive habitats, including oak trees and oak woodland habitat, are protected under the specific policies outlined in the City of Roseville Tree Ordinance.

4.5.1. Mixed Oak Woodland

As mentioned previously, the Study Area contains mixed oak woodlands throughout the Study Area. A total of 0.58 acres of mixed oak woodland was mapped in the Study Area (**Figure 3**). Oak trees are regulated under the City of Roseville Tree Ordinance. A total of 36 protected oak trees, consisting of 23 interior live oaks and 13 blue oaks were inventoried within the Study Area. Detailed tree data is included in a separate Arborist Report prepared by Foothill Associates (2019). A tree permit is required prior to the removal of protected oak trees.

4.5.2. Riparian

A total of approximately 0.01 acres of riparian habitat was mapped within the Study Area (**Figure 3**). As discussed in **Section 2.2**, riparian areas, defined as the outermost bank or the edge of riparian vegetation, whichever is greater, may be subject CDFW jurisdiction under Section 1602 of the Fish and Game Code. The limits of the riparian habitat were mapped as the edge of riparian vegetation adjacent to the off-site perennial drainage, and comprises only a small portion of the Study Area. The current site plan avoids all impacts to riparian habitat **(Figure 4**). Any changes to the current site plan or grading footprint that result in impacts to mapped riparian habitat may require preparation of a streambed notification for submittal to CDFW to determine if riparian areas onsite are regulated by CDFW. CDFW should be consulted prior to disturbance or development within the riparian area to determine whether issuance of a Streambed Alteration Agreement is required.

4.5.3. Wildlife Migration Corridors

Wildlife corridors link together areas of suitable wildlife habitat that are otherwise separated by rugged terrain, changes in vegetation, or human disturbance. The fragmentation of open space areas by urbanization creates isolated "islands" of wildlife habitat. Fragmentation can also occur when a portion of one or more habitats is converted into another habitat, such as when woodland or scrub habitat is altered or converted into grasslands after a disturbance such as fire, mudslide, or grading activities. Wildlife corridors mitigate the effects of this fragmentation by: (1) allowing animals to move between remaining habitats, thereby permitting depleted populations to be replenished and promoting genetic exchange; (2) providing escape routes from fire, predators, and human disturbances, thus reducing the risk of catastrophic events (such as fire or disease) on population or local species extinction; and (3) serving as travel routes for individual animals as they move within their home ranges in search of food, water, mates, and other needs. Although some species may travel along the perennial drainage corridor, the overall Study Area does not link two significant natural areas and is surrounded by similar habitat types within a largely developed area; therefore, it is not considered a wildlife migration corridor.

5.0 CONCLUSIONS

As discussed, the Study Area comprises approximately 1.74 acres of non-native annual grassland, 1.01 acres of disturbed/developed area, 0.58 acres of mixed oak woodland, and 0.01 acres of riparian habitat. Sensitive habitats identified within the Study Area include oak woodland and riparian habitat. **Table 1** summarizes the biological communities and expected impacts from the Proposed Project. Proposed project impacts are shown in **Figure 4**.

TABLE 1 — IMPACTS TO BIOLOGICAL COMMUNITIES

Biological Communities	Impacted Acreage	Preserved Acreage	Total Acreage
Non-Native Annual Grassland	1.71	0.03	1.74
Mixed Oak Woodland	0.56	0.02	0.58
Riparian	-	0.01	0.01
Disturbed/Developed	1.00	0.01	1.01
Total[1]	**3.27**	**0.07**	**3.34**

[1] Acreages are calculated to four significant figures and subsequently rounded to two significant figures.

Known or potential biological constraints within the Study Area include the following:

- Potential aestivation habitat for western pond turtle and western spadefoot;
- Potential roosting and foraging habitat for pallid bat and silver-haired bat;
- Potential nesting and foraging habitat for migratory birds and other birds of prey including: Cooper's hawk, grasshopper sparrow, white-tailed kite, song sparrow ("Modesto" population), and purple martin;
- Riparian habitat; and
- Protected oak trees.

5.1. Recommendations

5.1.1. Special-Status Reptiles and Amphibians

Special-status amphibians and reptiles have the potential to aestivate within the Study Area. A qualified biologist should conduct a pre-construction survey for special-status amphibian and reptile species including western pond turtle and western spadefoot within 14 days prior to ground-disturbing activities including, vegetation clearing and removal of trees, and grading operations.

If no special-status amphibians or reptiles are observed, then a letter report should be prepared to document the survey, and no additional measures are recommended. If construction does

not commence within 14 days of the pre-construction survey, or halts for more than 14 days, an additional survey is required prior to starting work.

If western spadefoot or western pond turtles are found, then a qualified biologist should conduct an environmental worker awareness training to all construction personnel. The training should include identification of the special-status species, required practices before the start of construction, general measures that are being implemented to conserve the species as they relate to the project, penalties for non-compliance, and boundaries of the Study Area and of the permitted disturbance zones. Supporting materials containing training information should be prepared and distributed. Upon completion of training, all construction personnel should sign a form stating that they have attended the training and understand all the measures. Proof of this instruction should be kept on file with the project proponent. The project proponent should provide CDFW with a copy of the training materials and copies of the signed forms by project staff indicating that training has been completed within 30 days of the completion of the first training session.

Furthermore, a qualified biologist should be present on-site during initial ground-clearing and grading activities for the purpose of relocating any special-status reptile or amphibian species found within the construction footprint to suitable habitat away from the construction zone.

5.1.2. Special-Status Bats

Special-status bats have the potential to roost and forage within the Study Area. A qualified biologist should conduct a pre-construction survey for special-status bat species, including pallid bat and silver haired bat, within 14 days prior to ground-disturbing activities including vegetation clearing and removal of trees, and grading operations. This can be conducted in combination with a pre-construction nesting bird survey. If no bats are observed, a letter report should be prepared to document the survey, and no additional measures are recommended. If construction does not commence within 14 days of the pre-construction survey, or halts for more than 14 days, an additional survey is required prior to starting work.

If special-status bats are present and roosting on or within 100 feet of the proposed project footprint, then the biologist should establish an appropriate buffer around the roost site prior to construction. Because the oak woodland continues off-site to the south, buffers may be limited to the property boundary and, if necessary, will be established by the conducting biologist at the time of the survey. At a minimum, no trees should be removed until the biologist has determined that the bat is no longer roosting in it. Additional mitigation measures for bat species, such as installation of bat boxes or alternate roost structures, would be recommended only if special-status bat species are found to be roosting within the proposed project area. In addition, a pre-construction environmental worker awareness training should be conducted alerting workers to the presence of and protections for various bat species.

5.1.3. Migratory Birds

Several special-status species of migratory birds have the potential to forage and nest in the Study Area, including Cooper’s hawk, grasshopper sparrow, white-tailed kite, song sparrow

("Modesto" population), and purple martin. Active nests are protected by the California Fish and Game Code Section 3503.5 and the MBTA. Ground-disturbing activities including vegetation clearing and tree removal could impact nesting birds if these activities occur during the nesting season (February 15 to August 31). All vegetation clearing including removal of trees and shrubs should be completed between September 1 and February 14, if feasible.

If construction activities within the Study Area begin during the nesting season (February 15 to August 31), a qualified biologist should conduct a pre-construction survey of the project footprint, where accessible, for active nests. Additionally, the surrounding 500 feet should be surveyed for active raptor nests, where accessible. Binoculars may be needed in order to survey areas outside of the Study Area and to remain within the property boundaries. The pre-construction survey should be conducted within 14 days prior to commencement of ground-disturbing activities. If the pre-construction survey shows that there is no evidence of active nests, a letter report should be prepared to document the survey, and no additional measures are recommended. If construction does not commence within 14 days of the pre-construction survey, or halts for more than 14 days, an additional survey is required prior to starting work.

If nests are found and considered to be active, the project biologist should establish buffer zones to prohibit construction activities and minimize nest disturbance until the young have successfully fledged. Buffer width will depend on the species in question, surrounding existing disturbances, and specific site characteristics, but may range from 20 feet for some songbirds to 250 feet for most raptors. If active nests are found within any trees slated for removal, then an appropriate buffer should be established around the trees and the trees should not be removed until a biologist determines that the nestlings have successfully fledged. In addition, a pre-construction worker awareness training should be conducted alerting workers to the presence of and protections for the active avian nests.

If construction activities begin during the non-breeding season (September 1 through January 31), a survey and training is not required and no further studies are necessary.

5.1.4. Riparian Habitat

Proposed construction activities will avoid all impacts to riparian habitat within the Study Area (**Figure 4**). If, it is later determined that riparian habitat cannot be avoided, it is recommended that a Streambed Alteration Agreement (SAA) application be submitted to CDFW, pursuant to Section 1600 of the California Fish and Game Code, for any activities affecting riparian vegetation. If required, the project proponent should coordinate with CDFW in developing appropriate mitigation, and should abide by the conditions of any executed permits.

High-visibility protective fencing should be placed along the avoided riparian habitat within the Study Area, facing the Project Site, for the duration of work. No work should be performed within this fencing.

5.1.5. Oak Trees

The Proposed Project would result in the removal of 33 protected oak trees within the Study Area. Three protected oak trees will be preserved during project construction. To mitigate for the loss of oak woodlands associated with the project, a combination of avoidance, protection, and on- or off-site replacement where feasible, is recommended. Tree protection measures should be implemented around trees to remain in the Study Area as detailed in the Arborist Report prepared for the project (Foothill Associates 2019).

5.2. Summary of Avoidance and Minimization Measures

- Conduct one pre-construction survey for special-status bats and nesting birds (as applicable) within 14 days prior to the start of construction within the limits of the Study Area, where accessible;
- Conduct one pre-construction survey for special-status reptile and amphibian species within 14 days prior to the start of construction within the limits of the Study Area, where accessible;
- Conduct environmental worker awareness training for special-status bats, western spadefoot, western pond turtle, and nesting migratory birds, prior to the start of construction, if needed;
- Install high-visibility protective fencing along the riparian boundary within the Study Area, as close as possible to the project's limits of disturbance, to avoid impacts to sensitive habitat and special-status species that may utilize this habitat including western spadefoot and western pond turtle; and
- Implement oak tree mitigation according to City of Roseville tree ordinance and implement tree protection measures for avoided oak trees, as outlined in the Arborist Report, during construction.

6.0 REFERENCES

Baldwin, B.G., D.H. Goldman, D.J. Keil, R. Patterson, T.J. Rosatti, and D.H. Wilken, eds. 2012. *The Jepson Manual: Vascular Plants of California*. 2nd Edition. University of California, Berkeley.

Barbour, Michael G., Todd Keeler-Wolf, and Allan A. Schoenherr, Editors. 2007. *Terrestrial Vegetation of California*, Third Edition. University of California Press, Berkeley and Los Angeles, California.

Calflora. 2017. *The Calflora Database: Information on California plants for Education, Research and Conservation*. Berkeley, California. Available online at: http://www.calflora.org. [Accessed on 12/19/2017].

California Department of Fish and Wildlife (CDFW). 2009. *Protocols for Surveying and Evaluating Impacts to Special-Status Native Plant Populations and Natural Communities*. State of California, California Natural Resources Agency. Department of Fish and Wildlife. November 24, 2009.

CDFW. 2018. *California Natural Diversity Data Base* (*Citrus Heights, Folsom, Buffalo Creek, Carmichael, Pleasant Grove, Rio Linda, Sacramento East, Roseville, and Rocklin* quadrangles U.S. Geological Survey (USGS) 7.5-minute series quadrangles), Sacramento, CA. [Accessed on 10/11/2018].

Californiaherps. 2017. *A Guide to the Amphibians and Reptiles of California*. Available online at: http://californiaherps.com. [Accessed 12/19/2017].

California Native Plant Society (CNPS). 2017. *Inventory of Rare and Endangered Plants* (online edition, v8-03 0.39) (*Citrus Heights, Folsom, Buffalo Creek, Carmichael, Pleasant Grove, Rio Linda, Sacramento East, Roseville, and Rocklin* quadrangles). [Accessed on 12/19/2017].

California Wildlife Habitat Relationship System (CWHR). Various years. Various *Life History Accounts* and *Range Maps*. California Department of Fish and Wildlife, Sacramento, California. Available online at: http://www.dfg.ca.gov/biogeodata/cwhr/cawildlife.aspx. [Accessed on 12/19/2017].

City of Roseville. 2004. *City of Roseville General Plan: Open Space and Conservation Element*. City of Roseville Planning Division. 2004. Available online at: https://www.roseville.ca.us/UserFiles/Servers/Server_7964838/File/Government/Departments/Development%20Services/Planning/General%20Plan/05_Open_Space__Conservation_Element_web.pdf. [Accessed on 12/19/2017].

City of Roseville. 2017. *Roseville Municipal Code, Chapter 19.66: Tree Preservation*. November 2017. Available online at: http://qcode.us/codes/roseville/?view=desktop&topic=19-iv-19_66-19_66_020. [Accessed on 12/19/2017].

Davis, Caroline J. 1998. *Western Pond turtle (Clemmys marmorata pallida) Master's Thesis*. San Jose State University.

Foothill Associates. 2019. *Arborist Report* [for the] H*untington Senior Apartments, City of Roseville,* California. January 29, 2019.

NatureServe. 2017. *NatureServe Explorer*: *An Online Encyclopedia of Life* [Web Application]. Version 7.1. Last updated November 2017. NatureServe, Arlington, Virginia. Available online at: http://www.natureserve.org/explorer. [Accessed on 12/19/2017].

Pilliod, D.S, J.L. Welty, and R. Stafford. 2013. *Terrestrial Movement Patterns of Western Pond Turtles (Actinemys marmorata) in Central California*. Herpetological Conservation and Biology 8(1): 207-221.

Rathbun, G. B., N. J. Scott, T. G. Murphey. 2002. Terrestrial habitat use by Pacific pond turtles in a Mediterranean climate. *Southwestern Naturalist* 47(2):225–235.

Reese, Devin A. and Hartwell H Welsh. 1997a. Habitat Use by Western Pond Turtle in the Trinity River, California. *Journal of Wildlife Management* 62(3):842-853.

Reese, Devin A. and Hartwell H Welsh. 1997b. Use of Terrestrial Habitat by Western Pond Turtles, *Clemmys marmorata*: Implications for Management. Pages 352-357 in *Proceedings of Conservation, Restoration, and Management of Tortoises and Turtles. An International Conference*.

Riensche, David L., Douglas A. Bell, Amda L. Dwyer, Janelle A. Dorcy. 2013. *Movement Patterns and Habitat Use by the Western Pond Turtle (Actinemys marmorata) in the East Bay Regional Park District*. Poster presentation prepared for The Wildlife Society 2013 Annual Conference.

Rosenberg, Daniel, J. Gervais, D. Vesely, S. Barnes, L. Holts, R. Horn, R. Swift, L. Todd, and C. Yee. 2009. *Conservation Assessment of the Western Pond Turtle in Oregon*.

Sawyer, John O. and Todd Keeler-Wolf. 1995. *A Manual of California Vegetation*. California Native Plant Society, Sacramento, California.

Stebbins, R. C. 2003. *Western Amphibians and Reptiles*, 3rd Edition. Boston: Houghton Mifflin Co.

U.S. Department of Agriculture (USDA), Natural Resources Conservation Service (NRCS). 1980. *Soil Survey of Placer County, California - Western Part, California*. USDA, NRCS, in cooperation with the Regents of the University of California (Agricultural Experiment Station).

USDA, NRCS. 2017. *Web Soil Survey*. Available online at: http://websoilsurvey.sc.egov.usda.gov/App/HomePage.html. [Accessed on 12/19/2017].

U.S. Fish and Wildlife Service (USFWS). 2017. *Information for Planning and Conservation* (IPaC) *Trust Resource Report*: *Huntington Senior Apartments, Roseville, California*. [Accessed on 12/19/2017].

U.S. Geological Survey (USGS). 2015. *Citrus Heights, California*. 7.5 -minute series topographic quadrangle. U.S. Department of the Interior.

Zeiner, D.C., W.F. Laudenslayer, Jr., K.E. Mayer, and M. White, eds. 1988. *California's Wildlife: California Wildlife Habitat Relationships*. Wildlife and Habitat Data Analysis Branch, California Department of Fish and Game. Available online at: https://www.wildlife.ca.gov/Data/CWHR. [Accessed on 12/19/2017].

Zeiner, D.C., W.F. Laudenslayer, Jr., K.E. Mayer, and M. White, eds. 1990. *California's Wildlife: California Wildlife Habitat Relationships*. Wildlife and Habitat Data Analysis Branch, California Department of Fish and Game. Available online at: https://www.wildlife.ca.gov/Data/CWHR. [Accessed on 12/19/2017].

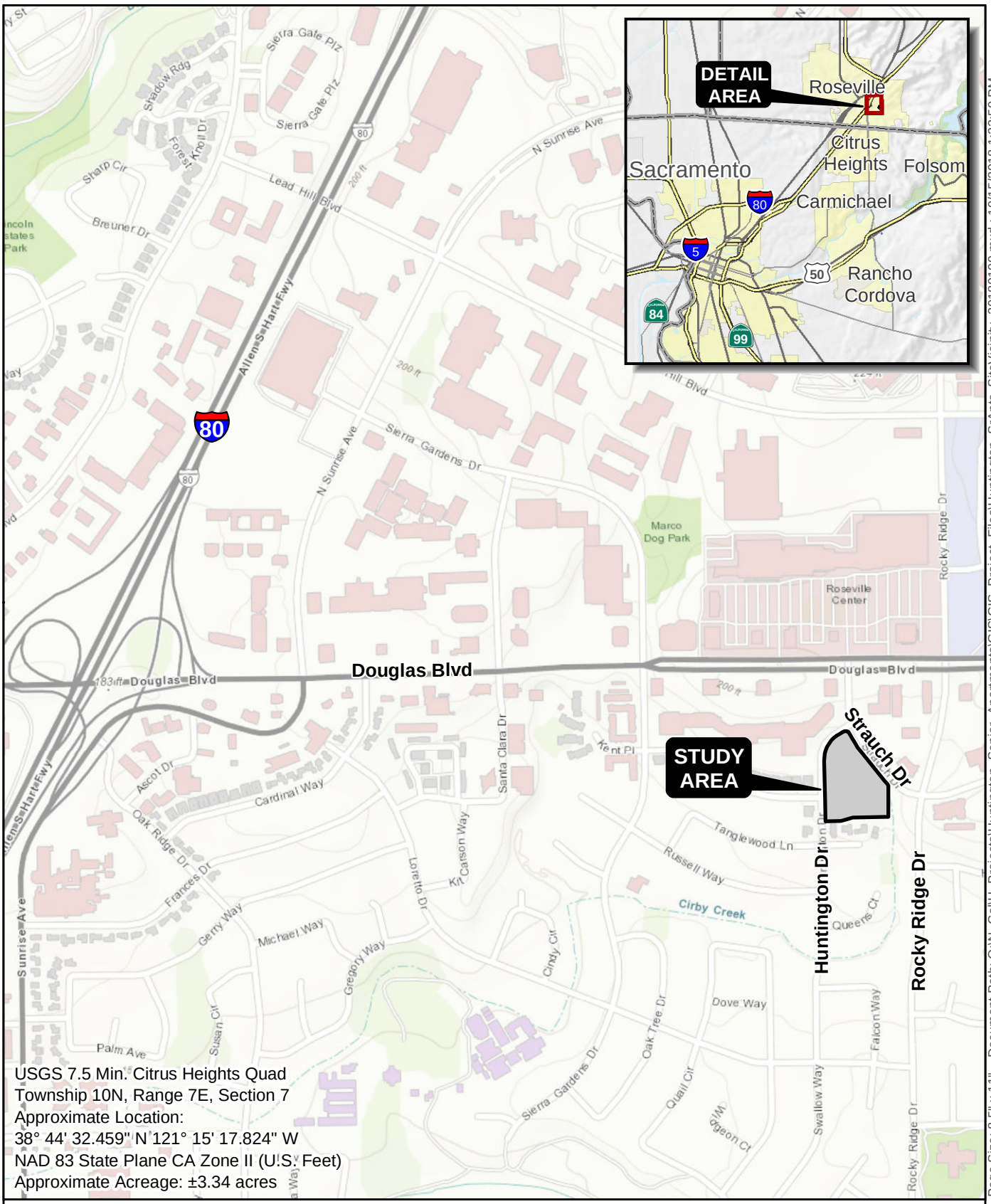

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FIGURE 1

HUNTINGTON SENIOR APARTMENTS

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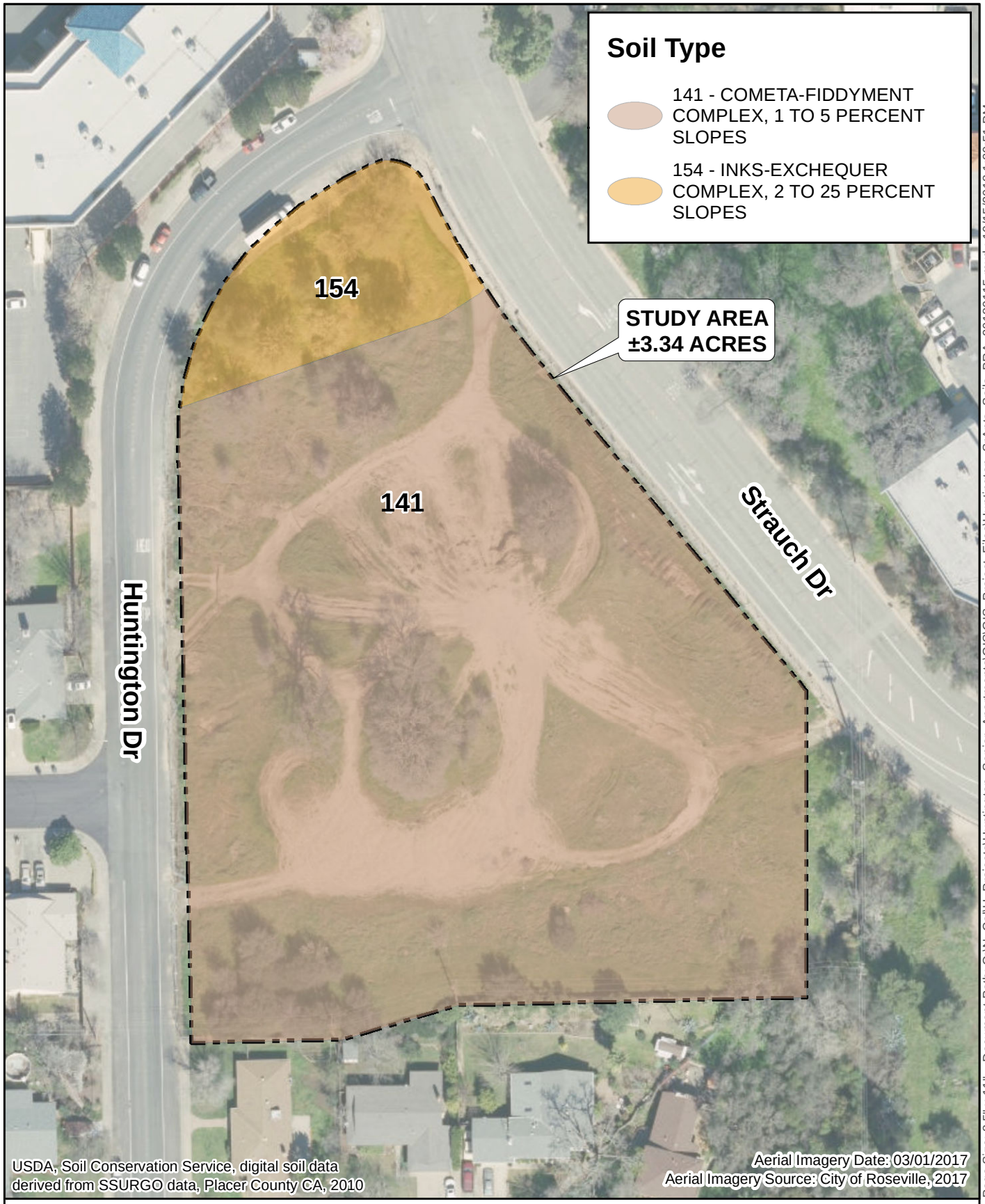

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SOILS

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FIGURE 2

HUNTINGTON SENIOR APARTMENTS

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BIOLOGICAL COMMUNITIES

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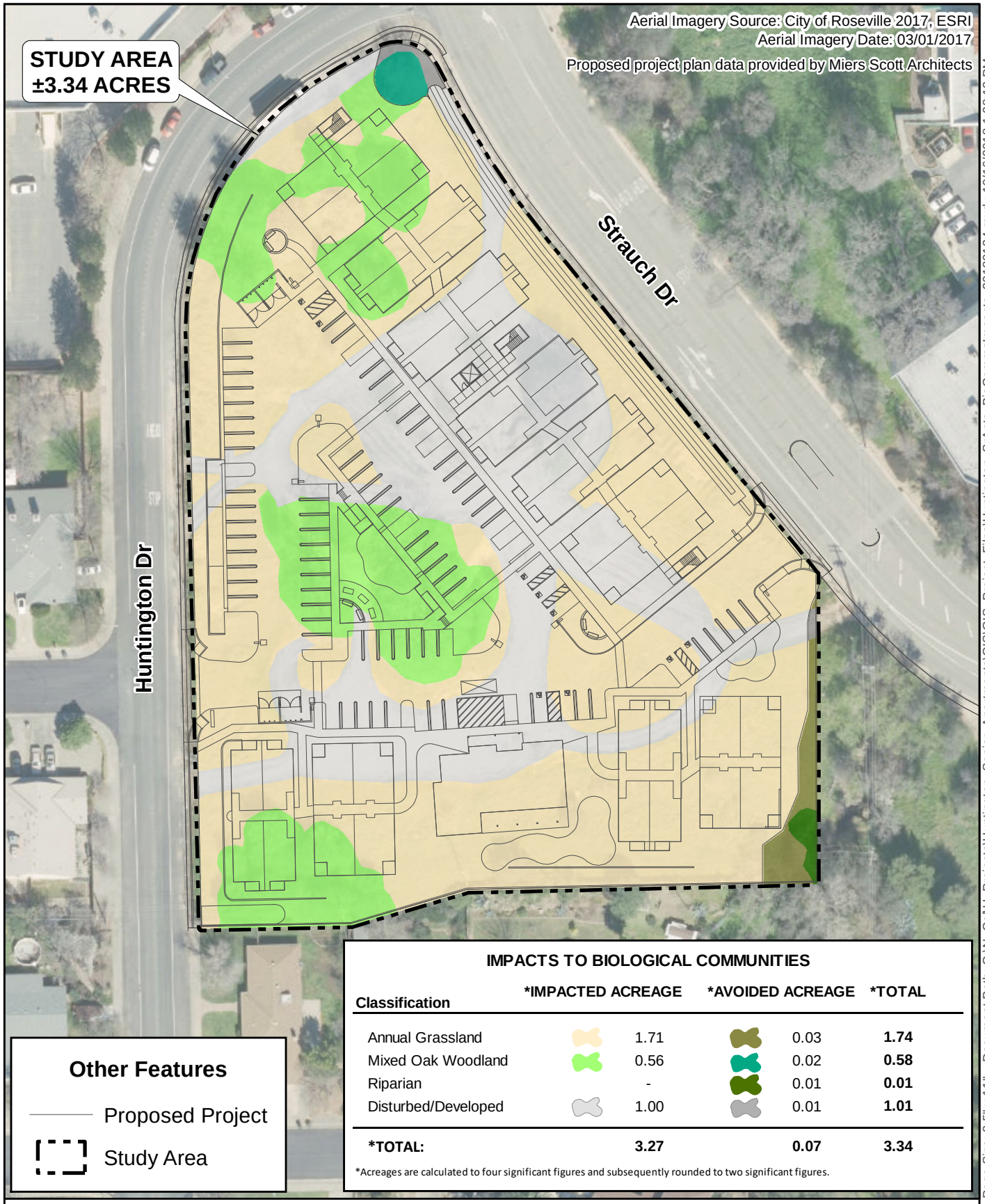
FIGURE 3

HUNTINGTON SENIOR APARTMENTS



IMPACTS TO BIOLOGICAL COMMUNITIES

Classification	*IMPACTED ACREAGE	*AVOIDED ACREAGE	*TOTAL
Annual Grassland	1.71	0.03	**1.74**
Mixed Oak Woodland	0.56	0.02	**0.58**
Riparian	-	0.01	**0.01**
Disturbed/Developed	1.00	0.01	**1.01**
***TOTAL:**	**3.27**	**0.07**	**3.34**

*Acreages are calculated to four significant figures and subsequently rounded to two significant figures.

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IMPACTS TO BIOLOGICAL COMMUNITIES

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FIGURE 4

Appendix A — Regionally Occurring Listed and Special-Status Species

Regulatory Status Legend

FE = Federal endangered FT = Federal threatened FC = Federal candidate PT = Federal proposed threatened FPD = Federal proposed for delisting FD = Federal delisted FSC = Federal Species of Concern	CE = California state endangered CT = California state threatened CCE = California candidate endangered CCT = California candidate threatened CFP = California fully protected CD = California delisted CSC = California Species of Special Concern CSA = California Special Animals List CR = California state rare	1A = plants presumed extinct in California 1B = plants rare, threatened, or endangered in California and elsewhere 2 = plants rare, threatened, or endangered in California, but common elsewhere 3 = plants about which we need more information 4 = plants of limited distribution

Table 1 — Legally Protected Species

Special-Status Species	Regulatory Status	Habitat Requirements	Identification/ Survey Period	Potential for Occurrence
Plants				
Boggs Lake hedge-hyssop *Gratiola heterosepala*	--; CE; --; 1B	Annual herb found on clay soils in vernal pools, marshes, and swamps, occasionally along the lake margins, from 10 to 2,375 meters.	Blooming period: April – August	**None**; the Study Area does not provide suitable habitat for this species. Four CNDDB occurrences are documented within five miles of the Study Area (CDFW 2018).
Sacramento Orcutt grass *Orcuttia californica* var. *viscida*	FE; CE; --; 1B	Annual herb found in vernal pools from 20-100 meters.	Blooming period: April – Jul(Sep)	**None**; the Study Area does not provide suitable habitat for this species. There are no CNDDB occurrences documented within five miles of the Study Area (CDFW 2018).
Slender Orcutt grass *Orcuttia tenuis*	FT; CE; 1B	Annual herb found in vernal pools that are often gravelly, from 35 to 1,760 meters.	Blooming period: May – October	**None**; the Study Area does not provide suitable habitat for this species. There are no CNDDB occurrences documented within five miles of the Study Area (CDFW 2018).
Invertebrates				
Conservancy fairy shrimp *Branchinecta conservatio*	FE; --; --; --	Found in large vernal pools (30 to 356,253 sq. meters) of varying soils and geology.	USFWS protocol-level wet-season sampling and/or dry season cyst identification.	**None**; the Study Area does not provide suitable habitat for this species. There are no CNDDB occurrences documented within five miles of the Study Area (CDFW 2018).
Valley elderberry longhorn beetle *Desmocerus californicus dimorphus*	FT; --; --; --	Sole hosts are elderberry (*Sambucus* sp.) shrubs usually associated with riparian areas. This species is known from portions of the Central Valley of California	Adults emerge in spring until June Exit holes visible year – round	**None**; there were no elderberry shrubs identified within the Study Area during the December 2018 site survey. Five CNDDB occurrences are documented within five miles of the Study Area (CDFW 2018).
Vernal pool fairy shrimp *Branchinecta lynchi*	FT; --; --; --	Inhabits vernal pools, swales, and ephemeral freshwater habitat. Known from Alameda, Butte, Calaveras, Colusa, Contra Costa, El Dorado, Fresno, Glenn, Kings, Madera, Merced, Monterey, Napa, Placer, Riverside, Sacramento, San Benito, San Joaquin, San Luis Obispo, Santa Barbara, Shasta, Solano, Stanislaus, Sutter, Tehama, Tulare, Tuolumne, Ventura, Yolo, and Yuba counties.	USFWS protocol-level wet-season sampling and/or dry season cyst identification	**None**; the Study Area does not provide suitable habitat for this species. There are 17 CNDDB occurrences documented within five miles of the Study Area (CDFW 2018).
Vernal pool tadpole shrimp *Lepidurus packardi*	FE; --; --; --	Inhabits vernal pools, swales, and ephemeral freshwater habitat. Known from Alameda, Butte, Colusa, Contra Costa, Fresno, Glenn, Kings, Merced, Placer, Fresno, San Joaquin, Shasta, Solano, Stanislaus, Sutter, Tehama, Tulare, Yolo, and Yuba counties.	USFWS protocol-level wet-season sampling and/or dry season cyst identification.	**None**; the Study Area does not provide suitable habitat for this species. One CNDDB occurrence is documented within five miles of the Study Area (CDFW 2018).
Fish				
Central Valley steelhead DPS *Oncorhynchus mykiss irideus*	FT; --; --; --	Found in cool, clear, fast-flowing permanent streams and rivers with riffles and ample cover from riparian vegetation or overhanging banks. Spawning occurs in streams with pool and riffle complexes. The species requires cold water and gravelly streambed to successfully breed. Spawn in the Fresno and San Joaquin rivers and tributaries before migrating to the Delta and Bay Area.	Spawns in winter and spring	**None**; the Study Area does not provide suitable habitat for this species. One CNDDB occurrence is documented within five miles of the Study Area (CDFW 2018).
Delta smelt *Hypomesus transpacificus*	FT; CE; --; --	Found in estuarine waters. Majority of life span is spent within the freshwater outskirts of the mixing zone (saltwater-freshwater interface) within the Delta.	December – July (Spawn) Year – round (Present in delta)	**None**; the Study Area does not provide suitable habitat for this species. There are no CNDDB occurrences documented within five miles of the Study Area (CDFW 2018).

Special-Status Species	Regulatory Status	Habitat Requirements	Identification/ Survey Period	Potential for Occurrence
Amphibians/ Reptiles				
California red-legged frog *Rana draytonii*	FT; CSC; --; --	Requires a permanent water source and is typically found along quiet, slow-moving streams, ponds, or marsh communities with emergent vegetation. Breeding sites are in aquatic habitats including pools and backwaters within streams and creeks, ponds, marshes, springs, sag ponds, dune ponds and lagoons from 0 to 1,500 meters. Additionally, frequently breed in artificial impoundments such as stock ponds. Typically found in or within 300 feet of aquatic habitat, but may disperse up to two miles between suitable aquatic habitat. Elevational range extends from sea level to about 1,500 meters (5,000 ft.), but typically occur below 1,200 meters (3,935 ft.).	Breeding: November – March Non-breeding: June – August	**None**; although the Study Area provides marginal upland habitat for this species, it is fragmented on all sides by development. Additionally, the Study Area is located on the very fringe of the known range of this species. There are no CNDDB occurrences documented within five miles of the Study Area (CDFW 2018).
California tiger salamander *Ambystoma californiense*	CT; FT	Breeds in vernal pools and seasonal ponds in grasslands and oak savannas. Adults spend summer in small mammal burrows.	March – June	**None**; the Study Area does not provide suitable habitat for this species and is outside of its known range. There are no CNDDB occurrences documented within five miles of the Study Area (CDFW 2018).
Giant garter snake *Thamnophis gigas*	FT; CT	Found in agricultural wetlands and other wetlands such as irrigation and drainage canals, low gradient streams, marshes, ponds, sloughs, small lakes, and their associated uplands in Sacramento, Sutter, Butte, Colusa, and Glenn counties.	Active outside of dormancy period November-mid March	**None**; although the Study Area provides marginal upland habitat for this species, it is fragmented on all sides by development. Additionally, the Study Area is located within the furthest limits of the known range of this species. There are no CNDDB occurrences documented within five miles of the Study Area (CDFW 2018).
Birds				
Bank swallow *Riparia riparia*	--; CT; --; --	Colonial breeder found in open and partly open situations, frequently near flowing water. Nests on steep sand, dirt, or gravel banks, in burrows dug near the top of the bank, along the edge of inland water, or along the coast, or in gravel pits or road embankments.	Breeding: April – September	**None**; the Study Area does not provide suitable habitat for this species. There are no CNDDB occurrences documented within five miles of the Study Area (CDFW 2018).
California black rail *Laterallus jamaicensis coturniculus*	--; CT; --; --	Saltwater, brackish, and freshwater marshes. This species is known from Alameda, Butte, Contra Costa, Imperial, Los Angeles, Marin, Napa, Nevada, Orange, Placer, Sacramento, San Bernardino, San Diego, San Francisco, San Joaquin, San Luis Obispo, San Mateo, Santa Clara, Santa Cruz, Solano, Sonoma, Sutter, and Yuba counties, in California.	Year – round	**None**; the Study Area does not provide suitable habitat for this species. There are no CNDDB occurrences documented within five miles of the Study Area (CDFW 2018).
Swainson's hawk *Buteo swainsoni*	--; CT; --; --	Nest peripherally in valley riparian systems, lone trees or groves of trees in agricultural fields. Valley oak, Fremont cottonwood, walnut, and large willow trees, ranging in height from 41 to 82 feet, are the most commonly used nest trees in the Central Valley.	Breeding: March – October	**None**; although the Study Area contains annual grassland, the site is highly disturbed and not large enough to be considered foraging habitat for this species. Additionally, the Study Area is on the very fringe of the known range of this species. There are no CNDDB occurrences documented within five miles of the Study Area (CDFW 2018).
Western yellow-billed cuckoo *Coccyzus americanus occidentalis*	FT; CE; --; --	Found in woodlands, thickets, orchards, and streamside groves. Breeds mostly in dense deciduous stands, including forest edges, tall thickets, dense second growth, overgrown orchards, scrubby oak woods. Often found in willow groves around marshes. In the west, mostly in streamside trees, including cottonwood-willow groves in arid country.	Late Spring – Early Fall	**None**; the Study Area is outside of the known range of this species. There are no CNDDB occurrences documented within five miles of the Study Area (CDFW 2018).
Tricolored blackbird *Agelaius tricolor*	--; CCE; CSA; --	Breeding habitat is freshwater marshes that include cattails, tules, bulrushes and sedges. Nests are made in the dense vegetation of the marsh or thickets, and sometimes on the ground. In migration and winter, will inhabit open cultivated lands and pastures as well as marshes.	Year – round	**None**; because of the small size and degree of fragmentation, the Study Area does not provide suitable nesting or foraging habitat for this species One CNDDB occurrence is documented within five miles of the Study Area (CDFW 2018).

Note: Table 1 includes federal threatened or endangered species and eagles, and State threatened, endangered, or fully protected species.

Table 2 — Species Subject to CEQA Review

Special-Status Species	Regulatory Status	Habitat Requirements	Identification/ Survey Period	Potential for Occurrence
Plants				
Ahart's dwarf rush *Juncus leiospermus* var. *ahartii*	1B	Annual herb found in mesic areas in valley and foothill grasslands from 30 to 229 meters.	Blooming period: April – August	**None**; the Study Area does not provide suitable habitat for this species. There are no CNDDB occurrences documented within five miles of the Study Area (CDFW 2018).
Big-scale balsamroot *Balsamorhiza macrolepis*	--; --; --; 1B	Perennial herb found sometimes in serpentine soils within chaparral, cismontane woodland, and valley and foothill grassland habitats from 90 to 1,555 meters.	Blooming period: March – June	**None**; the Study Area does not provide suitable soils and is outside of the known elevational range of this species. One CNDDB occurrence is documented within five miles of the Study Area (CDFW 2018).
Dwarf downingia *Downingia pusilla*	--; --; --; 2B	An annual herb found in mesic areas within valley and foothill grassland and vernal pool habitats from 1 to 445 meters.	Blooming period: March – May	**None**; the Study Area does not provide suitable habitat for this species. Nine CNDDB occurrences are documented within five miles of the Study Area (CDFW 2018).
Hispid bird's-beak *Chloropyron molle* ssp. *hispidum*	--; --; --; 1B	An annual hemiparasitic herb found in alkaline soils within meadows and seeps, playas, and valley and foothill grassland from 1 to 155 meters.	Blooming period: June – September	**None**; the Study Area does not provide the soils required for this species. One CNDDB occurrence is documented within five miles of the Study Area (CDFW 2018).
Legenere *Legenere limosa*	1B	Annual herb found in vernal pools from 1 to 880 meters.	Blooming period: April – June.	**None**; the Study Area does not provide suitable habitat for this species. One CNDDB occurrences are documented within five miles of the Study Area (CDFW 2018).
Pincushion navarretia *Navarretia myersii*	--; --; --; 1B	Annual herb often found in acidic soils within vernal pools from 20 to 330 meters.	Blooming period: April – May	**None**; the Study Area does not provide suitable habitat for this species. There are no CNDDB occurrences documented within five miles of the Study Area (CDFW 2018).
Red Bluff dwarf rush *Juncus leiospermus* var. *leiospermus*	1B	Annual herb found in vernally mesic areas of chaparral, woodland, meadows and seeps, valley and foothill grassland, and vernal pools from 35 to 1,250 meters.	Blooming period: March – May	**None**; the Study Area does not provide suitable habitat for this species. There are no CNDDB occurrences documented within five miles of the Study Area (CDFW 2018).
Sanford's arrowhead *Sagittaria sanfordii*	--; --; --; 1B	Perennial rhizomatous herb found in marshes and swamps in assorted shallow freshwater areas from 0 to 650 meters.	Blooming period: May – October	**None**; the Study Area does not provide suitable habitat for this species. Three CNDDB occurrences are documented within five miles of the Study Area (CDFW 2018).
Invertebrates				
California linderiella *Linderiella occidentalis*	--; CSA; --; --	Found in a variety of natural, and artificial seasonally ponded freshwater habitats, including vernal pools, swales, ephemeral drainages, stock ponds, reservoirs, ditches, backhoe pits, and ruts caused by vehicular activity.	Wet-season sampling and/or dry season cyst identification	**None**; the Study Area does not provide suitable habitat for this species. There are 13 CNDDB occurrences documented within five miles of the Study Area (CDFW 2018).
Amphibians/Reptiles				
Western pond turtle *Emys marmorata*	--; CSC; --; --	Typically associated with permanent ponds, lakes, streams, irrigation ditches and canals, and marshes, or pools in intermittent drainages, usually lined with abundant vegetation and either rocky or muddy bottom substrates. Requires aquatic basking sites, such as logs, rocks, cattail mats or exposed banks. Turtles are active from February to November, in which breeding occurs from April to May. Overwintering occurs in upland terrestrial habitats close to water sources (approximately 300 feet), in which they will bury themselves under loose soil.	Active: February – November	**High**; the Study Area provides suitable wintering habitat for this species within the annual grassland and oak woodland. Habitat is marginal; however, the off-site perennial drainage provides potential access to the Study Area. One CNDDB occurrence is documented within five miles of the Study Area (CDFW 2018).

Special-Status Species	Regulatory Status	Habitat Requirements	Identification/ Survey Period	Potential for Occurrence
Western spadefoot *Spea hammondii*	--; CSC; --; --	Found in a variety of upland habitats, including lowlands, foothills, grasslands, open chaparral, and pine-oak woodlands. Habitat preferences include shortgrass plains, and sandy or gravelly soils for burrowing (e.g. alkali flats, washes, alluvial fans). Hibernates/aestivates for most of the year underground. During the breeding season are found in temporary rain pools, and slow-moving streams (e.g. areas flooded by intermittent streams).	Breeding: January – May	**High**; the Study Area provides aestivation habitat for this species within the burrows in the annual grassland habitat. The offsite perennial drainage provides access to the Study Area. Three CNDDB occurrences are documented within five miles of the Study Area (CDFW 2018).
Birds				
Burrowing owl *Athene cunicularia*	--; CSC; --; -- (burrowing sites and some wintering sites)	Nests in burrows in the ground, often in old ground squirrel burrows or badger, within open dry grassland and desert habitat. The burrows are found in dry, level, open terrain, including prairie, plains, desert, and grassland with low height vegetation for foraging and available perches, such as fences, utility poles, posts, or raised rodent mounds.	Year – round	**None**; although the Study Area contains annual grassland habitat, the site is extremely fragmented with surrounding development, and is located on the fringe of the known year-round range for this species. Additionally, the nearest known occurrence is approximately seven miles away, and this occurrence is 15 years old. There are no CNDDB occurrences documented within five miles of the Study Area (CDFW 2018).
Cooper's hawk *Accipiter cooperii*	--; CSC; --; --	Found in cismontane woodland, riparian forest, riparian woodland, and upper montane coniferous forest.	Year – round	**High**; the oak woodland and riparian woodland within the Study Area provide habitat for this species. Additionally, this species is known to occur locally and observations often go unreported to the CNDDB database. There are no CNDDB occurrences documented within five miles of the Study Area (CDFW 2018).
Double-crested cormorant *Phalacrocorax auritus*	--; CSA; --; --	Found in a wide variety of aquatic habitats including coasts, bays, lakes, rivers, mangrove swamps, reservoirs and inland ponds. Nesting occurs in trees near or over water, on sea cliffs or on the ground on islands.	Year – round	**None**; the Study Area does not provide suitable habitat for this species. There are no CNDDB occurrences documented within five miles of the Study Area (CDFW 2018).
Ferruginous Hawk *Buteo regalis*	--; CSA; --; --	Found in prairies, deserts, and open grasslands. This is the largest of North American hawks, with a distinct gray head and rust colored shoulders.	Winter-non-breeding	**None**; the Study Area does not provide suitable habitat for this species. There are no CNDDB occurrences documented within five miles of the Study Area (CDFW 2018).
Golden eagle *Aquila chrysaetos*	--; CFP; --; -- (nesting and wintering)	Open and semi-open areas in the mountains up to 12,000 feet in elevation. They are also found in canyon lands, rimrock, terrain, and riverside cliffs and bluffs. Nest are built on cliffs and steep escarpments in grassland, in trees, chaparral, shrubland, forests and man-made structures within vegetated areas.	Year – round	**None**; although the Study Area contains annual grassland, the site is highly disturbed and not large enough to be considered foraging habitat for this species. There are no CNDDB occurrences documented within five miles of the Study Area (CDFW 2018).
Grasshopper sparrow *Ammodramus savannarum*	--; CSC; --; --	Frequents dense, dry, or well drained grassland, especially native grassland. Nests at base of overhanging clump of grass. This species is known from Los Angeles, Mendocino, Orange, Placer, Sacramento, San Diego, San Luis Obispo, Solano, and Yuba counties, in California.	April – July	**Low**; the Study Area contains suitable nesting and foraging habitat for this species within the annual grassland. There are no CNDDB occurrences documented within five miles of the Study Area (CDFW 2018).
Great blue heron *Ardea herodias*	--; CSA; --; --	Inhabits both freshwater and saltwater habitats and forages in grassland and agricultural field. Breeding colonies are located within 2 to 4 miles of feeding areas, often in isolated swamps or on islands, and near lakes and ponds bordered by forests.	Year – round	**None**; the Study Area does not provide suitable habitat for this species. There are no CNDDB occurrences documented within five miles of the Study Area (CDFW 2018).
Great egret *Ardea alba*	--; CSA; --; --	Found in marshes, swampy woods, tidal estuaries, lagoons, mangroves, streams, lakes, ponds, fields and meadows. Nests primarily in tall trees, or in woods or thickets near water.	Year – round	**None**; the Study Area does not provide suitable habitat for this species. There are no CNDDB occurrences documented within five miles of the Study Area (CDFW 2018).
Merlin *Falco columbarius*	--; CSA; --; --	Non-breeding habitats include a wide variety, such as marshes, deserts, sea coasts, near coastal lakes and lagoons, open woodlands, fields, etc. During winter, may roost in conifer trees.	Winter (non-breeding)	**None**; the Study Area does not provide suitable habitat for this species. There are no CNDDB occurrences documented within five miles of the Study Area (CDFW 2018).

Special-Status Species	Regulatory Status	Habitat Requirements	Identification/ Survey Period	Potential for Occurrence
Osprey *Pandion haliaetus*	--; CSA; --; --	Found near a water source, either freshwater or salt water, such as coastal estuaries, salt marshes, large lakes, reservoirs, and rivers, where large numbers of fish are present. Sometimes seen in desert habitat during migration.	Winter (Non-Breeding)	**None**; the Study Area does not provide suitable habitat for this species. There are no CNDDB occurrences documented within five miles of the Study Area (CDFW 2018).
Purple martin *Progne subis*	--; CSC; --; --	Nests in wide variety of open and partly open habitats that are often near water or around towns. Nests in tree cavities, abandoned woodpecker holes, crevices in rocks, and sometimes in bird houses or gourds put up by humans.	Summer (breeding)	**High**; the Study Area provides suitable habitat for this species within the oak woodland and riparian area. There is one CNDDB occurrence documented within five miles of the Study Area (CDFW 2018).
Song sparrow ("Modesto" population) *Melospiza melodia*	--; CSC; --; --	Found in thickets, brush, marshes, roadsides, gardens. Habitat varies over its wide range. In most areas, found in brushy fields, streamsides, shrubby marsh edges, woodland edges, hedgerows, well-vegetated gardens. Some coastal populations live in salt marshes. Nests in dense streamside brush in southwestern deserts, and in any kind of dense low cover on Aleutian Islands, Alaska.	Year – round	**Low**; the Study Area provides suitable nesting and foraging habitat for this species within the oak woodland and riparian habitat. There are no CNDDB occurrences documented within five miles of the Study Area (CDFW 2018).
White-tailed kite *Elanus leucurus*	--; CFP; --; -- (nesting)	Inhabit savanna, open woodlands, marshes, desert grassland, partially cleared lands and cultivated fields. Nests in trees, often near a marsh in savanna, open woodland, partially cleared lands, and cultivated fields. Foraging occurs within ungrazed or lightly-grazed fields and pastures.	Year – round	**High**; the Study Area provides suitable nesting habitat for this species within the oak woodland and suitable foraging habitat within the annual grassland. Two CNDDB occurrences are documented within five miles of the Study Area (CDFW 2018).
Mammals				
American badger *Taxidea taxus*	--; CSC; --; --	Found in a variety of grassland, shrublands, and open woodlands throughout California. Suitable burrowing habitat requires friable soil.	Year – round	**None**; although the Study Area contains suitable habitat for this species, the site is fragmented on all sides by development. Therefore, it is highly unlikely that this species could utilize the small and fragmented habitat within the Study Area. There are no CNDDB occurrences documented within five miles of the Study Area (CDFW 2018).
Pallid bat *Antrozous pallidus*	--; CSC; --; --	Mostly are found in desert habitats, including scrub and canyons with rocky outcrops, and in oak woodland, savannah, and riparian habitats up to about 1,800 meters, and generally below 2,000 meters. Maternity roosts in rock crevices, in buildings and other man-made structures. Day roosting sites include caves, crevices, mines, and occasionally in hollow trees and buildings, while nighttime roosts may occur in more open areas, such as porches or open buildings	Year – round	**High**; the Study Area provides suitable roosting habitat for this species within the oak woodland. One CNDDB occurrence is documented within five miles of the Study Area (CDFW 2018).
Silver haired bat *Lasionycteris noctivagans*	--; CSC; --; --	Found in primarily coniferous forested areas adjacent to lakes, ponds, and streams. Summer roosts and nursery sites occur in coniferous or deciduous tree foliage, cavities or under loose bark, and sometimes in buildings. In winter, can be found in caves, mines, houses, rock crevices, under loose bark, and in hollow trees.	Year – round	**High**; the Study Area provides suitable roosting habitat for this species within the oak woodland. One CNDDB occurrence is documented within five miles of the Study Area (CDFW 2018).

Note: Table 2 includes state and federal species of concern and Rank 1 and 2 CNPS species.

Table 3 — Other Species of Interest

Special-Status Species	Regulatory Status	Habitat Requirements	Identification/ Survey Period	Potential for Occurrence
Plants				
Adobe navarretia *Navarretia nigelliformis* ssp. *nigelliformis*	--; --; --; 4	Annual herb found on clay, and sometimes serpentinite soils in vernally mesic valley and foothill grasslands and sometimes vernal pools from 100 to 1,000 meters.	Blooming period: April – June	**None**; the Study Area does not provide suitable habitat for this species and is outside of its known elevational range. There are no CNDDB occurrences documented within five miles of the Study Area (CDFW 2018).
Brandegee's clarkia *Clarkia biloba* ssp. *biloba*	--; --; --; 4	Annual herb found often in roadcuts within chaparral, cismontane woodland, and lower montane coniferous forest from 75 to 915 meters.	Blooming period: May – July	**None**; the Study Area is outside of the known elevational range of this species. There are no CNDDB occurrences documented within five miles of the Study Area (CDFW 2018).
Stinkbells *Fritillaria agrestis*	--; --; --; 4	Perennial bulbiferous herb found in clay soils, sometimes in serpentinite, chaparral, cismontane woodland, pinyon and juniper woodland, and valley and foothill grassland from 10 to 1,555 meters (CNPS 2016).	Blooming period: March – June	**None**; although the Study Area contains a claypan, it is highly disturbed and has been historically used to place fill from surrounding development. Additionally, the only known occurrence within five miles of the Study Area is over 100 years old. One CNDDB occurrence is documented within five miles of the Study Area (CDFW 2018).
Invertebrates				
Andrenid bee *Andrena subapasta*	--; CSA; --; --	Found in grassland habitats within El Dorado, Placer, Sacramento, and San Joaquin counties. Ground nesters that will be underground from summer, fall and winter and emerge in early spring to forage and pollinate early bloomers, such as willows, maples, violets and other early blooming wildflowers.	Year – round	**None**; site does not contain vernal pools for nesting habitat. One CNDDB occurrence is documented within five miles of the Study Area (CDFW 2018).
Mid-valley fairy shrimp *Branchinecta mesovallensis*	CSA	Inhabits vernal pools, swales, and ephemeral freshwater habitat.	Wet-season sampling and/or dry season cyst identification.	**None**; the Study Area does not provide suitable habitat for this species.
Ricksecker's water scavenger beetle *Hydrochara ricksecker*i	--; CSA; --; --	An aquatic beetle known to occur in shallow waters of creeks, artificial ponds, springs and brooks. Known to occur along the San Francisco Bay within Alameda, Marin, San Mateo and Sonoma counties. Can also be found in Lake, Placer, Sacramento, San Joaquin, and Solano counties.	Year – round	**None**; the Study Area does not provide suitable habitat for this species.

Note: Table 3 includes Rank 3 and 4 CNPS species and non-listed invertebrates, which may not be subject to CEQA review.

Appendix B — Plants and Wildlife Observed in the Study Area

Appendix B — Plant Observed in the Study Area

Family	Scientific Name	Common Name	Native or Invasive
Agavaceae	*Agave americana*	American century plant	N
Agavaceae	*Agave* sp.	Agave	--
Anacardiaceae	*Toxicodendron diversilobum*	Poison oak	N
Arecaceae	*Washingtonia robusta*	Mexican fan palm	I
Asteraceae	*Centromadia fitchii*	Spikeweed	N
Asteraceae	*Senecio vulgaris*	Common groundsel	I
Brassicaceae	*Raphanus sativus*	Radish	I
Fabaceae	*Trifolium hirtum*	Rose clover	I
Fabaceae	*Trifolium wormskioldii*	Cow clover	N
Fabaceae	*Vicia villosa* ssp. *varia*	Winter vetch	I
Fagaceae	*Quercus douglasii*	Blue oak	N
Fagaceae	*Quercus wislizeni*	Interior live oak	N
Geraniaceae	*Erodium botrys*	Big heron bill	I
Geraniaceae	*Geranium molle*	Dove's foot geranium	I
Juncaceae	*Juncus xiphioides*	Iris leaved rush	N
Lythraceae	*Lagerstroemia* sp.	Crepe myrtle	I
Montiaceae	*Claytonia perfoliata*	Miner s lettuce	N
Onagraceae	*Epilobium* sp.	Willowherb	N
Plantaginaceae	*Plantago* sp.	Plantain	--
Poaceae	*Avena fatua*	Wild oat	I
Poaceae	*Bromus diandrus*	Ripgut grass	I
Poaceae	*Bromus hordeaceus*	Soft brome	I
Poaceae	*Elymus caput-medusae*	Medusa head	I
Poaceae	*Festuca perennis*	Italian rye grass	I
Poaceae	*Paspalum dilatatum*	Dallis grass	I
Polygonaceae	*Rumex crispus*	Curly dock	I
Rosaceae	*Photinia* sp.	Photinia	I
Rosaceae	*Prunus dulcis*	Almond	I
Rosaceae	*Rubus armeniacus*	Himalayan blackberry	I
Rubiaceae	*Cephalanthus occidentalis*	Button willow	N
Rubiaceae	*Galium* sp.	Bedstraw	N
Salicaceae	*Populus fremontii* ssp. *fremontii*	Fremont cottonwood	N
Salicaceae	*Salix laevigata*	Red willow	N
Scrophulariaceae	*Verbascum thapsus*	Woolly mullein	I
Themidaceae	*Triteleia laxa*	Ithuriel's spear	N
Vitaceae	*Vitis californica*	California grape	N

Appendix B — Wildlife Observed in the Study Area

Scientific Name	Common Name
Aphelocoma californica	California Scrub-Jay
Calypte anna	Anna's Hummingbird
Melanerpes formicivorus	Acorn Woodpecker
Mimus polyglottos	Northern Mockingbird
Sayornis nigricans	Black Phoebe
Zenaida macroura	Mourning Dove

Appendix C — Representative Site Photographs

Description: Looking northwest at mixed oak woodland within northwest corner of Study Area.

Date: December 27, 2017 Photographer: Z. Neider

Description: Looking west at Study Area and riparian habitat. Photo taken from east side of off-site perennial drainage.

Date: December 27, 2017 Photographer: Z. Neider

REPRESENTATIVE SITE PHOTOGRAPHS

Description: Looking northwest at large oaks in western portion of Study Area.

Date: December 27, 2017 Photographer: Z. Neider

Description: Looking west from top of soil mound near the center of the Study Area. Note erosion and sandy soils.

Date: December 27, 2017 Photographer: Z. Neider

REPRESENTATIVE SITE PHOTOGRAPHS

Attachment 4

Arborist Report [for the] *Huntington Senior Apartments, City of Roseville, California*, prepared by Foothill Associates

January 29, 2019

Arborist Report

Huntington Senior Apartments
City of Roseville, California

Prepared for:

Stamas Corporation

January 29, 2019

Prepared by:

FOOTHILL ASSOCIATES

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1.0 INTRODUCTION

This report presents the results of a field update conducted by Foothill Associates to a tree survey conducted in April 2017 by Acorn Arboricultural Services (Acorn) for the ±3.34-acre Huntington Senior Apartments Project site (Study Area). The associated report by Acorn was reviewed and field-verified by Foothill Associates in order to identify any significant changes in tree health from the findings in the Acorn assessment. Updates to tree conditions are included in this report. The Study Area is located at 1650 Huntington Drive, approximately 0.8 miles east of Interstate 80, south of Douglas Boulevard and west of Rocky Ridge Drive within Township 10 North, Range 7 East, Section 7 on the USGS *Citrus Heights, California* 7.5-minute quadrangle map (**Figure 1**).

The purpose of this report is to document and assess the trees on the project site and assess the impacts to protected trees associated with the proposed project.

1.1. City of Roseville Tree Ordinance

The City of Roseville regulates the removal of or impact to protected trees under Chapter 19.66 of the Roseville Municipal Code. Protected trees are defined as any native oak tree with a trunk diameter equal to or greater than six inches at breast height (DBH), which is at 54" above grade, measured as a total of a single trunk or multiple trunks. No work that might impact the tree, including grading, trenching, or irrigation, is allowed within the protected zone of a protected tree, defined as the dripline radius plus one foot, without a tree permit. No permit is required for the removal of a protected tree under the following situations:

1) Trees damaged by thunderstorm, windstorm, flood, earthquake, fire or other natural cause and determined by a peace officer, fire fighter, public utility official, civil defense official or city code enforcement officer, acting in his or her official capacity, to present a danger to persons or property. Upon discovery of a condition justifying removal, the officer or official making the determination shall immediately provide written notification of the condition and action taken to the planning director.

2) When removal is determined to be necessary by fire department personnel actively engaged in fighting a fire.

3) When compliance would interfere with activities of a public utility necessary to comply with applicable safety regulations and/or necessary to repair or avoid the interruptions of services provided by such a utility. Unless there is an imminent threat to the public health, safety or welfare, the planning director shall be notified prior to the removal by a public utility of a protected tree.

4) The planning director may allow removal of a protected tree which has been certified by an arborist to be a dead tree. An arborist-certified dead tree may be removed without any replacement or mitigation requirements.

5) A protected tree located on property developed with a single-family or two-family dwelling which has been granted occupancy.

6) When a protected living tree presents a hazard to health and safety or structures due to its structural condition and location, the tree may be removed without any replacement or mitigation requirements. The hazardous condition of the tree must be determined by an arborist. The planning director must review the arborist's determination and consider the location of the protected tree prior to approving removal.

2.0 METHODS

The Study Area was surveyed by International Society of Arboriculture (ISA) Certified Arborist Zachary Neider (WE-11615A) on December 27, 2017. All protected native oaks previously inventoried by Acorn were assessed to identify any significant changes in health from the previous assessment. Each surveyed tree was examined to verify species type and trunk DBH. A diameter tape or calipers were used to measure each trunk diameter at 54 inches above grade. With the exception of trees #498 and #499, tagged by Foothill Associates, trees were tagged by Acorn with a round, pre-printed aluminum tag, and correspond to the numbering in **Appendix A**. The measurement from the trunk to the end of the longest lateral limb was verified and used as the approximate dripline radius (DLR). Approximate tree locations were mapped using a Trimble GeoXT Global Positioning System (GPS) hand-held unit with sub-meter accuracy. Approximate tree locations and potential project impacts to surveyed trees are identified in **Figure 2**.

The health and structural condition of each tree was verified and rated according to **Table 1**. The health rating considers factors such as the size, color, and density of the foliage; the amount of deadwood within the canopy; bud viability; evidence of wound closure; and the presence or evidence of stress, disease, nutrient deficiency, and insect infestation. The structural rating reflects the trunk and branch configuration; canopy balance; the presence of included bark and other structural defects such as decay; and the potential for structural failure. In cases where conditions fall between the good, fair, and poor ratings, intermediate ratings fair-good and poor-fair were used.

TABLE 1 — TREE RATING SYSTEM

Rating	Tree Health
Good	There is an average or below-average amount of deadwood/dieback with respect to the tree's size and growing environment; leaf size, color, and density are typical for the species; buds are normal size, viable, abundant, and uniform throughout the canopy; current and past growth increments are generally average or better; any callusing is vigorous. This health rating indicates that there is very little, if any, evidence of stress, disease, nutrient deficiency, and/or insect infestation.
Fair	There is an above-average amount of deadwood/dieback with respect to the tree's size and growing environment; leaf size, color, and density may be below what is typically expected for the species; buds are normal size and viable, but slightly sparse throughout the canopy; current and past growth increments may be below average; tree may be slow to callus around old wounds. This health rating indicates that there is moderate evidence of stress, disease, nutrient deficiency, and/or insect infestation.
Poor	There is an extreme amount of deadwood/dieback with respect to the tree's size and growing environment; leaf size, color, and density are clearly compromised; very few viable buds are present throughout the canopy; current and past growth increments are meager; no evidence of callusing around old wounds. This health rating indicates that there is widespread evidence of stress, disease, nutrient deficiency, and/or insect infestation.

Rating	Tree Structure
Good	No wounds, cavities, decay, or indication of hollowness are evident in the root crown, trunk, or primary and secondary limbs; no anchor roots are exposed; no codominant branching or multiple trunk attachments are present; very little included bark at branch attachments exists; no dead primary or secondary limbs are present in canopy; there have been no major limb failures; limbs are not overburdened; branching structure is appropriate for species; any decay is limited to small dead branches/stubs. This structure rating represents a low potential for failure.
Fair	With respect to the size of the tree, small to moderate wounds, cavities, decay, and indication of hollowness may be evident in the root crown, trunk, and/or primary and secondary limbs; some anchor roots may be exposed; codominant branching or multiple trunk attachments may be present, but included bark does not exist or is not well developed; minor to moderate amounts of included bark at branch attachments may exist; there may be small to moderate amounts of large dead limbs in canopy, but there is no evidence of large limb failures; limbs may be slightly overburdened; branching structure and/or canopy balance may be moderately altered by the tree's growing environment. This structure rating represents a moderate potential for failure.
Poor	With respect to the size of the tree, significant wounds, cavities, decay, and/or indication of hollowness may be evident in the root crown, trunk, and/or primary and secondary limbs; anchor roots may be exposed and/or the tree may have lost anchorage; codominant branching or multiple trunk attachments may be present; significant amounts of included bark may exist in trunk and branch attachments; there may be significant amounts of large dead limbs in the canopy; there may be evidence of trunk or large limb failures; limbs may be severely overburdened; branching structure and/or canopy balance may be drastically altered by the tree's growing environment. This structure rating represents a high potential for failure.

Protected trees within the Study Area were identified based on their size, species, and the regulations specified in the City of Roseville Tree Ordinance. This is identified in the Status column of **Appendix A**. As previously described in **Section 1.1**, protected trees are defined as any native oak tree with a trunk equal to or greater than six inches DBH, measured as a total of a single trunk or multiple trunks.

3.0 RESULTS AND DISCUSSION

3.1. Surveyed Trees

A total of 36 trees were inventoried in the Study Area; 34 were surveyed by Acorn during the April 2017 survey and two trees were added during Foothill Associates' December 2017 survey. Three additional trees were included in the initial survey by Acorn, but these three trees were determined to be outside of the Study Area and are not included in this updated report. Inventoried trees consist of 13 blue oaks (*Quercus douglasii*) and 23 interior live oaks (*Quercus wislizeni*). Detailed data on the surveyed trees is included in **Appendix A**. Approximate locations of surveyed trees are shown on **Figure 2**. **Table 2** shows the number of surveyed trees ranked by health and structure ratings.

TABLE 2 — NUMBER OF TREES BY HEALTH AND STRUCTURE RATINGS

		Health					
Structure		Good	Fair-Good	Fair	Poor-Fair	Poor	Total Trees
	Good	—	—	—	—	—	—
	Fair-Good	—	1	—	—	—	**1**
	Fair	—	8	8	8	1	**25**
	Poor-Fair	—	—	6	3	–	**9**
	Poor	—	—	—	1	—	**1**
	Total Trees	—	**9**	**14**	**12**	**1**	**36**

In general, and when compared to the rating results from Acorn, the majority of the inventoried trees are in decline with respect to health and structure. Many of the trees in Poor or Poor-Fair condition have trunk wounds or limb failure, all of which provide entry points for disease and decay organisms. It should be noted that even though dead trees do not require mitigation after removal, they serve as potential nest habitat for avian species and can be preserved where they do not pose a hazard to people or property.

3.2. Impacts and Mitigation

The proposed project will remove all but three of the surveyed trees (#3973, #3974, and #3988) within the Study Area. By implementing the best management practices (BMPs) described later in this document, these three remaining trees are not expected to incur significant impacts during construction. A tree is considered significantly impacted if ground-disturbing work encroaches within 20 percent or greater of the DLR. The approximate limits of project disturbance are shown on **Figure 2**. A Tree Removal Permit should be obtained from the City of Roseville for the removal of, or significant impacts to the estimated 33 protected trees that will be subject to removal by the proposed project.

Impacts to protected trees are mitigated under **Chapter 19.66.070** of the City's Municipal Code. Mitigation planting or in-lieu fees are expected to be required for any protected trees removed or significantly impacted as part of the project. The total number of mitigation trees to be planted or in-lieu fees to be paid are based on an inch-for-inch basis of the total trunk diameter of protected trees removed. For this project, a total of 613 trunk inches will be removed. A total of 11 trees, with a combined trunk diameter of 193 inches, are recommended for removal based on poor condition. Individual data for these trees can be found in **Attachment A**. Depending on the landscape design, there may not be sufficient area within the Study Area to allow for 100 percent on-site mitigation planting. Subsequently, the required difference is expected to take the form of payment of in-lieu fees, off-site planting, or a combination of the two. For replacement planting, a 1:1 replacement of trunk inches would be required for any trunk inches not addressed through payment of in-lieu fees. A minimum of 50 percent of the trees must be native oak species. Up to 50 percent may be met by planting of non-native species. For the use of in-lieu fees, the current rate for mitigation payment is $118 per inch. In-lieu fees are deposited into either a Native Oak Tree Propagation Fund or a Non-Native Tree Fund, as determined by the Planning Manager. If payment of in-lieu fees is chosen as the sole form of mitigation, the total amount required is estimated to be $72,334.

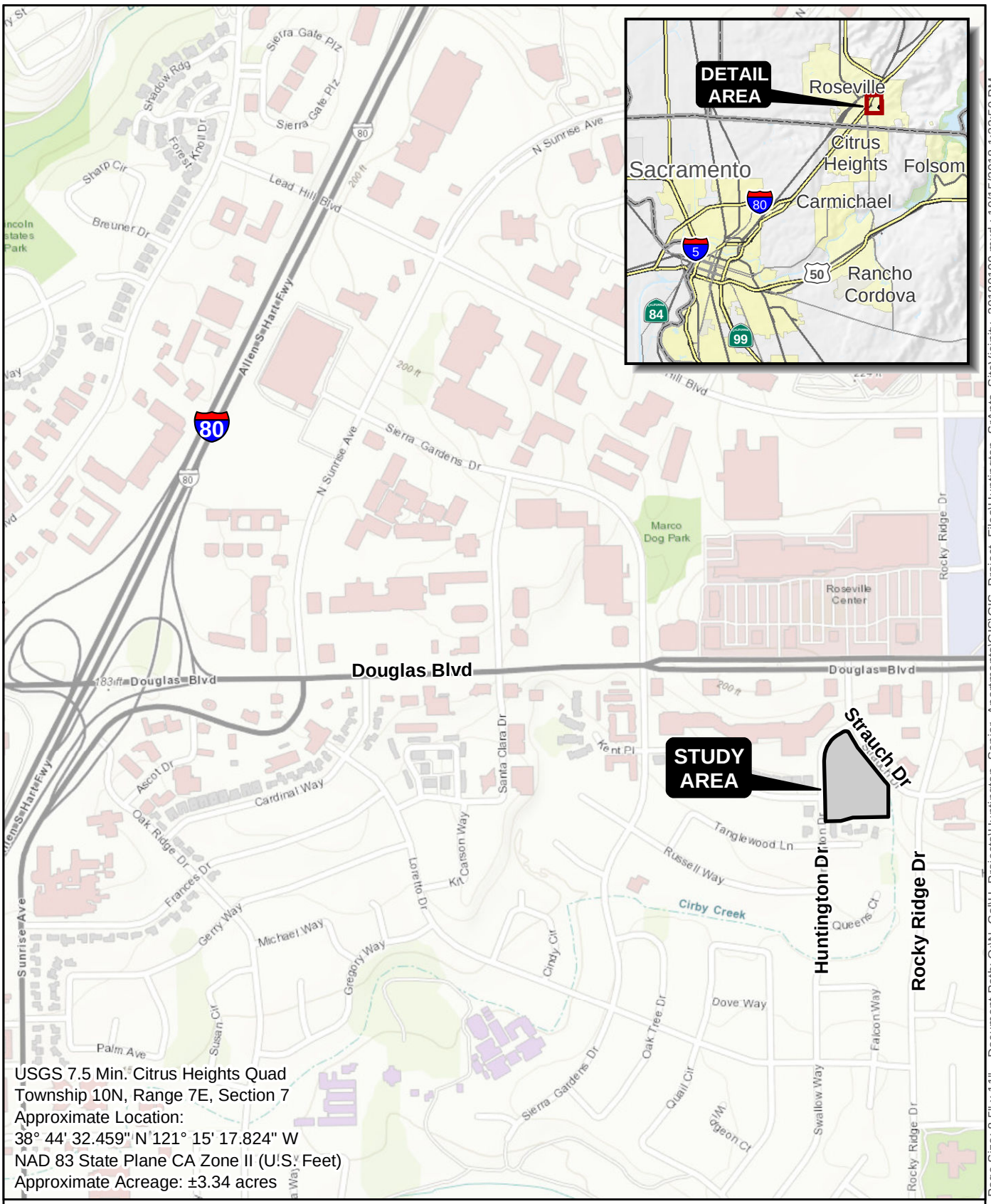
Final determination of mitigation requirements is made by the Approving Authority.

3.3. Recommended Tree Protection Measures

The following measures should be integrated into the construction documents to protect trees to remain within the Study Area, or the immediate vicinity of the Study Area, during construction where accessible:

- Tree Protection Fencing, consisting of four-foot tall, brightly-colored, high-visibility plastic fencing, shall be placed around the perimeter of the tree protection zone (TPZ) (dripline radius + 1 foot). The TPZ is the minimum distance for placing protective fencing. Tree protection fencing should be placed as far outside of the TPZ as possible. Signs shall be placed along the fence denoting this as a Tree Protection Zone that shall not be moved until construction is complete. Trees or tree clusters with canopy extending beyond 50 feet from proposed project boundaries may be fenced only along sides facing the project. In cases where proposed work infringes on TPZ, fence shall be placed at edge of work;
- Whenever possible, fence multiple trees together in a single TPZ;
- Tree protection fencing shall not be moved without prior authorization from the Project Arborist and the City of Roseville, as appropriate;
- No parking, portable toilets, dumping or storage of any construction materials, grading, excavation, trenching, or other infringement by workers or domesticated animals is allowed in the TPZ;
- No signs, ropes, cables, or any other items shall be attached to a protected tree, unless recommended by an ISA-Certified Arborist;

- Underground utilities should be avoided in the TPZ, but if necessary shall be bored or drilled. If boring is impossible, all trenching will be done by hand under the supervision of an ISA-Certified Arborist;
- No cut or fill within the dripline of existing protected tree is permitted. If cut or fill within the dripline is unavoidable, any mitigation requirements shall be determined by the City of Roseville, as appropriate;
- Pruning of living limbs or roots over two inches in diameter shall be done under the supervision of an ISA-Certified Arborist;
- All wood plant material smaller than six inches in diameter shall be mulched on site. Resulting mulch shall be spread in a layer four to six inches deep in the TPZ of preserved trees. Mulch shall not be placed touching the trunk of preserved trees; and
- Appropriate fire prevention techniques shall be employed around all significant trees to be preserved. This includes cutting tall grass, removing flammable debris within the TPZ, and prohibiting the use of tools that may cause sparks, such as metal blade trimmers or mowers.



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0 400 800
Feet
1 : 9,600

Drawn By: MUB
QA/QC: SLK
Date: 10/15/2018

FIGURE 1

HUNTINGTON SENIOR APARTMENTS

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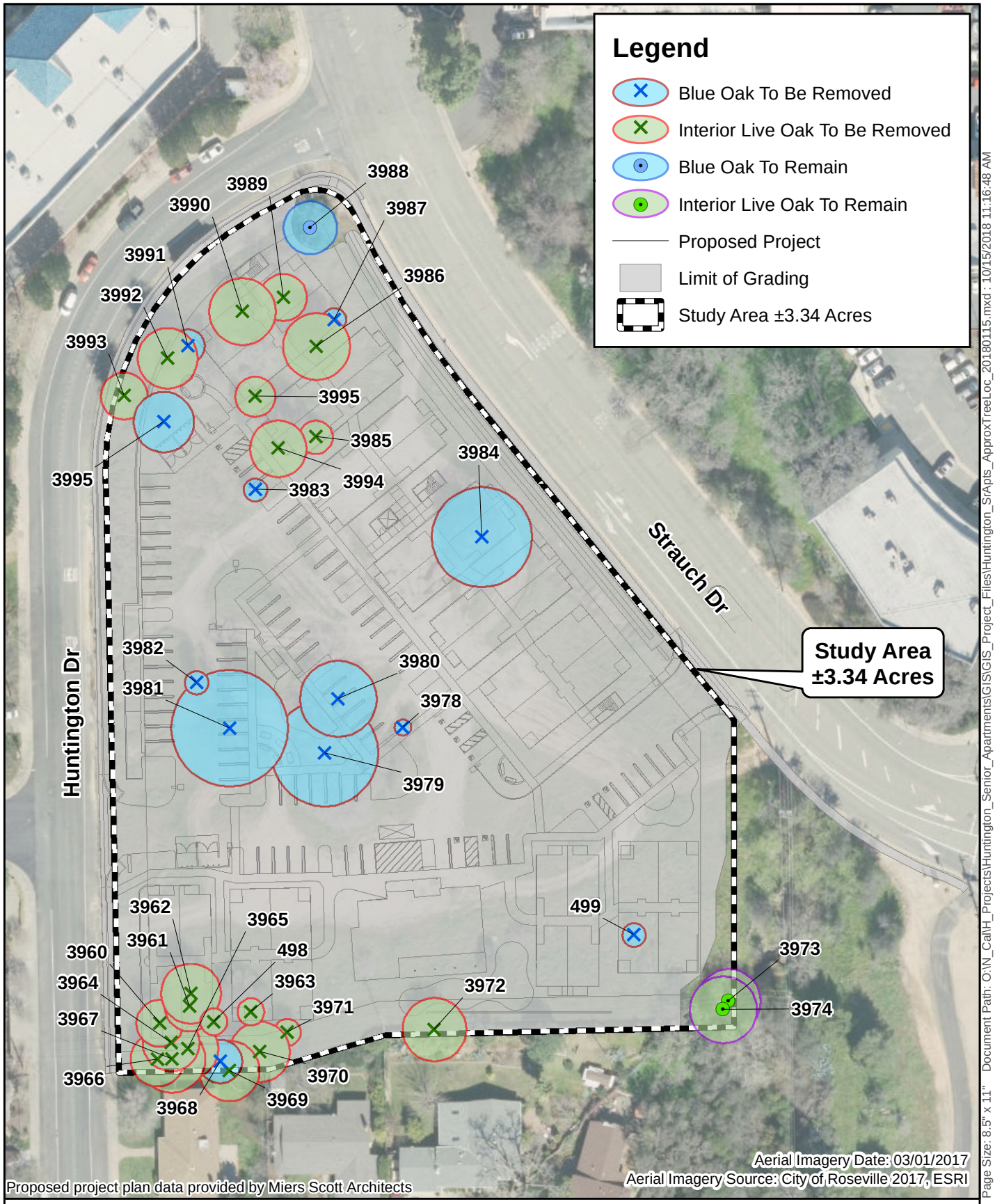

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APPROXIMATE TREE LOCATIONS AND PROJECT IMPACTS

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0 40 80
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Date: 10/15/2018

FIGURE 2

HUNTINGTON SENIOR APARTMENTS

Appendix A — Tree Data

Attachment A — Tree Data

Tree #	Scientific Name	Common Name	# of Trunks	DBH (inches)	DLR (feet)	Height	Health	Structure	Vigor	Notes	Status	Recommended for Removal	Impacts
498	*Quercus wislizeni*	Interior Live Oak	4	4, 4, 3, 2	8	20	Poor-Fair	Fair	Poor-Fair	shaded, codominant, included bark, dieback	Protected	No	Removed
499	*Quercus douglasii*	Blue Oak	1	6	7	15	Poor-Fair	Fair	Poor-Fair	dying, included bark	Protected	No	Removed
3960	*Quercus wislizeni*	Interior Live Oak	2	8, 5	14	26	Fair	Fair	Fair	codominant, included bark, lean, dieback	Protected	No	Removed
3961	*Quercus wislizeni*	Interior Live Oak	2	7, 6	15	26	Fair	Fair	Fair	exposed roots, codominant, lean, dieback, included bark	Protected	No	Removed
3962	*Quercus wislizeni*	Interior Live Oak	4	13, 8, 7, 4	18	30	Fair	Fair	Fair	codominant, included bark, dieback, cement block against trunk	Protected	No	Removed
3964	*Quercus wislizeni*	Interior Live Oak	2	7, 6	17	28	Fair	Fair	Fair	codominant, included bark, pruning cuts	Protected	No	Removed
3965	*Quercus wislizeni*	Interior Live Oak	6	7, 6, 5, 5, 5, 4	18	28	Fair-Good	Fair	Fair	codominant, included bark, shaded	Protected	No	Removed
3968	*Quercus douglasii*	Blue Oak	1	7	13	34	Poor-Fair	Fair	Poor-Fair	dieback, shaded	Protected	No	Removed
3969	*Quercus wislizeni*	Interior Live Oak	2	7, 7	18	32	Fair-Good	Fair	Fair	codominant, included bark, minimal dieback	Protected	No	Removed
3970	*Quercus wislizeni*	Interior Live Oak	3	7, 6, 6	18	28	Fair-Good	Fair	Fair	codominant, included bark, lean	Protected	No	Removed
3971	*Quercus wislizeni*	Interior Live Oak	4	4, 4, 4, 3	8	20	Fair-Good	Fair	Fair	codominant, included bark, trunk wound	Protected	No	Removed
3972	*Quercus wislizeni*	Interior Live Oak	5	6, 5, 4, 4	19	30	Fair	Fair	Fair	codominant, included bark, lean, asymmetrical canopy	Protected	No	Removed
3979	*Quercus douglasii*	Blue Oak	1	41	32	55	Poor-Fair	Fair	Poor-Fair	over mature, in decline, dieback, limb	Protected	No	Removed
3981	*Quercus douglasii*	Blue Oak	1	36	35	55	Poor-Fair	Fair	Fair	dieback, sloughing bark, trunk wound, limb wounds	Protected	No	Removed
3986	*Quercus wislizeni*	Interior Live Oak	3	15, 8, 7	20	38	Fair	Fair	Fair	codominant, included bark, dieback	Protected	No	Removed
3987	*Quercus douglasii*	Blue Oak	1	6	7	26	Fair	Fair	Fair	dieback	Protected	No	Removed
3988	*Quercus douglasii*	Blue Oak	2	10, 9	16	28	Poor-Fair	Fair	Poor-Fair	codominant, included bark, dieback	Protected	No	None
3989	*Quercus wislizeni*	Interior Live Oak	2	7, 5	14	30	Fair-Good	Fair	Fair	codominant, included bark	Protected	No	Removed
3990	*Quercus wislizeni*	Interior Live Oak	2	8, 7	20	28	Fair-Good	Fair	Fair	codominant, included bark, min dieback	Protected	No	Removed
3991	*Quercus douglasii*	Blue Oak	1	6	10	35	Poor-Fair	Fair	Poor-Fair	asymmetrical canopy, dieback, lean	Protected	No	Removed
3992	*Quercus wislizeni*	Interior Live Oak	3	17, 5, 5	18	30	Fair	Fair	Fair	codominant, included bark, dieback	Protected	No	Removed
3993	*Quercus wislizeni*	Interior Live Oak	3	7, 6, 4	14	30	Fair-Good	Fair	Fair	codominant, included bark, minimal dieback	Protected	No	Removed
3994	*Quercus wislizeni*	Interior Live Oak	2	6, 5	17	30	Fair-Good	Fair	Fair	sprawling , dieback, codominant, included bark	Protected	No	Removed
3995	*Quercus douglasii*	Blue Oak	3	12, 10, 8	18	28	Poor-Fair	Fair	Poor-Fair	major dieback, included bark, codominant	Protected	No	Removed
3996	*Quercus wislizeni*	Interior Live Oak	1	7	12	30	Fair-Good	Fair-Good	Fair-Good	included bark, minimal dieback	Protected	No	Removed
3963	*Quercus wislizeni*	Interior Live Oak	4	4, 4, 3, 3	8	20	Poor	Fair	Poor	major dieback, included bark, codominant, sprouting	Protected	Yes	Removed

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Attachment A — Tree Data

Tree #	Scientific Name	Common Name	# of Trunks	DBH (inches)	DLR (feet)	Height	Health	Structure	Vigor	Notes	Status	Recommended for Removal	Impacts
3966	*Quercus wislizeni*	Interior Live Oak	5	7, 5, 4, 4, 3	16	26	Fair	Poor-Fair	Fair	codominant, included bark, min dieback, heavy lean	Protected	Yes	Removed
3967	*Quercus wislizeni*	Interior Live Oak	4	7, 6, 5, 4	20	22	Fair	Poor-Fair	Fair	codominant, included bark, heavy lean, pruning cuts, minimal dieback	Protected	Yes	Removed
3973	*Quercus wislizeni*	Interior Live Oak	1	8	19	35	Poor-Fair	Poor-Fair	Fair	codominant, included bark, limb wounds, pruning cuts, trunk rot, asymmetrical canopy	Protected	Yes	None
3974	*Quercus wislizeni*	Interior Live Oak	1	6	20	26	Poor-Fair	Poor	Poor-Fair	codominant, included bark, dieback, sloughing bark, limb wounds, heavy lean,	Protected	Yes	None
3978	*Quercus douglasii*	Blue Oak	5	4, 4, 3, 3, 3	5	13	Poor-Fair	Poor-Fair	Poor-Fair	codominant, included bark, dieback	Protected	Yes	Removed
3980	*Quercus douglasii*	Blue Oak	1	20	23	36	Poor-Fair	Poor-Fair	Poor-Fair	heavy lean, dieback, dead limbs	Protected	Yes	Removed
3982	*Quercus douglasii*	Blue Oak	4	7, 5, 2, 2	7	1	Fair	Poor-Fair	Fair	codominant, included bark, dieback	Protected	Yes	Removed
3983	*Quercus douglasii*	Blue Oak	1	6	7	15	Fair	Poor-Fair	Poor-Fair	dieback, included bark	Protected	Yes	Removed
3984	*Quercus douglasii*	Blue Oak	3	18, 17, 14	30	55	Fair	Poor-Fair	Poor-Fair	codominant, included bark, moderate dieback, one stem growing on ground	Protected	Yes	Removed
3985	*Quercus wislizeni*	Interior Live Oak	3	6, 3, 3	10	16	Fair	Poor-Fair	Fair	codominant, included bark, sprawling, dieback	Protected	Yes	Removed

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Attachment 5

Environmental Noise and Vibration Assessment [for the] *Huntington Senior Apartments, Roseville, California*, prepared by Bollard Acoustical Consultants, Inc.

May 8, 2018

Environmental Noise and Vibration Assessment

Huntington Senior Apartments

Roseville, California

BAC Job # 2018-042

Prepared For:

Foothill Associates

Attn: Ms. Kyrsten Shields
590 Menlo Drive, Suite 5
Rocklin, CA 95765

Prepared By:

Bollard Acoustical Consultants, Inc.

Paul Bollard, President

May 8, 2018

BOLLARD
Acoustical Consultants

3551 Bankhead Road • Loomis, CA 95650 • Phone: (916) 663-0500 • Fax: (916) 663-0501 • BACNOISE.COM

CEQA Checklist

NOISE AND VIBRATION – **Would the Project Result in:**	**NA – Not Applicable**	**Potentially Significant Impact**	**Less than Significant with Mitigation Incorporated**	**Less Than Significant Impact**	**No Impact**
A) Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?			**X**		
B) Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?				**X**	
C) A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?					**X**
D) A substantial temporary or periodic increase in ambient noise levels in the project vicinity above level existing without the project?			**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 expose people residing or working in the project to excessive noise levels?					**X**
F) For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels?					**X**

Introduction

The Huntington Senior Apartments (project) proposes the construction of a multi-family, age restricted (55+) apartment complex on approximately 3.34 acres located at 1650 Huntington Drive in Roseville, California. The project will consist of 10 apartment buildings composed of 48 one-bedroom units, 28 two-bedroom units, a community clubhouse, and associated parking. Existing land uses in the project vicinity include residential uses directly to the south and west, and commercial uses to the north and east. The project area and site plan are shown on Figures 1 and 2, respectively.

Due to the proximity of the proposed development to the adjacent residential uses, Bollard Acoustical Consultants, Inc. (BAC) was retained by the project applicant to prepare this noise and vibration assessment. Specifically, this assessment focuses on noise and vibration generated by project construction activities. Specific noise mitigation recommendations are provided in this analysis to mitigate project noise impacts.

Noise and Vibration Fundamentals

Noise

Noise is simply described as unwanted sound. Sound is defined as any pressure variation in air that the human ear can detect. Discussing sound directly in terms of pressure would require a very large and awkward range of numbers. To avoid this, the decibel (dB) scale was devised. The decibel scale uses the hearing threshold (20 micropascals of pressure), as a point of reference, defined as 0 dB. Other sound pressures are compared to the reference pressure and the logarithm is taken to keep the numbers in a practical range. The dB scale allows a million-fold increase in pressure to be expressed as 120 dB.

To better relate overall sound levels and loudness to human perception, frequency-dependent weighting networks were developed. There is a strong correlation between the way humans perceive sound and A-weighted sound levels. For this reason, the A-weighted sound level has become the standard tool of environmental noise assessment for community exposures. All sound levels expressed as dB in this section are A-weighted sound levels, unless noted otherwise. Definitions of acoustical terminology are provided in Appendix A.

Community noise is commonly described in terms of the “ambient” noise level, which is defined as the all-encompassing noise level associated with a given noise environment. A common statistical tool to measure the ambient noise level is the average, or equivalent, sound level (L_{eq}), over a given time period (usually one hour). The L_{eq} is the foundation of the composite noise descriptors, day-night average level (L_{dn}) and the community noise equivalent level (CNEL), and shows very good correlation with community response to noise for the average person. The median noise level descriptor, denoted L_{50}, represents the noise level which is exceeded 50% of the hour. In other words, half of the hour ambient conditions are higher than the L_{50} and the other half are lower than the L_{50}.

The L_{dn} is based upon the average noise level over a 24-hour day, with a +10 dB weighting applied to noise occurring during nighttime (10:00 p.m. to 7:00 a.m.) hours. The nighttime penalty is based upon the assumption that people react to nighttime noise exposures as though they were twice as loud as daytime exposures. Because L_{dn} represents a 24-hour average, it tends to disguise short-term variations in the noise environment. Where short-term noise sources are an issue, noise impacts may be assessed in terms of maximum noise levels, hourly averages, or other statistical descriptors.

The perceived loudness of sounds and corresponding reactions to noise are dependent upon many factors, including sound pressure level, duration of intrusive sound, frequency of occurrence, time of occurrence, and frequency content. As mentioned above; however, within the usual range of environmental noise levels, perception of loudness is relatively predictable, and can be approximated by weighing the frequency response of a sound level meter by means of the standardized A-weighing network. Figure 3 shows examples of noise levels for several common noise sources and environments.

It is generally recognized that an increase of at least 3 dB of similar sources is usually required before most people will perceive a change in noise levels in the community, and an increase of 5 dB is required before the change will be clearly noticeable. A common practice is to assume that a minimally perceptible increase of 3 dB represents a significant increase in ambient noise levels. This approach is very conservative, however, when applied to noise conditions substantially below levels deemed acceptable in general plan noise elements or in noise ordinances.

Vibration

Vibration is like noise in that it involves a source, a transmission path, and a receiver. While vibration is related to noise, it differs in that noise is generally considered to be pressure waves transmitted through air, while vibration is usually associated with transmission through the ground or structures. As with noise, vibration consists of an amplitude and frequency. A person's response to vibration will depend on their individual sensitivity as well as the amplitude and frequency of the source.

Vibration can be described in terms of acceleration, velocity, or displacement. A common practice is to monitor vibration measures in terms of velocity in inches per second. Standards pertaining to perception as well as damage to structures have been developed for vibration in terms of peak particle velocity as well as RMS velocities.

As vibrations travel outward from the source, they excite the particles of rock and soil through which they pass and cause them to oscillate. Differences in subsurface geologic conditions and distance from the source of vibration will result in different vibration levels characterized by different frequencies and intensities. In all cases, vibration amplitudes will decrease with increasing distance. The maximum rate, or velocity of particle movement, is the commonly accepted descriptor of the vibration "strength".

Legend

- Short-Term Noise and Vibration Measurement Site
- Approximate Project Boundary
- Nearest Existing Residential Uses to Project

N

Scale (Feet)

0 50 100

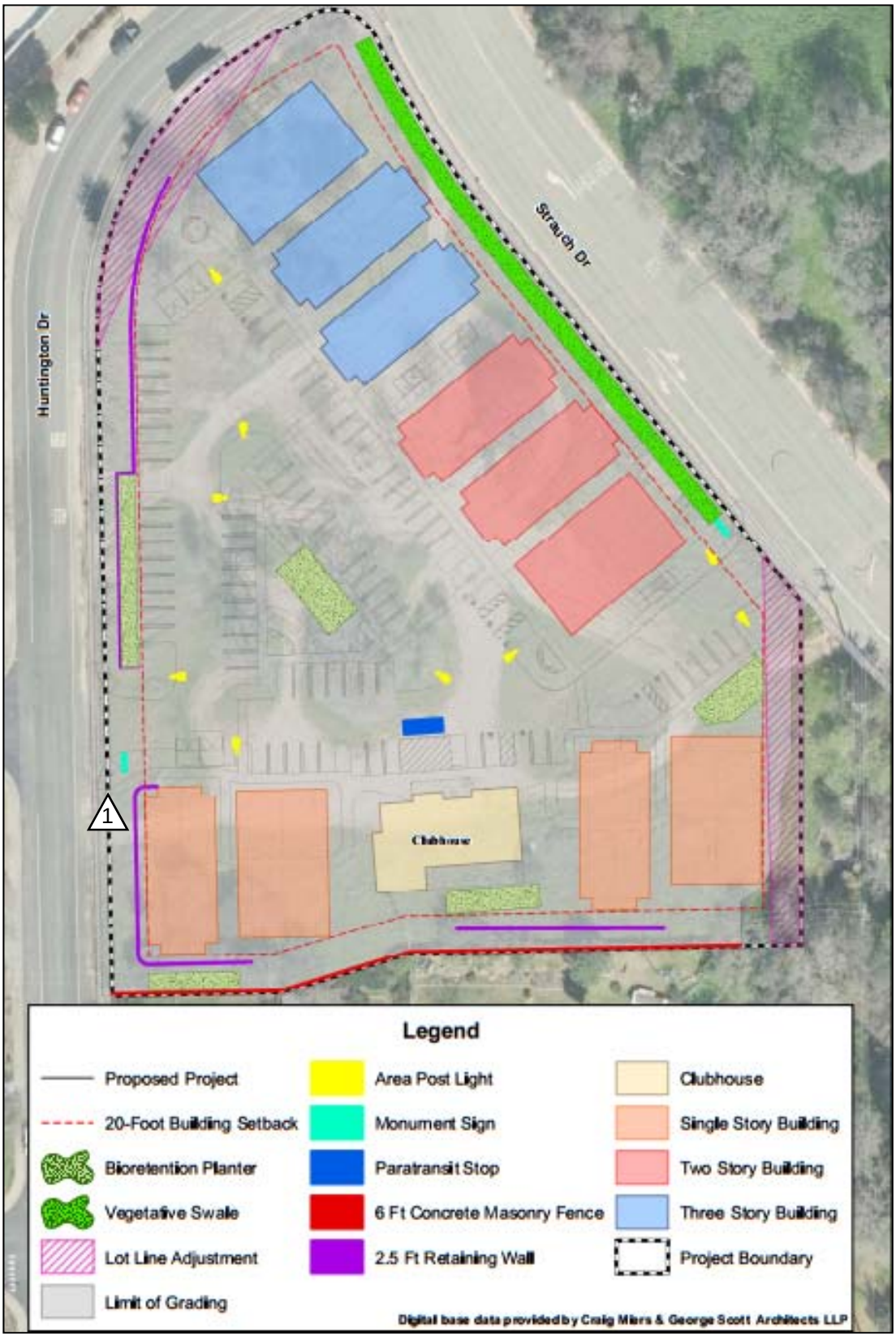
Huntington Senior Apartments

Roseville, California

Project Area & Measurement Site

Figure 1

BOLLARD Acoustical Consultants



Legend

1 Short-Term Noise and Vibration Measurement Site

N

Scale (Feet)

0 50 100

Huntington Senior Apartments

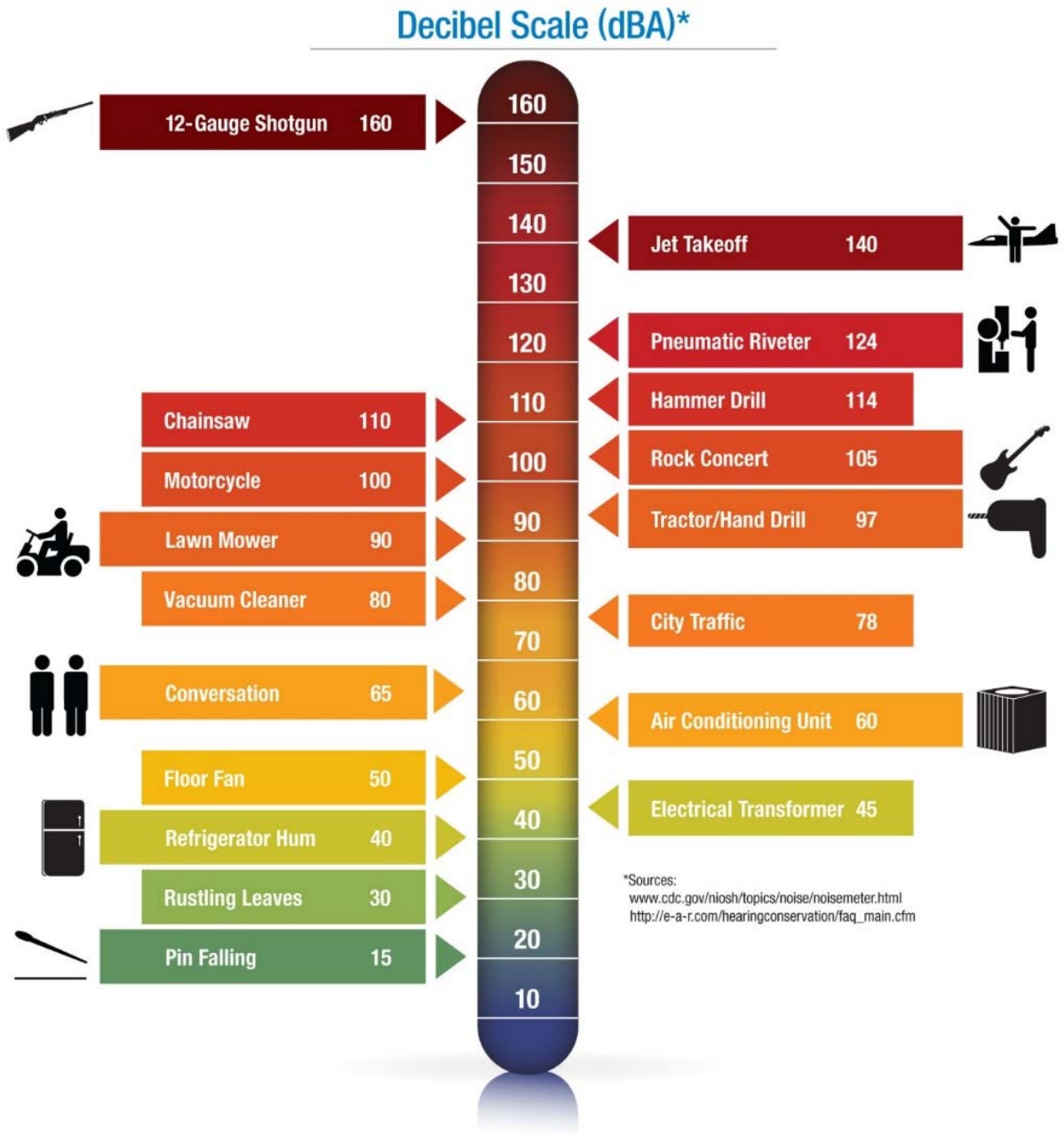
Roseville, California

Project Site Plan

Figure 2

BOLLARD Acoustical Consultants

Figure 3
Typical A-Weighted Sound Levels of Common Noise Sources



Human response to vibration is difficult to quantify. Vibration can be felt or heard well below the levels that produce any damage to structures. The duration of the event has an effect on human response, as does frequency. Generally, as the duration and vibration frequency increase, the potential for adverse human response increases.

According to the Transportation and Construction-Induced Vibration Guidance Manual (Caltrans, June 2004), operation of construction equipment and construction techniques generate ground vibration. Traffic traveling on roadways can also be a source of such vibration. At high enough amplitudes, ground vibration has the potential to damage structures and/or cause cosmetic damage. Ground vibration can also be a source of annoyance to individuals who live or work close to vibration-generating activities. However, traffic, rarely generates vibration amplitudes high enough to cause structural or cosmetic damage.

Regulatory Setting: Criteria for Acceptable Noise and Vibration Exposure

Federal

There are no federal noise or vibration criteria which would be directly applicable to this project.

State of California

California Environmental Quality Act (CEQA)

The State of California has established regulatory criteria that are applicable to this assessment. Specifically, Appendix G of the State of California Environmental Quality Act (CEQA) Guidelines are used to assess the potential significance of impacts pursuant to local General Plan policies, Municipal Code standards, or the applicable standards of other agencies. According to Appendix G of the CEQA guidelines, the project would result in a significant noise or vibration impact if the following occur:

A. exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies;

B. a substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project;

C. a substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project;

D. exposure of persons to or generation of excessive groundborne vibration or noise levels;

E. for a project located within an ALUP or, where such a plan has not been adopted, within 2 miles of a public airport or public use airport, the project would expose people residing or working in the project area to excessive noise levels;

F. or a project within the vicinity of a private airstrip, the project would expose people residing or working in the project area to excessive noise levels.

It should be noted that audibility is not a test of significance according to CEQA. If this were the case, any project which added any audible amount of noise to the environment would be considered unacceptable according to CEQA. Because every physical process creates noise, whether by the addition of a single vehicle on a roadway, or a tractor in an agricultural field, the use of audibility alone as significance criteria would be unworkable. CEQA requires a substantial increase in noise levels before noise impacts are identified, not simply an audible change.

California Department of Transportation (Caltrans)

The City of Roseville does not currently have adopted standards for groundborne vibration. As a result, vibration criteria established by the California Department of Transportation (Caltrans 2013) was applied to this project. The Caltrans publication, *Transportation and Construction Vibration Guidance Manual*, provides guidelines for acceptable vibration limits for transportation and construction projects in terms of the induced peak particle velocity (PPV). Human and structural response to different vibration levels is influenced by a number of factors, including ground type, distance between source and receptor, duration, and the number of perceived vibration events. The Caltrans criteria applicable to human responses to vibration are shown below in Table 1.

Table 1
Human Response to Transient Vibration

Human Response/Structure	Peak Particle Velocity (in/sec)
Barely Perceptible	0.04
Distinctly Perceptible	0.25
Strongly Perceptible	0.90
Severe	2.00
Residential Construction	1.0

Source: Caltrans Transportation and Construction Vibration Guidance Manual, September 2013

As shown in Table 1, a vibration level of 0.25 in/sec PPV is the level at which vibration becomes distinctly to strongly perceptible. As a result, the 0.25 threshold is considered to be a conservative benchmark against which project vibration levels are evaluated in this assessment.

City of Roseville Municipal Code

The City of Roseville Municipal Code (noise control) establishes standards for acceptable non-transportation (stationary) noise exposure for sensitive receptors. The criteria applicable to the project are reproduced below:

9.24.100 Sound limits for sensitive receptors.

> It is unlawful for any person at any location to create any sound, or to allow the creation of any sound, on property owned, leased, occupied or otherwise controlled by such person, which causes the exterior sound level when measured at the property line of any affected

sensitive receptor to exceed the ambient sound level by three dBA or exceed the sound level standards as set forth in Table 1 (Table 2 of this report), by three dBA, whichever is greater.

Table 2
Sound Level Standards
(for non-transportation or fixed sound sources)

Sound Level Descriptor	Daytime (7 a.m. to 10 p.m.)	Nighttime (10 p.m. to 7 a.m.)
Hourly L_{eq}, dB	50	45
Maximum Level, dB	70	65

Notes:

A. Each of the sound level standards specified in Table 1 shall be reduced by five dB for simple tone noises, consisting of speech and music.

B. If the intruding sound source is continuous and cannot be reasonably be discontinued or stopped for a time period whereby the ambient sound level can be measured, the south level measured while the source is in operation shall be compared directly to the sound level standards of Table 1 (Ord. 3638 § 1, 2001.)

9.24.030 Exemptions

Sound or noise emanating from the following sources and activities are exempt from the provisions of this title:

A. Private construction (e.g., construction, alteration or repair activities) between the hours of 7:00 a.m. and 7:00 p.m. Monday through Friday, and between the hours of 8:00 a.m. and 8:00 p.m. Saturday and Sunday; provided, however, that all construction equipment shall be fitted with factory installed muffling devices and that all construction equipment shall be maintained in good working order (Section 3638 § 1, 2001.)

Thresholds of Significance for Project-Related Noise Level Increases

The CEQA guidelines state that a project would result in a significant noise impact if it results in a substantial temporary increase in ambient noise levels above those present without the project. CEQA does not, however, define what constitutes a substantial increase. It is generally recognized that an increase of at least 3 dB for similar noise sources is usually required before most people will perceive a change in noise levels, and an increase of 6 dB is required before the change will be clearly noticeable (Egan, Architectural Acoustics, page 21, 1988, McGraw Hill).

The Federal Interagency Commission on Noise (FICON) has developed a graduated scale for use in the assessment of project-related noise level increases (Table 3). Table 3 was developed by FICON as a means of developing thresholds for impact identification for project-related noise level increases. The FICON standards have been used extensively in recent years by the authors of this section in the preparation of the noise sections of Environmental Impact Reports that have been certified in many California cities and counties.

The rationale for the graduated scale used in the FICON standards is that test subjects' reactions to increases in noise levels varied depending on the starting level of noise. Specifically, with lower ambient noise environments, such as those below 60 dB L_{dn}, a larger increase in noise levels was required to achieve a negative reaction than was necessary in more elevated noise environments.

The use of the FICON standards are considered conservative relative to thresholds used by other agencies in the State of California. For example, the California Department of Transportation (Caltrans) requires a project-related traffic noise level increase of 12 dB for a finding of significance, and the California Energy Commission (CEC) considers project-related noise level increases between 5-10 dB significant, depending on local factors. Therefore, the use of the FICON standards, which set the threshold for finding of significant noise impacts as low as 1.5 dB, provides a very conservative approach to impact assessment for this project.

Table 3
Significance of Changes in Cumulative Noise Exposure

Ambient Noise Level Without Project, L_{dn}	Increase Considered Significant
<60 dB	+5.0 dB or more
60-65 dB	+3.0 dB or more
>65 dB	+1.5 dB or more

Source: Federal Interagency Committee on Noise (FICON)

Based on the FICON research (Table 3), a 5 dB increase in noise levels due to a project is required for a finding of significant noise impact where ambient noise levels without the project are less than 60 dB L_{dn}. Where pre-project ambient conditions are between 60 and 65 dB L_{dn}, a 3 dB increase is applied as the standard of significance. Finally, in areas already exposed to higher noise levels, specifically pre-project noise levels in excess of 65 dB L_{dn}, a 1.5 dB increase is considered by FICON as the threshold of significance.

This graduated scale indicates that in quieter noise environments, test subjects tolerated a higher increase in noise levels due to a project before the onset of adverse noise impacts than did test subjects in louder environments.

According to the FICON study, if screening analysis shows that noise-sensitive areas will be at or above DNL 65 dB and will have an increase of DNL 1.5 or more, further analysis should be conducted. The FICON study also reported the following: Every change in the noise environment does not necessarily impact public health and welfare.

As noted previously, audibility is not a test of significance according to CEQA. If this were the case, any project which added any audible amount of noise to the environment would be considered unacceptable according to CEQA. Because every physical process creates noise, whether by the addition of a single vehicle on a roadway, or a tractor in an agricultural field, the

use of audibility alone as significance criteria would be unworkable. CEQA requires a substantial increase in noise levels before noise impacts are identified, not simply an audible change.

Environmental Setting - Existing Ambient Noise and Vibration Environment

Noise Environment

The existing ambient noise environment in the immediate project vicinity is primarily defined by traffic on Strauch Drive and Huntington Drive. To quantify the existing ambient noise environment in the project vicinity, BAC conducted short-term (15-minute) noise level measurements on the project site on March 5, 2018. The noise measurement location is shown on Figure 1, identified as Site 1.

A Larson Davis Laboratories (LDL) Model LxT precision integrating sound level meter was used for the noise level measurement survey. The meter was calibrated before use with an LDL Model CA200 acoustical calibrator to ensure the accuracy of the measurements. The equipment used meets all specifications of the American National Standards Institute requirements for Type 1 sound level meters (ANSI S1.4). The results of the measurements are summarized in Table 4. Photographs of the noise measurement site are shown in Appendix B.

Table 4
Summary of Short-Term Ambient Noise Monitoring Results
Huntington Senior Apartments – Roseville, California
March 5, 2018

		Measured Noise Levels, dBA		
Site	**Time**	**L_{eq}**	**L_{max}**	**Field Notes**
1	2:57 p.m.	58.3	78.5	Traffic on Huntington Drive primary noise source

Source: Bollard Acoustical Consultants, Inc. (2018)

The noise level measurements conducted at Site 1 were intended to quantify the existing general ambient noise environment, including the noise generation of traffic on Huntington Drive. The Table 4 data indicates that measured average maximum (L_{max}) noise levels at the project site were 79 dB L_{max}. BAC staff noted that measured maximum noise levels at Site 1 were attributable to vehicle passbys on Huntington Drive.

Vibration Environment

During a site visit on March 5, 2018, vibration levels were below the threshold of perception in the project vicinity. Nonetheless, to quantify existing vibration levels at the project site, BAC conducted short-term (15-minute) vibration measurements at the location shown on Figure 1.

A Larson-Davis Laboratories Model LxT precision integrating sound level meter equipped with a vibration transducer was used to complete the measurements. The results are summarized in Table 5. Photographs of the vibration measurement site are shown in Appendix B.

Table 5
Short-Term Vibration Measurement Results
Huntington Senior Apartments – Roseville, California
March 5, 2018

Site[1]	Time	Average Vibration Level, VdB RMS
1	2:57 p.m.	52

Source: Bollard Acoustical Consultants, Inc. (2018)

The Table 5 data indicate that measured average vibration levels at the measurement site were 52 VdB RMS. The measured vibration level of 52 VdB RMS is well below the threshold of perception, or, below 0.1 inches per second if converted to Peak Particle Velocities (PPV).

Impacts and Mitigation Measures

Methodology

Evaluation of Construction Noise at Nearest Residences

During project construction, heavy equipment would be used for grading excavation, paving, and building construction, which would increase ambient noise levels when in use. Noise levels would vary depending on the type of equipment used, how it is operated, and how well it is maintained. Noise exposure at any single point outside the project site would also vary depending on the proximity of construction activities to that point. Standard construction equipment, such as graders, backhoes, loaders, and trucks, would be used for this work.

The range of maximum noise levels for various types of construction equipment at a distance of 50 feet is depicted in Table 6. The noise values represent maximum noise generation, or full-power operation of the equipment. As one increases the distance between equipment, or increases separation of areas with simultaneous construction activity, dispersion and distance attenuation reduce the effects of combining separate noise sources.

Table 6
Construction Equipment Noise Emission Levels

Equipment	Typical Sound Level (dBA) 50 Feet from Source
Air compressor	81
Backhoe	80
Compactor	82
Concrete mixer	85
Concrete pump	82
Concrete vibrator	76
Crane, mobile	83
Dozer	85
Generator	81
Grader	85
Impact wrench	85
Jackhammer	88
Loader	85
Paver	89
Pneumatic tool	85
Pump	76
Roller	74
Saw	76
Truck	88

Source: Transit Noise and Vibration Impact Assessment, Federal Transit Administration, Table 12-1. (May 2006)

The nearest sensitive receptors to the project site are single-family residential uses located to the south, with the nearest residence located approximately 25 feet from construction activities that would occur on the project site. As shown in Table 6, construction activities typically generate noise levels ranging from approximately 75 to 89 dB L_{max} at a reference distance of 50 feet from the construction activities. The noise levels from construction operations decrease at a rate of approximately 6 dB per doubling of distance from the source. As a result, maximum construction noise levels would range from 81 to 95 dB L_{max} at the nearest residence.

Evaluation of Construction Vibration Levels at Nearest Residences

During project construction heavy equipment would be used for grading excavation, paving, and building construction, which would generate localized vibration in the immediate vicinity of the construction. As mentioned previously, the nearest residence is located approximately 25 feet from construction activities which would occur on the project site.

The range of vibration source levels for construction equipment commonly used in similar projects are shown in Table 7. The vibration levels depicted in Table 7 are representative of measurements at a distance of 25 feet from the equipment source.

Table 7
Vibration Levels of Construction Equipment – 25 Foot Reference Distance

Equipment	Peak Particle Velocity (PPV) in/sec.
Hoe ram	0.089
Large bulldozer	0.089
Caisson drilling	0.089
Loaded trucks	0.076
Jackhammer	0.035
Small bulldozer	0.003

Source: Transit Noise and Vibration Impact Assessment, Federal Transit Administration, Table 12-2. (May 2006)

The vibration data shown in Table 7 indicate that heavy equipment-generated vibration levels are below levels at which become distinctly perceptible even at the very close distance of 25 feet from the operating equipment.

Evaluation of Impacts Relative to CEQA Criteria

Criteria A: Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies.

As shown in Table 6, exterior noise levels at a distance of 50 feet from the noise sources could reach as high as 89 dB L_{max}. As noted in the Regulatory Setting Section of this report, Section 9.24.030 of the Roseville Noise Ordinance exempts noise sources associated with construction provided such activities take place between 7:00 a.m. and 7:00 p.m. Monday through Friday, between the hours of 8:00 a.m. and 8:00 p.m. Saturday and Sunday, and that well-maintained construction equipment is fitted with factory installed muffling devices. Provided project construction activities are limited to these hours, and are maintained pursuant to these conditions, construction activities would be exempt and this impact would be considered ***less than significant***.

However, if construction activities are proposed outside of the hours defined by Noise Ordinance Section 9.24.030, noise levels generated by construction activities would likely exceed the maximum noise level standards identified in Table 2 at the nearest residences. ***This impact would be considered significant***.

Mitigation for Criteria A: Restrictions on hours of construction operations

MM-1: Noise-generating construction activities shall not occur within the hours identified in Noise Ordinance Section 9.24.030.

Significance after Mitigation: *Less than Significant*

Criteria B: Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels.

At the nearest residence to the proposed construction area, approximately 25 feet away, construction-generated vibration levels are predicted to be less than the 0.25 in/sec PPV threshold at which vibration levels become distinctly perceptible. As a result, this impact is considered ***less than significant.***

Criteria C: A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project.

The proposed construction activities are associated with the development only, and would cease upon completion of the project. Any potential increases in ambient noise levels in the project vicinity resulting from project construction activities would be temporary, and would only occur during the project construction phase. As a result, there would be no permanent increase in ambient noise levels as a result of this project and ***no permanent impacts would result from the project***.

Criteria D: A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project.

The ambient noise environment in the immediate project vicinity is primarily defined by traffic on the nearby roadways (Strauch Drive and Huntington Drive). The ambient noise measurement site was located approximately 25 feet from the centerline of Huntington Drive - approximately the same distance from the nearest residential property to the west of the project to the centerline of Huntington Drive. According to the ambient noise level measurement results (representative of ambient noise levels at residences adjacent to Huntington Drive), the measured daytime maximum noise level was 79 dB L_{max}. Based on the measured daytime noise level at the measurement site, maximum noise levels generated during project construction activities are not expected to substantially exceed existing maximum noise levels currently received by nearby residences. Further, given the relatively short duration of construction, and the fact that construction activities would be limited to daytime hours pursuant to Mitigation Measure 1, project construction activities are not expected to result in adverse public reaction from the nearby residents. However, because average noise levels generated by project construction activities could result in periods of substantial increases in ambient noise levels, ***this impact is considered potentially significant.***

Mitigation for Criteria D: Construction Noise Control Measures

MM-2: To the maximum extent practical, the following measures should be incorporated into the project construction operations:

- Pursuant to MM1, noise–generating construction activities at the project site shall not occur within the hours identified in Noise Ordinance Section 9.24.030.
- All noise-producing project equipment and vehicles using internal-combustion engines shall be equipped with manufacturers-recommended mufflers and be maintained in good working condition.
- All mobile or fixed noise-producing equipment used on the project site that are regulated for noise output by a federal, state, or local agency shall comply with such regulations while in the course of project activity.
- Electrically powered equipment shall be used instead of pneumatic or internal-combustion-powered equipment, where feasible.
- Material stockpiles and mobile equipment staging, parking, and maintenance areas shall be located as far as practicable from noise-sensitive receptors.
- Project area and site access road speed limits shall be established and enforced during the construction period.
- Nearby residences shall be notified of construction schedules so that arrangements can be made, if desired, to limit their exposure to short-term increases in ambient noise levels.

Significance after Mitigation: Less than Significant

Criteria 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 expose people residing or working in the project area to excessive noise levels?**

Because the project site is not located within 2 miles of a public airport, ***no noise impact*** is identified relative to this significance criteria.

Criteria F: **For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels?**

Because the project site is not located in the vicinity of a private airstrip, ***no noise impact*** is identified relative to this significance criteria.

Conclusions and Recommendations

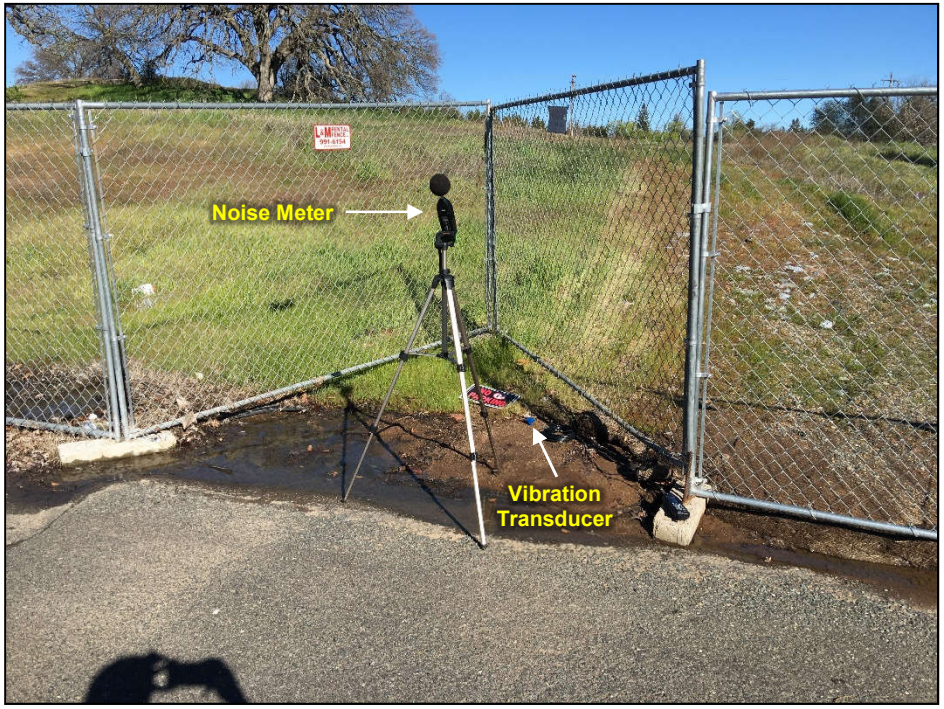
This analysis concludes that, with implementation of feasible noise mitigation measures, all potentially significant noise impacts resulting from the project can be mitigated to a less than significant level. In addition, this analysis concludes that project-generated vibration will not result in adverse impacts at the nearest residences.

This concludes BAC's noise and vibration assessment for the proposed Huntington Senior Apartments in Roseville, California. Please contact BAC at (916) 663-0500 or paulb@bacnoise.com with any questions regarding this assessment.

Appendix A

Acoustical Terminology

Acoustics	The science of sound.
Ambient Noise	The distinctive acoustical characteristics of a given space consisting of all noise sources audible at that location. In many cases, the term ambient is used to describe an existing or pre-project condition such as the setting in an environmental noise study.
Attenuation	The reduction of an acoustic signal.
A-Weighting	A frequency-response adjustment of a sound level meter that conditions the output signal to approximate human response.
Decibel or dB	Fundamental unit of sound, A Bell is defined as the logarithm of the ratio of the sound pressure squared over the reference pressure squared. A Decibel is one-tenth of a Bell.
CNEL	Community Noise Equivalent Level. Defined as the 24-hour average noise level with noise occurring during evening hours (7 - 10 p.m.) weighted by a factor of three and nighttime hours weighted by a factor of 10 prior to averaging.
Frequency	The measure of the rapidity of alterations of a periodic signal, expressed in cycles per second or hertz.
Ldn	Day/Night Average Sound Level. Similar to CNEL but with no evening weighting.
Leq	Equivalent or energy-averaged sound level.
Lmax	The highest root-mean-square (RMS) sound level measured over a given period of time.
Loudness	A subjective term for the sensation of the magnitude of sound.
Masking	The amount (or the process) by which the threshold of audibility is for one sound is raised by the presence of another (masking) sound.
Noise	Unwanted sound.
Peak Noise	The level corresponding to the highest (not RMS) sound pressure measured over a given period of time. This term is often confused with the Maximum level, which is the highest RMS level.
RT_{60}	The time it takes reverberant sound to decay by 60 dB once the source has been removed.
Sabin	The unit of sound absorption. One square foot of material absorbing 100% of incident sound has an absorption of 1 sabin.
SEL	A rating, in decibels, of a discrete event, such as an aircraft flyover or train passby, that compresses the total sound energy of the event into a 1-s time period.
Threshold of Hearing	The lowest sound that can be perceived by the human auditory system, generally considered to be 0 dB for persons with perfect hearing.
Threshold of Pain	Approximately 120 dB above the threshold of hearing.



Notes:

Left: Short-term noise and vibration measurement Site 1, facing east
Right: Short-term noise and vibration measurement Site 1, facing south along Huntington Drive

Huntington Senior Apartments
Roseville, California

Noise & Vibration Measurement Site Photos

Appendix B

BOLLARD
Acoustical Consultants

Attachment 6

Water Conservation Plan for the Huntington Senior Apartments, prepared by Kimley-Horn and Associates, Inc.

September 27, 2018

Kimley»Horn

MEMORANDUM

To: City of Roseville

From: Kimley-Horn and Associates, Inc.

Date: September 27, 2018

Subject: Water Conservation Plan for the Huntington Senior Apartments

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The purpose of this memorandum is to provide the project background, project description, and purpose of the Water Conservation Plan (WCP) for the Huntington Senior Apartments (proposed project). This memorandum described the relationship of the proposed project to expected water use through an analysis of water use estimates, water supply, and City of Roseville (City) water conservation requirements. This memorandum evaluates this information and present potential feasible measure and mechanisms to reduce the water usage that would result from the proposed project.

SUMMARY

Implementation of water conservation methods described above will reduce water demands by 3.73 acre-feet per year (AFY) or approximately 24.8%, below the 15.07 AFY that would be realized without the conservation measures. Ultimately, the actual water conservation will be dependent on a number of factors including the participation and adherence by the property owners and senior residents within the individual apartments. However, this can be mitigated by ensuring the project development incorporates the listed measures such as integrated on-demand water heaters, low flush toilets, reduced turf area, and use of low demand plants and smart irrigation controls.

BACKGROUND

Water Conservation Plan Purpose

In February 2008, then California Governor Arnold Schwarzenegger introduced a seven-part comprehensive plan for improving the Sacramento-San Joaquin Delta. As part of this effort, the Governor directed state agencies to develop a plan to reduce statewide per capita urban water use by 20 percent by the year 2020. In February 2010, the State Water Resources Control Board (SWRCB) issued the 20x2020 Water Conservation Plan, which sets forth a statewide road map to maximize the state's urban water efficiency and conservation opportunities between 2009 and 2020, and beyond.

As part of the response to the 20x2020 Plan, the City has a requirement that all new specific plan projects incorporate water conservation measures into the overall project design such that the overall water demands (both potable and recycled) are reduced. The City has an overall conservation goal of 20% for potable and irrigation water usage throughout the City.

This WCP presents potentially feasible measures and guidance that can result in a reduction of the projected overall water usage within the proposed project, which will contribute towards the City-wide conservation goal. The projected reduction in water use will be established by estimating the baseline water demands without conservation measures; identification of potentially feasible conservation measures; and estimating the resultant water demands with application of the identified conservation measures. This WCP has been developed in conformance with the Water Efficient Landscape Ordinance (WELO) as a minimum.

Project Vicinity

The proposed project is located at 1650 Huntington Drive southwest of the intersection of Douglas Road and Rocky Ridge Road. The project site is bound Strauch Drive to the northeast, Huntington Drive to the west, Rocky Ridge Road to the east, and approximately 1.75 acres of undeveloped land and single family residential uses to the south. The area surrounding the project site is characteristic of a suburban land use pattern. To the north, adjacent to both sides of Douglas Boulevard, land uses are dominated by commercial and retail development with the Kaiser Permanente Roseville Medical Center at the northeast of the intersection with Rocky Ridge Road. The project vicinity is shown in Figure 1 – *Project Vicinity*, below.

Project Description

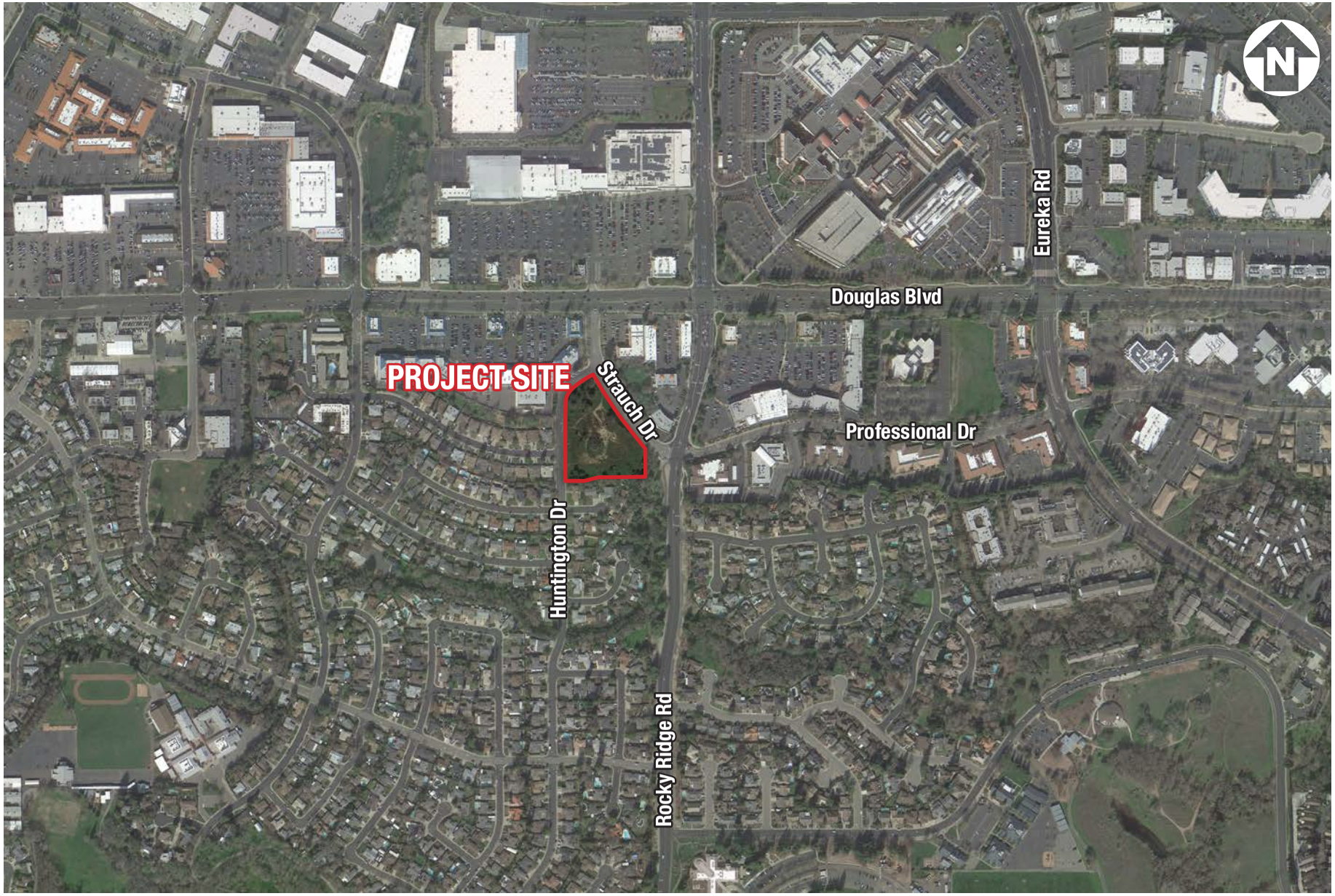
The proposed site consists of approximately 3.2 acres, and due to this size as well as the surrounding development and existing roadway configuration, the land uses that would be suitable to the project site and opportunities for developments are somewhat constrained. The proposed project, however, would be developed in a pattern, design, use, and with access points that would be consistent with the surrounding areas. The proposed project would include 76 one- and two-bedroom senior living units, including a clubhouse, 94 total parking spaces, and access via Strauch Drive and Huntington Drive. The proposed project would result in approximately 24 dwelling units per acre. The proposed project site plan is shown in *Figure 2 – Proposed Site Plan*, below.

Pre-Development Conditions

The project site is located on an undeveloped parcel and is approximately 3.2 acres in size. The site largely consists of grassy and low-lying vegetation with a few centrally located trees and stands of trees in the northerly, southwesterly, and southeasterly corners of the lot. The central portion of the site is crowned with a small hill rising 20-30 feet above the margins of the project site. Portions of the hill are heavily disturbed with bare soil and evidence of off-road vehicle use.

Baseline Water Use Estimation

The calculation for the baseline water use estimation was established based on the proposed land uses that would occur with implementation of the proposed project as shown in *Figure 2 – Proposed Site Plan*. The baseline water use for the proposed project was established using the January 2016 City of Roseville Design Standards for Domestic Water Supply System Design (RDSDWSD) flow determination table. The RDSDWSD was amended in 2017 and updated requirements for the domestic



HUNTINGTON SENIOR APARTMENTS

Vicinty Map

FIGURE 1

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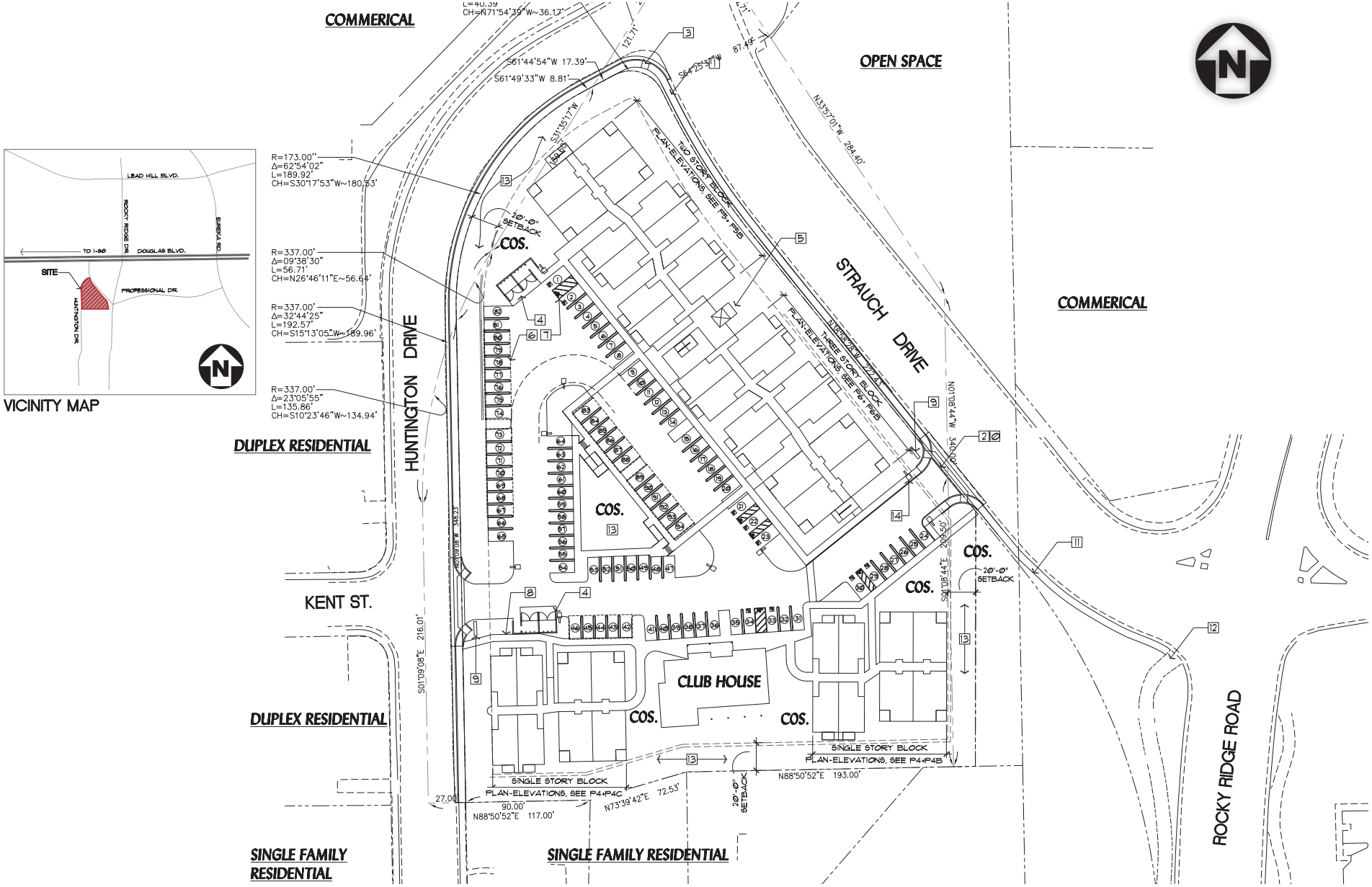

HUNTINGTON SENIOR APARTMENTS

Proposed Site Plan

FIGURE 2

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water supply system but did not update the demand factors. Accordingly, the City employs standard demand factors for residential land uses of varying densities as well as for commercial and other uses. The determination of flow volumes for a specific land use category considers the maximum day domestic demand in conjunction with an emergency fire flow demand. The residential demands are presented as gallons per day (GPD) per dwelling unit (DU), and the commercial/other demands are presented as GPD per acre. The City's Demand Factors are presented in *Table -1 – Water Demand Factors*, below.

Table -1 Water Demand Factors		
Land Use Category	**Land Use Designation and Density**	**Average Day Unit Water Demand Factors**
Residential	LDR (<3.5 DU's/ac)	728 gpd/DU
	LDR (<3.5 to 5.0 DU's/ac)	600 gpd/DU
	LMDR (>5.0 to 6.0 DU's/ac)	521 gpd/DU
	LMDR (>6.0 to 8.0 DU's/ac)	430 gpd/DU
	MDR (>8.0 to 12.0 DU's/ac)	323 gpd/DU
	HDR (>12.0 to 16.0 DU's/ac)	288 gpd/DU
	HDR (>16.0 DU's/Ac)	***177 gpd/DU***
Commercial/Other	Commercial/Retail	2,598 gpd/ac
	Business Professional	2,598 gpd/ac
	Light Industrial	2,598 gpd/ac
	Industrial	2,562 gpd/ac
	Railroad Yard	109/gpd/ac
	Elementary Schools	3,454 gpd/ac
	High Schools	4,068 gpd/ac
	Public (Fire Stations, etc.)	1,780 gpd/ac
	Park/Recreation	2,988 gpd/ac
	Open Space/Major ROW	--
	Vacant/Unassigned	--
Source: City of Roseville Design Standards – Domestic Water Supply System Design – January 2016. Abbreviations: ac=acre, LDR=Low Density Residential, LMDR=Low-Medium Density Residential, MDR=Medium Density Residential, HDR=High Density Residential, GPD=gallons per day, DU=dwelling unit, AFY=acre feet per year		

Existing Land Use Designation Water Demand

Utilizing the City's demand factors, the estimated annual water use for the Low-, Medium- and High-Density Residential, the water demand for the currently approved land uses on the project site, development of 23 units of MDR, have been calculated. The basis for the proposed project considering High Density Residential Uses (>16.0 DU's/ac) is presented in *Table 2- Existing Land Use Designation Water Use Estimat*e. Based on the 23 units, the average daily water use was calculated as well as the yearly demand in acre feet per year. An acre foot is defined as the volume of water that would cover and acre of land a foot deep.

Table -2 Existing Land Use Designation Water Use Estimate						
Land Use Category Density	**Number of Units**	**Average Day Demand (GPD/DU)**	**Average Daily Demand (GPD)**	**Average Day Demand (AF)**	**Average Day Demand with 2% (AF)[1]**	**Yearly Demand (AF)**
MDR (>8.0 to 12.0 DU's/ac)	23	430	9,890	0.030	0.031	11.3
Total	--	--	**9.890**	**0.030**	**0.031**	11.3

Source: Kimley-Horn, 2018
[1]Demand accounts for 2% system loss
Abbreviations: HDR=High Density Residential, GPD=gallons per day, DU=dwelling unit, AFY=acre feet

Proposed Project Water Demand

Utilizing the City's demand factors, the estimated annual water use for the Low-, Medium- and High-Density Residential units proposed for the project site have been calculated. The basis for the proposed project considering High Density Residential Uses (>16.0 DU's/ac) is presented in *Table 3- Huntington Senior Apartments Water Use Estimate*. Based on the number of proposed units, the average daily water use was calculated as well as the yearly demand in acre feet per year. An acre foot is defined as the volume of water that would cover and acre of land a foot deep.

Table -3 Huntington Senior Apartments Water Use Estimate					
Land Use Category Density	**Number of Units**	**Average Day Demand (GPD/DU)**	**Average Daily Demand (GPD)**	**Total Average Day Demand (AF)**	**Total Average Day Demand with 2% (AF)[1]**
HDR (>16.0 DU's/Ac)	76	177	13,452	0.041	0.042
Total	--	--	**13,452**	**0.041**	**0.042**

Source: Kimley-Horn, 2018
[1]Demand accounts for 2% system loss Abbreviations: HDR=High Density Residential, GPD=gallons per day, DU=dwelling unit, AFY=acre feet

The water use estimation, as established by the City for purposes of water conservation does not distinguish between potable water and recycled water. *Table 4 – Huntington Senior Apartments Water Use Factors and Demands*, below.

Table 4 – Huntington Senior Apartments Water Use Factors and Demands						
Land Use Abbreviation and Zoning	**Total Area (Acres)**	**Dwelling Unit County**	**Water Use Factor**	**Daily Demand (GPD)**	**Annual Demand (AFY)**	**Annual Demand with 2% (AFY)[1]**
HDR	3.2	76	177 GPD/DU	13,452	15.07	15.25
Source: Kimley-Horn, 2018 [1]Demand accounts for 2% system loss Abbreviations: HDR=High Density Residential, GPD=gallons per day, DU=dwelling unit, AFY=acre feet per year						

Residential Water Use Distribution

Overall water use and demand for Low-, Medium- and High-Density Residential (LDR, MDR, and HDR) will vary due to different in home and landscaping demands. Overall water use, however, can be divided by typical uses within the homes and landscaping and irrigation demands outside the home. Because LDR, and MDR typically have front and back yards the associated irrigation demand for landscaping is greater than that of HDR uses. Generally, landscaping for a single-family home is approximately 51% of the water demand. Other in-home uses that require water include toilets, faucets, cooking, cleaning, showers, clothes washing, bath, toilet leaks, and dishwashers. The percentage of total use will have different distribution for HDR which is primarily attributable to a reduction in the demand for irrigated landscaped areas. Therefore, the 51% landscaping demand is attributable only to LDR and MDR and is not applicable to HDR. HDR developments, however, do typically have common areas that require landscaping which is discussed in more detail further below. *Table -5 Residential Water Use Percentages*, below, provides an approximate breakdown of the percentage of water used for the different in-home uses.

Table – 5 Residential Water Use Percentages	
Landscaping	51%[1]
Toilets	13%
Faucets, Cooking, Cleaning	10%
Showers	9%
Clothing Washing	8%
Bath	6%
Toilet Leaks	2%
Dishwasher	1%
Source: Kimley-Horn, 2015 [1] The 51% landscaping demand is attributable to LDR and MDR and is not applicable to HDR.	

As discussed above, HDR units typically do not have front yard and back yard irrigation demand; however, there are common area irrigation demands that are attributable to HDR unit. Average planning numbers for irrigation demands for HDR units is 20% of the estimated overall water usage. This value is expressed as 20% of the annual irrigation demand and no passed on designation of demands split between front and back yard area designations. *Table 6 – Huntington Senior Apartments Irrigation Water Demands*, below presents a summary of demands based on the assumptions listed above.

Table 6- Huntington Senior Apartments Irrigation Water Demands

Land Use	Annual Demand (AFY)	Annual Demand Front Yard (AFY)[1]	Annual Demand Backyard (AFY)[1]	Annual Total Irrigation Demand (AFY)
HDR	15.07	N/A	N/A	3.01

Source: Kimley-Horn, 2018
[1]Demand for HDR parcels does not include front yard and backyard water demand. As discussed above, irrigation demand for common areas is approximately 20% of the annual AFY water demand.
Abbreviations: HDR=High Density Residential, AFY=acre feet per year

Water Use Reduction Strategies

A series of implementable water use reduction strategies and methods were identified and analyzed to calculate a quantifiable savings in water demand for the proposed project. These strategies are discussed in more detail in the following subsections of this document, including the estimated percentage of water use reduction.

The water use reduction strategies identified for the proposed project include:

- Reduction of turf areas;
- Reduction of common area turf (non-residential);
- Irrigation Management;
    - Smart weather irrigation
- Water Conservation Methods
    - Recirculating hot water systems, and
    - Low flow toilets

Reduction in Turf Areas

The most effective and cost-efficient way to reduce water demand is by limiting the use of turf and replacing turf with low water use plants and landscaping. Because turf areas account for a sizeable portion of the water demand of residential developments they typically can be used for a sizable reduction in water use. However, because the size of turf areas is limited in HDR uses the potential to save water by converting to low water demand landscaping can be limited. When turf is able to be converted to low water demand landscaping, the City estimates that for the same sized area of turf, low-water consumption vegetation can result in a water savings of up to 70%.

For typical front yard landscaping in LDR and MDR developments, a general estimate is that 30% of the total yard area is non-irrigated hardscape and irrigated landscaping typically occupies about 70%. Although HDR developments do not typically have front yard and rear yards with landscaping, there are landscaped common areas, paseos, and greenways that are available to residents and require watering. For the purpose of this analysis, it is assumed these areas generally would occupy a total of approximately 65% of the area not developed in the residential footprint. It should be noted that LDR and MDR developments typically contain, and sometimes contain sizeable, rear/back-yards where homeowner has the responsibility for backyard landscaping and the is only able influence the front-yard landscaping. In HDR developments, however, backyard areas are generally small or not provided and the developer will likely be able to influence landscaping and water use in these areas. In these instances, the developer can reduce the area covered by turf and replace it with low water demand landscaping.

For the purposes of this analysis, it is assumed that for developments similar to the proposed project that 70% of the irrigated landscape would be turf and 5% would be low water use areas. This is referred to as the baseline condition and is compared to the water conservation measures that will be used in the proposed project as shown in *Table 7 – Huntington Senior Apartments Reduced Landscape Turf Areas*, below.

Table 7 – HDR Base Condition Compared to Huntington Senior Apartments Proposed Condition

Land Use	Base Condition			Proposed Condition		
	Turf Area	Low Water Use Area	Hardscape	Turf Area[1]	Low Water Use Area	Hardscape
HDR	70%	5%	25%	3.2%	33.4%	63.4%

Source: Kimley-Horn, 2018
[1] Turf areas within the proposed project are used as bioswales to aid water infiltration and drainage.
Abbreviations: HDR=High Density Residential

In an HDR development such as the proposed project, it would be reasonable reduce irrigated lawn areas to 42%. The proposed project, however, would reduce the irrigated lawn area further, and is proposing to reduce the percent of the total irrigated area containing lawn/turf to 4,448 sf or 3.2% of the overall project site. The remaining 46,552 sf of landscaped area would account for 33.4% of the total project area of 139,392 sf (3.2 acres. This area would be planted with low water demand plants and other landscaping to reduce overall water demand. In addition, although the turf areas would be irrigated, these areas would be used as bioswales that have an added benefit of reducing run-off and erosion and promoting water infiltration and groundwater recharge. Lastly, the use of low water demand vegetation provides other benefits such as enabling the use of more efficient irrigation systems such as drip watering.

Table 8- Huntington Senior Apartments Irrigated Area Water Efficiencies, below, shows the HDR annual demand for irrigation without turf reductions and applies the water savings percentage that would accompany the incorporation of low water consumption plants for landscaped areas.

Table 8 – Huntington Senior Apartments Irrigated Area Water Efficiencies.				
Land Use	**Annual Irrigation Demand (AFY)**	**New Demand (AFY)**	**Annual Demand Savings (AFY)**	**Annual Demand Savings (%)**
HDR	3.01	.83	2.18	72%
Source: Kimley-Horn, 2018 Abbreviations: HDR=High Density Residential, GPD=gallons per day, DU=dwelling unit, AFY=acre feet per year				

As an example of how these values were calculated, the calculation for the new demand and annual demand savings is presented as follows:

$$\left(\frac{46{,}552\ \text{sf}}{51{,}000\ \text{sf}} * 30\%\right) + \left(\frac{4{,}448\text{sf}}{51{,}000\text{sf}} * 100\%\right)$$

$$.27.38 + 0.08 = 27.46.\%$$

$$3.01AFY * 27.46\% = 0.83AFY$$

Notes:
46,552 sf = low water demand vegetation and landscaping;
51,000 sf = total landscaped area;
4,448 sf = landscaping using turf;
25% = reduced water usage from low-water demand vegetation and landscaping;
100% = full water demand for turf areas.
3.01 = water use expected from typical HDR development (20% of 15.07 AFY).

Irrigation Management

Smart and centrally located irrigation controllers restrict irrigation to times and rates necessary to maintain landscaping. They account for changes in the demand for water, which varies with weather patterns, seasonal influences and soil moisture content. For use in the Huntington Senior Apartments project, smart irrigation controllers, as defined in WELO, will be required for all irrigated parcels. As referenced in previous studies for the City, a number of studies have been completed specifically on the conversion to smart irrigation controllers and the resultant water savings. Those studies suggest that water use reductions can be expected between 7% and 41%. This is a wide range of variability. Since the Huntington Senior Apartments are an entirely new development all irrigation applications will employ the use of smart irrigation controllers (per WELO). Therefore, a water use reduction value of 20% has been estimated for purposes of this analysis, consistent with previous analyses completed for

similar developments within the City. The sample calculation is presented below and the values are summarized in *Table 10- Huntington Senior Apartments Smart Irrigation Controller Water Efficiencies*, below.

Table 10 – Huntington Senior Apartments Smart Irrigation Controller Water Efficiencies				
Land Use	**Annual Irrigation Demand (AFY)**	**Annual Demand Savings (%)**	**New Irrigation Demand w/Controller (AFY)**	**Annual Demand Savings (AFY) -**
HDR[1]	0.83 AFY	20%	0.66 AFY	0.16 AFY
Source: Kimley-Horn, 2018 [1] Annual Irrigation demand derived from Table 7.				

Water Conservation Methods

There are many water conservation measures that can be implemented throughout the Huntington Senior Apartments project. Some of these conservation measures, including low flow shower heads, faucet aerators, etc., have already been included to the proposed project. The proposed project, however, also would include on demand hot water heaters and single flush toilets. On-demand hot water systems feature a tankless system which reduces the time necessary to receive hot water at any hot water faucet throughout the home. They provide hot water at the tap immediately upon engaging the hot water faucet, eliminating the waste of water as the user does not wait for the cold water to clear through the pipes and transition to hot water at the tap. This type of system will be included on all residential units to generate additional water conservation. The amount of water savings with these systems varies based on the number of times hot water is utilized throughout the day. A conservative estimate indicates a water savings of approximately 1.25 gallons per use is saved by having on-demand hot water for the hot water system. It is estimated that on average this would occur six times per day per residential unit, consistent with previous studies for the City. *Table 11 – On-Demand Hot Water System Water Efficiencies*, shows the estimated water savings, below. The proposed project did consider using a recirculating hot water system which uses a pump(s) to maintain hot water within the pipes. However, these systems require additional energy consumption to pump cooled water back to the tank where is it reheated to maintain a consistent hot water supply and loses efficiency.

Table 11 – On-Demand Hot Water System Water Efficiencies				
Land Use	**Dwelling Unit Count**	**Savings per Dwelling Unit per day (gal)**	**Annual Demand Savings (AFY)**	**Annual Demand Savings (%)**
HDR	76	7.5	0.64	4.2%
Source: Kimley-Horn, 2018 Abbreviations: HDR=High Density Residential, gal=gallons, AFY=acre feet per year, %=percent				

The 2016 California Plumbing Code (CPC) requires water closets to use a maximum of 1.6 gallons of water per flush (gpf). The proposed project will use water efficient toilets with flush rates and flows below the existing requirements of the California Plumbing Code. Accordingly, the project proposes to

use toilets that require 1.0 gpf, which is 0.6 gpf less than existing standards. As discussed above, and shown in *Table12-Low Flow Toilet Water Savings*, below, toilets use an estimated 13% of overall residential water use which would be 1.9 AFY. This analysis assumes the proposed project will install higher efficiency toilets that will use 1.0 gpf instead of the 1.6 gallons per flush that is required. This represents an approximately 38% water savings over the conventional 1.6 gpf CPC requirement, and would result in a total water savings of 0.72 AFY.

Table 12-Low Flow Toilet Water Savings

Land Use	1.6 GPF Annual Toilet Water Demand (AFY)	Efficient Toilet Demand (AFY)	Water Savings (AFY)
HDR	1.96[1]	1.21[2]	0.75

Source: Kimley-Horn, 2018
[1] Based on 13% of total water demand (15.07 AFY);
[2] Based on 38% greater efficiency than 1.9 AFY.
Abbreviations: HDR=High Density Residential, AFY=acre feet per year, gpf=gallons per flush.

Conclusion

A series of water conservation methods have been proposed for implementation as part of the Huntington Senior Apartments. These methods are readily implemented and are consistent with the goals and objectives of the proposed project and the City.

Table 13, Summary of Water Efficiencies, provides a summary of the water conservation measures and their estimated savings in water use. As shown, with implementation of all the measures an estimated conservation of 21.6% of the project water use would be realized within the project area.

Table 13 - Summary of Water Efficiencies

Water Conservation Opportunity	Total Water Demand (AFY)	Annual Demand Without Reduction	Annual Demand With Reduction	Water Demand Reduction	Water Demand Reduction (Percent)
Irrigation	***15.07***	3.01	0.83	2.18	14.5%
Smart Irrigation Controls		0.82	.66	0.16	1.1%
On-Demand Hot Water System[2]		1.91	1.27	0.64	4.2%
Low Flush Toilets		1.96	1.21	0.75	5.0%
Other Water Uses[1]		7.37	7.37	0.0	0.0%
Total		**15.07**	**11.34**	**3.73**	**24.8%**

[1] Other water uses include faucets, cooking, cleaning, clothing washing, bath, toilet leaks, and dishwasher.
[2] Assumes a 25% more efficient delivery of hot water
Source: Kimley-Horn, 2018
Abbreviations: GPD=gallons per day, AFY=acre feet per year, %=percent

The implementation of water conservation methods described above will reduce water demands by approximately 3.73 AFY or approximately 24.8%, below the 15.07 AFY that would be expected to occur if the proposed project was implemented without the listed conservation measures.

In comparison to the water use that would occur if a project under the existing land use designations (Medium Density Residential), the proposed project would use substantially the same volume of water. A project built under the existing land use designations, as shown in *Table 2 Existing Land Use Designation Water Use Estimate*, above, would use approximately 11.3 AFY. As shown in *Table 13-Summary of Water Efficiencies*, above, the proposed project would use approximately 11.34 AFY, which is a difference or approximate 0.04 AFY or 13,034 gallons.

Ultimately, the actual water conservation will be dependent on a number of factors including the participation and adherence by the property owners and senior residents within the individual apartments. However, this can be mitigated by ensuring the project development incorporates the listed measures such as the integrated on-demand water heaters, and low flush toilets, reduced turf area, use of low water demand plants, and smart irrigation controls.

To help ensure that use of these measures are ongoing, both the City and property manager may engage in resident outreach to reinforce the need for water conversation, explain why the proposed measures are in place, and encourage all workers and employees on the site to continue to use water wisely. This may include reminder notices and messages from management, and attachments to water bills, promotion of the City's water conservation website, and making City water conservation staff available for questions.

References:

City of Roseville, 2018 – City of Roseville Design & Construction Standards. [Online: https://www.roseville.ca.us/cms/One.aspx?portalId=7964922&pageId=8754129]. Accessed: July 10, 2018.

Kimley-Horn, 2015 – Amoruso Ranch Specific Plan Area – Water Conservation Plan.