COUNTRYHOUSE MEMORY CARE PROJECT EIR

State Clearinghouse No. 2018072015

Prepared for:

City of Orinda

March 2019

URBAN PLANNING PARTNERS INC.

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Prepared for the City of Orinda

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March 2019

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I. INTRODUCTION

A. PURPOSE OF EIR

This Draft Environmental Impact Report (EIR) describes the environmental impacts of the proposed CountryHouse Memory Care Project ("project"). The purpose of this EIR is to inform City staff, the Planning Commission, City Council, responsible and interested agencies, and the general public of the proposed project and its potential adverse environmental impacts; recommend mitigation measures to lessen or avoid significant adverse impacts; and consider a reasonable range of feasible alternatives to the project. The information contained in the EIR will be reviewed and considered by public agencies prior to making a decision about the proposed project. The City of Orinda (City) is the lead agency for environmental review of the proposed project.

The Draft EIR is available for public review for the period identified in the Notice of Availability attached to the front of this document. During this time, written comments on the Draft EIR may be submitted to the City of Orinda Planning Department at the address indicated on the Notice of Availability. Responses to all comments received on the environmental analysis in the Draft EIR during the specified review period will be included in the Response to Comments Document/Final EIR.

B. PROPOSED PROJECT

The project site is located at 1 Wilder Road, which is accessed from State Route 24 (SR 24), at the southeast intersection of SR 24 and Wilder Road, between the Caldecott Tunnel and the downtown Orinda exit, as shown in Figure I-1. The 1.1-acre site is bordered by SR 24 to the north and Wilder Park to the southeast. The Wilder Road highway on-ramp is to the west and this road continues around the south edge of the project site. A wireless tower with multiple carriers is located on the adjacent Caltrans property to the northeast.

The developer for the CountryHouse Memory Care project seeks to build a congregate care facility which will provide 24-hour non-medical care for seniors, including those with dementia and Alzheimer's.

The proposed one- to two-story Craftsman-style building would range in height from approximately 20 feet to a maximum height of 33 feet 2 inches above the natural grade. The building would have 38 assisted-living studio units (with five different layouts), with 12 units on the lower level and 26 units on the upper level. The lower

FIGURE I-1 PROJECT LOCATION

level would also have an employee lounge, kitchen, delivery area, exercise room, living room, beauty salon, spa room, and other miscellaneous amenity spaces, as well as a courtyard. The upper level would have a parlor, servery, dining room, and an activity room, as well as the reception area and several offices.

C. NOTICE OF PREPARATION/EIR SCOPE

The City previously circulated two Notices of Preparation (NOP) for similar projects proposed for the site. The first NOP was published on February 11, 2011, and the public comment period for the scope of the EIR lasted from February 11, 2011 to March 14, 2011. The project application was revised and a second NOP with the revised information was circulated on May 2, 2014. The public comment period lasted from May 2, 2014 through June 2, 2014.

The project application was revised in 2017 and a third NOP, briefly describing the project and the environmental topics that would be evaluated in the EIR, was circulated on July 6, 2018. The public comment period lasted from July 6, 2018 through August 6, 2018. The City advised the public of the NOP in the following ways:

- Mailed NOP to parties previously requesting notice in writing, as well as other parties the City determined may be interested in the project;
- Mailed NOP to responsible agencies and State Clearinghouse;
- Posted NOP in the county clerk's office

NOP comments were received primarily from responsible agencies as well as one concerned citizen regarding a wide range of issues, which are addressed in this EIR. Topics referenced in the NOP comment letters are listed in Chapter 2, Summary. Additionally, there were several comments related to project merits that do not specifically relate to significant California Environmental Quality Act (CEQA) impacts. The NOP and written comments received are included in Appendix A.

The following environmental topics are addressed in this EIR:

A. Aesthetics
B. Air Quality
C. Biological Resources
D. Hydrology and Water Quality
E. Greenhouse Gas Emissions
F. Land Use
G. Noise and Vibration
H. Public Services, Utilities, and Recreation
I. Transportation and Circulation

Environmental topics not warranting detailed evaluation (agricultural resources, cultural resources, tribal cultural resources, geology, hazards and hazardous materials, population and housing, mineral resources, and energy) are discussed in Chapter VI, *Effects Found Not to be Significant*.

D. REPORT ORGANIZATION

This EIR is organized into the following chapters:

- *Chapter I – Introduction*: Discusses the overall EIR purpose; provides a summary of the proposed project; describes the EIR scope; and summarizes the organization of the EIR.
- *Chapter II – Summary:* Summarizes the impacts that would result from implementation of the project; describes mitigation measures recommended to avoid or reduce significant impacts; summarizes areas of known controversy; and describes project alternatives.
- *Chapter III – Project Description:* Provides a description of the project site, project objectives, the proposed development, and required approvals and permits.
- *Chapter IV – Setting, Impacts, and Mitigation Measures:* Describes the following for each environmental topic: existing conditions (setting); significance criteria; potential environmental impacts and their level of significance; and mitigation measures recommended to mitigate identified significant impacts. Cumulative impacts are also discussed in each technical topic section. Potential adverse impacts are identified by levels of significance, as follows: less-than-significant impact (LTS), significant impact (S), and significant and unavoidable impact (SU). The significance level is identified for each impact before and after implementation of the recommended mitigation measure(s).
- *Chapter V – Alternatives:* Provides an evaluation of three alternatives to the proposed project. The alternatives include the No Project Alternative, the Reduced Development Alternative, and the Screened Truck Loading Alternative.
- *Chapter VI – Effects Found Not to Be Significant*: Provides a brief description of why certain environmental topics were found not to be significant.
- *Chapter VII – CEQA Required Assessment Conclusions:* Provides the required analysis of effects found not to be significant; growth-inducing impacts; unavoidable significant effects; and significant irreversible changes.
- *Chapter VIII – Report Preparers and References:* Identifies preparers of the EIR, references used, and the persons and organizations contacted.

- *Appendices:*
  - A – NOP and written comments submitted on the NOP.
  - B – CalEEMod data and health risk assessment that support the Air Quality and Greenhouse Gas Emissions sections.
  - C – Biological Resource Assessment and its update that supports the Biological Resources section.
  - D – Synchro software technical outputs that support the analysis of traffic operations in the Transportation and Circulation section.
  - E – Cultural Resources Memo with the archival search results that supports the Cultural Resources findings in Chapter VI, *Effects Found Not to Be Significant*.

All supporting technical documents and reference documents are available for public review at the City of Orinda Planning Department.

II. SUMMARY

A. OVERVIEW OF PROPOSED PROJECT

This EIR has been prepared to evaluate the potential environmental effects of the CountryHouse Memory Care project. The undeveloped 1.1-acre parcel is located on the western edge of the city of Orinda (City) and is bordered by State Route 24 (SR 24). To the immediate north and west are the on- and off-ramps to SR 24 and their transition to/from Wilder Road; this road continues around the south edge of the project site. The land to the north of the parcel is part of the Caltrans right-of-way for SR 24 and Wilder Park is to the southeast.

The project applicant seeks to develop a congregate care facility which would include assisted living and memory care facilities on a vacant site in Orinda. The project would consist of a one- to two-story, 32,084-square-foot building, gardens, lawns, and a parking area. The building would have 38 assisted-living studio units (with 5 different layouts), with 12 units on the lower level and 26 units on the upper level. Key project amenities would include an employee lounge, kitchen, delivery area, exercise room, living room, beauty salon, spa room, and other miscellaneous amenity spaces.

B. SUMMARY OF IMPACTS AND MITIGATION MEASURES

This summary provides an overview of the analysis contained in Chapter IV, *Setting, Impacts, and Mitigation Measures*. CEQA requires a summary to include discussion of: (1) potential areas of controversy; (2) significant impacts and proposed mitigation measures; (3) cumulative impacts; (4) significant irreversible and unavoidable impacts; and (5) alternatives to the project. Each of these topics is summarized below.

1. Potential Areas of Controversy

Letters and verbal comments received in response to the Notices of Preparation (NOP) dated July 6, 2018 raised the following topics that the commenters wanted addressed in the EIR:

- The project would require approvals from the Central Contra Costa Sanitary District Board and Contra Costa Local Agency Formation Commission for a Sphere of Influence change and annexation of the project site into the service boundaries.

- The project could have a negative aesthetic impact due to its location relative to nearby development and its size in comparison with the small lot.

- The EIR should analyze the cumulative traffic impacts of the buildout of the Wilder subdivision together with the proposed project.

The issues raised by these comments are addressed in Chapter IV, *Setting, Impacts and Mitigation Measures*. In addition, some of the comments offered in the NOP comment letters addressed the merits of the project itself and not the potential adverse environmental impacts that are the subject of this EIR. The City staff will consider these comments as part of its review of the requested project approvals, independent of the CEQA analysis. A copy of the NOP and written comment letters are included in Appendix A.

2. Significant and Significant Unavoidable Impacts

Under CEQA, a significant impact on the environment is defined as "…a substantial, or potentially substantial, adverse change in any of the physical conditions within the area affected by the project, including land, air, water, minerals, flora, fauna, ambient noise, and objects of historic or aesthetic significance."[1]

As discussed in Chapter IV, *Setting, Impacts and Mitigation Measures*, and shown in Table II-1 below, the project would result in several potentially significant impacts. All potentially significant impacts identified would be mitigated to a less-than-significant level with implementation of the recommended mitigation measures.

The potentially significant impacts that could be mitigated to a less-than-significant level are identified for the following topics:

- Air Quality
- Biological Resources

Impacts are anticipated to be less than significant for all other environmental topics. Furthermore, the proposed project would not significantly contribute to any significant cumulative impacts.

3. Alternatives to the Project

Chapter V includes analysis of three alternatives to the project to meet the CEQA requirements for analysis of a reasonable range of project alternatives. The three project alternatives analyzed in Chapter V include:

- The **No Project/No Build Alternative**, which assumes the continuation of existing conditions within the project site.

[1] California Code of Regulations, Title 14, Section 15382; Public Resources Code Section 21068.

- **Reduced Development Alternative**, which assumes a less dense scenario than the CountryHouse Memory Care Project. Under this alternative, the building would have 30 assisted-living units and 28,884 square feet of floor area, compared with 38 units and 32,084 square feet under the proposed project. Parking would remain the same at 16 spaces.
- **Screened Truck Loading Alternative**, which has a revised site plan with a truck loading area along the eastern side of the project, adjacent to but separated from Wilder Road by a landscape strip. Four fastigiate English oaks would be planted to screen the truck loading area from public view. In all other aspects, this alternative would be identical to the proposed project.

C. SUMMARY TABLE

Information in Table II-1, Summary of Impacts and Mitigation Measures, has been organized to correspond with environmental issues discussed in Chapter IV. The table is arranged in four columns: (1) impacts; (2) level of significance prior to mitigation (when mitigation is necessary); (3) recommended mitigation measures; and (4) level of significance after implementation of mitigation. Levels of significance are categorized as follows: LTS = Less Than Significant, S = Significant and SU = Significant and Unavoidable. For a complete description of potential impacts and recommended mitigation measures, please refer to the specific discussions in Chapter IV.

TABLE II-1 SUMMARY OF IMPACTS AND MITIGATION MEASURES

Impact	Level of Significance Without Mitigation	Mitigation Measure	Level of Significance With Mitigation
A. AESTHETICS			
Implementation of the project would not result in any significant aesthetic impacts.			
B. AIR QUALITY			
AIR-1: Fugitive dust emissions during construction of the project could contribute substantially to an existing or projected air quality violation.	S	AIR-1: During grading and construction, the project shall comply with the following Bay Area Air Quality Management District (BAAQMD) Basic Construction Mitigation Measures: ▪ All exposed surfaces (e.g., parking areas, staging areas, soil piles, graded areas, and unpaved access roads) shall be watered two times per day. ▪ All haul trucks transporting soil, sand, or other loose material off-site shall be covered. ▪ All visible mud or dirt track-out onto adjacent public roads shall be removed using wet power vacuum street sweepers at least once per day. The use of dry power sweeping is prohibited. ▪ All vehicle speeds on unpaved roads shall be limited to 15 miles per hour. ▪ All roadways, driveways, and sidewalks to be paved shall be completed as soon as possible. Building pads shall be laid as soon as possible after grading unless seeding or soil binders are used. ▪ Idling times shall be minimized either by shutting equipment off when not in use or reducing the maximum idling time to 5 minutes (as required by the California airborne toxics control measure Title 13, Section 2485 of California Code of Regulations). Clear signage shall be provided for construction workers at all access points. ▪ All construction equipment shall be maintained and properly tuned in accordance with manufacturer's specifications. All equipment shall be checked by a certified visible emissions evaluator. ▪ Post a publicly visible sign with the telephone number and person to contact at the lead agency regarding dust complaints. This person shall respond and take corrective	LTS

LTS = Less Than Significant, S = Significant, SU = Significant and Unavoidable

TABLE II-1 SUMMARY OF IMPACTS AND MITIGATION MEASURES

Impact	Level of Significance Without Mitigation	Mitigation Measure	Level of Significance With Mitigation
		action within 48 hours. The BAAQMD's phone number shall also be visible to ensure compliance with applicable regulations. With implementation of Mitigation Measure AIR-1 the project's contribution to an existing or projected air quality violation from fugitive dust $PM_{2.5}$ and PM_{10} would be less than significant.	
C. BIOLOGICAL RESOURCES			
BIO-1: Development of the project could potentially harm nesting special-status or common migratory birds.	S	BIO-1: In order to avoid destruction, abandonment, or other direct impacts to active nests, the applicant shall submit a breeding bird survey and summary memo by a qualified biologist for staff review if vegetation removal and/or ground disturbance is to occur within the breeding bird season between February 1 and August 31. The biologist shall conduct a survey within two weeks prior to ground disturbance. If an active nest is found, a suitable buffer shall be established around the nest and work will be avoided within the buffer until the young have fledged or the nest is no longer active. The size of the buffer, as determined by the biologists, will be informed by the nest location, species, and any existing visual or auditory barriers. However, if any construction work is to be conducted outside of the breeding season (February through August), no breeding bird surveys are required.	LTS
D. HYDROLOGY AND WATER QUALITY			
Implementation of the project would not result in any significant hydrology and water quality impacts.			
E. GREENHOUSE GAS EMISSIONS			
Implementation of the project would not result in any significant greenhouse gas emissions impacts.			
F. LAND USE			
Implementation of the project would not result in any significant land use impacts.			
G. NOISE AND VIBRATION			
Implementation of the project would not result in any significant noise and vibration impacts.			

LTS = Less Than Significant, S = Significant, SU = Significant and Unavoidable

TABLE II-1 SUMMARY OF IMPACTS AND MITIGATION MEASURES

Impact	Level of Significance Without Mitigation	Mitigation Measure	Level of Significance With Mitigation
H. PUBLIC SERVICES, UTILITIES, AND RECREATION			
Implementation of the project would not result in any significant public services, utilities, and recreation impacts.			
I. TRANSPORTATION AND CIRCULATION			
Implementation of the project would not result in any significant transportation and circulation impacts.			

LTS = Less Than Significant, S = Significant, SU = Significant and Unavoidable

III. PROJECT DESCRIPTION

This chapter describes the proposed CountryHouse Memory Care Project ("project") at 1 Wilder Road evaluated in this EIR. The chapter begins with a description of the project site and surrounding land uses, relevant planning context and project objectives, followed by a detailed description of the project, a discussion of the intended uses of the EIR, and an explanation of required project approvals and permits.

A. PROJECT SITE

1. Location and Site Characteristics

The 1.1-acre project site is located just inside the western boundary of the city of Orinda. Orinda is located in Contra Costa County and is bordered by Berkeley Hills open space to the west; open space, including a combination of Regional Park and East Bay Municipal Utility District (EBMUD) watershed to the north; the city of Moraga to the south; and the city of Lafayette to the east.

Project site, looking west towards SR 24 and Sibley Volcanic Regional Preserve

The project site is located at 1 Wilder Road, at the southeast intersection of State Route 24 (SR 24) and Wilder Road. The site is between the Caldecott Tunnel (0.8 mile to the west) and the downtown Orinda highway exit and Orinda Bay Area Rapid Transit Station (1 mile to the east). Figure III-1 shows the project site's location.

The oblong property is bordered by SR 24 to the north and the Wilder Park sports fields to the southeast. The Wilder Road highway on-ramp is to the west and this road continues around the south edge of the project site.

Looking east along edge of project site

Source: City of Orinda, 2018; Contra Costa County Mapping Information Center, 2018; Google, 2018.

CountryHouse Memory Care Project EIR

Figure I-1
Project Location

A wireless tower with multiple carriers is located on the adjacent Caltrans property to the northeast. The project site is undeveloped and slopes gently from the highest point of 739 feet on the southern end of the parcel to the lowest point of 725 feet on the northern end. Vegetation on the parcel is characterized by non-native annual grassland.

2. Surrounding Land Uses

The site is located immediately west of the Wilder residential subdivision, which is currently under construction and will include 245 single-family homes at build-out. Other nearby land uses include the Wilder Park located to the east of the site, and the California Shakespeare Theater and associated parking lots located to the north and west of the site across SR 24.

The areas surrounding the Wilder neighborhood, the theater, and the project site are primarily open space managed and maintained by either the East Bay Regional Park District or watershed lands managed by EBMUD.

3. Existing General Plan and Zoning

The General Plan designation for the project site is Public and Semi-Public; and the surrounding areas are designated Utility or Open Space. The General Plan states that the Public and Semi-Public classification "designates uses other than parks owned by a public agency or semipublic institution that are of sufficient size to warrant differentiation from adjoining uses (…) examples are public and private schools."[1]

The site is zoned Public/Semi Public and Utility District (PS) as is the area immediately surrounding the project site. The PS zone is intended to "preserve established patterns of diverse uses such as the high-intensity community center and the EBMUD filter plant and the undeveloped lands of the EBMUD watershed and to subject any changes in existing uses to a heightened level of scrutiny to assure consistency with the General Plan." According to Schedule 17.9.2 of the Orinda Municipal Code, congregate care facilities are an allowed use in the PS zoning district with a use permit. The area to the east of the project site is zoned Planned Development District (PD). PD zones are established for the purpose of facilitating planning and review procedures that are better suited for development of large parcels of land.

[1] Orinda, City of, 1987 (last amended 2013). General Plan, Chapter 2: Land Use and Circulation Element, p. 2-10.

B. PROJECT OBJECTIVES

The project objectives are as follows:

- Provide a higher-end congregate care facility in Orinda with memory care services[1] to help meet the needs of a growing senior population.
- Provide a care facility for seniors who need assistance and would like to relocate to be, or remain, close to friends and family members.
- Provide specialized memory care housing and services to help meet the needs of a specific sub-group of a growing senior population.
- Provide meeting space within the project for community functions and classes.
- Create an aesthetically pleasing facility that takes in to account the topography of the site.
- Become a model for environmentally-friendly and sustainable congregate care facilities.
- Construct a financially feasible development and provide reasonable returns on investment so as to secure construction and long-term financing.
- Increase both short-term and long-term employment opportunities in Orinda.
- Provide opportunities for local volunteers who have expressed an interest in being a part of CountryHouse's programming.

C. PROPOSED PROJECT

Key elements of the project would include a one- to two-story, 32,084-square-foot building with 38 assisted-living units, a parking area with 16 parking spaces and a vehicle turn-around adjacent to the front and delivery entrances, and landscaping.

1. Site Plan and Circulation

The proposed development is sited on a 1.1-acre parcel, Assessor's Parcel Number 273-160-009. The majority of the site would be occupied by the building and associated parking area, as shown in Figure III-2. The building would be sited so the long axis of the structure runs in a generally north-south direction across the majority of the parcel. The design steps down to generally follow the site's natural topography, i.e., the southern (higher elevation) half of the site would have the surface parking lot

[1] Memory care is a form of assisted living that specifically caters to individuals with Alzheimer's disease, dementia, and other types of memory problems. Memory care combines housing, support services and health care, as needed, and often also includes medication management and transportation.

and the single-story component of the building, while the northern (lower elevation) half of the site would have the two-story component of the building. The building footprint would also step in and out to accommodate the building on the somewhat irregularly-shaped parcel and to articulate the building mass and provide visual interest.

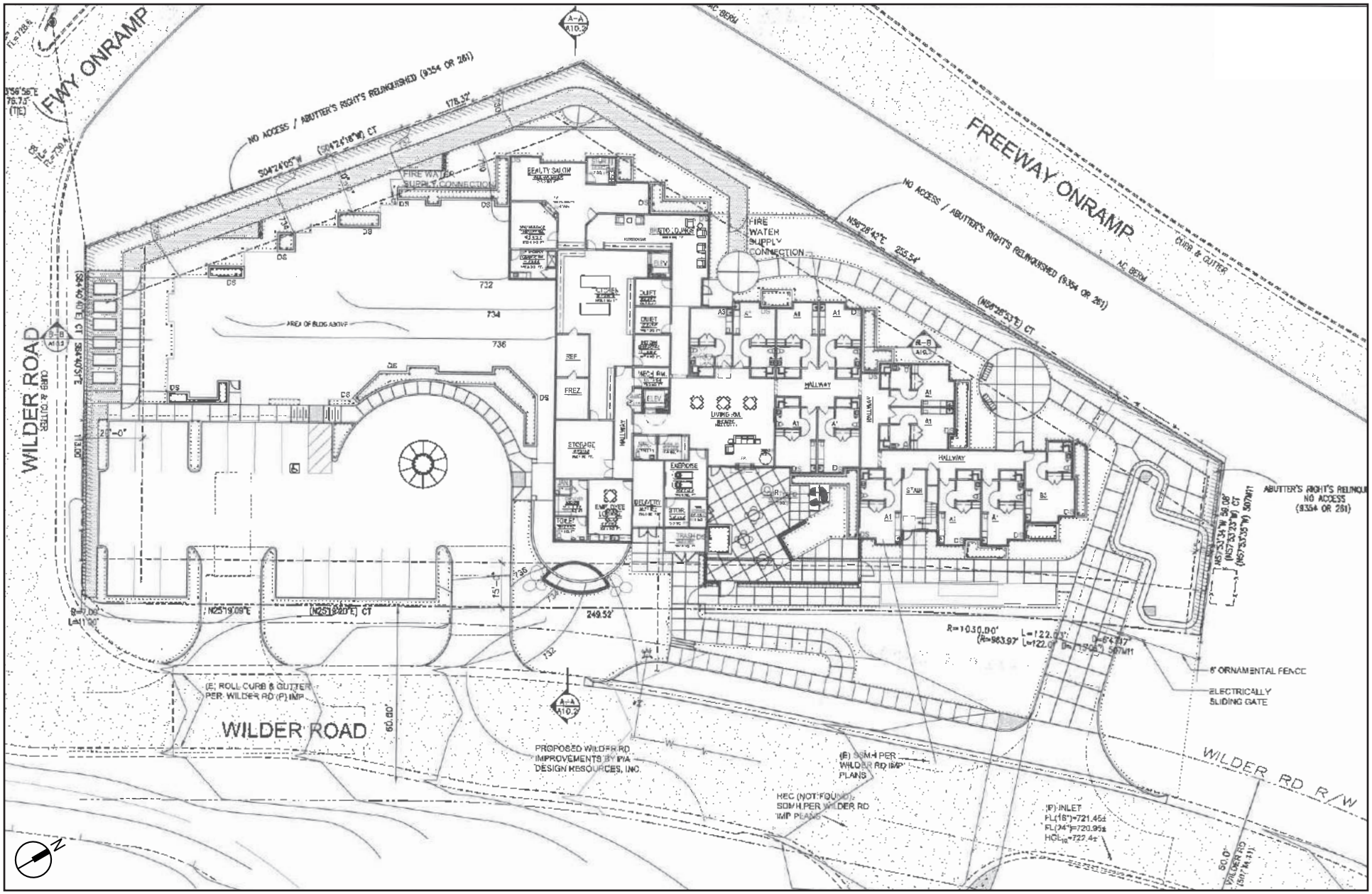
The project also includes a new 6-foot-wide sidewalk along Wilder Road at the northern half of the site, away from the exit and entrance driveways at the southern half of the site. Pedestrians would access the building via the pedestrian walkways leading to the building entrances on Wilder Road and on the northwest side of the building.

The surface parking and turn-around area would be located in the southeast portion of the site and would be accessed via a one-way entrance driveway positioned along the east edge of the site on Wilder Road. Visitors and staff will be permitted to use the parking spaces. The one-way exit driveway would be located south of the entrance driveway on Wilder Road. Both the main and delivery entrances would be located on the east side of the building, adjacent to the parking and turn-around areas. The project would provide a 10-foot-wide truck and delivery loading area between the new sidewalk and Wilder Road, within the public right-of-way.

2. Building Design and Uses

The proposed one- to two-story Craftsman-style building would range in height from approximately 20 feet to a maximum height of 33 feet 2 inches above the natural grade, with a chimney projecting another 5 feet above the maximum height, as shown in Figures III-3.A and III-3.B. The structure is planned to contain 38 assisted-living studio units (with five different layouts), with 12 units on the lower level and 26 units on the upper level, as shown in Figures III-5 and III-6. The lower level would also have an employee lounge, kitchen, delivery area, exercise room, living room, beauty salon, spa room, and other miscellaneous amenity spaces, as well as a courtyard. The upper level would have a parlor, servery, dining room, and an activity room, as well as the reception area and several offices.

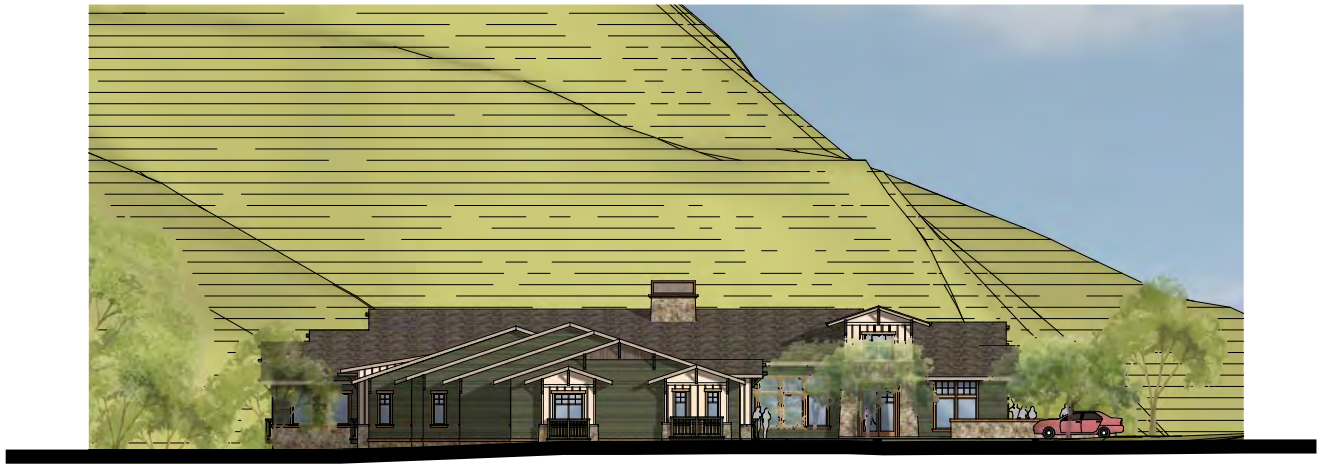
The exterior of the building would be well articulated with a range of building planes and forms and a variety of building materials (see Figure III-4 for perspective views). The roof would be asphalt composition shingle with one faux chimney stack and the horizontal siding would be a dark olive green color, with hillstone along the base of



CountryHouse Memory Care Project EIR

Source: Architects Orange, 2017.

Figure III-2
Site Plan



SOUTH ELEVATION

EAST ELEVATION (WILDER ROAD)

CountryHouse Memory Care Project EIR

Source: Architects Orange, 2018.

Figure III-3.A
Exterior Elevations

NORTH ELEVATION

WEST ELEVATION

CountryHouse Memory Care Project EIR

Source: Architects Orange, 2018.

Figure III-3.B
Exterior Elevations

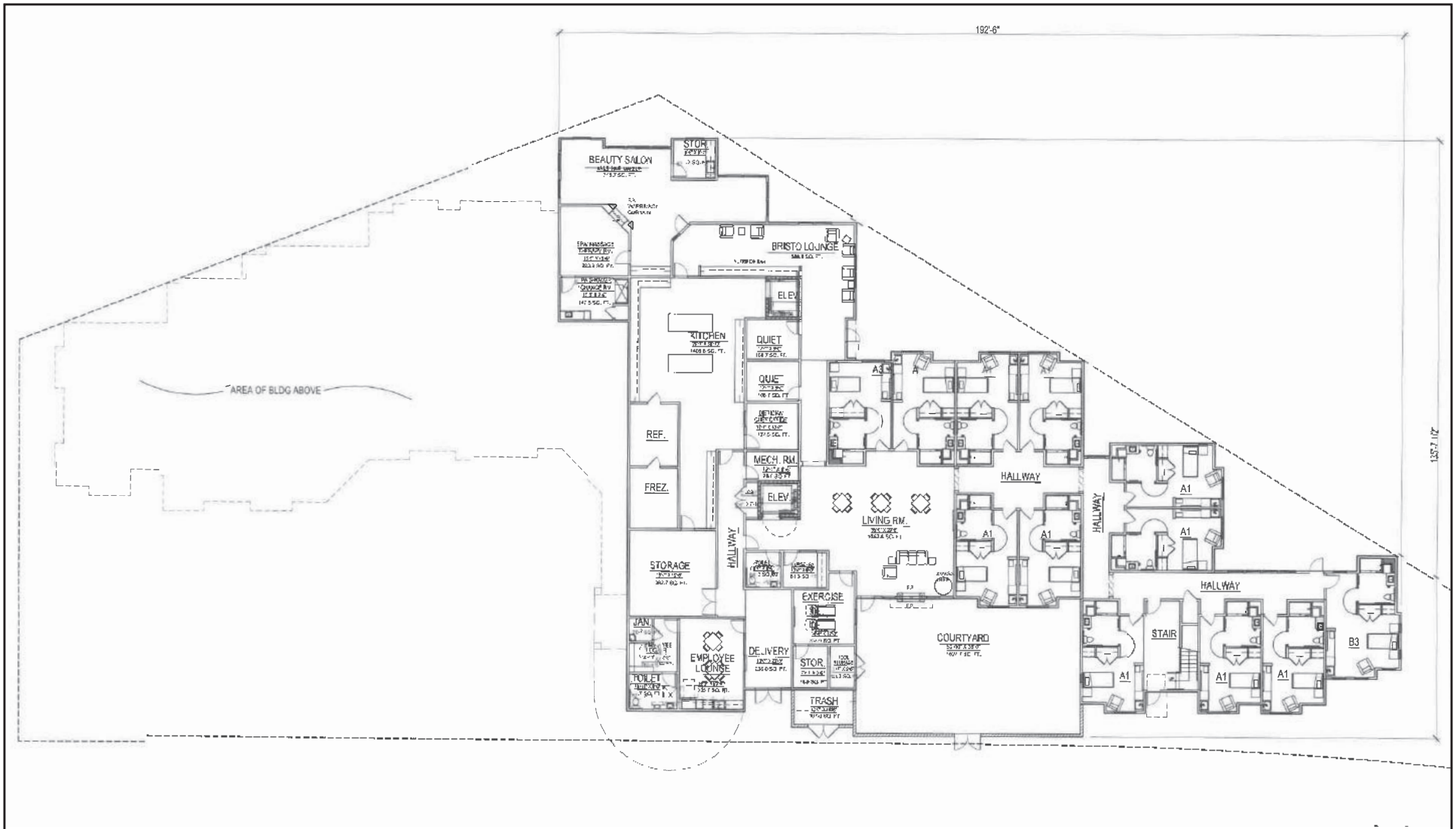
VIEW FROM WEST PROPERTY LINE

VIEW FROM MAIN ENTRY

CountryHouse Memory Care Project EIR

Source: Architects Orange, 2018.

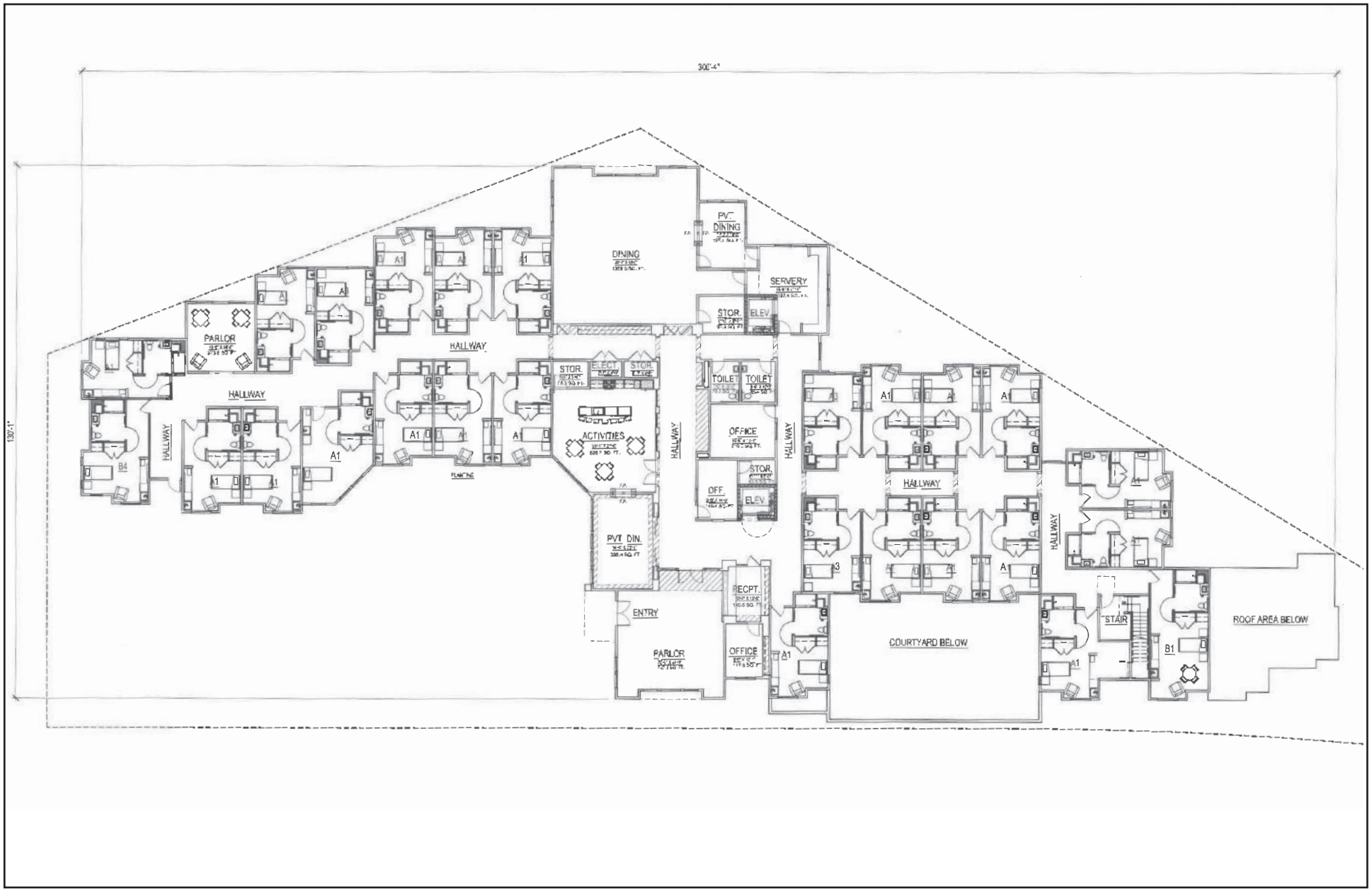
Figure III-4
Perspective Views



CountryHouse Memory Care Project EIR

Source: Architects Orange, 2017.

Figure III-5
Floor Plan - Lower Level



CountryHouse Memory Care Project EIR

Source: Architects Orange, 2017.

Figure III-6
Floor Plan - Upper Level

the building to add visual interest. Fascia, eaves, and trim would be a light-colored material.

3. Landscaping and Streetscape

Landscaping would be incorporated throughout the site and is planned to include a variety of trees, shrubs, and groundcovers installed in gardens and along the project boundaries. An ornamental fence is proposed for the north and west perimeters of the site to screen the residents from the adjacent SR 24. Several landscaped amenities are proposed on the east perimeter of the site to the north of the surface parking, including a 1,527-square-foot courtyard, a water wall featuring the 'CountryHouse' title, and a bocce ball court.

4. Construction

Construction of the project would begin with grading to prepare the site for the foundation and to provide a more level surface between the building and the street edge of the site to accommodate walkways, parking area, gardens and lawn. Minimal grading of the site would be required as the building is designed to follow the gentle downslope of the parcel. Other construction activities would consist of excavation and shoring, foundation and below-grade construction, and construction of the building and finishing interiors. The foundation would be a conventional spread footing foundation. No pile driving would be included. Project construction is expected to occur over approximately 12 to 18 months, beginning in early 2019.

Depth of excavation would be up to 4 feet, and height of fill would be up to 7 feet. Up to 1,200 cubic yards of soil would be excavated and 1,000 cubic yards of soil would be filled, resulting in 200 cubic yards of soil off-hauled from the site.

5. Utilities

Utility services are currently provided to the Wilder residential subdivision near the project site and would be readily available to serve the project. Water supply and treatment would be provided to the project site by EBMUD, while wastewater treatment would be provided by the Central Contra Costa Sanitary District (CCCSD). Existing sewer and water mains are located in Wilder Road. Minor connections to these existing lines would be required to serve new structures on the project site. Please see Section IV.H, *Public Services, Utilities, and Recreation*, for more detail.

D. PERMITS AND APPROVALS

A number of permits and approvals would be required before the development of the project could proceed. As Lead Agency for the project, the City of Orinda would be responsible for the majority of approvals required for development. It is anticipated

that this EIR will provide environmental review for all discretionary approvals and actions necessary for the project.

Other agencies also have some authority related to the project and its approvals. A list of required permits and approvals that may be required by the City and other agencies includes, without limitation, those provided in Table III-1. Responsible agencies listed are those agencies which have some discretionary authority over the project or a portion of it. Responsible agencies are also required to comply with CEQA and may rely on this EIR to meet their CEQA compliance requirements, although they must independently review and approve this EIR.

TABLE III-1 REQUIRED PERMITS AND APPROVALS

Lead Agency	Permit/Approval
City of Orinda	▪ Use permit for a congregate care facility in PS district ▪ Design Review ▪ Right-of-Way Vacation or Revocable Encroachment Agreement
Responsible Agencies	
Central Contra Costa Sanitary District	▪ Sphere of influence amendment and annexation into service boundary for sewer connections
Contra Costa Local Agency Formation Commission	▪ Approval of CCCSD's sphere of influence amendment and annexation
East Bay Municipal Utility District	▪ Approval of water lines, water hookups and review of water needs
Other Agencies	
Pacific Gas & Electric	▪ Electricity and natural gas utility hook ups
State Department of Community Care Licensing	▪ Food Service License for Residential Care Facilities for the Elderly
Contra Costa County Environmental Health Department	▪ Medical Waste Generator Health Permit

IV. SETTING, IMPACTS, AND MITIGATION MEASURES

This chapter contains an analysis of the environmental topics determined to be potentially significant relevant to the CountryHouse Memory Care Project. Sections IV.A through IV.I of this chapter describe the existing setting, the potential impacts that could result from implementation and buildout of the project, and mitigation measures designed to reduce significant impacts of the project to a less-than-significant level.

The following provides an overview of the scope of the analysis included in this chapter, organization of the sections, and the methods for determining what impacts are significant.

ENVIRONMENTAL TOPICS

The following environmental topics are analyzed in this chapter:

A. Aesthetics
B. Air Quality
C. Biological Resources
D. Hydrology and Water Quality
E. Greenhouse Gas Emissions
F. Land Use
G. Noise and Vibration
H. Public Services, Utilities, and Recreation
I. Transportation and Circulation

A brief discussion of the environmental topics for the project that are not found to be significant is included in Chapter VI, *Effects Found Not to Be Significant*. These topics include: agricultural resources, cultural resources, tribal cultural resources, geology, hazards and hazardous materials, population and housing, mineral resources, and energy.

FORMAT OF TOPIC SECTIONS

Each environmental topic section generally includes three main subsections: (1) Setting; (2) Regulatory Framework; and (3) Impacts (construction, project, and cumulative) and Mitigation Measures. Identified significant impacts are numbered and shown in **bold** type, and the corresponding mitigation measures are numbered and

indented. Significant impacts and mitigation measures are numbered consecutively within each topic and begin with a shorthand abbreviation for the impact section (e.g., AIR for Air Quality). The following abbreviations are used for individual topics:

AES: Aesthetics
AIR: Air Quality
BIO: Biological Resources
HYD: Hydrology and Water Quality
GHG: Greenhouse Gas Emissions
LAND: Land Use
NOISE: Noise and Vibration
UTIL: Public Services, Utilities, and Recreation
TRANS: Transportation and Circulation

The following notations are provided after each identified significant impact and mitigation measure:

SU = Significant and Unavoidable
S = Significant
LTS = Less than Significant

These notations indicate the significance of the impact with and without mitigation.

DETERMINATION OF SIGNIFICANCE

Under CEQA, a significant effect is defined as a substantial, or potentially substantial, adverse change in the environment.[1] Each impact evaluation in this chapter is prefaced by criteria of significance, which are the thresholds for determining whether an impact is significant.

The criteria of significance identified in this EIR are intended to implement and supplement provisions in the CEQA Guidelines for determining the significance of environmental effects, including Sections 15064, 15064.5, 15065, 15382 and Appendix G.

A summary of the project's relationship to each significance criteria is provided at the beginning of the impact and mitigation measures subsection for each topic.

[1] Public Resources Code Section 21068.

CUMULATIVE ANALYSIS CONTEXT

CEQA defines cumulative as "two or more individual effects which, when considered together, are considerable, or which can compound or increase other environmental impacts." Section 15130 of the CEQA Guidelines requires that an EIR evaluate potential environmental impacts when the project's incremental effect is cumulatively considerable. "Cumulatively considerable" means that the incremental effects of an individual 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. These impacts can result from a combination of the proposed project together with other projects causing related impacts. "The cumulative impact from several projects is the change in the environment which results from the incremental impact of the project when added to other closely related past, present, and reasonably foreseeable probable future projects."[1]

The methodology used for assessing cumulative impacts typically varies depending on the specific topic being analyzed. For example, the geographic and temporal (time-related) parameters related to a cumulative analysis of air quality impacts are not necessarily the same as those for a cumulative analysis of noise or aesthetic impacts. This is because the geographic area that relates to air quality is much larger and regional in character than the geographic area that could be impacted by potential noise or aesthetic impacts from a proposed project and other cumulative projects/growth. The noise and aesthetic cumulative impacts are more localized than air quality and transportation impacts, which are more regional in nature. Accordingly, the parameters of the respective cumulative analyses in this document are determined by the degree to which impacts from this project are likely to occur in combination with other development projects.

[1] California Environmental Quality Act (CEQA) Guidelines, Section 15355(b).

A. AESTHETICS

This section describes existing aesthetic resources within and in the vicinity of the project site, lists relevant aesthetic planning policies, and evaluates the potential aesthetics impacts of the project.

The analysis in this section is based on: (1) a field survey of the project site that was conducted in May 2018; (2) a review of the data provided by the City of Orinda (City) and the project applicant, including site plans, building designs, and planning documents; and (3) visual simulations that show "before" and "after" representations of the project. The analysis of the project is focused on the aspects of aesthetics as defined in the significance criteria, including impacts to visual character, scenic vistas, and scenic resources within State scenic highways.

1. Setting

This section describes the visual character of the project site and surrounding area.

a. Visual Character of the Project Site

The project site is undeveloped, enclosed by a chain-link fence, and surrounded by roadways on three sides. The perimeter of the site is bordered by small road signs, trees of mostly small- to medium-height, and ornamental plantings. The site itself is an open field mostly composed of grass, which is tall and green in the wet season and brown in the dry season, with shrubs interspersed throughout. The overall visual character of the site is typical of undeveloped parcels, which are usually covered in ruderal vegetation (i.e., weeds).

Photo 1: Project site from Wilder Road, view north

Photo 2: Project site from Wilder Road, view west, EBMUD watershed lands in the middleground

b. Visual Character of the Surrounding Area

The project site is located directly adjacent to State Route 24 (SR 24) in an area dominated by low grass- and oak-covered hills. Moving both west and east of the project site along SR 24, the visual setting is characterized by low- to medium-height rolling hills rising on both sides of SR 24, creating a valley-like setting. There are very few man-made structures encroaching upon the natural landscape, with the exception of utility and light poles and signage, as well as SR 24 itself and other roadways. The only major development in the area is the Wilder housing subdivision and associated facilities, which are immediately south of and adjacent to the project site. In addition, the California Shakespeare Theater is north of SR 24. The Wilder subdivision and the California Shakespeare Theater are generally not visible from SR 24 due to the hilly terrain.

Following is a brief discussion of the visual character of the areas surrounding the project site.

- **North.** The visual character immediately north/west of the site comprises SR 24 and the eastbound on-ramp for SR 24, which is a heavily travelled highway. Beyond SR 24 are rolling hills that slope up steeply from the highway. The hills are vegetated with grassland and chaparral and some of the areas are densely vegetated with mature oaks. There are also occasional stands of non-native eucalyptus. This area is within East Bay Municipal Utility District's (EBMUD) Siesta Valley Recreation Area and includes public hiking trails, including a segment of the East Bay Skyline National Recreational Trail, a 31-mile continuous path used by hikers and equestrians. The first structures begin to appear as one approaches downtown Orinda and the Orinda BART station, approximately 1 mile east of the project site along SR 24.

Photo 3: SR 24 with hills directly above and to the north

- **East.** Immediately east of the project site are the Wilder Park sports fields

Photo 4: Wilder housing development beyond the project site to the east, looking north from Wilder Road

and the associated clubhouse, with the Wilder residential development beyond and farther south. The carefully arranged and chosen ornamental plantings, athletic facilities, and community gathering space are all typical of a large suburban planned development. The visual aesthetic of this area is quite different from the rest of the SR 24 corridor between the Caldecott Tunnel and downtown Orinda, which features few signs of development. The Wilder development also includes a network of existing and proposed publicly accessible trails, primarily in the Quarry Hill open space area, less than half a mile to the northeast of the site, and the Eastern Hills open space area, approximately 0.8 mile to the east of the site.

- **South.** Few signs of development are seen along the SR 24 corridor south and southwest of the project site besides the highway and the Caldecott Tunnel, roadway itself, road signs, and transmission lines. Farther to the west and east of the project site, the hills on the south side of the freeway are north-facing and generally densely wooded, although there is an open patch of grassland immediately adjacent to SR 24 just west of the project site.

Photo 5: SR 24 as it curves south, Caldecott Tunnel in the middleground

- **West.** Few signs of development are seen along the SR 24 corridor west of the project site. The Wilder Road overpass is just west of the project site and the Caldecott Tunnel is approximately 0.8 mile southwest. The California Shakespeare Theater is located across SR 24 just west of the overpass within EBMUD's property. The surface unpaved parking areas are in the foreground; the theater and picnic facilities are located farther into the property and are not visible due to the topography and mature vegetation.

Photo 6: The entryway leading to the California Shakespeare Theater

c. Views from the Project Site

The project site has views of SR 24 directly below and to the northwest, as well as receding in the distance towards the west. The sparsely wooded hills of the Siesta Valley Recreation Area are visible to the north, beyond and above SR 24. There are

open views of the densely forested hills to the southwest, which are part of the EBMUD protected watershed lands.

Views to the southeast quickly transition to a landscaped suburban recreation area, clubhouse, five sports fields that are lighted for evening events, and semi-custom single-family homes beyond. The clubhouse and the other improvements associated with the Wilder subdivision feature earth-toned colors and natural look and materials, which generally complement the aesthetic of the area. The houses of the Wilder development are mostly hidden from sight due to a small hill blocking the view, however the rooflines of several of the houses are visible in the middleground.

Photo 7: SR 24 looking east towards the project site

Photo 8: SR 24 looking west towards project site

d. Views of the Project Site

Views of the project site from the surrounding area are generally limited due to the hilly terrain. In this area, SR 24 has a slight downhill gradient from east to west; therefore, the project site is more readily visible to westbound travelers, although multiple medium-sized trees almost entirely obstruct the base of the project site. Heading from west to east, the project site is not visible due to the uphill gradient, aforementioned tree cover, and the Wilder Road overpass, which further obstructs any views. The project site is readily visible from Orinda Fields Lane (as well as Wilder Road), although the farther southeast one goes on either of those roadways, the less visible the site becomes due to elevation as well as intervening structures such as athletic fields, lights, and signage.

Photo 9: Project site from Orinda Fields Lane looking northwest

Photo 10: Project site looking northwest from farther back on Orinda Fields Lane, Wilder Park sports fields seen on the right

e. Existing Light and Glare

As can be seen in Figure IV.A-5, there are streetlights in the area of the project site. In addition, Wilder Park has two fields with lighting that are used for night games until 10:00 p.m.[6] The project site does not currently have lighting.

2. Regulatory Framework

The main policies that are applicable to aesthetics and visual quality within and around the project site are the Land Use, Circulation, and Conservation elements of the General Plan, the Orinda Municipal Code, and California State Scenic Highway Program.

a. General Plan

The current 1987 General Plan has several guiding and implementing policies that may apply to the project, listed below in Table IV.A-1.[7] In addition, the following three roads are designated as Scenic Corridors by the City of Orinda General Plan: Moraga Way, Camino Pablo, and SR 24. Please see subsection IV.A.2.c, *California State Scenic Highways*, below for a discussion of SR 24.

[6] City of Orinda, 2018. Facilities –Wilder Park. http://www.cityoforinda.org/Facilities/Facility/Details/Wilder-Park-8. Accessed July 1, 2018.

[7] City of Orinda, 1987 (last amended 2013). General Plan. https://cityoforinda.app.box.com/generalplan. Accessed July 1, 2018.

TABLE IV.A-1 GENERAL PLAN POLICIES

LAND USE ELEMENT
2.1.1 GUIDING POLICY (A) Maintain the semi-rural character of Orinda.
2.1.1 GUIDING POLICY (B) Maintain the dominance of wooded and open ridges and hillsides.
2.1.2 IMPLEMENTING POLICY (E) Residential Area Design and House siting: Consider ordinances to maintain semi-rural character with respect to the following: ▪ Regulating the relationship of house size in relation to lot size to maintain low-density character; ▪ Removal of natural vegetation; ▪ Disturbance of existing groundforms; ▪ Disturbance of creek corridors; ▪ Street design to avoid wide, straight streets; ▪ House placement in relation to ridgelines to avoid or minimize visibility around designated ridges and scenic hillsides through the adoption of an appropriate hillside and ridgeline ordinance giving due consideration to such ordinances from adjoining cities; ▪ Height of new houses and additions; ▪ Solar orientation of new houses.
CIRCULATION ELEMENT
2.3.1 GUIDING POLICY (G) It is the goal of the City of Orinda to preserve and retain, in the most natural condition possible, scenic vehicular entryways, routes and corridors in the community.
2.3.2 IMPLEMENTING POLICY (P) The following routes are designated Scenic Corridors on the General Plan: I. Moraga Way from its intersection with Camino Pablo south to the City limits; 2. Camino Pablo from its intersection with Santa Maria Way north to the City limits; 3. Highway 24, designated as a California Scenic Highway within Orinda City limits.
2.3.2 IMPLEMENTING POLICY (Q) Special care shall be taken to provide a well landscaped and open feeling along Scenic Corridors, especially at the entrance to the City, utilizing such techniques as generous landscaped setbacks and open-space acquisition, where appropriate.
2.3.2 IMPLEMENTING POLICY (R) Any proposed development or subdivision along a Scenic Corridor or Scenic Highway shall be designed to blend with and permit the natural environment to be maintained as the dominant visual element. It shall not lessen the scenic value of existing visual elements.
2.3.2 IMPLEMENTING POLICY (S) Where structures are permitted, they shall be designed to blend with and permit the natural environment to be maintained as the dominant visual element.
2.3.2 IMPLEMENTING POLICY (T) Because Highway 24 is a freeway that bisects Orinda, it merits special consideration to maintain its integrity as a California Scenic Highway as it passes through Orinda.
CONSERVATION ELEMENT
4.1.1 GUIDING POLICY (F) Achieve aesthetically sensitive grading that conforms to the natural contours, ensures safety and preserves trees and other vegetation to the greatest practical extent.
4.1.1 GUIDING POLICY (G) Protect visually prominent ridgelines and hillsides from development.

TABLE IV.A-1 GENERAL PLAN POLICIES

4.1.1 GUIDING POLICY (J) Open space to the north and west of the Planning Area adjacent to watershed areas and parks shall be preserved.

b. Municipal Code

The City's Municipal Code contains guidance that may provide additional context for how to treat aesthetic resources.

(1) Performance Standards

Section 17.15.2C addresses glare from glass and outdoor lighting.

1. **From Glass.** Mirror or highly reflective glass may not cover more than twenty (20) percent of a building surface visible from a street unless an applicant submits information demonstrating to the satisfaction of the Zoning Administrator that use of such glass will not significantly increase glare visible from an adjacent street and property or pose a hazard for moving vehicles.
2. **From Outdoor Lighting.** Parking lot lighting must comply with Chapter 17.16 of this title. Security lighting may be indirect or diffused, or be shielded or directed away from an R district within one hundred (100) feet. Lighting for outdoor court or field games within three hundred (300) feet of an R district or Scenic Corridor requires approval of a use permit, processed in accordance with provisions of this title.

(2) View Preservation Ordinance

The City recognizes that "outward views and plentiful sunlight reaching property contribute greatly to the quality of life and promote the general welfare of the entire community" (OMC Section 17.22.2A). Therefore, the View Preservation Ordinance addresses residential views blocked by growth of trees.

This ordinance is intended to apply to protection of private views from a property, which are generally not subject to analysis under CEQA, rather than public views. However, the City does not have any policy guidance that is applicable to the protection of vistas from publicly accessible places such as city streets and parks. For purposes of this analysis, the definition in OMC Section 17.22 of "view" has been used to define scenic vistas and resources. OMC defines views as including, but not limited to distinctive geologic features, hillside terrains, wooded canyons, ridges, and bodies of water. Some examples are:

1. Mt. Diablo;

2. Prominent features of the East Bay Hills, such as Round Top, Huckleberry Preserve and Tilden Park;
3. Briones Reservoir;
4. Briones Agricultural Preserve.

(3) Design Review

As stated in OMC Section 17.30.1, "The purpose of design review is to preserve and enhance the semi-rural character of Orinda, maintain property values, conserve and enhance the visual character of the community and protect the public health, safety and general welfare of its citizens." Design review is required for any building in the Public/Semi Public and Utility District.

OMC Section 17.30.5 provides guidance on the design of development within Orinda.

1. **Siting and Neighborhood Context.** The proposed development is designed and located on the site so that it is visually harmonious with, but not necessarily identical to, other structures in the neighborhood. The proposed development is designed to blend into the existing landscape and natural context, protect undeveloped ridgelines and hillsides, maintain the dominance of wooded and open ridges and hillsides, and preserve significant or unique scenic vistas.
2. **Design.** The design elements are visually harmonious, in scale with the size of the structure, and balance environmental considerations. If the proposed development is an addition or remodel of an existing structure, the existing construction and proposed construction are visually harmonious. Facades and exterior walls shall be designed to reduce the blocky or massive features of building surfaces and provide articulation.
3. **Privacy, Views, Light, and Air.** The proposed development does not impair the existing views, block access to light and air or infringe on the privacy of neighbors in a substantial fashion. In considering this factor, decisionmakers shall balance the importance of minimizing impacts on neighboring properties and the applicant's ability to develop the property. The term "view" shall be defined in Section 17.22.4.
4. **Landscaping.** Primary landscaping elements complement and are appropriate for the structure, the site, and the neighborhood.

c. California State Scenic Highways

California's Scenic Highway Program was created by the California Legislature in 1963. Its purpose is to protect and enhance the natural scenic beauty of California highways and adjacent corridors through special conservation treatment. The state laws

governing the Scenic Highway Program are found in the Streets and Highways Code, Sections 260–263.

The California Department of Transportation (Caltrans) designates State scenic highways. To be designated, highways must meet various criteria established in a visual assessment conducted and reviewed during the scenic highway's nomination process. Such a visual assessment includes an evaluation of the corridor's visual quality in terms of vividness, intactness, and unity. The four criteria used to determine whether a highway may be designated as scenic are as follows:

- The State or county highway consists of a scenic corridor composed of a memorable landscape that showcases the natural scenic beauty or agriculture of California.
- Its existing visual intrusions do not significantly impact the scenic corridor.
- It demonstrates strong local support for the proposed scenic highway designation.
- The length of the proposed scenic highway is not less than a mile and is not segmented.

Visual intrusions are evaluated in the following manner:

- The more pristine the natural landscape is and less affected by intrusions, the more likely the nominated highway will qualify as scenic.
- Where intrusions have occurred, the less impact they have on an area's natural beauty, the more likely the nominated highway will qualify as scenic.
- The extent to which intrusions dominate views from the highway will determine the significance of their impact on the scenic corridor.

Once the scenic highway designation is granted, a wide range of protections apply to the designated corridor.[8]

Caltrans designates SR 24 as a scenic highway for the portion between the east portal of the Caldecott Tunnel to Interstate 680 near Walnut Creek. The project is located along SR 24 and would be visible to motorists that traverse this scenic highway. As described on the California Scenic Highway Mapping System web page, "The route

[8] California Department of Transportation (Caltrans), 2008. Landscape Architecture Program. Scenic Highway Guidelines. October. http://www.dot.ca.gov/hq/LandArch/16_livability/scenic_highways/guidelines/scenic_hwy_guidelines_04-12-2012.pdf. Accessed July 1, 2018.

passes attractive residential and commercial areas with 3,849 ft. Mt. Diablo as the focus while traveling eastward."[9]

3. Impacts and Mitigation Measures

This section discusses potential impacts on aesthetic resources that could result from implementation of the project. The section begins with the criteria of significance, which establish the thresholds used to determine whether an impact is significant. The latter part of this section presents the land use impacts associated with the project and any necessary mitigation measures that might result.

a. Criteria of Significance

Implementation of the project would have a significant effect on aesthetic resources if it would:

1. Have a substantial adverse effect on a public scenic vista;
2. Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway;
3. Substantially degrade the existing visual character or quality of the site and its surroundings; or
4. Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area.

b. Less-than-Significant Aesthetics Impacts

Photo simulations were prepared to inform the analysis of the project on scenic vistas and resources and visual character. Photos were taken at selected vantage points, which were chosen as representative public views in the vicinity of the project site and then the project was simulated into the photos to provide a conceptual representation of the project. Figure IV.A-1 shows the locations of the selected viewpoints. The photos and corresponding visual simulations are provided in Figures IV.A-2 through IV.A-6.

- **Viewpoints 1, 2, and 3** (Figures IV.A-2, IV.A-3, and IV.A-4) show the project site to the left at various points along SR 24 from the perspective of a westbound driver. Densely vegetated hills are seen beyond the site. There are few man-made elements seen from this viewpoint besides the roadway, a few light poles, and an array of communication towers along the ridgeline. In the **with project view**, the new building is shown in the foreground of the hillside and vegetation and would be seen from autos traveling west on SR 24 towards Oakland. The low profile of

[9] California Department of Transportation (Caltrans), 2018. Route 24 – Scenic Highway. http://www.dot.ca.gov/hq/LandArch/16_livability/scenic_highways/. Accessed July 1, 2018.

the building and the building materials and green and earth-tone colors minimize the visibility of the building and allow it to generally blend into the landscape.

- **Viewpoint 2** (Figure IV.A-5) shows the project site to the east in the foreground from Wilder Road. In the middleground, hidden by vegetation, are the sports fields at Wilder Park. In addition, a topographically prominent hill rises to the left; this is the Quarry Hill open space area. Viewpoint 2 directly faces Mount Diablo; however, the hills foreground obscures the view of Mount Diablo from travelers along SR 24 and other roadways near the project site. In the **with project view,** the new building is shown on the left side of Wilder Road. The height of the building steps down from the comparatively greater height of the trees to its left.
- **Viewpoint 3** (Figure IV.A-6) is from Wilder Road looking southwest towards the project site from just below the sports fields at Wilder Park. This view is characterized by banners advertising the Wilder subdivision and landscaping along the sides of Wilder Road. In the **with project view**, the new building is shown on the right side of Wilder Road. The muted green and earth-tone colors of the building allow it to generally blend in to the landscape.

Implementation of the project would result in the less-than-significant impacts described below. Since these impacts would not exceed the significance thresholds described above, no mitigation measures are necessary for these less-than-significant impacts.

(1) Scenic Vistas (Criterion 1)

The Orinda Municipal Code states that the City's scenic vistas include ridgelines and hills; with a few prominent features called out specifically (including Mt. Diablo and Round Top). None of the specifically identified features are visible in the project vicinity; however, there is a view southwest from SR 24 towards the EBMUD watershed lands from SR 24 and the ridgeline of the East Bay Sibley Volcanic Regional Preserve beyond (Figures IV.A-2, IV.A-3, and IV.A-4). This is a visually pleasing feature due to the intactness of its visual character, as the hillside is densely covered by trees and there are no man-made elements encroaching upon the unbroken expanse of green. The transmission towers on the ridgeline introduce a discordant element and detract somewhat from its attractiveness.

The development would consist of a one- to two-story residential building on a relatively flat area. The proposed building would obstruct the lower portion of the EBMUD watershed hillside visible by travelers on SR 24 (Figure IV.A-2). The ridgeline itself would not be obstructed and most of the hill would remain visible after development. At no point would views from public viewpoints be entirely blocked by the project.

The City of Orinda's General Plan also designates Moraga Way, Camino Pablo, and SR 24 as Scenic Corridors. Moraga Way and Camino Pablo are both a mile east of the project site and would not be affected by the project. Please see Criterion 2, below, for a discussion of SR 24.

In addition, this analysis considers potential public views of the site from trails in the project vicinity. The East Bay Skyline National Recreational Trail runs northwest to southeast within the vicinity of the project, including a segment that is within the Siesta Valley Recreation Area. At its nearest point, the trail is slightly less than a mile from the project site. Due to the topography and generally wooded terrain along this trail segment, no views of the project site are available.

The Wilder development includes a network of existing and proposed trails, primarily in the Quarry Hill open space area, less than half a mile to the northeast of the project site; and in the Eastern Hills open space area, approximately 0.8 mile east of the project site. No views of the project site are available from the Eastern Hills open space area due to intervening topography.

The Quarry Hill open space area directly overlooks the project site. The dominant visual feature from this view is SR 24, which draws the viewer's eye because of the movement of cars and minimizes the prominence of any nearby features by comparison, including the proposed building. The proposed project would be within the Wilder valley, and would be seen as a continuance of the man-made elements within the valley associated with the Wilder development, including the ballfields and parking lots, as seen in Photo 11. Since the project would not be located in one of the undeveloped areas seen from this vantage point (i.e., hills), but rather directly behind and adjacent to the ballfields, it would not have a substantial adverse effect on the existing visual character.

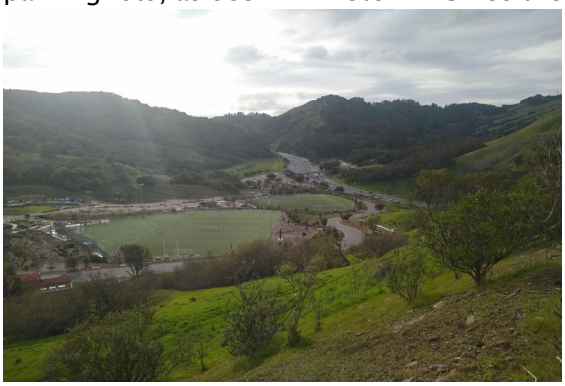


Photo 11: Views toward the project site (between the smaller ballfield and SR 24) from Quarry Hill

For the above reasons, the introduction of the project would not significantly alter the above views, and the project would not have a substantial adverse effect on a public scenic vista. Therefore, this impact would be less than significant.

CountryHouse Memory Care Project EIR

Source: Google Earth, 2018.

Figure IV.A-1
Viewpoint Location Map

Existing Conditions

Existing Conditions with Project

Source: PreVision Design, 2018.

CountryHouse Memory Care Project EIR

Figure IV.A-2
Viewpoint 1: Eastbound SR 24

Existing Conditions

Existing Conditions with Project

Source: PreVision Design, 2018.

CountryHouse Memory Care Project EIR

Figure IV.A-3
Viewpoint 2: Eastbound SR 24, farther east

Existing Conditions

Existing Conditions with Project

Source: PreVision Design, 2018.

CountryHouse Memory Care Project EIR

Figure IV.A-4
Viewpoint 3: Eastbound SR 24, farthest east

Existing Conditions

Existing Conditions with Project

Source: PreVision Design, 2018.

CountryHouse Memory Care Project EIR

Figure IV.A-5
Viewpoint 4: Wilder Road near SR 24 Off-Ramp

Existing Conditions

Existing Conditions with Project

Source: PreVision Design, 2018.

CountryHouse Memory Care Project EIR

Figure IV.A-6
Viewpoint 5: Wilder Road near Wilder Park

(2) Scenic Resources in a State Scenic Highway (Criterion 2)

SR 24 through the City of Orinda is designated as a scenic highway. The proposed building would be visible to motorists that traverse this highway. Although the proposed structure would be visible, the building would not overwhelm views of hills and ridgelines by motorists, as noted in the discussion of scenic vistas above. In addition, the Scenic Highways Program references "attractive residential and commercial areas" as part of the scenic highway description for SR 24.[10] Attractiveness is hard to define and is subjective, depending on the viewer. The project would have to go through design review prior to construction. As seen in Figure IV.A-2, the building as currently designed would blend well into the existing natural landscape on the southeast side of SR 24. The one- to two-story building would be of a similar height to the trees surrounding the project site and the undulating roofline would match the undulating outline of the tops of the trees. The building's siding would primarily be a dark, muted green color, which would match the green color of the natural landscape. For these reasons, the project would not substantially damage scenic resources such as trees, designated historic buildings, rock outcrops or other resources and therefore, this impact would be less than significant.

(3) Visual Character (Criterion 3)

The proposed project would introduce a new development to the area by developing a site that is immediately adjacent to Wilder Road and the eastbound SR 24 on-ramp. The site is between the edge of the Wilder subdivision/Wilder Park and the SR 24, a distance that spans approximately 175 feet to the on-ramp and 250 feet to the edge of the highway. Other structures in the immediate vicinity are associated with Wilder Park (clubhouse, sports fields, fences, lights) or single-family homes in the Wilder subdivision.

While most of the surrounding area has a semi-rural feel, recent development of the Wilder subdivision and Wilder Park has changed the nature of the area. The project would change the visual character in the immediate vicinity of the project site, but would not substantially change the visual character of the greater area. Figure IV.A-6 shows the proximity of Wilder Park (fencing in middle left of photo) to the project. Please also see earlier Photo 10 which also shows the proximity of the project site to Wilder Park and the associated clubhouse.

The project would be consistent with the overall visual character of the area, which consists of suburban elements such as fencing, subdivision banners, and detached, two- to three-story houses on large lots. As seen in Figures IV.A-3 and IV.A-4 and discussed further above under subsection IV.A.3.b.(1), *Scenic Vistas*, the height, color,

[10] California Department of Transportation (Caltrans), 2018. Route 24 – Scenic Highway. http://www.dot.ca.gov/hq/LandArch/16_livability/scenic_highways/. Accessed July 1, 2018.

and form of the building would also be consistent with natural features in the environment, which is dominated by dense tree clusters. The project would provide a truck and delivery loading area adjacent to the new sidewalk along the eastern border of the project site. Associated truck deliveries would be visible from Wilder Park and Wilder Road. The intermittent presence of large trucks in the delivery area would not have a substantial adverse effect on the existing visual character, as trucks and other vehicles are already constantly present on SR 84 and also visible from Wilder Park and Wilder Road.

For the above reasons, the project would not substantially degrade the visual character or quality of the area and would have a less-than-significant impact.

(4) Light and Glare (Criterion 4)

The project would be required to comply with performance standards regarding glare, as found in OMC Section 17.15.2C, which requires development to shield and aim lighting away from residential districts. The project would not create a new source of substantial light or glare which would adversely affect day or nighttime views in the area; therefore, this impact would be less than significant.

c. Significant Aesthetics Impacts

The project would not result in any significant aesthetic-related impacts.

d. Cumulative Impacts

The project would not result in a significant aesthetic impact by creating a substantial adverse effect on a scenic vista; substantially damaging scenic resources within a state-designated scenic highway; substantially degrading the existing visual character or quality of the site and its surroundings; or creating a new source of substantial light or glare. The amount of visual change in the area has been considerable due to the buildout of the Wilder subdivision and the project would be consistent with the more suburban visual character that the area has transitioned to. The one- to two-story proposed building would be relatively small and unobtrusive in comparison to the many large homes that have been constructed or are in construction as part of the Wilder subdivision. Therefore, the project would not have a significant cumulative visual quality impact.

B. AIR QUALITY

This section evaluates the potential air quality impacts of the project. The impacts associated with the project were evaluated in terms of operational and construction impacts related to air quality. The air quality analysis considered project-related emissions on regional air quality and the temporary short-term construction air quality impacts on nearby receptors. This analysis was conducted following guidance provided by Bay Area Air Quality Management District (BAAQMD).[11]

1. Setting

The project site is located in the San Francisco Bay Area Air Basin (SFBAAB) and is under the jurisdiction of the BAAQMD. Air quality in the SFBAAB is influenced by the regional climate, meteorology, and topography, in addition to the presence of existing air pollution sources and ambient conditions. The following discussion provides an overview of the physical and regulatory setting for air pollutants of concern in the SFBAAB.

a. Climate, Meteorology, and Topography

The Bay Area has a Mediterranean climate characterized by wet winters and dry summers. During the summer, a high pressure cell centered over the northeastern Pacific Ocean results in stable meteorological conditions and a steady northwesterly wind flow that keep storms from affecting the California coast. During the winter, the Pacific high-pressure cell weakens resulting in increased precipitation and the occurrence of storms. The highest air pollutant concentrations in the Bay Area generally occur during inversions, when a surface layer of cooler air becomes trapped beneath a layer of warmer air. An inversion reduces the amount of vertical mixing and dilution of air pollutants in the cooler air near the surface.[12]

The city of Orinda (city) is located in an inland valley. The Coast range to the west of the city obstructs some of the westerly marine air flow from the Pacific. During the daytime, the prevailing wind direction is from the southwest.[13] On clear nights, surface inversions can generate drainage surface winds that flow north down the valley toward the Carquinez Strait.[14] Summer temperatures range between about 50 to 80 degrees Fahrenheit and winter temperatures range between about 40 to 60

[11] Bay Area Air Quality Management District (BAAQMD), 2017a. California Environmental Quality Act Air Quality Guidelines. May.
[12] Bay Area Air Quality Management District (BAAQMD), 2017a. California Environmental Quality Act Air Quality Guidelines. May.
[13] Weather Underground, 2014. WunderMap. Glorietta Area; Station ID KCAORIND3. http://www.wunderground.com/wundermap/. Accessed on April 29.
[14] Bay Area Air Quality Management District (BAAQMD), 2017a. California Environmental Quality Act Air Quality Guidelines. May.

degrees Fahrenheit. Most of the rainfall in the city occurs during the winter months with an annual average of about 30.5 inches.[15]

In the summer and fall, the combination of low wind speeds and strong inversions from elevated temperatures increase the air pollution potential in the city of Orinda. In the winter, the city experiences stormy conditions with moderate to strong winds, as well as periods of stagnation with very light winds. On clear winter nights, radiation inversions can form that increase the air pollution potential. The winter storms weaken or eliminate inversion conditions, resulting in lower air pollution potential.[16]

b. Air Pollutants of Concern

The California Air Resources Board (CARB) and the U.S. Environmental Protection Agency (EPA) currently focus on the following air pollutants as indicators of ambient air quality: ozone, particulate matter, nitrogen dioxide (NO_2), carbon monoxide (CO), sulfur dioxide (SO_2), and lead. Because these are the most prevalent air pollutants known to be deleterious to human health and extensive health-effects criteria documents are available, they are commonly referred to as "criteria air pollutants." Another group of pollutants commonly referred to as toxic air contaminants (TACs) can result in local health effects that can be quite severe. Some TACs are also categorized as criteria air pollutants.

(1) Ozone

While ozone serves a beneficial purpose in the upper atmosphere (stratosphere) by reducing ultraviolet radiation potentially harmful to humans, it can be harmful to the human respiratory system and to sensitive species of plants when it reaches elevated concentrations in the lower atmosphere. Ozone is not emitted directly into the environment, but is formed in the atmosphere by complex chemical reactions between reactive organic gases (ROG) and oxides of nitrogen (NOx) in the presence of sunlight. Ozone formation is greatest during periods of little or no wind, bright sunshine, and high temperatures. As a result, levels of ozone usually build up during the day and peak in the afternoon hours.

Sources of ROG and NOx are vehicle tailpipe emissions; the evaporation of solvents, paints, and fuels; and biogenic sources.[17] Automobiles are the single largest source of ozone precursors in the SFBAAB. Short-term ozone exposure can reduce lung function

[15] Western Regional Climate Center, 2014. Cooperative Climatological Data Summaries; Orinda Bowman, California (046502). http://www.wrcc.dri.edu/cgi-bin/cliMAIN.pl?ca6502. Accessed May 5.

[16] Bay Area Air Quality Management District (BAAQMD), 2017a. California Environmental Quality Act Air Quality Guidelines. May.

[17] Biogenic sources include volatile organic compounds, which include ROG, from the decomposition of vegetative matter and certain plants, such as oak and pine trees.

in children, make persons susceptible to respiratory infection, and produce symptoms that cause people to seek medical treatment for respiratory distress. Long-term exposure can impair lung defense mechanisms and lead to emphysema and chronic bronchitis. Ozone can also damage plants and trees, and materials such as rubber and fabrics.

(2) Particulate Matter

Particulate matter refers to a wide range of solid or liquid particles in the atmosphere, including smoke, dust, aerosols, and metallic oxides. Respirable particulate matter with an aerodynamic diameter of 10 micrometers or less is referred to as PM_{10}. Fine particulate matter is a subgroup of PM_{10} that has an aerodynamic diameter of 2.5 micrometers or less and is referred to as $PM_{2.5}$. Some sources of particulate matter, like pollen, forest fires, and windblown dust, are naturally occurring. However, in urban settings, most particulate matter is caused by road dust, factories, combustion products, construction activities, and motor vehicles. Particulate matter can also be formed in the atmosphere by condensation of SO_2 and ROG.

Extended exposure to respirable particulate matter can increase the risk of chronic respiratory disease. PM_{10} is of concern because it bypasses the body's natural filtration system more easily than larger particles, and can lodge deep in the lungs. $PM_{2.5}$ poses an increased health risk because the particles can deposit deep in the lungs and may contain substances that are particularly harmful to human health. Motor vehicles are currently responsible for about half of the particulate matter in the SFBAAB. Wood burning in fireplaces and stoves is another large source of fine particulates.

(3) Nitrogen Dioxide

NO_2 is a reddish-brown gas that is a by-product of combustion processes. Automobiles and industrial operations are the main sources of NO_2. Combustion devices emit primarily NO, which oxidizes in the atmosphere to form NO_2. NO and NO_2 are collectively referred to as NOx. Aside from its contribution to ozone formation, nitrogen dioxide can increase the risk of acute and chronic respiratory disease and reduce visibility. NO_2 may be visible as a coloring component of a brown cloud on high pollution days, especially in conjunction with high ozone levels.

(4) Carbon Monoxide

CO is a colorless, odorless gas produced by the incomplete combustion of fuels, primarily from transportation sources but also from wood-burning stoves, incinerators, and other industrial sources. CO impacts are generally localized as CO will disperse rapidly as distance increased from the source but high concentrations can be a concern in areas with heavy traffic congestion. CO concentrations tend to be the highest during the winter morning, with little to no wind, when surface-based inversions trap the pollutant at ground levels. The highest ambient CO concentrations

are generally found near highly congested transportation corridors and intersections. When CO enters the bloodstream, it reduces the delivery of oxygen to the body's organs and tissues. Health threats are most serious for those who suffer from cardiovascular disease, chronic lung disease or anemia, as well as fetuses. Even healthy people exposed to high concentrations of CO can experience headaches, dizziness, fatigue, unconsciousness, and even death.

(5) Sulfur Dioxide

SO_2 is a colorless, extremely irritating gas or liquid. It enters the atmosphere as a pollutant mainly as a result of burning high sulfur-content fuel oils and coal, and from chemical processes occurring at chemical plants and refineries. SO_2 can irritate lung tissue and increase the risk of acute and chronic respiratory disease.

(6) Lead

Lead is a metal found naturally in the environment as well as in manufactured products. The major sources of lead emissions have historically been mobile and industrial sources. As a result of the phase-out of leaded gasoline, metal processing is currently the primary source of lead emissions. The highest levels of lead in air are generally found near lead smelters. Other stationary sources are waste incinerators, utilities, and lead-acid battery manufacturers. Lead is a state-recognized carcinogen.[18]

(7) Toxic Air Contaminants

TACs include a diverse group of air pollutants that can adversely affect human health. They are not fundamentally different from the criteria pollutants, but they have not had ambient air quality standards established for them for a variety of reasons (e.g., insufficient dose-response data, association with particular workplace exposures rather than general environmental exposure, etc.). TACs are evaluated based on estimations of localized concentrations and chemical-specific risk assessments.

For risk assessment purposes, the health effects of exposure to TACs are separated into cancer and health hazard impacts. Health hazards are often referred to as “non-cancer” health effects and may be minor ailments such as eye or lung irritation or more severe such central nervous system disorders, which may result in dizziness, nausea, vomiting, headaches, drowsiness, tremors, or loss of consciousness. The adverse health effects a person may experience following exposure to any chemical depend on several factors, including the amount to which one is exposed (dose), the duration of exposure, the form of the chemical, and if exposure to any other chemicals has occurred. A specific chemical may be considered a carcinogen or a

[18] California Environmental Protection Agency (CEPA), Office of Environmental Health Hazard Assessment, 2012. Safe Drinking Water and Toxic Enforcement Act of 1986, Chemicals Known to the State to Cause Cancer or Reproductive Toxicity. November 2.

health hazard or both; for instance, benzene is considered both a carcinogen and a health hazard. TACs that are defined as carcinogens are assumed to have no safe exposure threshold and cancer risk is expressed as excess cancer cases per one million exposed individuals over a lifetime of exposure. Non-carcinogenic substances are generally assumed to have a safe threshold below which health impacts would not occur. Acute exposure (less than a year) and chronic exposure (more than a year) to non-carcinogens is expressed as a hazard index (HI), which is the sum of expected exposure levels divided by the corresponding reference exposure level at which no adverse health effect would be expected to occur.

Common sources of TAC emissions include stationary sources, such as industrial facilities, and mobile sources, such as vehicle exhaust along highways and major roadways. Smoke from residential wood combustion can be a source of TACs and can also contain a significant amount of PM_{10} and $PM_{2.5}$. The CARB has identified diesel particulate matter (DPM) as a TAC. DPM differs from other TACs in that it is not a single substance, but rather a complex mixture of hundreds of substances. DPM is the predominant TAC in urban air and is estimated to represent about two-thirds of the cancer risk from TACs (based on the statewide average).[19] BAAQMD research indicates that mobile-source emissions of DPM, benzene, and 1,3-butadiene represent a substantial portion of the ambient background risk from TACs in the SFBAAB.[20]

(8) Odors

Other air quality issues of concern in the SFBAAB include nuisance impacts from odors. Objectionable odors may be associated with a variety of pollutants. Common sources of odors include wastewater treatment plants, landfills, composting facilities, refineries, and chemical plants. Odors rarely have direct health impacts, but they can be very unpleasant and can lead to anger and concern over possible health effects among the public. Each year the BAAQMD receives thousands of citizen complaints about objectionable odors.

c. Regional Air Quality

California and national ambient air quality standards (CAAQSs and NAAQSs, respectively) have been developed by the CARB and U.S. EPA, respectively, for the six criteria air pollutants to assess regional air quality impacts. California has also established ambient air quality standards for sulfates, visibility reducing particles, hydrogen sulfide, and vinyl chloride. The CAAQSs and NAAQSs are intended to incorporate an adequate margin of safety to protect the public health and welfare,

[19] California Air Resources Board (CARB), 2009. The California Almanac of Emissions and Air Quality.

[20] Bay Area Air Quality Management District (BAAQMD), 2017a. California Environmental Quality Act Air Quality Guidelines. May.

including people who are most susceptible to air pollutants, known as "sensitive receptors."

The CAAQSs, which are based on meteorological conditions unique to California, are either equal to or more stringent than the NAAQSs. Areas in California are classified as either in "attainment" or "non-attainment" for each criteria air pollutant, based on whether or not the NAAQSs or CAAQSs have been achieved.

To assess the regional attainment status, the BAAQMD collects air quality data from about 40 monitoring sites within the SFBAAB. Based on the monitoring data, the SFBAAB is currently designated as a nonattainment area for ozone, PM_{10}, and $PM_{2.5}$, and is designated as an attainment or unclassified area for all other pollutants (Table IV.B-1).[21]

d. Local Air Quality

East of the Coast Range, the nearest BAAQMD air monitoring site to the project is located at 2956-A Treat Boulevard in the city of Concord. This air monitoring site is approximately 10 miles northeast of the project site. Since 2011, the highest annual ozone, CO, NO_2, SO_2, PM_{10}, and $PM_{2.5}$ concentrations reported from the Concord air monitoring site are summarized in Table IV.B-2. The number of days that ozone, CO, NO_2, SO_2, PM_{10}, and $PM_{2.5}$ exceeded CAAQSs or NAAQSs over this time period are summarized in Table IV.B-3. Ozone levels measured in the city of Concord exceeded the CAAQSs and NAAQSs in 2011 and 2012. PM_{10} levels exceeded the CAAQSs in 2011 and 2013, and $PM_{2.5}$ levels exceeded the NAAQSs in 2011 and 2013. Since 2011, other exceedances of ambient air quality standards have not been reported at the Concord monitoring site.

e. Sensitive Receptors

The term "sensitive receptors" refers to subgroups of the general population who are most susceptible to poor air quality. Land uses such as schools, convalescent homes, and hospitals are considered to be relatively sensitive to poor air quality because the very young, the old, and the infirm are more susceptible to air-quality-related health problems than the general public. Residential areas are also considered sensitive to poor air quality because people are often at home for extended periods.[22] A recreational facility may also be considered a land use where sensitive receptors are

[21] Bay Area Air Quality Management District (BAAQMD), 2017b. Air Quality Standards and Attainment Status. http://www.baaqmd.gov/research-and-data/air-quality-standards-and-attainment-status. Accessed January 5.

[22] California Air Resources Board (CARB), 2005. Air Quality Land Use Handbook: A Community Perspective.

located because high levels of physical activity can exacerbate the adverse health effects of poor air quality due to increased breathing rates. The nearest sensitive

TABLE IV.B-1 AMBIENT AIR QUALITY STANDARDS AND ATTAINMENT STATUS

		CAAQSs		NAAQSs	
Pollutant	**Averaging Time**	**Concentration**	**Attainment Status**	**Concentration**	**Attainment Status**
Ozone	8-Hour	0.070 ppm (137μg/m³)	N	0.075 ppm	N
	1-Hour	0.09 ppm (180 μg/m³)	N	Revoked by U.S. EPA 2005	
Carbon Monoxide	8-Hour	9.0 ppm (10 mg/m³)	A	9 ppm (10 mg/m³)	A
	1-Hour	20 ppm (23 mg/m³)	A	35 ppm (40 mg/m³)	A
Nitrogen Dioxide	1-Hour	0.18 ppm (339 μg/m³)	A	0.100 ppm	U
	Annual Arithmetic Mean	0.030 ppm (57 μg/m³)		0.053 ppm (100 μg/m³)	A
Sulfur Dioxide	24-Hour	0.04 ppm (105 μg/m³)	A	0.14 ppm (365 μg/m³)	A
	1-Hour	0.25 ppm (655 μg/m³)	A	0.075 ppm (196 μg/m³)	A
	Annual Arithmetic Mean			0.030 ppm (80 μg/m³)	A
Particulate Matter (PM_{10})	Annual Arithmetic Mean	20 μg/m³	N		
	24-Hour	50 μg/m³	N	150 μg/m³	U
Particulate Matter – Fine ($PM_{2.5}$)	Annual Arithmetic Mean	12 μg/m³	N	15 μg/m³	U/A
	24-Hour			35 μg/m³	N
Sulfates	24-Hour	25 μg/m³	A		
Lead	30-Day Average	1.5 μg/m³			A
	Calendar Quarter			1.5 μg/m³	A
	Rolling 3-Month Average			0.15 μg/m³	U
Hydrogen Sulfide	1-Hour	0.03 ppm (42 μg/m³)	U		
Vinyl Chloride	24-Hour	0.010 ppm (26 μg/m³)	No information available		
Visibility Reducing Particles	8 Hour (10:00 to 18:00 PST)		U		

Notes: A=Attainment; N=Nonattainment; U=Unclassified; mg/m³=milligrams per cubic meter; ppm=parts per million; μg/m³=micrograms per cubic meter.
Source: BAAQMD website: http://hank.baaqmd.gov/pln/air_quality/ambient_air_quality.htm.

TABLE IV.B-2 HIGHEST MEASURED AIR POLLUTANT CONCENTRATIONS

Pollutant	Average Time	Measured Air Pollutant Levels 2011	2012	2013
City of Concord Monitoring Site				
Ozone	1-Hour	**0.099 ppm**	**0.093 ppm**	0.074 ppm
	8-Hour	**0.078 ppm**	**0.085 ppm**	0.062 ppm
Carbon Monoxide (CO)	1-Hour	1.6 ppm	1.2 ppm	1.2 ppm
	8-Hour	1.2 ppm	0.8 ppm	1.0 ppm
Nitrogen Dioxide (NO_2)	1-Hour	0.042 ppm	0.040 ppm	0.044 ppm
	Annual	0.009 ppm	0.008 pm	0.009 ppm
Sulfur Dioxide (SO_2)	1-Hour	0.009 ppm	0.009 ppm	0.011 ppm
	24-Hour	0.003 ppm	0.003 pm	0.003 ppm
Respirable Particulate Matter (PM_{10})	24-Hour	**59 ug/m^3**	35 ug/m^3	**51 ug/m^3**
	Annual	15.7 ug/m^3	12.6 ug/m^3	16.0 ug/m^3
Fine Particulate Matter ($PM_{2.5}$)	24-Hour	**47.5 ug/m^3**	32.2 ug/m^3	**36.2 ug/m^3**
	Annual	7.8 ug/m^3	6.5 ug/m^3	7.6 ug/m^3

Notes: Bold and shaded values exceed current ambient air quality standards.
Source: BAAQMD Air Quality Summaries for 2011, 2012, and 2013: http://www.baaqmd.gov/Divisions/Communications-and-Outreach/Air-Quality-in-the-Bay-Area/Air-Quality-Summaries.aspx.

TABLE IV.B-3 ANNUAL NUMBER OF DAYS EXCEEDING AMBIENT AIR QUALITY STANDARDS

Pollutant	Standard	Days Exceeding Standard 2011	2012	2013
City of Concord Monitoring Site				
Ozone	CAAQS 1-Hour	2	0	0
	CAAQS 8-Hour	5	3	0
	NAAQS 8-Hour	2	2	0
Respirable Particulate Matter (PM_{10})	CAAQS 24-Hour	1	0	1
	NAAQS 24-Hour	0	0	0
Fine Particulate Matter ($PM_{2.5}$)	NAAQS 24-Hour	2	0	1
Others (CO, NO_2, SO_2)	NAAQS/CAAQS	0	0	0

Source: BAAQMD Air Quality Summaries for 2011, 2012, and 2013: http://www.baaqmd.gov/Divisions/Communications-and-Outreach/Air-Quality-in-the-Bay-Area/Air-Quality-Summaries.aspx.

receptors to the project are recreational fields located about 250 feet to the east and a new residential subdivision located about 2,000 feet to the east.

2. Regulatory Framework

An overview of the federal and state regulatory environments is provided below. The Clean Air Act (CAA) is the primary federal law regulating air quality in the United States. In addition to being subject to federal requirements, air quality in California is regulated under the California Clean Air Act (CCAA). At the federal level, the U.S. EPA administers the CAA. At the state level, the CARB administers the CCAA. Regionally, California is divided into 15 air basins. Under the CARB, the BAAQMD regulates air quality within the SFBAAB, which includes all of Alameda, Contra Costa, Marin, Napa, San Mateo, and Santa Clara Counties, the southern half of Sonoma County, and the southwestern portion of Solano County. The city of Orinda also has some local policies and regulations related to air quality. Following is a discussion of regulatory programs, plans, and policies relevant to the project.

a. United States Environmental Protection Agency

The U.S. EPA is responsible for enforcing the CAA. The U.S. EPA is also responsible for establishing the NAAQS, as required under the CAA. The U.S. EPA regulates emission sources that are under the exclusive authority of the federal government, such as aircraft, ships, and certain types of locomotives. The agency has jurisdiction over emission sources outside state waters (e.g., beyond the outer continental shelf) and establishes various emission standards, including those for vehicles and non-road[23] engines sold in the United States. For construction equipment, the engines are assigned various "Tier" designations based on the year the engine is manufactured and have associated emission standards that must be met.

b. California Air Resources Board

In California, CARB, which is part of the California EPA, is responsible for meeting the state requirements of the CAA, administering the CCAA, and establishing the CAAQSs. The CCAA requires all air districts in the state to endeavor to achieve and maintain the CAAQSs. CARB oversees the functions of the local air pollution control districts and air quality management districts, which in turn administer air quality activities at the regional and county level. CARB conducts or supports research into the effects of air pollution on the public and works with the various regional air quality management districts to develop strategies for reducing air pollutant emissions.

[23] Construction equipment, off-road recreational vehicles, lawn and garden equipment, boats and watercraft.

CARB is also responsible for setting emission standards for vehicles sold in California and for other emission sources, such as consumer products and certain off-road equipment. Automobiles sold in California must meet the stricter emission standards than the standards established U.S. EPA, as well as passenger-vehicle fuel specifications.

c. Bay Area Air Quality Management District

BAAQMD is primarily responsible for assuring that the NAAQSs and CAAQSs are attained and maintained in the SFBAAB. BAAQMD fulfills this responsibility by adopting and enforcing rules and regulations concerning air pollutant sources, issuing permits, inspecting stationary sources of air pollutants, responding to citizen complaints, and monitoring ambient air quality and meteorological conditions. BAAQMD also awards grants to reduce motor vehicle emissions, conducts public education campaigns and many other activities associated with improving air quality within the SFBAAB.

d. Bay Area Clean Air Plan

In accordance with the CAA and CCAA, the BAAQMD is required to prepare and update an air quality plan that outlines measures by which both stationary and mobile sources of pollutants can be controlled in order to achieve NAAQSs and CAAQSs in areas designated as non-attainment. In April 2017, the BAAQMD adopted the *Bay Area 2017 Clean Air Plan: Spare the Air, Cool the Climate* (2017 CAP).[24] The 2017 CAP includes 85 control measures to reduce ozone precursors, particulate matter, TACs, and greenhouse gases (GHGs). The 2010 CAP was developed based on a multi-pollutant evaluation method that incorporates well-established studies and methods on quantifying the health benefits and air quality regulations, computer modeling and analysis of existing air quality monitoring data and emissions inventories, and traffic and population growth projections prepared by the Metropolitan Transportation Commission (MTC) and the Association of Bay Area Government (ABAG), respectively.

e. City of Orinda General Plan

The City of Orinda General Plan[25] recognizes that as congestion increases along State Route 24 (SR 24), Orinda may experience localized high levels of CO near the freeway. Since growth anticipated under the General Plan would not likely contribute a significant amount of additional trips on SR 24, General Plan policies were not developed to address the potential impact.

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[24] Bay Area Air Quality Management District (BAAQMD), 2017c. The 2017 Clean Air Plan, Spare the Air – Cool the Climate. Adopted on April 19.

[25] City of Orinda, 1987 (last amended 2013). General Plan, Chapter 2: Land Use and Circulation Element.

f. City of Orinda Municipal Code

The City of Orinda's Municipal Code places the following restrictions on the installation of wood burning appliances in new construction:[26]

- Section 15.58.040: It is unlawful to install any wood burning appliance in new construction, other than pellet fueled wood heaters, unless the wood burning appliance meets one (1) of the applicable criteria below:
  - A. It has been certified by the EPA or the Northern Sonoma Air Pollution Control District; or
  - B. If it is a masonry fireplace, it has been certified by an EPA approved wood burning appliance testing laboratory and approved by the City Building Official; or
  - C. If it is any wood burning appliance other than those described in Subsections A and B of this section, it meets the following standards:
    1. Emits no more than 7.5 grams particulate matter per hour for a noncatalytic wood burning appliance or 4.1 grams particulate matter per hour for a catalytic wood burning appliance; or
    2. Is certified by an EPA approved wood burning appliance testing laboratory and approved by the City Building Official.
- Section 15.58.060: A permit for a wood burning appliance in new construction shall be obtained from the City Building Inspection Department prior to installation.

3. Impacts and Mitigation Measures

This section discusses potential impacts on air quality that could result from implementation of the project. The section begins with the criteria of significance, which establish the thresholds used to determine whether an impact is significant. The latter part of this section analyzes the impacts associated with the project and recommends mitigation measures to reduce significant impacts, if needed.

a. Criteria of Significance

The significance criteria used for analyzing and determining the project's level of impact on air quality and the scope of the analysis are described in this section. Based on Appendix G of the CEQA Guidelines, implementation of the project would have a significant impact on air quality if it would:

[26] City of Orinda, 2012. Orinda Municipal Code. Title 15, Chapter 15.58, Article 2, Sections 15.58.040 and 15.58.060.

1. Conflict with or obstruct implementation of the applicable air quality plan(s);
2. Violate any air quality standard or contribute substantially to an existing or projected air quality violation;
3. Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard;
4. Expose sensitive receptors to substantial pollutant concentrations; or
5. Create objectionable odors affecting a substantial number of people.

The significance criteria were evaluated based on the BAAQMD's CEQA Thresholds[27] and 2017 *CEQA Air Quality Guidelines*.[28]

b. Less-than-Significant Air Quality Impacts

Implementation of the project would result in less-than-significant impacts described below. Since these impacts would not exceed the significance thresholds described above, no mitigation measures are necessary for these less-than-significant impacts.

(1) Conflict with an Air Quality Plan (Criterion 1)

The current and applicable air quality plan is the 2017 CAP. Based on the current 2017 *CEQA Air Quality Guidelines*, the following criteria should be considered to determine if a project would conflict with or obstruct implementation of the 2017 CAP:

- Does the project support the primary goals of the air quality plan?
- Does the project include applicable control measures from the air quality plan?
- Does the project disrupt or hinder implementation of any air quality plan control measures?

The goals of the 2017 CAP are to reduce the emissions and ambient concentrations of ozone precursors, particulate matter, TACs, and GHGs, and to reduce public exposure to harmful pollutants. Since the project would not result in any significant and unavoidable air quality impacts related to emissions, ambient concentrations, or public exposures (see discussions, below), the project supports the primary goals of the 2017 CAP.

[27] Bay Area Air Quality Management District (BAAQMD), 2017a. California Environmental Quality Act Air Quality Guidelines. May.

[28] Bay Area Air Quality Management District (BAAQMD), 2017a. California Environmental Quality Act Air Quality Guidelines. May.

Control measures in the 2017 CAP aim to reduce air pollution from stationary, area, and mobile sources, as well as promote dense mixed-use development to reduce vehicle emissions and public exposure to pollutants. Since the control measures are generally regional in effect and are not project-specific, the control measures do not directly apply to the project.

The 2017 CAP was developed based on computer modeling and analysis of existing air quality monitoring data and emissions inventories and incorporated traffic and population growth projections prepared by MTC and ABAG, respectively. The traffic and population growth projected for the project is accounted for in the 2017 CAP; therefore, the project would not disrupt or hinder implementation of 2017 CAP. Based on the BAAQMD 2017 *CEQA Air Quality Guidelines*, the project would have a less-than-significant impact on implementation of the applicable air quality plan.

(2) Violate or Contribute Substantially to an Existing or Projected Air Quality Violation (Criterion 2)

Air quality impacts from emissions of fugitive dust $PM_{2.5}$ and PM_{10} are discussed under subsection IV.B.3.c, *Significant Air Quality Impacts*, below. Air quality impacts from other criteria pollutants during construction and operation of the project are less than significant and are discussed further, below.

The BAAQMD recommends using the most current version of the California Emissions Estimator Model (CalEEMod)[29] to estimate construction and operational emissions of criteria pollutants for a project. CalEEMod utilizes widely accepted models for emission estimates combined with appropriate default data that can be used if site-specific information is not available. A copy of the CalEEMod report for the project, which summarizes the input parameters, assumptions, and findings, is included in Appendix B.

1. Construction-Phase Regional Emissions

Common pollutant emissions of concern during construction include ROG, NOx and exhaust $PM_{2.5}$ and PM_{10} from equipment. Emissions of ozone precursors and exhaust $PM_{2.5}$ and PM_{10} above applicable thresholds could substantially contribute to existing violations of CAAQSs and/or NAAQSs in the SFBAAB. Potential emission sources for the project would include grading, building construction, paving, and architectural coatings. Unmitigated pollutant emissions during project construction were estimated using the CalEEMod default values, except as noted below.

[29] California Air Pollution Officers Association (CAPCOA), 2016. California Emissions Estimator Model Version 2016.3.2.

- Demolition would not be required for the project because the site is currently a vacant lot.
- The area of grading was changed to 1.10 acres based on the project design.
- A maximum of 200 cubic yards of soil will be exported.

Based on the size and type of development, CalEEMod estimated that project construction would likely last 226 working days. The average daily emissions of criteria pollutants or precursors estimated over that time period are compared to applicable BAAQMD Thresholds in Table IV.B-4. The estimated unmitigated emissions for ROG, NOx, and exhaust $PM_{2.5}$ and PM_{10} were substantially below the applicable Thresholds and, therefore, would have a less-than-significant impact on air quality standards.

TABLE IV.B-4 SUMMARY OF AVERAGE CRITERIA POLLUTANT EMISSIONS DURING PROJECT CONSTRUCTION

Pollutant (Units)	ROG (lb/day)	NO_x (lb/day)	Exhaust PM_{10} (lb/day)	Exhaust $PM_{2.5}$ (lb/day)
Emissions	3.6	13.5	0.75	0.72
Thresholds	54	54	82	54
Exceedance	No	No	No	No

Note: lb/day = pounds per day/
Source: CalEEMod (Appendix B).

2. Operation-Phase Regional Emissions

Common pollutant emissions of concern during the operational phase of a project include ROG, NOx, and exhaust $PM_{2.5}$ and PM_{10} from equipment. Emissions of ozone precursors and particulate matter above applicable BAAQMD Thresholds could substantially contribute to the existing violations of CAAQSs and/or NAAQSs in the SFBAAB.

Pollutant emissions of concern during the operational phase of the project would primarily be from mobile sources (i.e., vehicle trips). Other common emissions would include energy use (e.g., electricity and natural gas) and area sources (e.g., consumer products, architectural coatings, and landscape maintenance equipment). The unmitigated pollutant emissions from a total of 38 units at a congregate care facility were estimated using the CalEEMod default values, except as noted below.

- The lot area was changed to 1.10 acres based on the project design.

- The project's electricity is supplied by Pacific Gas and Electric. The CalEEMod default CO_2 intensity factor (from 2008) was updated to the most recent (2013) emission factor.
- The total building square footage was changed to 32,084 square feet based on the project design.
- The average weekday vehicle trip rate was changed to 2.60 trips/dwelling unit/day, based on the assumptions of the transportation analysis conducted for the project (see Section IV.I, *Transportation and Circulation*)
- No wood-burning devices are included in the building design.

The estimated average daily emissions of ozone precursors and PM_{10} and $PM_{2.5}$ from equipment and vehicle exhaust during the operational phase of the project are compared to applicable BAAQMD Thresholds in Table IV.B-5. The estimated unmitigated emissions for ROG, NOx, and exhaust $PM_{2.5}$ and PM_{10} were substantially below the applicable Thresholds and, therefore, would have a less-than-significant impact on air quality standards.

TABLE IV.B-5 SUMMARY OF AVERAGE CRITERIA POLLUTANT EMISSIONS DURING PROJECT OPERATION

Pollutant (Units)	ROG (lb/day)	NOx (lb/day)	Exhaust PM_{10} (lb/day)	Exhaust $PM_{2.5}$ (lb/day)
Emissions	0.87	0.11	0.02	0.02
Thresholds	54	54	82	54
Exceedance	No	No	No	No

Source: CalEEMod (Appendix B).

(3) Cumulatively Considerable Net Increase of Criteria Pollutants (Criterion 3)

Air pollution in the SFBAAB is generally a cumulative impact and, therefore, future development projects contribute to the region's adverse air quality impacts on a cumulative basis. In developing the Thresholds, the BAAQMD considered the emission levels for which an individual project's emissions would be cumulatively considerable; including the emissions of criteria pollutants already exceeding CAAQSs and NAAQSs. The SFBAAB is currently designated a nonattainment area for ozone and particulate matter. As discussed under subsection IV.B.3.b.(2) above, emissions of ozone precursors and particulate matter during the construction and operational phases of the project would not exceed the BAAQMD Thresholds. Therefore, the cumulative

impact of ozone precursors and particulate matter from the project would be less than significant.

(4) Expose Sensitive Receptors to Substantial Pollutant Concentrations (Criterion 4)

Air quality impacts to nearby sensitive receptors from project emissions during construction and operation would be less than significant as discussed below.

Construction-Phase TAC Emissions. TAC emissions during construction are typically limited to DPM from heavy-duty diesel vehicles and equipment. In accordance with guidance from the BAAQMD[30] and the Office of Environmental Health Hazard Assessment (OEHHA), a health risk assessment was conducted to calculate the incremental increase in cancer risk and chronic HI to sensitive receptors from DPM emissions during construction. The BAAQMD recommends evaluating potential air quality impacts to sensitive receptors located within 1,000 feet of a project.[31] Based on the BAAQMD Thresholds, significant impacts to sensitive receptors would include an incremental increase of 10 cancer cases per million people, an acute or chronic non-cancer HI greater than 1.0, or ambient $PM_{2.5}$ concentration greater than an annual average of 0.3 micrograms per cubic meter ($\mu g/m^3$).[32] The only sensitive receptors within 1,000 feet of the project are the Wilder Park sports fields, located at their nearest point about 400 feet to the northeast. Annual average concentrations of DPM and $PM_{2.5}$ concentration were estimated at the nearest recreational field using the U.S. EPA's Industrial Source Complex Short Term (ISCST3) air dispersion model. For this analysis, emissions of exhaust $PM_{2.5}$ were used as a surrogate for DPM, which is a conservative assumption because more than 90 percent of DPM is less than 1 micron in diameter. The input parameters and assumptions used for estimating emission rates of DPM and $PM_{2.5}$ from off-road diesel construction equipment are included in Appendix B.

Daily emissions from off-road construction equipment were assumed to occur between 8AM to 6PM, Monday through Friday. The exhaust from off-road equipment was represented in the ISCST3 model as a series of volume sources with a release height of 5 meters to represent the mid-range of the expected plume rise from frequently used construction equipment.

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[30]Bay Area Air Quality Management District (BAAQMD), 2011a. Recommended Methods for Screening and Modeling Local Risks and Hazards. May.

[31] Bay Area Air Quality Management District (BAAQMD), 2017a. California Environmental Quality Act Air Quality Guidelines. May.

[32] Bay Area Air Quality Management District (BAAQMD), 2017a. California Environmental Quality Act Air Quality Guidelines. May.

A uniform grid of receptors spaced 10 meters apart with receptor heights of 1.8 meters (for ground-level receptors) were placed around the development area as a means of developing isopleths (i.e., concentration contours) that illustrate the dispersion pattern from the various emissions sources. The ISCST3 model input parameters included 1 year of BAAQMD meteorological data from the Oakland STP weather station located about 7 miles southwest of the project site.

The modeled estimate of the maximum annual DPM concentration at the receptor location was used to calculate the incremental increase in cancer risk and chronic HI from project construction. The acute HI for DPM was not calculated because an acute reference exposure level has not been established.

Cancer risk and chronic HI were assessed for two potential sensitive receptor groups: children under the age of 2 (child <2), and children between the ages of 2 and less than 9 (child 2<9). These receptors were selected to conservatively assess the most sensitive receptors that would likely be present at the recreational fields. The 95th percentile daily breathing rates estimated by OEHHA for children less than 2 years of age and for children between 2 and 9 years of age (1,090 liters per kilogram per day (L/Kg-d) and 861 L/Kg-d, respectively) were assumed to account for elevated breathing rates while playing on the field.[33] The cancer risk for each receptor group was averaged over a lifetime (70-year period) under the assumption that the receptors would be exposed up to 4 hours every day during the construction period. The input parameters and results of the health risk assessment are included in Appendix B.

Conservative estimates of the risks to receptors at the nearest recreational field from construction DPM and exhaust $PM_{2.5}$ are summarized and compared to the BAAQMD Thresholds in Table IV.B-6. The estimated cancer risk for each receptor and the chronic HI from DPM, as well as the annual average $PM_{2.5}$ concentration, were substantially below the applicable Thresholds; therefore, construction emissions would have a less-than-significant-impact on nearby sensitive receptors.

TABLE IV.B-6 SUMMARY OF THE HEALTH RISK ASSESSMENT FOR DIESEL PARTICULATE MATTER AND FINE PARTICULATE MATTER EMISSIONS DURING PROJECT CONSTRUCTION

	Diesel Particulate Matter				Exhaust $PM_{2.5}$
Units	Annual Average Concentration (µg/m^3)	Child <2 Excess Cancer Risk $(10^6)^{-1}$	Child 2<9 Excess Cancer Risk $(10^6)^{-1}$	Chronic Hazard Index	Annual Average Concentration (µg/m^3)
Estimates	0.095	1.56	0.37	0.02	0.09

[33] Office of Environmental Health Hazard Assessment (OEHHA), 2015. Air Toxics Hot Spots Program, Risk Assessment Guidelines, Guidance Manual for Preparation of Health Risk Assessments. February 2015.

Thresholds	---	10	10	1.0	0.3
Exceedance	---	No	No	No	No

Note: "---" = not applicable.
Source: Appendix B.

3. Operation-Phase CO Emissions

As a congregate care facility, the project would not be expected to emit substantial amounts of TACs that would significantly affect nearby sensitive receptors. However, the BAAQMD considers emissions of CO to be significant if local concentrations (also known as "hot spots") exceed the Thresholds.[34]

The 2017 *CEQA Air Quality Guidelines* provide screening criteria to conservatively assess if a project could result in CO emissions that would cause local CO concentrations to exceed the Thresholds. The project would result in a less-than-significant impact to local CO concentrations if the following screening criteria are met:

- The project is consistent with an applicable Congestion Management Program (CMP) established by the County Congestion Management Agency for designated roads or highways, regional transportation plans, and local congestion management agency plans.
- The project traffic would not increase traffic volumes at affected intersections to more than 44,000 vehicles per hour.
- The project traffic would not increase traffic volumes at affected intersections to more than 24,000 vehicles per hour where vertical and/or horizontal mixing is substantially limited (e.g., tunnel, parking garage, bridge underpass, natural or urban street canyon, below-grade roadway).

The Contra Costa Transportation Authority (CCTA) serves as the Congestion Management Agency for Contra Costa County. The most recent CMP adopted by CCTA requires an analysis of any project that is expected to generate more than 100 peak-hour vehicle trips.[35] The project is expected to generate 7 peak-hour vehicle trips in the morning and 10 peak-hour vehicle trips in the evening (see Section IV.I, Transportation). Since the project would not generate more than 100 peak-hour

[34] Bay Area Air Quality District (BAAQMD2017a. California Environmental Quality Act Air Quality Guidelines. May.

[35] Contra Costa Transportation Authority (CCTA), 2013. 2013 Update of the Contra Costa Congestion Management Program. December 18.

vehicle trips, the project is consistent with the CCTA congestion management program.

SR 24 is the most heavily congested traffic corridor near the project site with a peak traffic volume of 13,600 vehicles per hour reported east of the Caldecott Tunnel in 2016. Therefore, additional traffic from the project (10 or fewer trips per hour) would not increase traffic volumes to more than 44,000 vehicles per hour. Vertical and/or horizontal mixing is not substantially limited at intersections near the project site. Since the project meets the BAAQMD screening criteria, the project would have a less-than-significant air quality impact on nearby sensitive receptors related to local CO concentrations.

4. Operation-Phase TAC Emissions

The project does not include any emergency diesel generator. Therefore, project operations would not introduce a new stationary source of TAC emissions and would have no impact on nearby sensitive receptors related to substantial pollutant concentrations.

5. Cumulative TAC Emissions

In addition to a project's individual TAC emissions during construction and operation, the potential cumulative health risks to sensitive receptors from existing and reasonably foreseeable future sources of TACs were evaluated. Based on the proximity to existing and future sources of TACs, cumulative health risks were estimated at the most sensitive receptor assuming the worst exposure scenario (child less than 2 years of age). The BAAQMD's online screening tools were used to provide conservative estimates of how much existing and foreseeable future TAC sources would contribute to cancer risk, HI, and $PM_{2.5}$ concentrations. The individual health risks associated with each source were summed to find the cumulative health risk at the most sensitive receptor.

Based on the BAAQMD's *Stationary Source Screening Analysis Tool*,[36] there are no stationary sources of TAC emissions within 1,000 feet of the project site. SR 24 is located approximately 370 feet northwest of the most sensitive receptor and is the only source of TAC emissions requiring further evaluation. The mobile-source screening values for SR 24 were linearly interpolated from screening tables provided in the BAAQMD's *Highway Screening Analysis Tool*.[37]

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[36] Bay Area Air Quality Management District (BAAQMD), 2012. Stationary Source Screening Analysis Tool. May 30.

[37] Bay Area Air Quality Management District (BAAQMD), 2011b. Highway Screening Analysis Tool. April 29.

Conservative estimates of the cumulative risks and hazards to the most sensitive receptor of the project are summarized and compared to the BAAQMD Thresholds in Table IV.B-7. The estimated cumulative excess cancer risk, chronic HI from DPM emissions, and annual average $PM_{2.5}$ concentrations at the most sensitive receptor would be below the BAAQMD's cumulative thresholds of significance. Therefore, the cumulative impact to nearby sensitive receptors from TAC emissions during construction of the project would be less than significant.

TABLE IV.B-7 SUMMARY OF RISKS AND HAZARDS FROM NEARBY TAC EMISSIONS

Source	Source Type	Cancer Risk (10^{-6})	Chronic Hazard Index	$PM_{2.5}$ ($\mu g/m^3$)
Project Emissions	Diesel Exhaust	1.6	<0.1	0.1
State Route 24	Freeway	13.6	NA	0.34
	Cumulative Health Risks	15	<0.1	0.4
	Cumulative Thresholds of Significance	100	10.0	0.8
	Exceedance	No	No	No

Source: Health risk screening values derived from the BAAQMD's Tools and Methodologies. http://www.baaqmd.gov/plans-and-climate/california-environmental-quality-act-ceqa/ceqa-tools. Accessed January 2017.
Caltrans, 2016. 2016 Traffic Volumes (for All Vehicles on CA State Highways). http://www.dot.ca.gov/trafficops/census/volumes2016/Route22-33.html. Accessed June 12, 2018.

(1) Create Objectionable Odors (Criterion 5)

As a congregate care facility, the project would not be expected to generate significant odors. Land uses surrounding the project site include open space and a residential subdivision, which would also not be expected to generate significant odors. Therefore, project impacts related to odors would be less than significant.

c. Significant Air Quality Impacts and Mitigation Measures

(1) Violate or Contribute Substantially to an Existing or Projected Air Quality Violation (Criterion 2)

Implementation of the project would result in the potentially significant air quality impact related to dust emissions. Air quality impacts from emissions of fugitive dust PM2.5 and PM10 are discussed below. Air quality impacts from other criteria pollutants during construction and operation of the project are less than significant and are discussed further in subsection IV.B.3.b.

<u>Impact AIR-1</u>: Fugitive dust emissions during construction of the project could contribute substantially to an existing or projected air quality violation. (S)

There are no quantitative threshold values for fugitive dust $PM_{2.5}$ and PM_{10} during construction, but the BAAQMD considers the implementation of best management practices necessary to achieve ambient air quality standards. The BAAQMD recommends implementing the best management practices described under their

Basic Construction Mitigation Measures[38] for all construction projects to reduce related air quality impacts from fugitive dust to a less-than-significant level. Therefore, the *Basic Construction Mitigation Measures* shall be incorporated into the project under **Mitigation Measure AIR-1**, below.

Mitigation Measure AIR-1: During grading and construction, the project shall comply with the following BAAQMD Basic Construction Mitigation Measures:

- All exposed surfaces (e.g., parking areas, staging areas, soil piles, graded areas, and unpaved access roads) shall be watered two times per day.
- All haul trucks transporting soil, sand, or other loose material off-site shall be covered.
- All visible mud or dirt track-out onto adjacent public roads shall be removed using wet power vacuum street sweepers at least once per day. The use of dry power sweeping is prohibited.
- All vehicle speeds on unpaved roads shall be limited to 15 miles per hour.
- All roadways, driveways, and sidewalks to be paved shall be completed as soon as possible. Building pads shall be laid as soon as possible after grading unless seeding or soil binders are used.
- Idling times shall be minimized either by shutting equipment off when not in use or reducing the maximum idling time to 5 minutes (as required by the California airborne toxics control measure Title 13, Section 2485 of California Code of Regulations). Clear signage shall be provided for construction workers at all access points.
- All construction equipment shall be maintained and properly tuned in accordance with manufacturer's specifications. All equipment shall be checked by a certified visible emissions evaluator.
- Post a publicly visible sign with the telephone number and person to contact at the lead agency regarding dust complaints. This person shall respond and take corrective action within 48 hours. The BAAQMD's phone number shall also be visible to ensure compliance with applicable regulations.

With implementation of **Mitigation Measure AIR-1** the project's contribution to an existing or projected air quality violation from fugitive dust $PM_{2.5}$ and PM_{10} would be less than significant. (LTS)

[38] Bay Area Air Quality Management District (BAAQMD), 2017a. California Environmental Quality Act Air Quality Guidelines. May.

d. Cumulative Impacts

Please see subsection IV.B.3.b(3) for a discussion of the project's contribution to a cumulative increase in criteria pollutants, and the latter half of subsection IV.B.4.b(4) for a discussion of cumulative TAC emissions.

C. BIOLOGICAL RESOURCES

An initial Biological Resources Assessment (BRA) was prepared for the project site on July 16, 2010, and an update was prepared on May 30, 2014. This section summarizes the findings from the 2010 BRA as well as the findings from a later update of the BRA, prepared on May 28, 2018. The 2010 BRA, 2014 BRA update, and the 2018 BRA update are provided in Appendix C.

Biological resources were identified through a literature review of existing information and field reconnaissance surveys. The review provided information on the condition of natural resources in the area, the extent of sensitive natural communities and critical habitat, presence or absence of jurisdictional wetlands previously identified on the site, and the distribution and habitat requirements of special-status species that have been recorded or are likely to occur in the project vicinity. A field reconnaissance survey of the project site was conducted on May 25, 2018 in order to verify site conditions, assess habitat suitability for special-status species and evaluate the potential presence of any wetlands.

1. Setting

This section presents the existing physical conditions pertaining to biological resources, including the presence or absence of wetlands and special-status species.

a. Vegetation and Wildlife

The project site is composed of ruderal grassland with a few shrubs, surrounded by paved roads, State Route 24 (SR 24) and Wilder Road, and more ruderal grassland. No other biological communities are found within the project site. The following describes existing biological conditions at the project site.

Ruderal Grassland. The majority of the project site is best described as a ruderal herbaceous grassland, or ruderal field, which supports non-native grassland and ruderal species. The grasslands are dominated by non-native annual and perennial species, such as yellow star thistle (*Centaurea solstitialis*), chicory (*Cichorium intybus*), and bristly ox-tongue (*Picris echioides*). Portions of the site are dominated by non-native grasses such as wild oats (*Avena sp.*) and bromes (*Bromus spp.*), and there are scattered stands of coyote brush (*Baccharis pilularis*) and poison oak (*Toxicodendron diversilobum*) near the edges of the site. Since the on-site ruderal grassland is isolated and dominated by non-native species, it is not likely to provide suitable habitat value for native plants.

Ruderal grassland is considered low-value habitat for native wildlife and is not listed as a sensitive natural community in the California Natural Diversity Database (CNDDB).

b. Special-Status Species

The following provides a discussion of special-status species and conclusions regarding their occurrence on the site. Special-status species[39] are plants and animals that are legally protected under the State and/or Federal Endangered Species Acts[40] or other regulations, as well as other species that are considered rare enough by the scientific community and trustee agencies to warrant special consideration, particularly with regard to protection of isolated populations, nesting or denning locations, communal roosts, and other essential habitat. Listed species often represent constraints to development, when proposed development would result in "take"[41] of these species.

The CNDDB of the California Department of Fish and Wildlife (CDFW) and the U.S. Fish and Wildlife Service (USFWS) maintain records of special-status animal species reported in the vicinity of the project site. These species are listed in Table IV.C-1. None of these species are considered highly or moderately likely to occur on-site based on evaluation of habitats present, and none were observed during the site visits (see Table IV.C-2).

Several special-status plant species have also been reported from Contra Costa County and the area of Orinda. Special-status plant species with potential to occur in the area are listed in Table IV.C-1. Because the project area does not contain habitat conditions that would support these species, none of these species were considered likely to occur on the site.

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[39] Special-status species include: designated rare, threatened, or endangered and candidate species for listing by the CDFW; designated threatened or endangered and candidate species for listing by the USFWS; species considered rare or endangered under the conditions of Section 15380 of the California Environmental Quality Act Guidelines, such as those plant species identified on lists 1A, 1B and 2 in the Inventory of Rare and Endangered Vascular Plants of California of the California Native Plant Society; and other species considered sensitive or of special concern because of limited distribution, such as those included on list 3 in the California Native Plant Society Inventory or animals identified as "Species of Special Concern" by CDFW.

[40] The Federal Endangered Species Act (FESA) of 1973 declares that all Federal departments and agencies shall use their authority to conserve endangered and threatened plant and animal species. The California ESA (CESA) of 1984 parallels the policies of FESA and pertains to native California species.

[41] "Take" as defined by FESA means "to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture or collect" a threatened or endangered species. "Harm" is further defined by USFWS to include killing or harming of wildlife by significant obstruction of essential behavior patterns (i.e., breeding, feeding, or sheltering) through significant habitat modification or degradation. CDFW also considers the loss of listed species' habitat as take.

TABLE IV.C-1 SPECIAL STATUS PLANT AND WILDLIFE SPECIES THAT MAY OCCUR, OR ARE KNOWN TO OCCUR IN HABITATS SIMILAR TO THOSE FOUND IN THE PROJECT AREA

Species	Status	Habitat Requirements	Habitat Suitability of Project Area
Plants			
Amsinckia lunaris bent-flowered fiddleneck	List 1B	Coastal bluff scrub, cismontane woodland, valley and foothill grassland. 3-500 meters(m). Blooms March-June.	**Unlikely.** Grassland communities within the Project Area are disturbed and dominated by weedy species.
Anomobryum julaceum slender silver-moss	List 4	Broad leafed upland forest, lower montane coniferous forest, north coast coniferous forest. Moss which grows on damp rocks and soil; usually seen on road cuts. 100-1000m.	**Not Present.** Suitable forested habitat is not present within the Project Area.
Arctostaphylos pallida pallid manzanita	FT, SE, List 1B	Broad-leafed upland forest, closed-cone coniferous forest, chaparral, cismontane woodland, coastal scrub/siliceous shale, sandy or gravelly. 185-465 m. Blooms December-March.	**Not Present.** No manzanita shrubs were observed in the Project Area.
Astragalus tener var. tener alkali milk-vetch	RP, List 1B	Playas, valley and foothill grassland (adobe clay), vernal pools/alkaline. 1-60 m. Blooms March-June.	**Not Present.** Vernal habitats are not present in the Project. Area. Site is above typical elevation range of species.
Atriplex joaquiniana San Joaquin spearscale	List 1B	Chenopod scrub, meadows and seeps, playas, valley and foothill grassland/ alkaline. 1-835 m. Blooms April-October.	**Unlikely.** Alkaline grassland is not present within the Project Area.
Balsamorhiza macrolepis var. macrolepis big-scale balsamroot	List 1B	Chaparral, cismontane woodland, valley and foothill grassland/ sometimes serpentinite. 90-1400 m. Blooms March-June.	**Unlikely.** Grassland communities within the Project Area are disturbed and dominated by weedy species.
Blepharizonia plumosa big tarplant	List 1B	Valley and foothill grassland. 30-505 m. Blooms July-October.	**Unlikely.** Grasslands within the Project Area are disturbed and dominated by weedy species.
California macrophylla round-leaved filaree	CBR	Cismontane woodland and valley and foothill grassland. 15-200 m. Blooms March-May.	**Unlikely.** Grasslands within the Project Area are disturbed and dominated by weedy species. Site is above typical elevation range of species.
Calochortus pulchellus Mt. Diablo fairy-lantern	List 1B	Chaparral, cismontane woodland, riparian woodland, valley and foothill grassland. 30-840 m. Blooms April-June.	**Unlikely.** Chaparral and woodland communities are not present within the Project Area.
Calystegia purpurata ssp. saxicola coastal bluff morning-glory	List 1B	Coastal dunes, coastal scrub, and north coast coniferous forest. 10-105 m. Blooms May-September.	**Not Present.** Coastal habitats are not present within the Project Area. Site is above typical elevation range of species.

TABLE IV.C-1 SPECIAL STATUS PLANT AND WILDLIFE SPECIES THAT MAY OCCUR, OR ARE KNOWN TO OCCUR IN HABITATS SIMILAR TO THOSE FOUND IN THE PROJECT AREA

Species	Status	Habitat Requirements	Habitat Suitability of Project Area
Carex comosa bristly sedge	List 2	Coastal prairie, marshes and swamps (lake margins), valley and foothill grassland. 0-625 m. Blooms May-September.	**Not Present.** Wetlands and wet grassland habitats are not present within
Centromadia parryi ssp. congdonii Congdon's tarplant	List 1B.	Valley and foothill grassland (alkaline). 1-230 m. Blooms May-October.	**Unlikely.** Alkaline grassland are not present within the Project Area
Chorizanthe cuspidata var. cuspidata San Francisco Bay spineflower	List 1B	Coastal bluff scrub, coastal dunes, coastal prairie, and coastal scrub. 3-215 m. Blooms April-July.	**Not Present.** Coastal habitats with which this species is associated, are not present.
Chorizanthe robusta var. robusta robust spineflower	FE, List 1B	Chaparral (maritime), cismontane woodland (openings), coastal dunes, coastal scrub/ sandy or gravelly. 3-300 m. Blooms April-September.	**Not Present.** The Project Area does not contain typical coastal habitat for this species.
Cirsium andrewsii Franciscan thistle	List 1B	Broad-leafed upland forest, coastal bluff scrub, coastal prairie, and coastal scrub. 0-150 m. Blooms March-July.	**Not Present.** Suitable habitat is not present within the Project Area. Site is above typical elevation range of species.
Presidio clarkia	FE, SE, List 1B	Coastal scrub, valley and foothill grassland (serpentinite). 25-335 m. Blooms May-July.	**Unlikely.** Serpentine soils are not apparent on the Project site.
Cordylanthus maritimus ssp. palustris Point Reyes bird's-beak	List 1B	Marshes and swamps (coastal salt). 0-10 m. Blooms June-October.	**Not Present.** Suitable wetland habitat is not present within the Project Area. Site is above typical elevation range of species.
Dirca occidentalis western leatherwood	List 1B	Broad-leafed upland forest, closed-cone coniferous forest, chaparral, cismontane woodland, North Coast coniferous forest, riparian forest, riparian woodland/ mesic. 50-395 . Blooms January-March.	**Not Present.** Suitable forested habitat is not present within the Project Area. Documented to occur within 1 mile to the north and south (CDFW 2010).
Fritillaria liliacea fragrant fritillary	List 1B	Cismontane woodland, coastal prairie, coastal scrub, valley and foothill grassland/ often serpentinite. 3-410 m. Blooms February-April.	**Unlikely.** Grasslands within the Project Area are disturbed and dominated by weedy species. Serpentine soils are not apparent on the Project site.
Gilia capitata ssp.chamissonis blue coast gilia	List 1B	Coastal dunes and coastal scrub. 2-200 m. Blooms April-July.	**Not Present.** Suitable coastal habitat is not present within the Project Area.

TABLE IV.C-1 SPECIAL STATUS PLANT AND WILDLIFE SPECIES THAT MAY OCCUR, OR ARE KNOWN TO OCCUR IN HABITATS SIMILAR TO THOSE FOUND IN THE PROJECT AREA

Species	Status	Habitat Requirements	Habitat Suitability of Project Area
Helianthella castanea Diablo helianthella	List 1B	Broad-leafed upland forest, chaparral, cismontane woodland, coastal scrub, riparian woodland, valley and foothill grassland. 60-1300 m. Blooms March-June.	**Unlikely.** Grasslands within the Project Area are disturbed and dominated by weedy species.
Hemizonia congesta ssp. congesta seaside tarplant	List 1B	Occurs in coastal scrub, valley and foothill grassland. Found in grassy valleys and on hills, often in fallow fields. 25-200 m.	**Unlikely.** Grasslands within the Project Area are disturbed and dominated by weedy species.
Hoita strobilina Loma Prieta hoita	List 1B	Chaparral, cismontane woodland, riparian woodland/ usually serpentinite, mesic. 30-860 m. Blooms May-July.	**Not Present.** Suitable habitat is not present within the Project Area. Serpentine soils are not apparent on the Project site.
Holocarpha macradenia Santa Cruz tarplant	FT, SE, List 1B	Coastal prairie, coastal scrub, valley and foothill grassland/ often clay, sandy. 10-220 m. Blooms June-October.	**Unlikely.** Sandy soils are not present. Grasslands within the Project Area are disturbed and dominated by weedy species.
Horkelia cuneata ssp. sericea Kellogg's horkelia	List 1B	Closed-cone coniferous forest, chaparral (maritime), coastal dunes, coastal scrub/ sandy or gravelly, openings. 10-200 m. Blooms April-September.	**Not Present.** Suitable soils and general plant communities are not present.
Juglans hindsii Northern California black walnut	List 1B	Naturally-occurring stands in riparian forest and riparian woodland. 0-440 m. Blooms April-May.	**Not Present.** Riparian habitat is not present within the Project Area.
Lasthenia conjugens Contra Costa goldfields	FE, RP, List 1B	Cismontane woodland, playas (alkaline), valley and foothill grassland, vernal pools/ mesic. 0 to 470 m. Blooms March-June.	**Not Present.** Wetland habitat suitable for this species is not present within the Project Area.
Lathyrus jepsonii var. jepsonii Delta tule pea	List 1B	Marshes and Swamps. 0-4 m. Blooms May-July.	**Not Present.** Wetland habitat is not present within the Project Area. Site is above typical elevation range of species.
Layia carnosa beach layia	FE, SE, List 1B	Coastal dunes and coastal scrub with sandy soils. 0-60 m. Blooms March- July.	**Not Present.** Coastal dune and coastal scrub habitat is not present in the Study Area. Site is above typical elevation range of species.
Leptosiphon rosaceus rose leptosiphon	List 1B	Coastal bluff scrub. 0- 100 m. Blooms April- July.	**Not Present.** Coastal bluff scrub habitat is not present in the Study Area. Site is above typical elevation range of species.

TABLE IV.C-1 SPECIAL STATUS PLANT AND WILDLIFE SPECIES THAT MAY OCCUR, OR ARE KNOWN TO OCCUR IN HABITATS SIMILAR TO THOSE FOUND IN THE PROJECT AREA

Species	Status	Habitat Requirements	Habitat Suitability of Project Area
Malacothamnus hallii Hall's bush mallow	List 1B	Chaparral, coastal scrub. 10-760 m. Blooms May-September.	**Not Present.** Chaparral and scrub habitats are not present within the Project Area.
Meconella oregana Oregon meconella	List 1B	Coastal prairie, coastal scrub. 250-620 m. Blooms March-April.	**Not Present.** Suitable coastal habitat is not present within the Project Area. Site is generally below typical elevation range of species.
Monardella villosa ssp. Globosa robust monardella	CBR	Broad-leafed upland forest, chaparral, cismontane woodland, coastal scrub, and valley and foothill grassland. 100-915 m. Blooms June-July.	**Unlikely.** Grasslands within the Project Area are disturbed and dominated by weedy species.
Navarretia gowenii Lime Ridge navarretia	List 1B	Chaparral. 180-305 m. Blooms May-June.	**Not Present.** Chaparral habitat is not present within the Project Area.
Plagiobothrys chorisianus var. chorisianus Choris' popcorn-flower	List 1B	Chaparral, coastal prairie, and coastal scrub. 15-160 m. Blooms March-June.	**Not Present.** Coastal habitat is not present within the Project Area. Site is above typical elevation range of species.
Plagiobothrys diffusus San Francisco popcorn-flower	SE, List 1B	Coastal prairie, valley and foothill grassland. 60-360 m. Blooms March-June.	**Unlikely.** Coastal prairie is not present. Grasslands within the Project Area are disturbed and dominated by weedy species.
Plagiobothrys glaber hairless popcorn-flower	List 1A	Meadows and seeps (alkaline), marshes and swamps (coastal salt). 15-180 m. Blooms March-May.	**Not Present.** Wetland habitats are not present within the Project Area. Site is above typical elevation range of species.
Potamogeton filiformis slender-leaved pondweed	List 2B	Marshes and swamps (assorted shallow freshwater). 300-2150 m. Blooms May-July.	**Not Present.** Wetland habitats are not present within the Project Area.
Sanicula maritima adobe sanicle	SR, List 1B	Chaparral, coastal prairie, meadows and seeps, valley and foothill grassland/ clay, serpentinite. 30-240 m. Blooms February-May.	**Unlikely.** Serpentine soils are not apparent on the Project site. Grasslands within the Project Area are disturbed and dominated by weedy species.
Streptanthus albidus ssp. peramoenus most beautiful jewel-flower	List 1B	Chaparral, cismontane woodland, valley and foothill grassland/ serpentinite. 94-1000 m. Blooms April-September.	**Unlikely.** Serpentine soils are not apparent on the Project site. Typical habitat is not present within the Project Area.
Suaeda californica California seablite	FE, List 1B	Marshes and swamps (coastal salt). 0-15 m. Blooms July-October.	**Not Present.** Tidal wetlands are not present within the Project Area. Site is above typical elevation range of species.

TABLE IV.C-1 SPECIAL STATUS PLANT AND WILDLIFE SPECIES THAT MAY OCCUR, OR ARE KNOWN TO OCCUR IN HABITATS SIMILAR TO THOSE FOUND IN THE PROJECT AREA

Species	Status	Habitat Requirements	Habitat Suitability of Project Area
Trifolium depauperatum var. hydrophilum saline clover	List 1B	Marshes and swamps, valley and foothill grassland (mesic, alkaline), vernal pools. 0- 300 m. Blooms April-June.	**Not Present.** Suitable mesic and alkaline habitats are not present within the Project Area.
Viburnum ellipticum oval-leaved viburnum	List 2	Chaparral, cismontane woodland, lower montane coniferous forest. 215-1400 m. Blooms May-June.	**Not Present.** Chaparral and forested habitats are not present within the Project Area.
Mammals			
Salt-marsh Wandering Shrew *Sorex vagrans halicoetes*	SSC	Salt marshes of the south arm of San Francisco Bay. Medium high marsh 6 to 8 feet above sea level where abundant driftwood is scattered among *Salicornia*.	**Not Present**. Suitable tidal habitat not present within Project Area.
Hoary Bat *Lasiurus cinereus*	WBWG:M	Prefers open habitats or habitat mosaics, with access to trees for cover and open areas or habitat edges for feeding. Roosts in dense foliage of medium to large trees. Feeds primarily on moths. Requires water.	**Unlikely.** Project Area lacks trees for suitable roosting habitat. May rarely forage over the site.
Western Red Bat *Lasiurus blossevillii*	SSC, WBWG:H	Roosts primarily in trees, less often in shrubs. Roost sites often are in edge habitats adjacent to streams, fields, or urban areas.	**Unlikely.** Project Area lacks trees for suitable roosting habitat. May rarely forage over the site.
Pallid Bat *Antrozous pallidus*	SSC, WBWG:H	Roosts found in rock outcrops, caverns, hollow trees, buildings, and bridges.	**Unlikely.** Project Area lacks roosting habitat. May rarely forage over the site.
Townsend's Big-eared Bat *Corynorhinus townsendii*	SSC, WBWG:H	Caverns and buildings provide roost habitat.	**Not Present.** Project Area lacks caverns or buildings for suitable roost habitat.
Long-eared Myotis *Myotis evotis*	WBWG:M	Roost sites include hollow trees, exfoliating bark, outcrops, caverns, buildings.	**Unlikely.** Project Area lacks trees and other structure for suitable roosting habitat.
Fringed Myotis *Myotis thysanodes*	WBWG:H	Caverns, trees, buildings provide suitable roost habitat.	**Unlikely.** Project Area lacks suitable roosting habitat.
Long-legged Myotis *Myotis volans*	WBWG:H	Roost habitat includes hollow trees, crevices, caverns, buildings	**Unlikely.** Project Area lacks suitable roosting habitat.
Silver-haired Bat *Lasionycteris noctivagans*	WBWG:M	Roosts in hollow trees, snags, buildings, rock crevices, caves, and under bark. Females may form nursery colonies or occur as solitary individuals in dense foliage or hollow trees.	**Unlikely.** Project Area lacks trees and other structure used by this species for roosting habitat.

TABLE IV.C-1 SPECIAL STATUS PLANT AND WILDLIFE SPECIES THAT MAY OCCUR, OR ARE KNOWN TO OCCUR IN HABITATS SIMILAR TO THOSE FOUND IN THE PROJECT AREA

Species	Status	Habitat Requirements	Habitat Suitability of Project Area
Western Mastiff Bat *Eumops perotis californicus*	SSC, WBWG:H	Cliff crevices, cracks in boulders, and buildings provide roosting sites.	**Unlikely.** Project Area lacks cliffs or buildings for suitable roost habitat.
Salt Marsh Harvest Mouse *Reithrodontomys raviventris*	FE, SE, CFP	Found only in the saline emergent wetlands of San Francisco Bay and its tributaries. Pickleweed is primary habitat. Do not burrow, build loosely organized nests. Require higher areas for flood escape.	**Not Present.** Suitable tidal habitat not present within Project Area.
San Pablo Vole *Microtus californicus sanpabloensis*	SSC	Saltmarshes of San Pablo Creek, on the south shore of San Pablo Bay. Constructs burrow in soft soil. Feeds on grasses, sedges and herbs. Forms a network of runways leading from the burrow.	**Not Present.** Suitable habitat not present within Project Area.
San Francisco Dusky-footed Woodrat *Neotoma fuscipes annectens*	SSC	Forest habitats of moderate canopy and moderate to dense understory. Also in chaparral habitats. Constructs nests of shredded grass, leaves, and other material. May be limited by availability of nest-building materials.	**Not Present.** Project Area is too isolated and small in size to support this species. Known to occur in Gateway Valley area to south.
American Badger *Taxidea taxus*	SSC	Most abundant in drier open stages of most shrub, forest, and herbaceous habitats, with friable soils. Requires friable soils and open, uncultivated ground. Preys on burrowing rodents.	**Not Present.** Small size and isolated, disturbed nature of Project Area precludes presence.
Ring-tailed Cat *Bassariscus astutus*	CFP	Found in a variety of habitats throughout the western US including riparian areas, semi-arid country, deserts, chaparral, oak woodlands, pinyon pine woodlands, juniper woodlands and montane conifer forests usually under 1400m in elevation. Typically uses cliffs or large trees for shelter.	**Not Present.** Small size, lack of cover, and isolated, disturbed nature of Project Area preclude presence.
Birds			
California Clapper Rail *Rallus longirostris obsoletus*	FE, SE, CFP	Resident in tidal marshes of the San Francisco Bay Estuary. Requires tidal sloughs and mud flats for foraging, and dense vegetation for nesting. Associated with abundant growth of cordgrass and pickleweed. Largest populations in south San Francisco Bay.	**Not Present.** Suitable salt marsh habitat not present.

TABLE IV.C-1 SPECIAL STATUS PLANT AND WILDLIFE SPECIES THAT MAY OCCUR, OR ARE KNOWN TO OCCUR IN HABITATS SIMILAR TO THOSE FOUND IN THE PROJECT AREA

Species	Status	Habitat Requirements	Habitat Suitability of Project Area
California Black Rail *Laterallus jamaicensis coturniculus*	ST, BCC, CFP	Resident in marshes (saline to freshwater) with dense vegetation below four inches in height. Prefers larger, undisturbed marshes close to a major water source.	**Not Present.** Suitable tidal marsh habitat not present.
California Least Tern *Sterna antillarum browni*	FE, SE, CFP	Nests along the coast from San Francisco Bay south to northern Baja California. Breeding colonies in San Francisco Bay found in abandoned salt ponds and along estuarine shores. Colonial breeder on barren or sparsely vegetated, flat substrates near water.	**Not Present.** Suitable foraging and breeding habitat not present.
Caspian Tern *Sterna caspia*	BCC	Nests in small colonies inland and along the coast. Inland fresh-water lakes and marshes; also, brackish or salt waters of estuaries and bays.	**Not Present.** Suitable breeding habitat not present.
Black Skimmer *Rynchops niger*	BCC, SSC	Nests along the north and south ends of the Salton Sea; also, on salt pond dikes of south San Diego bay. Nests on gravel bars, low islets, and sandy beaches, in unvegetated sites. Nesting colonies usually less than 200 pairs.	**Not Present.** Suitable breeding habitat not present.
Western Snowy Plover *Charadrius alexandrines nivosus*	FT, SSC, BCC, RP	Found on sandy beaches, salt pond levees and shores of large alkali lakes. Requires sandy, gravelly or friable soils for nesting.	**Not Present.** Suitable foraging and breeding habitat not present.
Bald Eagle *Haliaeetus leucocephalus*	FD, CE	Requires large bodies of water, or free-flowing rivers with abundant fish and adjacent snags or other perches. Most nests are located within 1 mile of water. Nests in large, old-growth, or dominant live tree with open branchwork.	**Not Present.** Suitable nesting and foraging habitat not present.
Golden Eagle *Aquila chrysaetos*	CFP, BCC	Open grassy hilltops and open spaces in chaparral and blue oak/digger pine woodlands	**Unlikely.** Typical nesting habitat not present. Project Area lacks prey species, providing unsuitable foraging habitat.
Northern Harrier *Circus cyaneus*	SSC	Forages in open to herbaceous stages of many habitats. Nests on ground in shrubby vegetation, usually near wetlands.	**Not Present.** Typical grassland/wetland for nesting and foraging not present within Project Area. No breeding records in vicinity (Glover 2009).

TABLE IV.C-1 SPECIAL STATUS PLANT AND WILDLIFE SPECIES THAT MAY OCCUR, OR ARE KNOWN TO OCCUR IN HABITATS SIMILAR TO THOSE FOUND IN THE PROJECT AREA

Species	Status	Habitat Requirements	Habitat Suitability of Project Area
White-tailed Kite *Elanus leucurus*	CFP	Forages in open to herbaceous stages of many habitats. Nests in shrubs and trees adjacent to grasslands.	**Unlikely.** Low-quality foraging habitat present in Project Area. May use shrubs for nesting; however, significant human disturbance likely precludes nesting attempts.
Prairie Falcon *Falco mexicanus*	CWL, BCC	Distributed from annual grasslands to alpine meadows, but associated primarily with perennial grasslands, savannahs, and rangeland.	**Not Present.** Typical foraging and nesting habitat not present within Project Area. No breeding records in vicinity (Glover 2009).
Peregrine Falcon *Falco peregrinus anatum*	CFP, BCC	Forages in many habitats; requires cliffs for nesting.	**Not Present.** Typical nesting habitat not present within Project Area. No breeding records in vicinity (Glover 2009).
Western Burrowing Owl *Athene cunicularia*	SSC, BCC	Nests and forages in low-growing grasslands that support burrowing mammals. May also use artificial structures for roosting and nesting.	**Not Present.** Burrow habitat is not present in the Project Area. No breeding records in vicinity (Glover 2009).
Long-eared Owl *Asio otus*	SSC	Inhabit open woodlands, forest edges, riparian strips along rivers, hedgerows, juniper thickets, woodlots, and wooded ravines and gullies. Breeding habitat must include thickly wooded areas for nesting and roosting with nearby open spaces for hunting.	**Not Present.** Suitable foraging and nesting habitat not present within Project Area. No breeding records in vicinity (Glover 2009).
Short-eared Owl *Asio flammeus*	SSC	Found in open, treeless areas with elevated sites for perches and dense vegetation for roosting and nesting. Tule patches/tall grass needed for nesting and daytime seclusion.	**Not Present.** Suitable habitat for this species not present in the Project Area. No breeding records in vicinity (Glover 2009).
Black Swift *Cyseloides niger*	SSC	Nests in riparian jungles of willow, often mixed with cottonwoods with thick lower story.	**Not Present.** The Project Area does not contain typical nesting habitat.
Vaux's Swift *Chaetura vauxi*	SSC	Forages high in the air over most terrain and habitats but prefers rivers/lakes. Requires large hollow trees for nesting.	**Unlikely.** The Project Area does not contain typical nesting habitat. May rarely forage over site during migration.
Lewis's Woodpecker *Melanerpes lewis*	BCC	Uncommon winter resident occurring on open oak savannahs, broken deciduous and coniferous habitats.	**Not Present.** The Project Area does not contain typical woodland or savannah habitat. No County breeding records (Glover 2009).

TABLE IV.C-1 SPECIAL STATUS PLANT AND WILDLIFE SPECIES THAT MAY OCCUR, OR ARE KNOWN TO OCCUR IN HABITATS SIMILAR TO THOSE FOUND IN THE PROJECT AREA

Species	Status	Habitat Requirements	Habitat Suitability of Project Area
Olive-sided Flycatcher *Contopus cooperi*	SSC, BCC	Most often found in montane conifer forests where tall trees overlook canyons, meadows, lakes or other open terrain	**Not Present.** Suitable habitat for this species not present in the Project Area.
Purple Martin *Progne subis*	SSC	Aerial insectivores that nest in open and semi-open areas, including savannas, cultivated lands, fields, parks, pastures, near lakes and marshes and in towns and suburbs.	**Not Present.** The Project Area does not contain typical nesting habitat.
Bank Swallow *Riparia riparia*	ST	Migrant in riparian and other lowland habitats in western California. Nests in riparian areas with vertical cliffs and bands with fine-textured or sandy soils in which to nest.	**Not Present.** The Project Area does not contain suitable nesting habitat for this species
Loggerhead Shrike *Lanius ludovicianus*	SSC, BCC	Prefers open habitats with scattered shrubs, posts, or other perches. Open-canopied valley foothill hardwood, valley foothill riparian	**Unlikely.** Low-quality foraging and nesting habitat present in Project Area, but isolation and small size may preclude presence.
Tricolored Blackbird *Agelaius tricolor*	SSC, BCC	Breeds near freshwater marsh with dense emergent vegetation near trees and shrubs. Nests in stands of cattails, bulrushes, or willows.	**Not Present.** Suitable habitat is not present within Project Area.
Yellow Warbler *Setophaga petechia*	SSC, BCC	Breeds in riparian woodlands, particularly those dominated by willows and cottonwoods.	**Not Present.** Typical riparian habitat not present.
Bryant's Savannah Sparrow *Passerculus sandwichensis alaudinus*	SSC	Associated with the coastal fog belt, primarily between Humboldt and northern Monterey Counties. Occupies low tidally-influenced habitats, adjacent to ruderal areas; often found where pickleweed communities merge into grassland.	**Unlikely.** Open grasslands or tidally-influenced areas not present.
San Pablo Song Sparrow *Melospiza melodia samuelis*	BCC, SSC	Resident of salt marshes along the north side of San Francisco and San Pablo Bays. Inhabits tidal sloughs in the *Salicornia* marshes; nests in *Grindelia* bordering slough channels.	**Not Present.** Typical tidal breeding and foraging habitat not present.
Alameda Song Sparrow *Melospiza melodia pusillula*	BCC, SSC	Resident of salt marshes bordering south arm of San Francisco Bay. Inhabits *Salicornia* marshes; nests low in *Grindelia* bushes (high enough to escape high tides) and in *Salicornia*.	**Not Present.** Typical tidal breeding and foraging habitat not present.

TABLE IV.C-1 SPECIAL STATUS PLANT AND WILDLIFE SPECIES THAT MAY OCCUR, OR ARE KNOWN TO OCCUR IN HABITATS SIMILAR TO THOSE FOUND IN THE PROJECT AREA

Species	Status	Habitat Requirements	Habitat Suitability of Project Area
Grasshopper Sparrow *Ammodramus savannarum*	SSC	Nests in dense grasslands on rolling hills, lowland plains, in valleys and on hillsides on lower mountain slopes. Favors native grasslands with a mix of grasses, forbs, and scattered shrubs. Loosely colonial when nesting.	**Unlikely.** Formerly occurred in grasslands of Gateway Valley. Project site is too small and disturbed to support this species.
Saltmarsh Common Yellowthroat *Geothlypis trichas sinuosa*	BCC, SSC	Resident of the San Francisco Bay region, in fresh and salt water marshes. Requires thick, continuous cover down to water surface for foraging; tall grasses, tule patches, willows for nesting.	**Not Present.** Typical wetland and riparian breeding and foraging habitat not present.
Yellow-breasted Chat *Icteria virens*	SSC	Breeds in riparian thickets and woodlands, particularly those dominated by willows and cottonwoods.	**Not Present.** Suitable dense riparian habitat not present within Project Area.
Lawrence's Goldfinch *Spinus lawrencei*	BCC	Inhabits oak woodlands, chaparral, riparian woodlands, pinyon-juniper associations, and weedy areas near water during the breeding season; highly erratic and localized in occurrence.	**Not Present.** Chaparral and woodlands are not present.
Reptiles and Amphibians			
California Tiger Salamander *Ambystoma californiense*	FT, ST	Inhabits annual grass habitat and mammal burrows. Seasonal ponds and vernal pools crucial to breeding	**Not Present.** Suitable breeding habitat not present; no nearby occurrences.
California Red-legged Frog *Rana draytonii*	FT, SSC	Associated with quiet perennial to intermittent ponds, stream pools and wetlands. Prefers shorelines with extensive vegetation. Documented to disperse through upland habitats after rains.	**Not Present.** The Project Area does not contain aquatic habitat and is isolated by roads on all sides. Documented to occur 1 mile southeast of site (CDFW 2010)
Foothill Yellow-legged Frog *Rana boylii*	SSC	Found in or near rocky streams in a variety of habitats. Feed on both aquatic and terrestrial invertebrates.	**Not Present.** The Project Area does not contain stream habitat.
California Horned Lizard *Phrynosoma coronatum frontale*	SSC	Occurs in valley-foothill hardwood, conifer and riparian habitats, as well as in pine-cypress juniper and annual grass habitats. Prefers sand areas, washes, flood plains and wind-blown deposits.	**Not Present.** The Project Area does not contain habitat types associated with this species.
Silvery Legless Lizard *Anniella pulchra pulchra*	SSC	Found in sandy or loose loamy soils under sparse vegetation. Soil moisture is essential.	**Not Present.** Loamy soils and perennial soil moisture are not present.

TABLE IV.C-1 SPECIAL STATUS PLANT AND WILDLIFE SPECIES THAT MAY OCCUR, OR ARE KNOWN TO OCCUR IN HABITATS SIMILAR TO THOSE FOUND IN THE PROJECT AREA

Species	Status	Habitat Requirements	Habitat Suitability of Project Area
Western Pond Turtle *Clemmys marmorata marmorata*	SSC	Occurs in perennial ponds, lakes, rivers, and streams with suitable basking habitat and submerged shelter	**Not Present.** The Project Area does not contain suitable perennial aquatic habitat.
Alameda Whipsnake *Masticophis lateralis euryxanthus*	FT, ST	Restricted to valley-foothill hardwood habitat of the Diablo Range. Associated with rock outcrops and scrub habitats.	**Not Present.** The Project Area does not contain suitable scrub and rock outcrop habitat for this species and is isolated by major roads from surrounding areas.
Invertebrates			
Bay checkerspot butterfly *Euphydryas editha Bayensis*	FT	Restricted to native grasslands on outcrops of serpentine soil in the vicinity of San Francisco Bay	**Not Present.** No native serpentine grasslands occur within Project Area.
Monarch butterfly *Danaus plexippus*	SSI	Winter roost sites extend along the coast from northern Mendocino to Baja California, Mexico. Roosts located in wind-protected tree groves (eucalyptus, Monterey pine, Monterey cypress), with nectar and water sources nearby.	**Unlikely.** No winter roost sites known in the immediate area. Large eucalyptus grove not present.
Callippe silverspot butterfly	FE	The potential for this species to occur is dependent on the presence of the silverspot's hostplant, Johnny jump-up (Viola pedunculata).	**Not Present.** Host plant not present.
Longhorn fairy shrimp *Branchinecta longiantenna*	FE	Inhabit small, clear-water depressions in sandstone and clear-to-turbid clay-grass-bottomed pools in shallow swales.	**Not Present.** Vernal pool habitats are not present in the Project Area.
San Bruno elfin *Callophrys mossii bayensis*	FE	Restricted to rocky outcrops that support *Sedum spathufolium.*	**Not Present.** There are no known occurrences of this species within 2 miles of the project site and no suitable habitat or host plants.

TABLE IV.C-1 SPECIAL STATUS PLANT AND WILDLIFE SPECIES THAT MAY OCCUR, OR ARE KNOWN TO OCCUR IN HABITATS SIMILAR TO THOSE FOUND IN THE PROJECT AREA

Species	Status	Habitat Requirements	Habitat Suitability of Project Area
Vernal pool fairy shrimp *Branchinecta lynchi*	FT	Inhabit small, clear-water sandstone-depression pools, grassy swales, slumps, or basalt-flow depression pools.	**Not Present.** Vernal pool habitats are not present in the Project Area.

Status Codes

FE	Federally Endangered	SE	State Endangered
FT	Federally Threatened	ST	State Threatened
FD	Federally Delisted	CFP	California Fully Protected Species
BCC	USFWS Bird of Conservation Concern	SSC	California Species of Special Concern
CBR	Considered for Listing but Rejected	CWL	CDFW Watch List

California Native Plant Society (CNPS):

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 more common elsewhere
3	Plants about which information is needed-a review list
4	Plants of limited distribution or infrequent throughout a broader area in California, whose status should be monitored regularly

Source: List compiled from CNDDB (CDFW 2010) Natural Diversity Database for the Richmond, Oakland West, Oakland East, Las Trampas Ridge, Walnut Creek, Hunter's Point, San Leandro, Hayward and Briones Valley USGS 7.5' quadrangles. Other CDFW lists and publications were also reviewed (Jennings and Hayes 1994; Shuford and Gardali 2008; Zeiner et al. 1990). Updated using May 2018 searches of CNDDB Natural Diversity Database for a 2-mile buffer around the project side in Oakland East and Briones Valley USGS 7.5' quadrangles.

TABLE IV.C-2 WILDLIFE SPECIES OBSERVED ON THE PROJECT SITE IN ORINDA DURING THE MAY 25, 2018 SITE VISIT

Scientific Name	Common Name
Wildlife	
Aphelocema californica	Scrub jay (perched)
Buteo jamaicensis	Red tail hawk (calling from across Wilder Road)
Diabrotica undecimpunctata	Spotted cucumber beetle
Rodentia	Unidentified rodent (scat)

Source: WRA Environmental Consultants, 2018.

c. Wetlands

Wetlands are generally considered to be areas that are periodically or permanently inundated by surface or ground water, and support vegetation adapted to life in saturated soil. Wetlands are recognized as important features on a regional and national level because of their high inherent value to fish and wildlife, use as storage areas for storm and flood waters, and their water recharge, filtration, and purification functions.

The CDFW, U.S. Army Corps of Engineers (Corps), and Regional Water Quality Control Board (RWQCB) have jurisdiction over modifications to stream channels, river banks, lakes, and other wetland features. Jurisdiction of the Corps is established through the provisions of Section 404 of the Clean Water Act, which prohibits the discharge of dredged or fill material into "waters" of the United States without a permit, including wetlands and unvegetated "other waters of the U.S." The Corps uses three mandatory technical criteria (hydrophytic vegetation, hydric soils, and wetland hydrology) to determine whether an area is a jurisdictional wetland. All three of the identified technical criteria must be present for an area to be identified as a wetland under Corps jurisdiction, unless the area has been modified by human activity and one or more of the criteria are not observable. The RWQCB is responsible for maintaining water quality standards of the State, and must issue a waiver or certification under Section 401 of the Clean Water Act whenever a Corps permit is to be authorized. The RWQCB can also regulate waters of the State under the Porter Cologne Act for any isolated wetlands not recognized as jurisdictional by the Corps. Jurisdictional authority of the CDFW over aquatic habitat areas is established under Section 1600 of the Fish and Game Code, which pertains to activities that would disrupt the natural flow or alter the channel, bed, or bank of any lake, river, or stream. The Fish and Game Code stipulates that it is unlawful to substantially divert or obstruct the natural flow or substantially change the bed, channel or bank of any river, stream or lake

without notifying the Department, incorporating necessary mitigation, and obtaining a Streambed Alteration Agreement.

The reconnaissance site survey conducted on May 25, 2018 revealed that no potential jurisdictional wetlands or waters are present in the project area.

d. Critical Habitat

The project area is not within a designated Critical Habitat unit.

e. Wildlife Movement Corridor

Under existing conditions, the project area does not represent a significant wildlife movement corridor. The site does not connect two or more significant habitat areas.

2. Regulatory Framework

The current 1987 General Plan has the following guiding and implementing policies applicable to biological resources (Table IV.C-3):[42]

TABLE IV.C-3 GENERAL PLAN POLICIES

CONSERVATION ELEMENT
4.1.1 GUIDING POLICY (B) Preserve rare and endangered species.
4.1.1 GUIDING POLICY (C) Preserve valuable wildlife habitats, particularly riparian habitats.
4.1.1 GUIDING POLICY (D) Preserve oak woodlands and other native trees, and encourage planting and reforestation of oaks and other natives in hillside areas.
4.1.1 GUIDING POLICY (E) Protect creeks from siltation, pollution, and debris buildup to minimize the danger of flooding in storms, to retain the aesthetic and habitat values of the creeks in their natural state, and enhance and restore them where possible. Prohibit major channelization.
4.1.2 IMPLEMENTING POLICY (C) Require environmental habitat assessment for any major development determined to be in an environmentally sensitive area. This assessment will include an on-site inspection, and a written description of any habitats, plant and animal species observed, species likely to be present, likely impacts of the proposed project, and mitigation measures which will preserve the habitats.
4.1.2 IMPLEMENTING POLICY (D) where possible, maintain connecting open-space areas so that wildlife can have free movement through the area, bypass urban areas, and have access to adjacent regional parks and open space.

3. Impacts and Mitigation Measures

The analysis of the impacts related to biological resources that could result from implementation of the project is presented below. This section begins with criteria of significance, which establish the thresholds for determining whether a project impact is significant, and then identifies less-than-significant impacts, and potentially

[42] City of Orinda, 1987 (last amended 2013). General Plan. Chapter 4: Environmental Resources.

significant biological impacts associated with the project. Where necessary, mitigation measures are recommended that would reduce significant impacts to a less-than-significant level, where feasible.

a. Criteria of Significance

Utilizing Appendix G of the CEQA Guidelines, implementation of the project would have a significant impact on biological resources if it would:

1. 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;
2. 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;
3. 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;
4. 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;
5. Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance; or
6. Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan.

b. Less-than-Significant Biological Resources Impacts

Implementation of the project would result in the less-than-significant impacts described below. Since these impacts would not exceed the significance thresholds described above, no mitigation measures are necessary for these less-than-significant impacts.

(1) Special-Status Plants and Species Habitat (Criterion 1)

The impacts of the project on sensitive plants and vegetative communities would be less than significant because of the absence of any special-status plant species, the surrounding roadways, and the limited habitat value of the site.

The grassland areas of the site provide limited habitat for wildlife because of previous disturbance and isolation from other habitat areas. Small mammals, reptiles or grassland birds may occur in this area; however, due to the small size and limited

current habitat value of the project site, impacts of the project on species habitat would be less than significant.

(2) Riparian Habitat and Wetlands (Criteria 2 and 3)

There is no riparian vegetation or habitat present on, or in the immediate vicinity of the project site; thus, there would be no impacts to riparian habitat. The project would not have a substantial adverse effect on federally-protected wetlands through direct removal, filling, hydrological interruption, or other means because no wetland areas are present in the work area. Therefore, there would be no impact to wetlands.

(3) Migratory Wildlife Corridors (Criterion 4)

The project would not substantially interfere with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors. The project is adjacent to SR 24 and is surrounded by highway on- and off-ramps and paved roadways, inhibiting migratory wildlife movement. The project is not located within a Critical Habitat unit and does not function as an important wildlife movement corridor.

(4) Local Policies and Conservation Plans (Criteria 5 and 6)

Please see Section IV.F, *Land Use*, for a discussion of local policies applicable to biological resources as well as Habitat Conservation Plans and Natural Community Conservation Plans.

c. Significant Biological Resources Impacts and Mitigation Measures

(1) Nursery Sites and Nesting Areas (Criterion 4)

Implementation of the project would result in the potentially significant biological resources impact described below.

<u>Impact BIO-1</u>: Development of the project could potentially harm nesting special-status or common migratory birds. (S)

Although special status bird species are unlikely to occur in the project area, some common bird species may occasionally nest in shrubs that occur along the margins of the site. Small shrubs on the project site would be removed prior to construction and potential nests in larger shrubs and trees around the perimeter of the site could be disturbed by construction noise, which could result in nest abandonment. Impacts to nesting special-status or common migratory birds are prohibited under the Migratory Bird Treaty Act and CDFW Fish and Game Codes; therefore, activities that result in the destruction or abandonment of nests would be considered a significant impact. The following mitigation measure would reduce this potential impact to a less-than-significant level.

Mitigation Measure BIO-1: In order to avoid destruction, abandonment, or other direct impacts to active nests, the applicant shall submit a breeding bird survey and summary memo by a qualified biologist for staff review if vegetation removal and/or ground disturbance is to occur within the breeding bird season between February 1 and August 31. The biologist shall conduct a survey within two weeks prior to ground disturbance. If an active nest is found, a suitable buffer shall be established around the nest and work will be avoided within the buffer until the young have fledged or the nest is no longer active. The size of the buffer, as determined by the biologists, will be informed by the nest location, species, and any existing visual or auditory barriers. However, if any construction work is to be conducted outside of the breeding season (February through August), no breeding bird surveys are required. (LTS)

d. Cumulative Impacts

As described above, the project could result in a potential impact on nesting birds that would be less than significant with mitigation. The project would have no other impacts on biological resources. **Mitigation Measure BIO-1** is a standard nesting bird survey mitigation measure and any other development projects in the area, such as the Wilder development, have been subject to similar mitigation measures. At the time of this document's publication, the Wilder development is mostly built out and no other developments are proposed in the project vicinity. Therefore, the project would not result in a cumulatively considerable effect on biological resources.

D. HYDROLOGY AND WATER QUALITY

This section describes the existing hydrological setting for the project site, including runoff, drainage, and water quality, based on information from federal, state, and regional agencies as well as information provided by the project applicant. This section also identifies potentially significant impacts that could result from implementation of the project and provides mitigation measures to avoid or minimize significant impacts where feasible.

1. Setting

The project site's existing conditions related to hydrology and water quality are described below.

a. Climate

The city of Orinda (city) has a Mediterranean climate, with distinct wet and dry seasons. The climate is characterized by long, dry, warm summers and mild, relatively wet winters. The mean annual precipitation is approximately 30.5 inches, with most of the rainfall occurring between October and April and the highest average rainfall totals occurring in December and January.[43] Analysis of long-term precipitation records indicates that wetter and drier cycles lasting several years are common in the region. Severe, damaging rainstorms occur at a frequency of about once every 3 years.[44]

b. Hydrology and Drainage

The project is located within the San Pablo Creek watershed.[45] The headwaters of San Pablo Creek originate within the city of Orinda, in the vicinity of Rheem, Glorietta, and Brookside Roads, and the creek ultimately discharges into the San Pablo Reservoir.[46] The San Pablo Reservoir is owned and operated by the East Bay Municipal Utility District (EBMUD) for water supply storage. San Pablo Creek is a perennial creek and is culverted through downtown Orinda and below State Route 24 (SR 24), but flows primarily in an open channel until discharging into San Pablo Reservoir. Downstream of the San Pablo Reservoir, the creek flows through the cities of El Sobrante, San

[43] Western Regional Climate Center, 2018. General Climate Summary Tables-Precipitation, Orinda Bowman, California. http://www.wrcc.dri.edu/cgi-bin/cliMAIN.pl?ca6502. Accessed May 31.

[44] U.S. Geological Survey, 1988. Landslides, Floods, and Marine Effects of the Storm of January 3-5, 1982, in the San Francisco Bay Region, California. U.S. Geological Survey Professional Paper 1434.

[45] East Bay Municipal Utilities District (EBMUD), 1996. East Bay Watershed Master plan, February 29. Revised March 15, 1999.

[46] The Waterways Restoration Institute, 2001. San Pablo Creek Through Downtown Orinda, Preliminary Restoration Plan, Orinda, California. July 2.

Pablo, and Richmond and then into San Pablo Bay, the northern portion of the greater San Francisco Bay system.

Under existing conditions, precipitation that falls on the project site either infiltrates, ponds, or runs off as overland flow. Soils at the project site, which consist of Diablo Clay and Cut and fill land - Los Osos complex are categorized as soil hydrologic group C and D soils, respectively, indicating that they have slow to very slow infiltration rates and have significant clay content that impedes downward transmission of water.[47] Existing storm drain inlets on the adjacent Wilder Road tie into the City-owned storm drainage infrastructure. Stormwater is conveyed underground along SR 24 toward downtown Orinda until discharging into San Pablo Creek just north of SR 24.

c. Flooding

The project site is located in a hilly upland area, approximately 350 feet above and about one mile from San Pablo Creek, the nearest perennial surface water feature. The project site is not located within a Federal Emergency Management Agency (FEMA) 100-year flood hazard zone.[48] Three dams are located within the Orinda area: San Pablo Dam, Briones Reservoir, and Lake Cascade Dam.

d. Water Quality

This section describes water quality in the project vicinity. Water quality in surface and groundwater bodies is regulated in California by the State Water Resources Control Board (State Water Board) and the nine Regional Water Quality Control Boards. The project site is under the jurisdiction of the San Francisco Bay Regional Water Board (Regional Water Board), which is responsible for implementation of state and federal water quality protection statutes, regulations, and policies in the vicinity of the project site.

According to the Regional Water Board's Water Quality Control Plan for the San Francisco Bay Basin (Basin Plan),[49] beneficial uses of San Pablo Creek and its tributaries are: freshwater replenishment, cold freshwater habitat, fish migration, preservation of rare and endangered species, fish spawning, warm freshwater habitat, wildlife habitat, water contact and noncontact water recreation. Beneficial uses for San Pablo Reservoir are: municipal and domestic supply, commercial and sport fishing, cold freshwater

[47] Natural Resource Conservation Service, 2018. Web Soil Survey. http://websoilsurvey.sc.egov.usda.gov/App/WebSoilSurvey.aspx. Accessed May 31.

[48] Federal Emergency Management Agency (FEMA), 2018. National Flood Hazard Layer FIRMette 06013C0405F Not Printed. Exported May 31.

[49] San Francisco Bay Regional Water Quality Control Board (Regional Water Board), 2017. San Francisco Bay Basin (Region 2) Water Quality Control Plan (Basin Plan). Incorporating all amendments as of May 4.

habitat, fish spawning, warm freshwater habitat, wildlife habitat, water contact and non-contact water recreation.[50]

San Pablo Creek is on the Clean Water Act, 2016 303(d) list of impaired water bodies. The creek exceeds the water quality criteria for trash and diazinon.[51] The source for diazinon is listed as urban runoff/storm sewers, while the source for trash is unknown. The U.S. Environmental Protection Agency (EPA) phased out the non-agricultural use of diazinon at the end of 2004, and therefore continued use of diazinon in and around the project site is no longer a legal activity.

San Pablo Reservoir is also on the Clean Water Act, 2016 303(d) list of impaired water bodies for chlordane, dieldrin, heptachlor epoxide, mercury, polychlorinated biphenyls, and toxaphene.[52] The sources for these pollutants are listed as unknown. EBMUD indicates that other constituents of concern in the San Pablo Reservoir watershed are disinfection byproducts, pesticides, pathogens, polynuclear aromatic hydrocarbons, nutrients, metals, and sediment.[53]

The project site is not located within a defined groundwater basin.[54]

2. Regulatory Framework

Applicable policies related to hydrology and water quality are described below.

a. Clean Water Act Section 402—National Pollutant Discharge Elimination System Program

The Clean Water Act (CWA) Section 402, enacted as an amendment to the original act in 1972, regulates construction-, industrial-, and municipal-related stormwater discharges to surface waters through the National Pollutant Discharge Elimination System (NPDES) program. The NPDES program provides for general permits and individual permits. In California, the State Water Board is authorized by EPA to oversee the NPDES program through the Regional Water Boards via the Porter-Cologne Act, as described below.

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[50] San Francisco Bay Regional Water Quality Control Board (Regional Water Board), 2017. San Francisco Bay Basin (Region 2) Water Quality Control Plan (Basin Plan). Incorporating all amendments as of May 4.

[51] State Water Resources Control Board (State Water Board), 2017. Clean Water Act Sections 303(d) and 305(b) 2016 Integrated Report for the San Francisco Bay Region. April.

[52] State Water Resources Control Board (State Water Board), 2017. Clean Water Act Sections 303(d) and 305(b) 2016 Integrated Report for the San Francisco Bay Region. April.

[53] East Bay Municipal Utilities District (EBMUD), 1996. East Bay Watershed Master plan, February 29. Revised March 15, 1999.

[54] San Francisco Bay Regional Water Quality Control Board (Regional Water Board), 2017. San Francisco Bay Basin (Region 2) Water Quality Control Plan (Basin Plan). Incorporating all amendments as of May 4.

Stormwater runoff can entrain pollutants from various sources and human activities can result in discharge of pollutants to surface waters, including construction projects, industrial activity, and urbanization. Within the NPDES program, there are several sub-programs (including municipal and construction programs) that could apply to the project. These are described further below.

b. Federal Flood Insurance Program

In 1968, Congress created the National Flood Insurance Program (NFIP) in response to the rising cost of taxpayer funded disaster relief for flood victims and the increasing amount of damage caused by floods. The NFIP makes federally-backed flood insurance available for communities that agree to adopt and enforce floodplain management ordinances to reduce future flood damage. FEMA manages the NFIP and creates Flood Insurance Rate Maps (FIRMs) that designate 100-year flood hazard zones and delineate other flood hazard areas. A 100-year floodplain zone is the area that has a one in one hundred (1 percent) chance of being flooded in any one year based on historical data. The project site is not located within a FEMA-designated flood hazard area.

c. State Regulations

State regulations related to water quality are described below.

(1) Porter-Cologne Act and State Implementation of Clean Water Act Requirements

The Porter-Cologne Water Quality Control Act (California Water Code, Division 7, Water Quality), promulgated in 1969, implements the federal CWA (see "Clean Water Act and Associated Environmental Compliance" above). It established the State Water Board and divided the State into nine hydrologic regions, each overseen by a Regional Water Board. The State Water Board is the primary state agency responsible for protecting the quality of the State's surface and groundwater supplies, but much of its daily implementation authority is delegated to the nine Regional Water Boards. The Porter-Cologne Act also provides for the development and tri-annual review of Water Quality Control Plans (Basin Plans) that designate beneficial uses of California's major rivers and groundwater basins and establish narrative and numerical water quality objectives for those waters.

(2) Construction General Permit Program

Pursuant to CWA Section 402 and the Porter-Cologne Water Quality Control Act, on September 2, 2009, the State Water Board adopted an NPDES General Permit for Storm

Water Discharges Associated with Construction and Land Disturbance Activities, Order No. 2009-0009-DWQ, NPDES No. CAS000002 (Construction General Permit).[55]

To obtain coverage under the Construction General Permit, the project applicant must provide via electronic submittal, a Notice of Intent, a Storm Water Pollution Prevention Plan (SWPPP), and other documents required by Attachment B of the Construction General Permit. Activities subject to the Construction General Permit include clearing, grading, and disturbances to the ground, such as grubbing or excavation that disturb one acre or more. Construction activities covered under the Construction General Permit are regulated at a local level by the Regional Water Board.

The Construction General Permit uses a risk-based permitting approach, and mandates certain requirements based on the risk level of the project (Level 1, Level 2, or Level 3). The risk level of the project is based on the risk of sediment discharge and the receiving water risk. The sediment discharge risk depends on the project location and timing (i.e., wet season versus dry season activities). The receiving water risk depends on whether the project would discharge to a sediment-sensitive receiving water. The determination of the project risk level would be made by the project applicant when the Notice of Intent is filed (and more details of the timing of the construction activity are known).

The performance standard in the Construction General Permit is that dischargers shall minimize or prevent pollutants in stormwater discharges and authorized non-stormwater discharges through the use of controls, structures, and best management practices (BMPs) that achieve Best Available Technology Economically Achievable (BAT) for treatment of toxic and non-conventional pollutants and Best Conventional Pollutant Control Technology for treatment of conventional pollutants.[56] The permit also imposes numeric action levels (Level 2 and Level 3 projects) and numeric effluent limits (Level 3 projects) for pH and turbidity, as well as minimum BMPs that must be implemented at all sites.

A SWPPP must be prepared by a Qualified SWPPP Developer that meets the certification requirements in the Construction General Permit. The purpose of the SWPPP is to: (1) help identify the sources of sediment and other pollutants that could affect the quality of stormwater discharges; and (2) describe and ensure the implementation of

[55] State Water Resources Control Board (State Water Board) Division of Water Quality, 2009. Construction General Permit Fact Sheet. 2009-0009-DWQ amended by 2010-0014-DWQ & 2012-0006-DWQ.

[56] As defined by U.S. EPA, BAT is a technology-based standard established by the CWA as the most appropriate means available on a national basis for controlling the direct discharge of toxic and non-conventional pollutants to navigable waters. The BAT effluent limitations guidelines, in general, represent the best existing performance of treatment technologies that are economically achievable. Best Conventional Pollutant Control Technology is a technology-based standard that applies to treatment of conventional pollutants, such as total suspended solids.

BMPs to reduce or eliminate sediment and other pollutants in stormwater as well as non-stormwater discharges resulting from construction activity. BMPs must be overseen by a Qualified SWPPP Practitioner that meets the requirements outlined in the permit.

The SWPPP must also include a construction site monitoring program. Depending on the project risk level, the monitoring program may include visual observations of site discharges, water quality monitoring of site discharges (pH, turbidity, and non-visible pollutants, if applicable), and receiving water monitoring (pH, turbidity, suspended sediment concentration, and bioassessment).

(3) State Water Board Low Impact Development Policy

On January 20, 2005, the State Water Board adopted the Low Impact Development (LID) Policy, which, at its core, promotes the idea of "sustainability" as a key parameter to be considered during the design and planning process for future development. The State Water Board has directed its staff to consider sustainability in all future policies, guidelines, and regulatory actions.

The sustainability practice promotes LID to benefit water supply and contribute to water quality protection. LID has been a proven approach in other parts of the country and is seen in California as an alternative to conventional stormwater management. The Regional Water Boards are advancing LID in California in various ways, including provisions for LID requirements in the Phase I and Phase II municipal stormwater NPDES permits.

d. Local Regulations and Programs

Local hydrology and water quality regulations and programs are described below.

(1) Municipal Regional Permit

Pursuant to Section 402 of the CWA[57] and the Porter-Cologne Water Quality Control Act (Porter-Cologne), municipal stormwater discharges in the city of Orinda are regulated under the San Francisco Bay Region Municipal Regional Stormwater NPDES Permit, Order No. R2-2015-0049, NPDES Permit No. CAS612008 (MRP). The MRP is overseen by the Regional Water Board.[58] The city is part of the Contra Costa Clean

[57] Federal regulations for controlling discharges of pollutants from municipal separate storm sewer systems, construction sites, and industrial activities were incorporated into the NPDES permit process by the 1987 amendments to the CWA and by the subsequent 1990 promulgation of federal stormwater regulations issued by the U.S. Environmental Protection Agency (EPA). In California, the EPA delegated its authority to the State Water Board to issue NPDES permits.

[58] San Francisco Bay Regional Water Quality Control Board (Regional Water Board), 2015. San Francisco Bay Region Municipal Regional Stormwater NPDES Permit, Order No. R2-2015-0049, NPDES Permit No. CAS612008. November 19.

Water Program, which provides guidance and assistance to municipalities in Contra Costa County to help them comply with requirements of the MRP.

Provision C.3 of the MRP addresses post-construction stormwater management requirements for development projects. It requires implementation of LID source control, site design, and stormwater treatment for regulated projects. Projects that create or replace over 10,000 square feet of impervious surface area are regulated projects. Additionally, projects that include alteration of over 50 percent of the impervious surface of a previously existing development that was not subject to Provision C.3 of the Municipal Regional Permit require stormwater treatment systems to be designed and sized to treat stormwater runoff from the entire site. LID employs principles such as preserving and recreating natural landscape features and minimizing impervious surfaces to create functional and appealing site drainage that treats stormwater as a resource, rather than a waste product. Practices used to adhere to these LID principles include measures such as rain barrels and cisterns, green roofs, permeable pavement, preserving undeveloped open space, and biotreatment through rain gardens, bioretention units, bioswales, and planter/tree boxes. As indicated in Attachment C of the MRP, the project site is located within an area that is exempt from hydromodification[59] management requirements.

The Contra Costa Clean Water Program has summarized the requirements for development projects in the *Stormwater C.3 Guidebook, Stormwater Quality Requirements for Development Applications*.[60] The Guidebook provides direction on selecting stormwater site design, source control, treatment, and best management practices, and summarizes the requirements for preparation of a Stormwater Control Plan, which specifies the permanent site features and facilities designed to control stormwater pollutants and flows for the life of the project. The Stormwater Control Plan must be submitted to the City for review and approval with the planning and zoning application.

(2) City of Orinda Municipal Code

Chapter 18.02 (Stormwater Management and Discharge Control) of the Municipal Code, which is intended to protect water quality consistent with the CWA and Porter-Cologne, requires project applicants for developments creating 10,000 square feet or more of impervious area to submit a Stormwater Control Plan and an Operation and Maintenance Plan consistent with the Contra Costa Clean Water Program Stormwater C.3. Guidebook, and specifies additional BMPs (e.g., for litter, parking lots, and paved

[59] Hydromodification is defined as the modification of a stream's hydrograph, caused in general by increases in flows and durations that result when land is developed (e.g., made more impervious). The effects of hydromodification include, but are not limited to, increased bed and bank erosion, loss of habitat, increased sediment transport and deposition, and increased flooding.

[60] Contra Costa Clean Water Program, 2017. Stormwater C.3 Guidebook. Stormwater Quality Requirements for Development Applications. May 17.

areas). The Stormwater Operation and Maintenance Plan shall designate the person(s) or organization(s) responsible for maintenance of the stormwater management facilities. Unless otherwise provided in the plan, those responsible for maintenance shall inspect the stormwater management facility at least annually.

Chapter 18.02 of the City of Orinda Municipal Code also requires that construction activities to conform to the requirements of the California Stormwater Quality Association Stormwater Best Management Practices Handbooks for Construction Activities, the Association of Bay Area Governments Manual of Standards for Erosion and Sediment Control Measures, the City's grading and erosion control ordinance, and other generally-accepted engineering practices for erosion control, as required by the approving authority when undertaking construction activities. Chapter 15.36 of the City of Orinda Municipal Code (Grading) requires the project applicant obtain a grading permit from the City and submit required plans and specifications for drainage, dust control, and erosion control. The City Building Official may inspect the project during the initial, rough grading, and final grading stages. The City Building Official may prohibit excavation, grading, or construction of fills during months in which he/she finds that rainfall will likely preclude compliance with the City's grading requirements.

3. Impacts and Mitigation Measures

This section discusses potential impacts on hydrology and water quality that could result from implementation of the project. The section begins with the criteria of significance, which establish the thresholds used to determine whether an impact is significant. The latter part of this section discusses impacts found to be less than significant and potentially significant hydrology impacts associated with the project.

a. Criteria of Significance

The significance criteria used for analyzing and determining the project's level of impact on hydrology and water quality and the scope of the analysis are described in this section. Based on Appendix G of the CEQA Guidelines, implementation of the project would have a significant impact on hydrology and water quality if it would:

1. Violate any water quality standards or waste discharge requirements;
2. 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 proposed uses for which permits have been granted);
3. Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course, or increasing the rate or amount of flow, of a

creek, river, or stream in a manner that would result in substantial erosion, siltation, or flooding, both on- or off-site;

4. 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;
5. Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff;
6. Otherwise substantially degrade water quality;
7. 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;
8. Place within a 100-year flood hazard area structures which would impede or redirect flood flows;
9. 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;
10. Inundation by seiche, tsunami, or mudflow.

b. Less-than-Significant Hydrology and Water Quality Impacts

Implementation of the project would result in less-than-significant impacts described below. Since these impacts would not exceed the significance thresholds described above, no mitigation measures would be necessary.

(1) Water Quality Standards or Waste Discharge Requirements, Substantial Additional Sources of Polluted Runoff, Substantial Degradation of Water Quality of San Pablo Creek and Downstream Receiving Waters (Criteria 1, 5, 6)

Construction. In areas of active construction, soil erosion may result in discharges of sediment-laden stormwater runoff into the stormwater collection system that eventually discharges to San Pablo Creek, if not properly controlled. Additional sediment input from construction of the project could contribute to degradation of downstream water quality and impairment of beneficial uses. Sediment can also be a carrier for other pollutants, such as heavy metals, nutrients, pathogens, oil and grease, fuels and other petroleum products. In addition to sediment, other pollutants associated with the various phases of construction, such as trash, paint, solvents, sanitary waste from portable restrooms, and concrete curing compounds, can discharge into and impair receiving waters, if released during construction.

Because construction of the project would disturb more than one acre of land, the project would be subject to the requirements of the Construction General Permit.

Chapter 18.02 of the City of Orinda Municipal Code also requires that construction activities conform to the requirements of the California Stormwater Quality Association Stormwater Best Management Practices Handbooks for Construction Activities, the Association of Bay Area Governments Manual of Standards for Erosion and Sediment Control Measures, the City's grading and erosion control ordinance, and other generally-accepted engineering practices for erosion control, as required by the approving authority[61] when undertaking construction activities. Required compliance with State and local regulations regarding stormwater quality during construction would ensure that the project would result in less-than-significant impacts to water quality during construction.

Operation. The project includes driveways, parking lots and landscaping, which are potential sources of stormwater pollutants, such as sediment, metals, pesticides, petroleum hydrocarbons, nutrients, and trash and debris. Such pollutants may also be present in non-stormwater discharges, such as runoff from irrigation and maintenance activities. If not properly controlled, the discharge of these pollutants into receiving waters could adversely affect water quality and beneficial uses.

Because the project would create or replace over 10,000 square feet of impervious surface area, the project would be subject to the requirements of Provision C.3 of the MRP. Because the project would include alteration of over 50 percent of the existing impervious surface, stormwater treatment systems would be required to designed and sized to treat stormwater runoff from the entire site. As indicated in the project plans, the project would include the use of flow-through planters, self-treating landscape areas, and bioretention basins to manage and treat stormwater runoff from the project site. Chapter 18.02 of the City of Orinda Municipal Code also requires project applicants for developments creating 10,000 square feet or more of impervious area to submit a Stormwater Control Plan and an Operation and Maintenance Plan consistent with the Contra Costa Clean Water Program Stormwater C.3. Guidebook, and specifies additional BMPs (e.g., for litter, parking lots, and paved areas). Required compliance with State and local regulations regarding stormwater quality during operation would ensure that the project would result in less-than-significant impacts to water quality during operation.

[61] Architects Orange, 2017. CountryHouse Memory Care at Orinda, CA plan set. December 18.

(2) Groundwater Supplies (Criterion 2)

The project site is not located within a defined groundwater basin.[62] Groundwater on site will not be used during the construction or operation phases of the project and, therefore, this would be a less-than-significant impact.

(3) Drainage Pattern, Stream and Rivers and Erosion (Criteria 3 and 4)

The project would change the existing drainage pattern on-site as the site would change from vacant to developed space. However, the project site has already been graded when the roadways and utilities were installed and changes to site topography would be minimal. Additionally, the project would not modify streams or rivers as none traverse the project site. Furthermore, as indicated in the project plans, stormwater at the project site would be directed to flow-through planters, self-treating landscape areas, or bioretention basins, which would minimize the amount of runoff and reduce impacts related to erosion and siltation. Compliance with the Construction General Permit during construction activities and Provision C.3 of the MRP during operation would ensure that the project would not result in substantial erosion or siltation potential of receiving water during construction and operation, respectively. Therefore, the project would have a less-than-significant impact related to substantial erosion or siltation on- or off-site associated with changing the drainage pattern of the project site.

(4) Stormwater Drainage Systems (Criterion 5)

Implementation of the project would involve placement of new impervious surfaces on the project site, including buildings, access roadways, pedestrian pathways, and surface parking lots. The placement of new impervious surfaces of 37,477 square feet would result in increased runoff that could exceed the capacity of the existing storm drain systems and result in localized flooding. However, stormwater at the project site would be directed to flow-through planters, self-treating landscape areas, or bioretention basins, which would minimize the amount of runoff. Further, standard plan review that would be conducted by the City of Orinda would ensure that any modifications to the existing storm drainage system would be adequately sized. This would be a less-than-significant impact.

(5) Flooding Hazards, Dam Failure, Inundation (Criteria 7-10)

FEMA mapping indicates that the project site is not located within a 100-year flood hazard area. Furthermore, the site is not subject to inundation from catastrophic failure of any of the three dams in the project vicinity. Failure of the San Pablo Dam would not cause flooding in Orinda. Failure of the Briones Reservoir and Lake Cascade

[62] San Francisco Bay Regional Water Quality Control Board (Regional Water Board), 2017. San Francisco Bay Basin (Region 2) Water Quality Control Plan (Basin Plan). Incorporating all amendments as of May 4.

Dam would not pose a risk to the project site as any flooding would flow away from the direction of the project site, north toward San Pablo Bay.[63]

Due to the distance from San Francisco Bay (over 6 miles) and elevation above sea level (greater than 700 feet), the project site is not subject to coastal hazards such as sea level rise, tsunamis and extreme high tides. The project site is not in a location that would be affected by seiches.[64] The closest reservoirs within the watershed are San Pablo Reservoir and Briones Reservoir, both located approximately 3 miles to the north. Due to the distance from these reservoirs, seiches would not affect the project site. Flood hazard impacts would be less-than-significant.

c. Significant Hydrology and Water Quality Impacts

The project would not result in significant impacts related to hydrology and water quality.

d. Cumulative Impacts

The geographic area of concern for cumulative hydrology and water quality impacts is the San Pablo Creek watershed and the San Pablo Reservoir, which receives runoff from the San Pablo Creek watershed. Stormwater discharges are affected by urban pollutants that contribute to the degradation of water quality in surface waters near the project site, including San Pablo Creek. Urban pollutants in stormwater include petroleum hydrocarbons, sediments, metals, pesticides, and trash. Past, current, and reasonably foreseeable projects within the San Pablo Creek watershed could result in cumulative impacts associated with stormwater discharges, similar to the potential impacts from construction of the project. To adequately address cumulative water quality impacts, stormwater regulations have become progressively more stringent since the passage of the federal Clean Water Act, and current NPDES permits now require new development and redevelopment projects to manage and treat all significant sources of stormwater pollutants and reduce runoff.

The project would comply with NPDES requirements during construction and would manage and treat stormwater runoff in accordance with NPDES requirements during operation through the use of flow-through planters, self-treating landscape areas, and bioretention basins to ensure that stormwater discharged from the project site would not impact the water quality of receiving waters. Therefore, any contribution of the project to a cumulative water quality impact would not be cumulatively considerable.

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[63] City of Orinda, 1987 (last amended 2013). General Plan.

[64] A seiche is a standing wave in an enclosed or partially enclosed body of water. Seiches have been observed in lakes, bays, and harbors, and can be triggered by strong winds, changes in atmospheric pressure, earthquakes, tsunami, or tides.

E. GREENHOUSE GAS EMISSIONS

This section describes the expected emissions of greenhouse gases (GHGs) generated during the construction and operational phases of the project and has been prepared in accordance with the most recent version of the Bay Area Air Quality Management District (BAAQMD) CEQA Guidelines.[65]

1. Setting

The following discussion provides an overview of the physical and regulatory setting for GHGs and a summary of climate change issues in the City of Orinda.

a. Climate Change and GHG Emissions

Existing GHGs allow about two-thirds of the visible and ultraviolet light from the sun to pass through the atmosphere and be absorbed by the Earth's surface. To balance the absorbed incoming energy, the surface radiates thermal energy back to space at longer wavelengths primarily in the infrared part of the spectrum. Much of the thermal radiation emitted from the surface is absorbed by the GHGs in the atmosphere and is re-radiated in all directions. Since part of the re-radiation is back towards the surface and the lower atmosphere, the global surface temperatures are elevated above what they would be in the absence of GHGs. This process of trapping heat in the lower atmosphere is known as the greenhouse effect.

An increase of GHGs in the atmosphere results in a global warming trend. Increases in global average temperatures have been observed since the mid-20th century and have been linked to observed increases in GHG emissions from anthropogenic sources. The primary GHG emissions of concern are carbon dioxide (CO_2), methane (CH_4), and nitrous oxide (N_2O). Other GHGs of concern include hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), and sulfur hexafluoride (SF_6), but their contribution to climate change is less than 1 percent of the total by well-mixed GHGs.[66] Each GHG has a different global warming potential (GWP). For instance, CH_4 traps about 21 times more heat per molecule than CO_2. As a result, emissions of GHGs are reported in metric tons of "carbon dioxide equivalents" (CO_2e), where each GHG is weighted by its GWP relative to CO_2.

According to the Intergovernmental Panel on Climate Change (IPCC), the atmospheric concentrations of CO_2, CH_4, and N_20 have increased to levels unprecedented in at least the last 800,000 years due to anthropogenic sources. In 2011, the concentrations of

[65] Bay Area Air Quality Management District (BAAQMD), 2017a. California Environmental Quality Act Air Quality Guidelines. May.

[66] Intergovernmental Panel on Climate Change (IPCC), 2013. Climate Change 2013; the Physical Science Basis; Working Group I Contribution to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change.

CO_2, CH_4, and N_20 exceeded the pre-industrial[67] levels by about 40 percent, 150 percent, and 20 percent, respectively. The Earth's mean surface temperature in the Northern Hemisphere from 1983–2012 was likely the warmest 30-year period over the last 1,400 years.[68] The first 6 months of 2016 also ranked as the Earth's warmest period on record since 1880.[69]

The global increases in CO_2 concentration are due primarily to fossil fuel combustion, cement production, and land use change (e.g., deforestation). The dominant anthropogenic sources of CH_4 are from ruminant livestock, fossil fuel extraction and use, rice paddy agriculture, and landfills, while the dominant anthropogenic sources of N_20 are from ammonia for fertilizer and industry.[70] All emissions of HFCs, PFCs, and SF_6 are not naturally-occurring and originate from industrial processes such as semiconductor manufacturing, use of refrigerants and other products, and electric power transmission and distribution.[71]

b. Existing GHG Emissions and Projections

In 2011, the California Air Resources Board (CARB) estimated that transportation was responsible for 37 percent of California's GHG emissions, followed by industrial sources and electrical power generation at about 20 percent each.[72] In 2011, 86.6 million metric tons (MMT) of CO_2e GHGs were emitted from anthropogenic sources within the San Francisco Bay Area Air Basin (SFBAAB). The CO_2 emissions from various activities represented about 90 percent of the total GHG emissions. [73] The 2011 GHG emissions in the SFBAAB are summarized in Table IV.E-1.

The BAAQMD estimated that the 2011 SFBAAB GHG "business-as-usual" (BAU) emissions would increase at an average rate of approximately 0.5 percent per year based on projected population growth and economic expansion (Table IV.E-2). However, the CARB and other State of California (State) agencies are developing and

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[67] Pre-1750.

[68] Intergovernmental Panel on Climate Change (IPCC), 2013. Climate Change 2013; the Physical Science Basis; Working Group I Contribution to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change.

[69] National Aeronautics and Space Administration (NASA), 2016. 2016 Climate Trends Continue to Break Records. https://www.nasa.gov/feature/goddard/2016/climate-trends-continue-to-break-records. Last updated July 16.

[70] National Aeronautics and Space Administration (NASA), 2016. 2016 Climate Trends Continue to Break Records. https://www.nasa.gov/feature/goddard/2016/climate-trends-continue-to-break-records. Last updated July 16.

[71] Bay Area Air Quality Management District (BAAQMD), 2010a. Source Inventory of Bay Area Greenhouse Gas Emissions. Updated February.

[72] California Air Resources Board (CARB), 2013. California Greenhouse Gas Inventory for 2000-2011; by Category as Defined in the 2008 Scoping Plan. Last updated August 1.

[73] Bay Area Air Quality Management District (BAAQMD), 2010b. Bay Area 2010 Clean Air Plan, September 15.

TABLE IV.E-1 SAN FRANCISCO BAY AREA 2011 GREENHOUSE GAS EMISSIONS

Pollutant	Percent	CO_2e (MMT/year)
CO_2	90.3%	78.2
CH_4	3.0%	2.6
N_20	1.7%	1.5
HFC, PFC, SF_6	4.9%	4.3
Total	**100.0%**	**86.6**

Note: MMT/year = million metric tons per year
Source: Bay Area Air Quality Management District (BAAQMD), 2010c. Source Inventory of Bay Area Greenhouse Gas Emissions. Updated February.

TABLE IV.E-2 SAN FRANCISCO BAY AREA GREENHOUSE GAS EMISSION TRENDS BY SECTOR (MMT CO_2E), BASE YEAR 2011

Category	1990	2002	2005	2008	2011	2014*	2017*	2020*
Transportation	28.6	30.9	33.5	34.8	34.3	33.9	32.5	30.4
Industrial/Commercial	21.0	28.0	30.2	28.9	31.0	32.6	34.3	36.0
Electricity/Cogeneration	8.4	14.3	13.0	13.9	12.1	12.9	12.6	12.3
Residential Fuel	7.0	7.0	6.7	6.5	6.6	6.7	6.8	6.9
Off-Road Equipment	0.9	1.0	1.1	1.4	1.3	1.3	1.4	1.3
Agriculture	1.2	1.3	1.3	1.3	1.3	1.3	1.3	1.3
Total	**67.1**	**82.4**	**85.8**	**86.8**	**86.6**	**88.7**	**88.8**	**88.2**

Note: * The emissions for these years are BAU projections, which do not take into account policy changes implemented after 2013 that aim to reduce state, regional, and local greenhouse gas emissions.
Source: Bay Area Air Quality Management District (BAAQMD), 2015. Bay Area Emissions Inventory Summary Report: Greenhouse Gases, Base Year 2011, updated January 2015. http://www.baaqmd.gov/~/media/files/planning-and-research/emission-inventory/by2011_ghgsummary.pdf. Accessed May 2017.

implementing measures to reduce statewide GHG emissions to 1990 levels by 2020 and to 40 percent below 1990 levels by 2030.

c. Effects of GHG Emissions

Some of the potential effects of increased GHG emissions and the associated climate change may include loss in snow pack (affecting water supply), sea level rise, more frequent extreme weather events, more large forest fires, and more drought years. In

addition, climate change may increase electricity demand for cooling, decrease the availability of hydroelectric power, and affect regional air quality and public health.[74]

2. Regulatory Framework

Federal, state, and local policies and regulations relevant to GHGs are described below.

a. Federal Regulations

The United States (U.S.) participates in the United Nations Framework Convention on Climate Change. In 1998 under the Clinton administration, the U.S. signed the Kyoto Protocol, which would have required reductions in GHGs; however, the protocol did not become binding in the U.S. as it was never ratified by Congress. Instead, the federal government chose voluntary and incentive-based programs to reduce emissions, and has established programs to promote climate technology and science. In 2002, the U.S. announced a strategy to reduce the GHG intensity of the American economy by 18 percent over a 10-year period from 2002 to 2012. In 2015, the U.S. submitted its "intended nationally determined contribution" to the framework convention, which targets to cut net GHG emissions by 26 to 28 percent below 2005 levels by 2025.

The U.S. Environmental Protection Agency (EPA) is responsible for enforcing the federal Clean Air Act and the 1990 amendments to it. On April 2, 2007, the U.S. Supreme Court ruled that CO_2 is an air pollutant as defined under the Clean Air Act, and that the EPA has the authority to regulate emissions of GHGs.[75] The EPA made two distinct findings regarding GHGs under Section 202(a) of the Clean Air Act, as follows:

- **Endangerment Finding:** The current and projected concentrations of the six key well-mixed GHGs (CO_2, CH_4, N_2O, HFCs, PFCs, and SF_6) in the atmosphere threaten the public health and welfare of current and future generations.
- **Cause or Contribute Finding:** The combined emissions of these well-mixed GHGs from new motor vehicles and new motor vehicle engines contribute to the GHG pollution that threatens public health and welfare.

These findings do not themselves impose any requirements on industry or other entities. However, they were a prerequisite for implementing GHG emissions standards for vehicles. In collaboration with the National Highway Traffic Safety Administration, the EPA finalized emissions standards for light-duty vehicles (2012–2016 model years) in May 2010 and heavy-duty vehicles (2014–2018 model years) in August 2011.

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[74] Bay Area Air Quality Management District (BAAQMD), 2017c. The 2017 Clean Air Plan, Spare the Air – Cool the Climate. Adopted on April 19.

[75] Massachusetts, et al. v. U.S. Envtl. Prot. Agency, et al. (2007) 549 U.S. 497.

b. State Regulations and Policies

California has adopted the following regulations aimed at reducing statewide GHG emissions:

(1) Pavley Regulations – Assembly Bill 1493

In 2002, the California Legislature adopted Assembly Bill (AB) 1493, referred to as the "Pavley regulations," which required the CARB to develop and adopt regulations that achieve the maximum feasible and cost-effective reductions in GHG emissions from new passenger vehicles. To meet the requirements of AB 1493, the CARB approved amendments to the California Code of Regulations in 2004 that added GHG emissions standards to California's existing standards for motor vehicle emissions. In 2009, the CARB adopted amendments to the Pavley regulations that reduce GHG emissions in new passenger vehicles from 2009 through 2016. These regulations are expected to reduce GHG emissions from California passenger vehicles by 30 percent through 2016.

(2) Renewable Portfolio Standard – Senate Bills 1078, 107, X1-2, and 350

In 2002, under Senate Bill (SB) 1078, the State enacted the Renewable Portfolio Standard (RPS) program, which aims to increase the percentage of renewable energy in California's electricity mix to 20 percent of retail sales by 2017. The RPS timeline was accelerated in 2006 under SB 107 and expanded in 2011 and 2015 under SB X1-2 and SB 350, respectively. The RPS program currently requires investor-owned utilities, electric service providers, and community choice aggregators to increase procurement from eligible renewable energy resources to 33 percent by 2020 and to 50 percent by 2030.

(3) Executive Order S-3-05

In 2005, Governor Schwarzenegger issued Executive Order S-3-05, which states that California is vulnerable to the effects of climate change, including reduced snowpack in the Sierra Nevada Mountains, exacerbation of California's existing air quality problems, and sea level rise. To address these concerns, the executive order established the following statewide GHG emissions reduction targets:

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

It should be noted that executive orders are legally binding only on State agencies and have no direct effect on local government or private actions.

(4) Assembly Bill 32

In 2006, Governor Schwarzenegger signed AB 32, the California Global Warming Solutions Act, which requires California to reduce statewide GHG emissions to 1990

levels by 2020. In December 2008, the CARB adopted the AB 32 Scoping Plan, which outlines a statewide strategy to achieve AB 32 goals. At the regional level, in response to SB 375 (see below), the Bay Area and other major metropolitan areas in California have developed sustainable communities strategies to integrate land use and transportation planning in order to reduce future motor vehicle travel and decrease GHG emissions. In addition, the BAAQMD is implementing a wide range of programs that promote energy efficiency, reduce vehicle miles traveled (VMTs), and develop alternative sources of energy.

(5) Low-Carbon Fuel Standard – Executive Order S-1-07

In 2007, Governor Schwarzenegger issued Executive Order S-1-07 to enact a low-carbon fuel standard. The low-carbon fuel standard calls for a reduction of at least 10 percent in the carbon intensity of California's transportation fuels by 2020.

(6) California Environmental Quality Act and Senate Bill 97

In 2007, under SB 97, the State acknowledged that climate change is a prominent environmental issue requiring analysis under CEQA. SB 97 directed the Governor's Office of Planning and Research to prepare, develop, and transmit to the California Natural Resources Agency guidelines for the feasible mitigation of GHG emissions or the effects of GHG emissions, as required by CEQA. In 2009, the Natural Resources Agency adopted the State CEQA Guidelines amendments, which provide guidance to public agencies regarding the analysis and mitigation of the effects of GHG emissions in CEQA documents. The amendments became effective in March 2010. The amendments added Sections 15126.4(c) and 15064.4 to the CEQA Guidelines, which specifically pertain to the significance of GHG emissions, and provide guidance on measures to mitigate GHG emissions when such emissions are found to be significant.

(7) Senate Bill 375 (2008)

SB 375 aligns regional transportation planning efforts, regional GHG reduction targets, and land use and housing allocations to reduce vehicle emissions. SB 375 requires California's regional land use and transportation authorities to work with local agencies to achieve more compact growth patterns, thereby reducing the quantity of GHGs emitted by passenger vehicles. Each metropolitan planning organization (MPO) must adopt a Sustainable Communities Strategy or Alternative Planning Strategy, which will prescribe land use allocation in that MPO's Regional Transportation Plan. The Sustainable Communities Strategy seeks to achieve the targeted reductions in GHG emissions by encouraging compact growth in concert with transportation planning. The nine Bay Area counties and 101 cities and towns continue to have land-use authority in their respective jurisdictions, however, and the

Sustainable Communities Strategy assumptions are drawn from local jurisdictions' planning documents.[76]

SB 375 requires CARB to establish GHG emission reduction targets related to transportation for each metropolitan transportation organization region. The Metropolitan Transportation Commission (MTC) is the designated MPO for the Bay Area. On July 28, 2010, the MTC approved a set of "Bay Area Principles for Establishing Regional Greenhouse Gas Reduction Targets" (Resolution 3970) proposing per-capita GHG reductions of 7 percent by 2020 and 15 percent by 2035. On September 23, 2010, CARB adopted the GHG reduction targets recommended by MTC.[77] These targets have been incorporated into Plan Bay Area, the Regional Transportation Plan/Sustainable Communities Strategy developed by MTC in collaboration with the Association of Bay Area Governments, BAAQMD, and the San Francisco Bay Conservation and Development Commission.

Two of the sustainable community strategies relevant to the project are:

- Reduce VMTs within the Bay Area by providing more housing in communities for people who provide essential services but cannot afford to live there and have to commute by car from far away, raising transportation costs, congesting roads, polluting the air and wasting time that could be spent with their families; and
- Develop compact communities where transit, jobs, schools, services, and recreation are conveniently located near people's homes.[78]

The MTC, in collaboration with the Association of Bay Area Governments, BAAQMD, and the Bay Conservation and Development Commission, has collaborated to produce their second integrated land-use/transportation plan to be implemented through 2040 ("Plan Bay Area 2040"), which was adopted on July 26, 2017. Plan Bay Area 2040 accounts for regional growth between 2015 and 2040 totaling an additional 688,000 jobs and 666,000 households, and proposes a transportation investment strategy of $303 billion.

(8) Executive Order B-30-15 and SB 32

In 2015, Governor Brown issued Executive Order B-30-15, which set a statewide GHG emissions reduction target of 40 percent below 1990 levels by 2030. This target is in addition to the previous GHG emissions reduction targets established in Executive Order S-3-05 for 2010, 2020, and 2050. In September 2016, Governor Brown signed SB 32, which expands on the mandate set forth by AB 32 to reduce statewide

[76] Association of Bay Area Governments (ABAG) and Metropolitan Transportation Commission (MTC), 2011. Plan Bay Area.

[77] California Air Resources Board (CARB), 2010. Regional Greenhouse Gas Emission Reduction Targets Pursuant to SB 375.

[78] California Air Resources Board (CARB), 2010. Regional Greenhouse Gas Emission Reduction Targets Pursuant to SB 375.

emissions of GHGs by requiring California to reduce GHG emissions to 40 percent below 1990 levels by 2030. This mandate is also consistent with the GHG emissions reduction target established under Executive Order B-30-15.

The executive order also requires the CARB to update the AB 32 Scoping Plan to identify measures to meet the 2030 target. On December 14, 2017, the CARB approved the 2017 Final Scoping Plan Update. The Update includes additional actions to promote renewable and low-carbon intensity sources, including the adoption of a zero net energy standard for residential buildings by 2018-2019 and for commercial buildings by 2030. The Update also includes a reduction of the transportation fuel carbon intensity target, programs to reduce emissions in municipal transit centers, and many other programs.

(9) Title 24 Building Efficiency Standards

The State regulates energy consumption under Title 24 Building Standards Code, Part 6 of the California Code of Regulations (also known as the California Energy Code). The Title 24 Building Energy Efficiency Standards were developed by the California Energy Commission and apply to energy consumed for heating, cooling, ventilation, water heating, and lighting in new residential and nonresidential buildings. The California Energy Commission has estimated that the 2016 Building Energy Efficiency Standards, which took effect on January 1, 2017, will reduce energy consumption by about 46 percent for residential buildings and 33.5 percent for nonresidential buildings on average compared to the 2008 Building Energy Efficiency Standards.[79,80]

(10) Title 24 California Green Building Standards Code (CALGreen Code)

Title 24 Building Standards Code, Part 11 of the California Code of Regulations is referred to as the California Green Building Standards Code or CALGreen Code. The purpose of the CALGreen Code is to improve public health, safety, and general welfare by enhancing the design and construction of buildings through the use of building concepts having a positive environmental impact and encouraging sustainable construction practices in the following categories: (1) planning and design; (2) energy efficiency; (3) water efficiency and conservation; (4) material conservation and resource efficiency; and (5) environmental air quality.

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[79] California Energy Commission (CEC), 2014. News Release: New Title 24 Standards Will Cut Residential Energy Use by 25 Percent, Save Water, and Reduce Greenhouse Gas Emissions. http://www.energy.ca.gov/releases/2014_releases/2014-07-01_new_title24_standards_nr.html. Accessed November 15, 2016.

[80] California Energy Commission (CEC), 2015. Adoption Hearing: 2016 Building Energy Efficiency Standards, June 10.

c. Bay Area Air Quality Management District Programs

The BAAQMD is the regional government agency that regulates sources of air pollution within the nine Bay Area counties. The BAAQMD regulates GHG emissions through the plans, programs, and guidelines outlined below.

(1) Regional Clean Air Plans

The BAAQMD and other air districts prepare clean air plans in accordance with the State and federal Clean Air Acts. In April 2017, the BAAQMD adopted the *2017 Clean Air Plan: Spare the Air, Cool the Climate* (2017 CAP), which is a comprehensive plan to improve Bay Area air quality and protect public health through implementation of a control strategy designed to reduce emissions and ambient concentrations of harmful pollutants. The 2017 CAP also includes measures designed to reduce GHG emissions.

(2) BAAQMD Climate Protection Program

The BAAQMD established a climate protection program to reduce pollutants that contribute to global climate change and affect air quality in the SFBAAB. The climate protection program includes measures that promote energy efficiency, reduce VMTs, and develop alternative sources of energy, all of which assist in reducing emissions of GHGs and in reducing air pollutants that affect the health of residents. The BAAQMD also seeks to support current climate protection programs in the region and to stimulate additional efforts through public education and outreach, technical assistance to local governments and other interested parties, and promotion of collaborative efforts among stakeholders.

d. City of Orinda

The City of Orinda has adopted the CALGreen Code, which includes measures to reduce GHG emissions from new buildings.[81] The CALGreen Code is described under subsection IV.E.2.b, *State Regulations*, above.

3. Impacts and Mitigation Measures

This section discusses potential impacts on GHG emissions that could result from implementation of the project. The section begins with the criteria of significance, which establish the thresholds used to determine whether an impact is significant. The latter part of this section presents the impacts associated with the project and recommends mitigation measures to reduce significant impacts, if needed.

a. Criteria of Significance

The significance criteria used for analyzing and determining the project's level of impact on GHG emissions and the scope of the analysis are described in this section.

[81] City of Orinda, 2012. Orinda Municipal Code. Title 15, Chapter 15.10.

Based on Appendix G of the CEQA Guidelines, implementation of the project would have a significant impact on the environment if it would:

1. Generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment; and
2. Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of GHGs.

The significance criteria were evaluated based on the BAAQMD's CEQA Thresholds[82] and 2017 *CEQA Air Quality Guidelines*.[83]

b. Less-than-Significant GHG Emissions Impacts

Implementation of the project would result in less-than-significant impacts described below. Since these impacts would not exceed the significant thresholds described above, no mitigation measures would be necessary.

(1) GHG Impacts on the Environment (Criterion 1)

The BAAQMD's GHG Thresholds for the operational phase of the project require compliance with **ONE** of the following:

- Compliance with a qualified GHG Reduction Strategy;
- Annual emissions less than 1,100 metric tons per year (MT/yr) of CO_2e; or
- Annual emissions less than 4.6 MT/yr of CO_2e per service population.

The City of Orinda has not adopted a GHG Reduction Strategy. To quantify annual GHG emissions during the operational phase of a project, the BAAQMD recommends using the most current version of the California Emissions Estimator Model (CalEEMod).[84] CalEEMod utilizes widely accepted models for emission estimates combined with appropriate default data that can be used if site-specific information is not available. A copy of the CalEEMod report for the project, which summarizes the input parameters, assumptions, and findings, is included in Appendix B.

GHG emissions during the operational phase of the project would primarily be from mobile sources (i.e., vehicle trips). Both on-site and off-site GHG emissions during project operations were estimated using the CalEEMod default values for a 38-unit congregate care facility, except as noted below.

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[82] Bay Area Air Quality Management District (BAAQMD), 2017a. California Environmental Quality Act Air Quality Guidelines. May.

[83] Bay Area Air Quality Management District (BAAQMD), 2017a. California Environmental Quality Act Air Quality Guidelines. May.

[84] California Air Pollution Officers Association (CAPCOA), 2016. California Emissions Estimator Model Version 2016.32.

- The project's electricity is supplied by Pacific Gas and Electric. The CalEEMod default CO_2 intensity factor (from 2008) was updated to the most recent (2013) emission factor.
- The average weekday vehicle trip rate was changed to 2.60 trips/dwelling unit/day, based on the assumptions of the transportation analysis conducted for the project (see Section IV.I, Transportation and Circulation).
- No wood-burning devices are included in the building design.
- Based on the design of the Central Contra Costa Sanitary District wastewater treatment plant that services the project area, the wastewater treatment process was changed to 100 percent aerobic treatment. The cogeneration facility at the Central Contra Costa Sanitary District supplies about 80 percent of the treatment plant's daily power needs. This was also incorporated into the model.

The average emissions of GHGs calculated in CalEEMod for the operational phase of the project are compared to the BAAQMD Thresholds in Table IV.E-3. The project's estimated GHG emissions do not exceed the annual emissions Threshold. Therefore, the project's operational GHG emissions would have a less-than-significant impact on global climate change.

TABLE IV.E-3 SUMMARY OF AVERAGE GHG EMISSIONS DURING PROJECT OPERATION

Pollutant	GHGs
Units	MT CO_2e/yr
Emissions	169
Thresholds	1,100
Exceedance	No

Source: CalEEMod (Appendix B).

Emissions from construction equipment and worker trips during construction would generate direct GHG emissions. The BAAQMD has not developed Thresholds for construction-related GHG emissions. The BAAQMD recommends calculating the GHG emissions to disclose the emissions levels that would occur during construction. Based on the size and type of development, CalEEMod estimated that project construction would likely last 226 days. Over this time period, the total emissions of GHGs calculated in CalEEMod for the construction phase of the project would be about 235 metric tons of CO_2e. By conservatively comparing these emissions to the operational Threshold of 1,100 MT/yr of CO_2e, the project's construction GHG emissions would also have a less-than-significant impact on global climate change.

(2) Conflicts with Applicable GHG Reduction Plans (Criterion 2)

The BAAQMD thresholds for GHGs were designed to ensure compliance with the AB 32 GHG reduction goals. Since the project's GHG emissions would be below the annual GHG Thresholds (Table IV.E-3), it can be assumed that the project would comply with AB 32. Therefore, the project's impact on applicable plans, policies, or regulations related to GHG emission reductions in the SFBAAB would be less than significant.

c. Significant GHG Emissions Impacts

There would be no significant impacts related to GHG emissions that would result from implementation of the project.

d. Cumulative Impacts

GHG impacts are, by their nature, cumulative impacts because one project by itself cannot significantly contribute to or cause global climate change. BAAQMD's GHG thresholds pertain to a project's contribution to cumulative impacts and whether the project's contribution is cumulatively considerable. See above for more discussion.

F. LAND USE

This section describes existing land uses within and in the vicinity of the project site, discusses land use planning policies and regulations applicable to the project, and evaluates the project's potential land use impacts.

1. Setting

Existing land uses within the project site and surrounding areas are described below. The section begins with the regional and local setting, and then provides more specific information about the project site and vicinity.

a. Regional Setting

The 1.1-acre project site is located in the eastern San Francisco Bay Area, just inside the western boundary of the city of Orinda (city), as shown in Figure III-1 in Chapter III, *Project Description*. Orinda is located approximately 8 miles northeast of the city of Oakland and approximately 8 miles southwest of the city of Walnut Creek. The city is located in Contra Costa County and is bordered by Moraga and Lafayette to the south and east, and by open space and East Bay Municipal Utility District (EBMUD) watershed lands to the north and west. Major transportation corridors in the area include State Route (SR) 24 and the Bay Area Rapid Transit (BART) Antioch-SFO/Millbrae line, which runs in the median of SR 24.

b. Local Setting

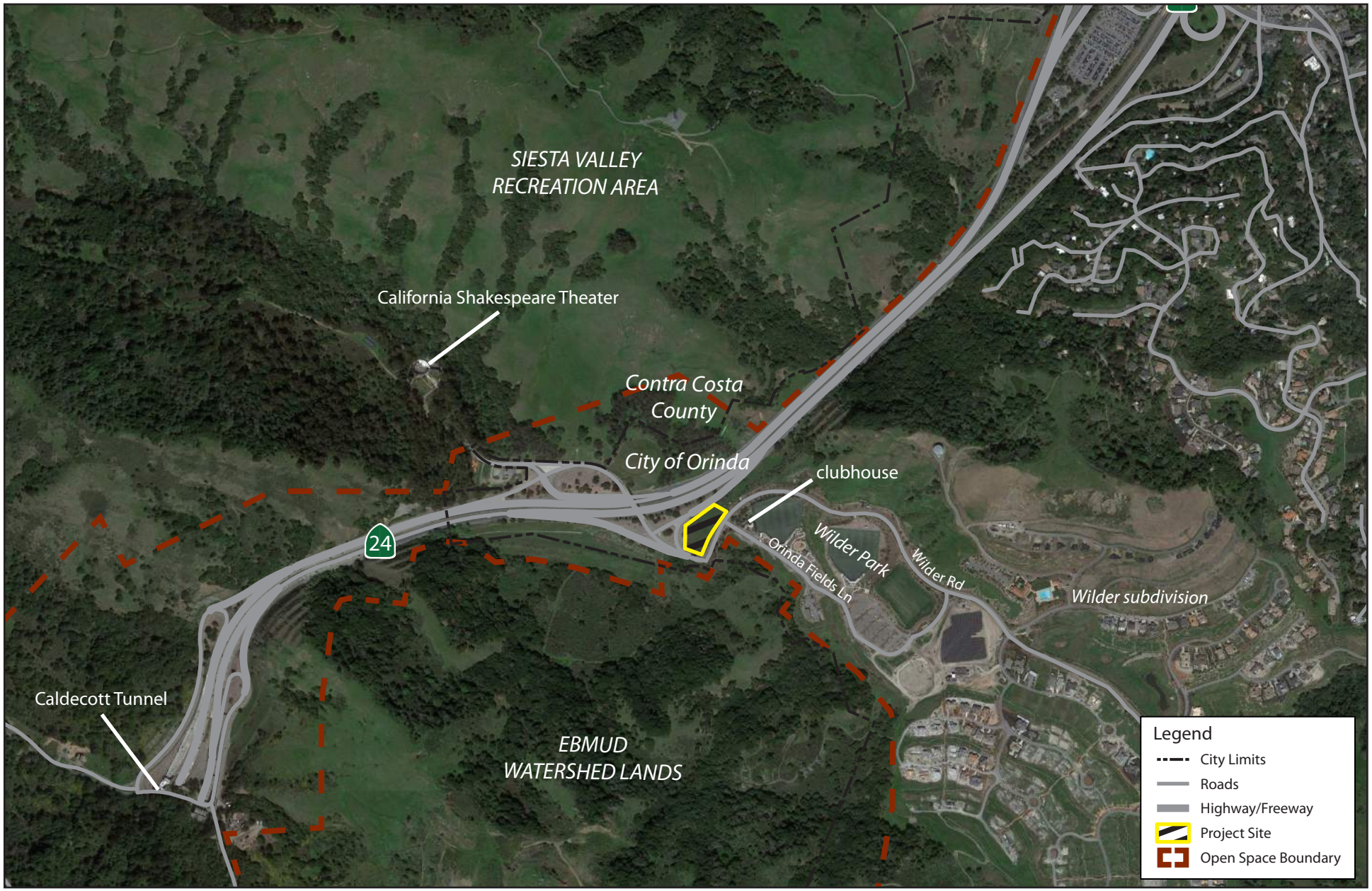
Orinda developed as a rural community throughout the twentieth century. In 1985 the 12.8 square-mile City of Orinda became incorporated, allowing local decision making. Downtown Orinda is centrally located around the Orinda BART Station and the SR 24/Camino Pablo interchange, with City Hall, the library and community center to the north, and the historic Orinda Theater and a small commercial district to the south. Beyond the downtown areas, development is characterized as semi-rural surrounded by open space and ridgeline preserves.

c. Land Uses on the Project Site

The 1.1-acre project site is bounded by SR 24 to the north and west, Wilder Park sports fields to the east, and Wilder Road and unincorporated open space to the south. Currently, the project site is undeveloped. The site's General Plan designation is Public and Semi-Public and the zoning is Public/Semi-Public and Utility (PS).

d. Land Uses in the Vicinity of the Project Site

Primary land uses in the vicinity of the project site include SR 24 to the north and west, EBMUD watershed and public recreation lands to the west and north, and the Wilder residential subdivision to the east, as shown in Figure IV.F-1.



CountryHouse Memory Care Project EIR

Source: Google, 2018.

Figure IV.F-1
Existing Land Uses

Unincorporated Contra Costa County is just beyond the project site and the SR 24 corridor to the west, north, and south. The surrounding areas are described below.

- **North.** To the north is SR 24, an eight-lane regional State Highway, and the surrounding California Department of Transportation (Caltrans) right-of-way. Across SR 24 is the Siesta Valley Recreation Area, owned by EBMUD. The California Shakespeare Theater is located approximately 1/3 mile north of SR 24 inside the Siesta Valley Recreation Area. These areas are in unincorporated Contra Costa County.

Photo 1: Siesta Valley Recreation Area to the north of SR 24, in the middleground. Project site is in the foreground.

- **East.** The sports fields and clubhouse at Wilder Park are to the east from the project site and across Wilder Road. There are currently five sports fields and a small clubhouse available for public rental.

  Land farther east and northeast of the project site is zoned Planned Development District (PD) and is within the Gateway Valley Planning Area. Gateway Valley Planning Area is a General Plan designation established to permit the Wilder subdivision, which is partially built out and will ultimately consist of 245 home sites, five community ball fields, a community park, a public clubhouse, a private swim and fitness facility, a public Art and Garden Center, a network of walking, bicycle and equestrian trails, and over 1,300 acres of open space.

Photo 2: Wilder Park sports fields, with the project site immediately to the southeast (out of view).

- **South.** EBMUD watershed lands are farther southeast beyond the project site and Wilder Road. Land uses to the south and southwest are in unincorporated Contra Costa County.

  Low-density residential neighborhoods are approximately 1 mile northeast, also within the Gateway Valley Planning Area and Planned Development District.

- **West.** To the west, beyond Wilder Road and the SR 24 off-ramp, is the SR 24 right-of-way, with the Caldecott Tunnel is 0.8 mile to the west. Areas to the west are in unincorporated Contra Costa County.

Photo 3: SR 24 on-ramp, looking east towards open space designated for the Wilder subdivision. Project site is behind the fence in middle of photo.

Photo 4: Looking west at SR 24, the Caldecott Tunnel is just out of sight around the curve. Project site is in middle of photo, obscured by trees.

2. Regulatory Framework

This subsection identifies policies and regulations of the City of Orinda General Plan (General Plan) as well as of the City of Orinda zoning ordinance that are applicable to the project. Pursuant to the CEQA Guidelines §15125(d), this subsection also identifies "any inconsistencies between the proposed project and applicable general plans, specific plans, and regional plans." Project-related policy conflicts and inconsistencies do not constitute, in and of themselves, significant environmental impacts. Such conflicts or inconsistencies result in environmental impacts only when they would result in direct physical effects. All physical impacts of the project are discussed in Chapter IV, *Setting, Impacts, and Mitigation Measures*, and its respective subsections. The consistency of the project with plans, policies, and regulations that do not relate to physical environmental issues or result in physical environmental effects will be considered by City decision-makers as part of the determination on whether to approve, modify, or disapprove the project.

Applicable planning-related policies in the General Plan and the relationship of the project with these policies are summarized below. The General Plan is a comprehensive plan for the growth and development of the city. The General Plan includes policies related to: land use; parks and open space; utilities; schools; circulation; housing; conservation; safety; noise; and growth management. These topics are addressed within individual elements of the General Plan. Policies in the Land Use Element; Open Space, Parks, Schools and Utilities Element; Circulation Element; Housing Element; Conservation Element: Safety Element; Noise Element; and Growth Management Element that are applicable to land uses within the project site and are summarized in Table IV.F-1.

The project site's current General Plan designation is Public and Semipublic and the zoning is Public/Semi-Public and Utility (PS) district. The Public and Semipublic General Plan designation is intended for uses "other than parks owned by a public agency or semipublic institution that are of sufficient size to warrant differentiation from adjoining uses. (…) Examples are public and private schools."[85] Congregate care facilities—which is the proposed project use—are permitted in the PS district with a use permit. The PS district is one of two districts that allow congregate care (the other is the RM – Medium Density Residential – district).

The Orinda Municipal Code defines congregate care as "a facility which provides twenty-four (24) hour nonmedical care of persons in need of personal services, supervision or assistance essential for sustaining the activities of daily living or for the protection of the individual. The facility contains small individual dwelling units of usually only one (1) or two (2) rooms with a small kitchen allowing for independent living but also provides common dining, housekeeping, recreational and social facilities. Health and Safety Code Sections 1502(a)(1); 1597.43. Small kitchens that comply with state and local standards must be included in each individual dwelling unit for this definition to apply."

The current 1987 General Plan has the following guiding and implementing policies that may apply to the project:[86]

TABLE IV.F-1 GENERAL PLAN POLICIES

LAND USE ELEMENT
2.1.1 GUIDING POLICY (A) Maintain the semi-rural character of Orinda. "Semi-rural character" is defined as consisting of the following characteristics: ▪ Major visible undeveloped ridgelines and hillsides; ▪ Most houses small in relation to their lots; ▪ Heavy tree cover and other vegetation dominating most lots; ▪ Limited grading and disturbance of existing land contours; ▪ Undisturbed creeks and creek beds; ▪ Diversity of hours placement; ▪ Visible vacant land within and adjacent to residential areas; ▪ Winding streets with limited traffic
2.1.1 GUIDING POLICY (B) Maintain the dominance of wooded and open ridges and hillsides.
2.1.2 IMPLEMENTING POLICY (E) Residential Area Design and House siting: Consider ordinances to maintain semi-rural character with respect to the following: ▪ Regulating the relationship of house size in relation to lot size to maintain low-density character; ▪ Removal of natural vegetation; ▪ Disturbance of existing groundforms;

[85] City of Orinda, 1987 (last amended 2013). General Plan, Chapter 2: Land Use and Circulation Element, p. 2-10.

[86] City of Orinda, 1987 (last amended 2013). General Plan.

TABLE IV.F-1 GENERAL PLAN POLICIES

▪ Disturbance of creek corridors; ▪ Street design to avoid wide, straight streets; ▪ House placement in relation to ridgelines to avoid or minimize visibility around designated ridges and scenic hillsides through the adoption of an appropriate hillside and ridgeline ordinance giving due consideration to such ordinances from adjoining cities; ▪ Height of new houses and additions; ▪ Solar orientation of new houses.
OPEN SPACE, PARKS, SCHOOLS AND UTILITIES ELEMENT
2.2.1 GUIDING POLICY (E) Retain existing private and public recreational open space, and acquire additional land for public park development to meet the needs of all sectors of Orinda and all age groups in the community. A minimum of five acres of land for each 1,000 city residents should be devoted to public park and recreational purposes but more may be needed.
CIRCULATION ELEMENT
2.3.1 GUIDING POLICY (A) Permit new development only when adequate transportation systems and parking are provided.
2.3.1 GUIDING POLICY (G) It is the goal of the City of Orinda to preserve and retain, in the most natural condition possible, scenic vehicular entryways, routes and corridors in the community.
2.3.2 IMPLEMENTING POLICY (P) The following routes are designated Scenic Corridors on the General Plan: I. Moraga Way from its intersection with Camino Pablo south to the City limits; 2. Camino Pablo from its intersection with Santa Maria Way north to the City limits; 3. Highway 24, designated as a California Scenic Highway within Orinda City limits.
2.3.2 IMPLEMENTING POLICY (Q) Special care shall be taken to provide a well landscaped and open feeling along Scenic Corridors, especially at the entrance to the City, utilizing such techniques as generous landscaped setbacks and open-space acquisition, where appropriate.
2.3.2 IMPLEMENTING POLICY (R) Any proposed development or subdivision along a Scenic Corridor or Scenic Highway shall be designed to blend with and permit the natural environment to be maintained as the dominant visual element. It shall not lessen the scenic value of existing visual elements.
2.3.2 IMPLEMENTING POLICY (S) Where structures are permitted (along Scenic Corridors), they shall be designed to blend with and permit the natural environment to be maintained as the dominant visual element.
2.3.2 IMPLEMENTING POLICY (T) Because Highway 24 is a freeway that bisects Orinda, it merits special consideration to maintain its integrity as a California Scenic Highway as it passes through Orinda.
HOUSING ELEMENT
GOAL 1: NEW HOUSING PRODUCTION Encourage the development of a variety of types of housing for all Income levels, which will be assisted through appropriate zoning and development standards.
POLICY 1.1: HOUSING DIVERSITY Provide for a diversity of housing types to meet current and future needs of all residents without compromising the semi-rural character of Orinda's single family neighborhoods.
POLICY 1.2: DESIGN QUALITY Apply high standards of quality and design to all housing development in the city. Where multi-family or mixed use housing is constructed, it should respect the context of the site and its surroundings and make a positive contribution to the character of Orinda.

TABLE IV.F-1 GENERAL PLAN POLICIES

POLICY 1.3: ENERGY EFFICIENCY: Require energy efficient design and construction in all residential development and rehabilitation projects.
POLICY 1.4: CONTEXT-APPROPRIATE PROGRAMS: Participate in those housing assistance programs that are most appropriate to Orinda's setting and demographics, with an emphasis on programs that benefit local seniors and those who live or work in Orinda.
CONSERVATION ELEMENT
4.1.1 GUIDING POLICY (F) Achieve aesthetically sensitive grading that conforms to the natural contours, ensures safety and preserves trees and other vegetation to the greatest practical extent.
4.1.1 GUIDING POLICY (G) Protect visually prominent ridgelines and hillsides from development.
4.1.2 IMPLEMENTING POLICY (H) Review development proposals to ensure site design and construction methods that minimize soil erosion and volume and velocity of surface runoff, and mitigate impacts on properties below. Soil erosion can result in siltation of creeks and eventual siltation in San Pablo Reservoir. Erosion can be controlled by limiting surface runoff, minimizing exposure of raw soil during storm season, early mulching and seeding of slopes, and temporary or permanent siltation ponds. Stream bank erosion can be prevented using upstream detention basins and siltation basins.
4.1.2 IMPLEMENTING POLICY (J) Encourage the conservation of energy through the promotion of solar design, and recycling of newspaper, aluminum and bottles. Provisions should be made to allow for a conveniently located and screened recycling area in the downtown.
SAFETY ELEMENT
4.2.1 GUIDING POLICY (A) Geologic and seismic hazards shall be mitigated or development shall be located away from geologic and seismic hazards in order to preserve life and protect property.
4.2.1 GUIDING POLICY (B) Encourage a high level of fire protection and fire prevention education.
4.2.1 GUIDING POLICY (C) Development shall be located away from flood-prone areas unless flood risks can be mitigated.
4.2.1 GUIDING POLICY (H) Minimize damage from grass fires through the development of firebreaks in dedicated open space and fire-access easements. Firebreaks and fire-access easements should be made a condition of project approval.
4.2.2 IMPLEMENTING POLICY (A) A geotechnical investigation and report, including assessments of seismic and landslide risks shall be required for new development in Orinda, including single-family residences unless exempted by the City of Orinda. Any other facility that could create a geologic hazard, such as a road on hillside terrain, must also have such an investigation.
4.2.2 IMPLEMENTING POLICY (F) Encourage a high level of fire protection to residential and commercial development.
4.2.2 IMPLEMENTING POLICY (G) Ordinances shall be developed requiring fire protection features, such as: fire-retardant roof material for new and replacement roofs, sprinklers for new construction, adequate provisions for emergency access, and other fire protection features.
4.2.2 IMPLEMENTING POLICY (H) Minimize damage from grass fires through the development of firebreaks in dedicated open space and fire-access easements. Firebreaks and fire-access easements should be made a condition of project approval.
4.2.2 IMPLEMENTING POLICY (K) Establish standards for public and private roads that ensure adequate access for fire protection equipment.

TABLE IV.F-1 GENERAL PLAN POLICIES

NOISE ELEMENT
4.3.1 GUIDING POLICY (A) Where practical, mitigate traffic noise to acceptable levels.
4.3.1 GUIDING POLICY (B) Prevent unnecessary noise from all sources.
4.3.2 IMPLEMENTING POLICY (A) Require an acoustical study and any necessary noise level mitigation where new residential or commercial development is proposed along Highway 24 corridor and adjacent to major arterials where projected noise contours are 60 L_{dn} or more.
4.3.2 IMPLEMENTING POLICY (B) Review all multi-family development proposals within the projected 60 L_{dn} contour for compliance with noise standards (45 L_{dn} in any habitable room) as required by State law.
4.3.2 IMPLEMENTING POLICY (C) Develop ordinance to limit noise created by temporary activities such as building construction to the shortest duration possible, and to daytime hours wherever possible. All reasonable noise mitigation measures would be used.
GROWTH MANAGEMENT ELEMENT
5.4.2 PERFORMANCE STANDARD (A) PARKS Dedication of parkland or payment of an in lieu parkland dedication fee equivalent to five acres of parkland per 1,000 residents for new residential development. This standard is referenced in Orinda's Park Dedication & In Lieu Fee Ordinance and General Plan Policy 2.2.1.E.
5.4.2 PERFORMANCE STANDARD (B) FIRE Respond to all structural fires with three engine companies.
5.4.2 PERFORMANCE STANDARD (C) POLICE Provide capital facilities sufficient to maintain an average two-beat minimum patrol configuration.
5.4.2 PERFORMANCE STANDARD (D) SANITARY SEWER Capacity to carry and treat 100 gallons per capita per day for residential uses and 1 ,500 gallons per acre per day for commercial uses. Sewer mains should be designed to be 2/3 full and trunk lines should be designed to be 100% full. All structures in which plumbing fixtures have been or are proposed to be installed shall be connected to a sanitary sewer all such plumbing fixtures and sanitary drainage systems or parts thereof shall be connected to the sanitary sewer. It is the determination of the health officer when/if any exceptions are granted. This standard is taken from the Environmental Health Division's regulations for installation of individual sewage disposal systems (Chapter 420-6 of the Ordinance Code of Contra Costa County).
5.4.2 PERFORMANCE STANDARD (E) WATER Provide a secure, reliable, high quality water supply to customers.
5.4.2 PERFORMANCE STANDARD (F) FLOOD CONTROL Enforce provisions of existing Ordinances regulating development in Floodplains (Ordinance 04-08) and provisions of existing Subdivision and Clean Water, Drainage and Related Riparian Habitat Regulations Ordinance for new development (Title 16 and 18 of the Municipal Code of Orinda).

3. Impacts and Mitigation Measures

The following section analyzes environmental impacts related to land use that could result from implementation of the project. The section begins with the criteria of significance, which establish the thresholds for determining whether an impact is

significant. The latter part of this section presents the land use impacts associated with the project and any necessary mitigation measures that might result.

a. Criteria of Significance

Implementation of the project would have a significant effect on land use if it would:

1. Physically divide an established community;
2. 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; or
3. Conflict with any applicable habitat conservation plan or natural community conservation plan.

b. Less than Significant Land Use Impacts

Less than significant land use impacts of the project are discussed below.

(1) Divide an Established Community (Criterion 1)

The physical division of an established community typically refers to the construction of a physical feature (such as an interstate highway or railroad tracks) or removal of a means of access (such as a local road or bridge) that would impair mobility within an existing community, or between a community and outlying areas.

The project would develop the currently vacant land with 38 assisted-living units in a one- to two-story, approximately 32,084-square-foot building. No new roadways would need to be constructed to accommodate the project. A new driveway would be constructed to provide access to the site from Wilder Road. No physical barriers would be developed on the project site that would impede access to and through the site, and no existing access would be permanently removed.

As previously described, existing land uses in the vicinity of the project site include recreation, residential, transportation (Caltrans), and open space. These surrounding uses are separated from the project site by roads. The project would introduce a new one- to two-story residential building, which would provide a buffer between the existing sports fields at Wilder Park and the highway. The project would not divide an established community.

(2) Habitat Conservation Plans (Criterion 2)

There are no Habitat Conservation Plans or Natural Area Community Plans encompassing the site or vicinity; therefore, no conflicts with these types of plans are anticipated.

(3) Conflict with an Applicable Zoning Ordinance of an Agency with Jurisdiction over the Project, Adopted for the Purpose of Avoiding or Mitigating an Environmental Effect (Criterion 3)

Conflicts with a general plan or zoning ordinance do not inherently result in a significant effect on the environment within the context of CEQA. As stated in Section 15358(b) of the CEQA Guidelines, "Effects analyzed under CEQA must be related to a physical change." Section 15125(d) of the CEQA Guidelines states that EIRs shall discuss any inconsistencies between the project and applicable general plans in the Setting section of the document (not under Impacts). Further, Appendix G of the CEQA Guidelines (Environmental Checklist Form) explicitly focuses on environmental policies and plans, asking if the project would "conflict with any applicable land use plan, policy, or regulation…adopted for the purpose of avoiding or mitigating an environmental effect". Even a response in the affirmative, however, does not necessarily indicate the project would have a significant effect, unless a physical change would occur. To the extent that physical impacts may result from such conflicts, such physical impacts are analyzed in the EIR under the respective resource topic sections.

The project would not conflict with any land use policies adopted for the purpose of avoiding or mitigating an environmental effect. As a result, no significant land use impacts related to the project's consistency with land use policies would occur.

c. Significant Land Use Impacts

There would be no significant impacts related to land use that would result from implementation of the project.

d. Cumulative Impacts

As described throughout this section, the project would not result in a significant land use impact by potentially physically dividing an established community; conflicting with adjacent or nearby land uses; or conflicting with applicable land use plans, policies, or regulations adopted for the purpose of avoiding or mitigating an environmental effect. The project would entail the construction of a new one- to two-story building on a previously undeveloped greenfield site. Therefore, the project would increase the intensity of development in the area, but this increase would respect the context of the site and its surroundings (a suburban subdivision) and would not be incompatible with the existing surrounding development pattern. The project would also further housing policies in the Orinda General Plan which aim to encourage the development of a variety of types and housing for all income levels and emphasize housing assistance programs that benefit local seniors (see Housing Element Goal 1 and Policy 1.4).[87] Thus, the project would not be combined with or add

[87] City of Orinda, 1987 (last amended 2013). General Plan. Housing Element.

to any potential adverse land use impacts that may be associated with other cumulative development, namely the Wilder subdivision.

G. NOISE AND VIBRATION

This section describes the noise and vibration setting at the project site; defines noise and vibration terminology; summarizes the relevant State and local regulatory policies and guidance for evaluating noise and vibration; and assesses the potential noise and vibration impacts of project implementation.

1. Setting

The following discussion provides background information on noise and vibration including terminology, a summary of the existing noise environment, and a summary of an acoustical study for the project prepared by the applicant's technical consultant.

a. General Information on Noise

Noise is commonly defined as unwanted sound that annoys or disturbs people and can have an adverse psychological or physiological effect on human health. The effects of noise on people can be grouped into three general categories: (1) subjective effects of annoyance, nuisance, and dissatisfaction; (2) interference with such activities as speech and sleeping; and (3) physiological effects, such as hearing loss.

Sound is measured in decibels (dB), which is a logarithmic scale. Decibels describe the purely physical intensity of sound based on changes in air pressure, but they cannot accurately describe sound as perceived by the human ear since the human ear is only capable of hearing sound within a limited frequency range. Therefore, the frequency of a sound must be taken into account when evaluating the potential human response to sound. For this reason, a frequency-dependent weighting system is used and monitoring results are reported in A-weighted decibels (dBA). Decibels and other technical terms are defined in Table IV.G-1.

In an unconfined space, such as outdoors, noise attenuates with distance according to the inverse square law. Noise levels at a known distance from point sources are reduced by 6 dBA for every doubling of that distance for hard surfaces, such as cement or asphalt surfaces, and 7.5 dBA for every doubling of distance for soft surfaces, such as undeveloped or vegetative surfaces.[88] Noise levels at a known distance from line sources (e.g., roads, highways, and railroads) theoretically decrease at a rate of 3 dBA for every doubling of the distance for hard surfaces and 4.5 dBA for every doubling of distance for soft surfaces.[89] Greater decreases in noise levels can result from the presence of intervening structures or buffers. Typical A-weighted noise levels at specific distances are shown for different noise sources in Table IV.G-2.

[88] California Department of Transportation (Caltrans), 1998. Technical Noise Supplement: A Technical Supplement to the Traffic Noise Analysis Protocol.

[89] California Department of Transportation (Caltrans), 1998. Technical Noise Supplement: A Technical Supplement to the Traffic Noise Analysis Protocol.

TABLE IV.G-1 DEFINITION OF ACOUSTICAL TERMS

Term	Definitions
Decibel (dB)	A unit describing the amplitude of sound on a logarithmic scale. Sound described in decibels is usually referred to as sound or noise "level." This unit is not used in this analysis because it includes frequencies that the human ear cannot detect.
Frequency (Hz)	The number of complete pressure fluctuations per second above and below atmospheric pressure. Normal human hearing is between 20 Hz and 20,000 Hz.
A-Weighted Sound Level (dBA)	Sound pressure level in decibels as measured on a sound level meter using the A-weighting filter network. The A-weighting filter de-emphasizes low and high frequency components of frequency components of sound in a manner similar to the frequency response of the human ear and correlates well with subjective response to sound. All sound levels in this report are A-weighted.
Equivalent Noise Level (L_{eq})	The average A-weighted sound level during the measurement period. For this CEQA evaluation, L_{eq} refers to a one-hour period unless otherwise stated.
L_{max}, L_{min}	The maximum and minimum A-weighted sound level during the measurement period.
Day/Night Noise Level (L_{dn})	The average A-weighted noise level during a 24-hour day, obtained after addition of 10 decibels to sound levels measured during the night between 10 p.m. and 7 a.m.
Community Noise Equivalent Level (CNEL)	The average A-weighted sound level during a 24-hour day, obtained after addition of 5 decibels to sound levels during the evening from 7 p.m. to 10 p.m. and after addition of 10 decibels to sound levels during the night between 10 p.m. and 7 a.m.
Ambient Noise Level	The composite of noise from all sources near and far. The normal or existing level of environmental noise at a given location.
Vibration Decibel (VdB)	A unit describing the amplitude of vibration on a logarithmic scale.
Peak Particle Velocity (PPV)	The maximum instantaneous peak of a vibration signal.
Root Mean Square (RMS) Velocity	The average of the squared amplitude of a vibration signal.

Sources:
Charles M. Salter Associates Inc., 1998. Acoustics – Architecture, Engineering, the Environment, William Stout Publishers.
Federal Transit Administration (FTA), 2006. Transit Noise and Vibration Impact Assessment (FTA-VA-90-1003-06).

TABLE IV.G-2 TYPICAL SOUND LEVELS MEASURED IN THE ENVIRONMENT AND INDUSTRY

Noise Source (Distance in Feet)	A-Weighted Sound Level in Decibels (dBA)	Subjective Impression
Civil Defense Siren (100)	130	Pain Threshold
Jet Takeoff (200)	120	
Rock Music Concert (50)	110	
Pile Driver (50)	100	Very Loud
Ambulance Siren (100)	90	
Diesel Locomotive (25)	85	Loud
Pneumatic Drill (50)	80	
Freeway (100)	70	Moderately Loud
Vacuum Cleaner (10)	60	
Light Traffic (100)	50	
Large Transformer (200)	40	Quiet
Soft Whisper (5)	30	Threshold of Hearing

Source: Charles M. Salter Associates Inc., 1998. Acoustics – Architecture, Engineering, the Environment, William Stout Publishers..

A typical method for determining a person's subjective reaction to a new noise is by comparing it to existing conditions. The following describes the general effects of noise on people:[90]

- A change of 1 dBA cannot typically be perceived except in carefully controlled laboratory experiments;
- A 3-dBA change is considered a just-perceivable difference;
- A minimum of 5-dBA change is required before any noticeable change in community response is expected; and
- A 10-dBA change is subjectively perceived as approximately a doubling or halving in loudness.

Since sound pressure levels are based on a logarithmic scale, they cannot be added or subtracted in the usual arithmetical way. For instance, if one noise source emits a

[90] Charles M. Salter Associates Inc., 1998. Acoustics – Architecture, Engineering, the Environment, William Stout Publishers.

sound level of 90 dBA, and a second source is placed beside the first and also emits a sound level of 90 dBA, the combined sound level is 93 dBA, not 180 dBA.

When the difference between two noise levels is 10 dBA or more, the amount to be added to the higher noise level is zero. In such cases, no adjustment factor is needed because adding in the contribution of the lower in the total noise level makes no perceptible difference in what people can hear or measure. For example if the noise level is 95 dBA and another noise source is added that produces 80 dBA noise, the combined noise level will be 95 dBA.

b. General Information on Vibration

Vibration is an oscillatory motion through a solid medium in which the motion's amplitude can be described in terms of displacement, velocity, or acceleration. Several different methods are used to quantify vibration. Typically, groundborne vibration generated by man-made activities attenuates rapidly with distance from the source of the vibration. Sensitive receptors to vibration include structures (especially older masonry structures), people (especially residents, the elderly, and sick), and vibration-sensitive equipment. Vibration amplitudes are usually expressed as either peak particle velocity (PPV) or the root mean square (RMS) velocity. The PPV is defined as the maximum instantaneous peak of the vibration signal. PPV is appropriate for evaluating potential damage to buildings, but it is not suitable for evaluating human response to vibration because it takes the human body time to respond to vibration signals. The response of the human body to vibration is dependent on the average amplitude of a vibration. The RMS of a signal is the average of the squared amplitude of the signal and is more appropriate for evaluating human response to vibration. PPV and RMS are normally described in units of inches per second (in/sec), and RMS is also often described in vibration decibels (VdB).

c. Local Noise Environment

The local noise environment, including sensitive receptors and existing noise conditions, is described below.

(1) Sensitive Receptors

Potential noise sensitive receptors are identified based on land uses where noise-sensitive people may be present or where noise-sensitive activities may occur. Areas with sensitive receptors may require special consideration to achieve protection from excessive noise. Noise-sensitive land uses include residences, schools, hospitals, and retirement homes. Noise-sensitive activities are those that occur in locations such as churches and libraries.

The areas adjacent to the project include State Route (SR) 24, undeveloped open spaces, and the Wilder subdivision. The Wilder subdivision project is currently under

construction and will include 254 single-family homes at build-out and community amenities in the areas east and southeast of the project site.

The nearest sensitive receptors to the project site are single-family residences that are part of the Wilder subdivision and are located over approximately 2,000 feet east and southeast of the project site. The Wilder Park sports fields are located approximately 250 feet east of the project site. The sports fields are considered a noise receptor, but not a "sensitive" receptor because noise generally does not interfere with the ability of people to play sports and sports activities themselves generate substantial noise (e.g., yelling and cheering).

(2) Current Noise Environment

The ambient noise environment in the city of Orinda is characterized as being that of a quiet semi-rural setting; however, traffic noise dominates the noise environment in areas located near SR 24 or near major arterial roadways.[91] The ambient noise environment in the vicinity of the project site was quantified in 2009 by Charles M. Salter Associates, Inc.[92] The results of the monitoring are presented in Table IV.G-3, below. Charles M. Salter Associates, Inc. collected continuous two-day noise measurements from December 3 to 4 in 2009 at two locations adjacent to the project site (LT1 and LT2 in Table IV.G-3). Additionally, continuous noise measurements were collected at one location at the northern boundary of the project site for 60 minutes (ST1 in Table IV.G-3). The existing ambient noise environment at the project site was found to be dominated by traffic on SR 24, which, at its closest, is located approximately 100 feet north of the project site. Based on the Caltrans traffic growth estimate of 1.1 percent per year, it was estimated that SR 24 traffic noise levels would increase by one dBA over a 20 year period.[93] Given the 9-year period elapsed since the noise measurements were collected, the ambient noise environment would have increased by less than 0.5 dBA since the completion of the acoustical study. Therefore, the 2009 noise measurements still effectively describe the ambient noise environment.

The Wilder subdivision had not been developed during the period that the noise study took place. Because the Wilder subdivision will contain only residential and recreational land uses, noise generated from this subdivision would be minor relative to SR 24. The primary noise generated from the Wilder subdivision in the vicinity of

[91] City of Orinda, 1987 (last amended 2013). General Plan, Chapter 4: Noise Element.
[92] Charles M. Salter Associates, Inc., 2009. Agemark at Wilder – Environmental Noise Study, Orinda, California. December 22.
[93] Charles M. Salter Associates, Inc., 2009. Agemark at Wilder – Environmental Noise Study, Orinda, California. December 22.

TABLE IV.G-3 NOISE MEASUREMENT DATA

Site	Location Description	Measured dBA L_{dn}
LT1	Approximately 350 feet south of the SR 24 centerline, just east of the beginning of the SR 24 eastbound onramp; 12-feet above grade.	65[1]
LT2	Approximately 160 feet south of the SR 24 centerline, at the approximate midpoint of SR 24 eastbound onramp; 12-feet above grade.	69[1]
ST1	Approximately 175 feet south of the SR 24 centerline, at the project north property line near the northeast corner of the project site; 8-feet above grade.	71

Note: 1 = The average L_{dn} from the two days of monitoring was reported because there was little variability in L_{dn} from day-to-day (i.e., less than one dBA).
Source: Charles M. Salter Associates, Inc., 2009. Agemark at Wilder – Environmental Noise Study, Orinda, California. December 22.

the project site would be traffic noise along Wilder Road[94], which leads to the Wilder subdivision. However, traffic noise at Wilder Road was predicted to be a minor source of noise relative to SR 24 even after the full buildout of the Wilder subdivision project; based on the Federal Highway Administration Highway Traffic Noise Prediction Model (FHWA RD-77-108) and traffic data from the Montanera Project Amendment 2nd Supplemental EIR, the noise level generated from both SR 24 and Wilder Road traffic at a distance of 50 feet from the Wilder Road centerline was predicted to be 64 dBA L_{dn}.[95]

It is estimated that the existing noise environment at the project site ranges between 64 and 71 dBA L_{dn}.

2. Regulatory Framework

This section provides a summary of the relevant guidance, plans, and policies for evaluating and regulating noise and vibration. Noise standards applicable to this project are promulgated by the State of California and by local community noise ordinances and general plans. The State of California provides guidance for the preparation of noise elements in general plans and noise insulation standards for buildings. The City of Orinda Municipal Code and City of Orinda General Plan contain the local regulations and policies pertaining to noise.

[94] This was referred to as Gateway Boulevard in Environmental Noise Study prepared by Charles M. Salter Associates, Inc. in 2009.

[95] Charles M. Salter Associates, Inc., 2009. Agemark at Wilder – Environmental Noise Study, Orinda, California. December 22.

a. State Regulations

(1) California Noise Control Act

Sections 46000 to 46080 of the California Health and Safety Code codify the California Noise Control Act of 1973. This act established the Office of Noise Control under the California Department of Health Services. The California Noise Control Act required that the Office of Noise Control adopt, in coordination with the Office of Planning and Research, guidelines for the preparation and content of noise elements for general plans. The most recent guidelines are contained in General Plan Guidelines, published by the California Office of Planning and Research in 2017. The document provides guidelines for cities and counties to use in their general plans to reduce conflicts between land use and noise. The guidelines provide suggested acceptable ranges for land use and noise compatibility. The guidelines for land use types located at and near the project site are summarized in Table IV.G-4, below.

TABLE IV.G-4 COMMUNITY NOISE EXPOSURE (L_{dn} OR CNEL, DB) LEVELS

Compatibility	Schools, Libraries, Churches, Hospitals, Nursing Homes	Residential – Low Density, Single-Family, Duplex, Mobile Homes	Playgrounds, Neighborhood Parks
Normally acceptable[a]	<70	<60	<70
Conditionally acceptable[b]	60-70	55-70	--
Normally unacceptable[c]	70-80	70-75	67-75
Clearly unacceptable[d]	>80	>75	>72

Note: "--" = no community noise exposure level specified.
[a] Specified land use is satisfactory, based upon the assumption that any building involved is of normal conventional construction, without any special noise insulation requirements.
[b] New construction or development should be undertaken only after a detailed analysis of the noise reduction requirements is made and needed noise insulation features included in the design. Conventional construction, but with closed windows and fresh air supply systems or air conditioning will normally suffice.
[c] New construction or development should generally be discouraged. If new construction or development does proceed, a detailed analysis of the noise reduction requirements must be made and needed noise insulation features included in the design.
[d] New construction or development should generally not be undertaken.
Source: Governor's Office of Planning and Research, 2017. State of California General Plan Guidelines.

(1) California Building Standards Code

The 2016 California Building Standards Code specifies that buildings containing non-residential uses (e.g., retail spaces and offices) that are exposed to exterior noise levels at or above 65 dBA L_{eq} or CNEL shall maintain an interior noise level below 50 dBA L_{eq} in occupied areas during any hour of operation.[96] An acoustical analysis documenting compliance with this interior sound level is required. The 2016

[96] California Code of Regulations, Title 24, Part 11, Section 5.507.

California Building Standards Code also specifies that interior noise levels attributable to exterior sources shall not exceed 45 dBA L_{dn} or CNEL in any habitable room.[97] The noise metric used (either L_{dn} or CNEL) shall be consistent with the noise element of the local general plan.[98]

b. City of Orinda Municipal Code

The purpose of the City of Orinda Noise Control Ordinance (Chapter 17.39 of the Municipal Code) is to preserve a semi-rural noise environment and protect the health and well-being of individuals by regulating excessive noise. Chapter 17.39.2 prohibits the generation of noise levels that exceed 60 dB[99], as measured at a listening point at any other property; construction activities that occur during allowable times specified in the Noise Ordinance are exempt from this standard.

The provisions of Chapter 17.39.3 of the Noise Control Ordinance, which specifically regulates construction activities, applicable to the project are summarized below:

- Construction activities are limited to between the hours of 8:00 a.m. and 6:00 p.m., Monday through Friday. On Saturdays, construction activities are limited to between the hours of 10:00 a.m. and 5:00 p.m. Construction activities are prohibited on Sundays (except for minor maintenance and improvement projects) and holidays.
- The applicant for a building permit or grading permit is required to post a sign describing the permitted hours of construction and permitted hours for use of heavy equipment in a conspicuous location near the property entrance legible from the edge of the roadway. The exact wording of the sign is to be prescribed by the Planning Department.

Exceptions to the limitations above may be granted only when the Zoning Administrator determines them to be reasonable and necessary.

Chapter 17.39.9 of the Noise Control Ordinance specifically regulates permanent mechanical equipment and requires that permanent mechanical equipment, with the exception of emergency back-up power generators, be screened or enclosed with sound-insulated materials so that noise levels at the property line do not exceed

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[97] Habitable space is a space in a building for living, sleeping, eating, or cooking. Bathrooms, toilet rooms, closets, halls, storage or utility spaces and similar areas are not considered habitable spaces.

[98] California Code of Regulations, Title 24, Part 2, Volume 1, Section1207.4.

[99] The noise ordinance specifies dB units, however dBA levels (not dB) are commonly used to evaluate the human response to noise because the A-weighting de-emphasizes low and high frequency components of sound in a manner similar to the frequency response of the human ear and correlates well with human response to sound. Because the purpose of noise levels standards is to limit noise that could disturb people and A-weighted decibels correlate well with human response to noise, all noise level standards are treated in this report as A-weighted.

45 dBA. It also requires that permanent mechanical equipment be installed closer to the structure on the property that it serves than to habitable structures on adjacent properties.

Chapter 17.15 of the Municipal Code establishes development standards for all zoning districts in the City of Orinda. The maximum noise standard for all districts, except Specific Plan and Planned Development districts, is 60 L_{dn}. The project site is located within a Public, Semi-Public, and Utility district. The development standards require the completion of an acoustical study for new multi-family residential or single-family residential projects involving four or more units, or for commercial development projects of at least 5,000 square feet, that would be located within 300 feet of SR 24 or adjacent to major arterials where noise contours are 60 dBA L_{dn} or more. Noise measurements collected to determine compliance with noise standards are required to meet the specifications outlined in Chapter 17.15.2(C)(3). The Zoning Administrator is authorized to require the incorporation of mitigation measures considered necessary to ensure that noise standards are not exceeded.

The Grading Ordinance (Chapter 15.36.1080 of the Municipal Code) requires that grading operations are controlled to prevent nuisances to public and private property as a result of noise and vibration.

c. City of Orinda General Plan

The current 1987 General Plan has the following guiding and implementing policies that may apply to the project (Table IV.G-5): [100]

TABLE IV.G-5 GENERAL PLAN POLICIES

ENVIRONMENTAL RESOURCES MANAGEMENT SECTION
NOISE ELEMENT
4.3.1 GUIDING POLICY (A) Where practical, mitigate traffic noise to acceptable levels.
4.3.1 GUIDING POLICY (B) Prevent unnecessary noise from all sources.
4.3.2 IMPLEMENTING POLICY (A) Require an acoustical study and any necessary noise level mitigation where new residential or commercial development is proposed along SR 24 corridor and adjacent to major arterials where projected noise contours are 60 L_{dn} or more.
4.3.2 IMPLEMENTING POLICY (B) Review all multi-family development proposals within the projected 60 L_{dn} contour for compliance with noise standards (45 L_{dn} in any habitable room) as required by State law.
4.3.2 IMPLEMENTING POLICY (C) Develop ordinance to limit noise created by temporary activities such as building construction to the shortest duration possible, and to daytime hours wherever possible. All reasonable noise mitigation measures would be used.

[100] City of Orinda, 1987 (last amended 2013). General Plan, Chapter 4: Noise Element.

3. Impacts and Mitigation Measures

This section discusses potential impacts on the noise environment that could result from implementation of the project. The section begins with the criteria of significance, which establish the thresholds used to determine whether an impact is significant. The latter part of this section presents the impacts associated with the project and recommends mitigation measures to reduce significant impacts, if needed.

a. Criteria of Significance

The significance criteria used for analyzing and determining the project's level of impact on the noise environment and the scope of the analysis are described in this section. The potential impacts assessed include temporary noise and vibration generated during construction and noise generated during the operational phase of the project and the effects that this new noise would have on existing receptors.

Based on Appendix G of the CEQA Guidelines, implementation of the project would have a potentially significant impact if it would:

1. Expose persons to or generate noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies;
2. Expose persons to or generate excessive groundborne vibration or groundborne noise levels;
3. Result in a substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project and in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies;
4. Result in a substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project and in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies;
5. For a project located within an airport land use plan or, where such a plan has not been adopted, within 2 miles of a public airport or public use airport, expose people residing or working in the project area to excessive noise levels; or
6. For a project within the vicinity of a private airstrip, expose people residing or working in the project area to excessive noise levels.

The first significance criteria listed above refers to quantitative standards established in the local general plan and/or noise ordinance, or in the applicable standards of other agencies. The subsequent significance criteria state that a project would result in a significant noise or vibration impact if it would cause a substantial temporary or

permanent increase in noise levels or if it would expose people to excessive noise or vibration. The criteria, however, do not define what constitutes a substantial change or excessive exposure level. In this analysis, a noise or vibration impact was considered excessive or substantial if it would:

- Expose existing noise sensitive land uses to a permanent increase of 5 dBA L_{dn} or more; or to a permanent increase of 3 dBA Ldn or more, if ambient noise levels at the receiving land use exceed City of Orinda standards.
- Generate a temporary increase of 10 dBA (which is perceived as a doubling loudness) or more at an existing noise-sensitive receptor.
- Expose people or buildings to vibration levels that exceed the Federal Transit Administration's recommended vibration thresholds to prevent disturbance to people and damage to structures.[101]

b. Less-than-Significant Noise and Vibration Impacts

Implementation of the project would result in the less-than-significant impacts described below. Since these impacts would not exceed the significance thresholds described above, no mitigation measures are necessary for these less-than-significant impacts.

(1) Permanent Increase in Ambient Noise Levels (Criteria 1 and 3)

The proposed long-term use of this project site would be as an assisted living and memory care residential facility. Based on this land use, the primary noise generation from the long-term operation of the project would occur as a result of the use of mechanical heating, ventilation, and air conditioning (HVAC) systems and from increased vehicular traffic on area roads.

Noise generated from HVAC systems installed as part of the project would be required not to exceed 45 dBA at the property line, in accordance with Chapter 17.39.9 of the Municipal Code. Compliance with this code would ensure that HVAC systems would not cause an increase in the ambient noise environment. The existing ambient noise environment at the project site ranges between 64 and 71 dBA L_{dn}. The difference between the ambient noise environment and the noise generated by HVAC systems would be 19 dBA or greater, and, as discussed above, when the difference between two noise levels is 10 dBA or more, the contribution of the lower noise level makes no perceptible difference in what people can hear or measure.

Implementation of the project would also result in increased traffic volumes on Wilder Road, which is located between the entrance to the project site and the SR 24 on- and off-ramps (see Section IV.I, Transportation and Circulation, for a detailed analysis).

[101] Federal Transit Administration (FTA), 2006. Transit Noise and Vibration Impact Assessment (FTA-VA-90-1003-06).

The a.m. and p.m. peak hour traffic volumes represent the highest project-generated traffic volumes and thus represent a worst-case scenario. The evaluation of a.m. and p.m. peak hour traffic volumes at two intersections near the project site indicates that the highest project-generated traffic volumes would occur along Wilder Road south of the project entrance and along Wilder Road south of the SR 24 on- and off-ramps, with an increase of 10 vehicles per hour during the PM peak hour. Therefore, the project alone would generate traffic noise levels of approximately 42.0 dBA L_{eq}.[102] The existing ambient noise environment at the project site range between 64 and 71 dBA L_{dn}, which corresponds to 62-73 dBA L_{eq}.[103] For the purpose of this analysis, ambient noise environment is conservatively estimated to be 62 dBA L_{eq}. The difference between the ambient noise environment and the noise generated by project would be 20 dBA., As discussed above, when the difference between two noise levels is 10 dBA or more, the contribution of the lower noise level makes no perceptible difference in what people can hear or measure. Therefore, the implementation of the project would not result in a significant increase in traffic noise along local area roadways.

Under the cumulative condition, which considers traffic generated by past, present, and probable future projects, including the project, the assessment of a.m. and p.m. peak hour traffic volumes at two intersections near the project site indicates that the highest traffic volume increase would occur along Wilder Road south of the project entrance and along Wilder Road south of the SR 24 on- and off-ramps. The highest traffic volume increase would be 65 vehicles per hour during the p.m. peak hour. This would generate traffic noise levels of approximately 50.1 dBA L_{eq}.[104] This is more than 10 dBA lower than the ambient noise environment of 62 dBA L_{eq}, and therefore, would not result in a perceptible increase. Consequently, the cumulative traffic noise increase along local area roadways is less than significant.

(2) Groundborne Noise and Vibration during Construction and Project Operation (Criterion 2)

Construction activities can result in varying degrees of ground vibration, depending on the equipment, activity, and relative proximity to sensitive receptors. The vibration levels for construction equipment that could be used at the project site are summarized in Table IV.G-6. Although the table provides one vibration level for each piece of equipment, it should be noted that there is considerable variation in reported ground vibration levels from construction activities, primarily due to variation in soil characteristics.

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[102] Federal Highway Administration (FHWA) TNM Version 2.5 model was used for this result.

[103] L_{dn} is within plus or minus 2 dBA of the L_{eq}.

[104] FHWA TNM Version 2.5 model was used for this result.

TABLE IV.G-6 VIBRATION SOURCE LEVELS FOR CONSTRUCTION EQUIPMENT

Equipment	PPV at 25 Feet (in/sec)	RMS at 25 Feet (VdB)[a]	RMS at 250 Feet (VdB)[a,b]
Large bulldozer	0.089	87	57
Loaded trucks	0.076	86	56
Jackhammer	0.035	79	49
Small bulldozer	0.003	58	28

[a] RMS vibration velocity level in VdB relative to 10^{-6} in/sec
[b] Based on vibration levels at 25 feet, the following propagation adjustment was applied to estimate RMS vibration levels at 250 feet assuming:
RMS2 = RMS1 – 30 x Log 10 x (D2/D1)
Where:
RMS1 is the reference vibration level at a specified distance.
RMS2 is the calculated vibration level.
D1 is the reference distance (in this case 25 feet).
D2 is the distance from the equipment to the receiver.
Source: Federal Transit Administration (FTA), 2006. Transit Noise and Vibration Impact Assessment (FTA-VA-90-1003-06).

Tables IV.G-7 and IV.G-8 summarize the vibration criteria to prevent disturbance of residents and to prevent damage to structures.

TABLE IV.G-7 VIBRATION CRITERIA TO PREVENT DISTURBANCE – RMS (VDB)

Land Use Category	Frequent Events[a]	Occasional Events[b]	Infrequent Events[c]
Residences and Buildings Where People Normally Sleep	72	75	80
Institutional Land Uses with Primarily Daytime Use	75	78	83

[a] More than 70 vibration events of the same kind per day or vibration generated by a long freight train.
[b] Between 30 and 70 vibration events of the same kind per day.
[c] Fewer than 30 vibration events of the same kind per day.
Source: Federal Transit Administration (FTA), 2006. Transit Noise and Vibration Impact Assessment (FTA-VA-90-1003-06).

TABLE VI.G-8 VIBRATION CRITERIA TO PREVENT DAMAGE TO STRUCTURES

Building Category	PPV (in/sec)	RMS (VdB)
Reinforced-Concrete, Steel, or Timber (No Plaster)	0.5	102
Engineered Concrete and Masonry (No Plaster)	0.3	98
Non-Engineered Timber and Masonry Buildings	0.2	94
Buildings Extremely Susceptible to Vibration Damage	0.12	90

Source: Federal Transit Administration (FTA), 2006. Transit Noise and Vibration Impact Assessment (FTA-VA-90-1003-06).

The nearest receptor is a building associated with the Wilder Park sports fields located approximately 250 feet east of the project site. At this distance, vibration generated from operation of construction equipment in close proximity to the building would not exceed the 75 VdB threshold of daytime use disturbance or the 0.3 PPV in/sec threshold to prevent damage to engineered concrete or masonry structures. In addition, the long-term operation of the project would not involve the use of any equipment or processes that would generate excessive vibration. Therefore, the potential of the construction and operational phases of the project to expose people to excessive vibration would be less than significant.

(3) Noise Generated During Construction (Criterion 4)

The primary noise impacts from construction would occur from noise generated by the operation of heavy equipment on the project site. Noise impacts would also result from trucks arriving to and departing from the site, which would be an intermittent source of noise. Construction activities associated with the project would potentially include grading, installation of utilities, erection of the building, and landscaping. Equipment typically used in these activities includes bulldozers, excavators, graders, backhoes, compactors, rollers, concrete trucks, loaders, and heavy-duty trucks. Table IV.G-9 shows typical noise levels associated with various types of construction-related machinery.

TABLE IV.G-9 TYPICAL NOISE LEVELS FROM CONSTRUCTION EQUIPMENT (DBA)

Equipment	Noise Level at 50 Feet
Backhoe	80
Compactor	82
Concrete Mixer	85
Dozer	85
Generator	81
Grader	85
Jack Hammer	88
Paver	89
Roller	74
Saw	76
Scraper	89
Truck	88

Source: Federal Transit Administration (FTA), 2006. Transit Noise and Vibration Impact Assessment (FTA-VA-90-1003-06).

Construction is performed in distinct phases, each with its own mix of equipment, workers, and activities. Consequently, each phase of construction has its own noise characteristics. Table IV.G-10 shows typical exterior noise levels at various phases of commercial construction.

TABLE IV.G-10 ESTIMATED NOISE LEVELS FROM CONSTRUCTION ACTIVITIES (DBA)

Noise Source	Noise Level at 50 Feet	Noise Level at 250 Feet	Noise Level at 2,000 Feet
Ground Clearing	83	66	43
Excavation	88	71	48
Foundations	81	64	41
Erection	81	64	41
Finishing	88	71	48

Note: The following propagation adjustment was applied to estimate noise levels at 250 and 2,000 feet assuming:
$dBA2 = dBA1 + 10 \times Log_{10}(D1/D2)^{2.5}$
Where:
dBA1 reference noise level at a specified distance.
dBA2 is the calculated noise level.
D1 is the reference distance.
D2 is the perpendicular distance from receiver.
Source of noise levels at 50 feet: United States Environmental Protection Agency (EPA), Legal Compilation on Noise, Vol.1, page2-104, 1973.

The nearest sensitive receptors to the project site are single-family residences at the Wilder subdivision that are located approximately 2,000 feet east of the project site. Based on the properties of noise attenuation from line sources and based on the 71 dBA daytime noise level measured at a distance of approximately 175 feet from the centerline of SR 24,[105] SR 24 generated noise levels at the residences nearest to the project site are approximately 55 dBA[106] during the daytime hours to which construction activities are restricted. The sum of the highway noise and the 48 dBA maximum construction noise (Table IV.G-7) would be approximately 56 dBA. Therefore construction activities would increase noise levels at the residences by approximately 1 dBA, which is well below the 10 dBA significance threshold for

[105] Charles M. Salter Associates, Inc., 2009. Agemark at Wilder – Environmental Noise Study, Orinda, California. December 22.

[106] The following propagation adjustment was applied to estimate noise levels at 2000 feet assuming:
$dBA2 = dBA1 + 10 \times Log_{10}(D1/D2)^{1.5}$
Where:
dBA1 reference noise level at a specified distance.
dBA2 is the calculated noise level.
D1 is the reference distance.
D2 is the perpendicular distance from receiver.

temporary noise. As a result, the potential impact of temporary noise generated by construction would be less than significant.

(4) Aircraft Noise (Criteria 5 and 6)

The project site is not located within an airport land use plan or within 10 miles of a public or private airport. Therefore, the project would have no impact related to the exposure of people to excess noise levels from private airstrips.

c. Significant Noise and Vibration Impacts

There would be no significant impacts related to noise and vibration that would result from implementation of the project.

d. Cumulative Impacts

Please see subsection IV.G.3.b.(1), *Permanent Increase in Ambient Noise Levels*, for a discussion of the cumulative ambient noise increases associated with traffic.

Cumulative noise and vibration impacts from construction could occur if sources of construction noise are located in close proximity to each other, as noise and vibration dissipate with increased distance from the source. The project construction would not overlap with any other construction noise sources. At the time of preparation of this analysis, the only reasonably foreseeable project in the vicinity of the project is the Wilder subdivision project, which is partially built out but remains under construction. The construction activity associated with the Wilder subdivision project that is in closest proximity to the project site is just west of the intersection of Wilder Road and Bigleaf Road/Paintbrush Lane, over 0.3 mile east of the project. Due to this distance, this project does not have the potential to contribute to a cumulative noise and vibration impact. Therefore, there would be no potential cumulative noise and vibration impact generated from construction of the project in combination with construction of the cumulative projects in the vicinity of the project site.

H. PUBLIC SERVICES, UTILITIES, AND RECREATION

This section describes the project's potential impacts to public services, utilities and recreation, including: fire and emergency services, police services, water supply, wastewater, solid waste, telecommunications, and energy. Potential impacts to public services, utilities and recreation that could result from the project are identified, and mitigation measures are recommended, as appropriate. The related topic of storm drainage is evaluated in Section IV.D, *Hydrology and Water Quality*.

1. Setting

This section describes the existing public services and utilities that would service the project site and their current capacity, as well as parks and recreation opportunities in the vicinity of the project.

a. Fire Protection

The Moraga-Orinda Fire District (MOFD) provides fire protection, rescue, and emergency medical services for the City of Orinda (City), Town of Moraga, community of Canyon, as well as other adjacent unincorporated areas. The MOFD participates in joint dispatching with other fire agencies in Contra Costa County in which the closest uncommitted unit responds to emergency calls, regardless of jurisdiction. The MOFD also has an Automatic Aid agreement with surrounding areas, including Contra Costa County, Lafayette, and Walnut Creek. Department staffing, facilities, equipment, and response times are described below.

Moraga-Orinda Fire Station

(1) Staffing

The MOFD has a current authorized staff of 64 full-time employees, 6 part-time employees, and 30 volunteers.[107] The MOFD staff is comprised of safety personnel, non-safety personnel, and volunteers. As of November 2018, MOFD safety personnel consisted of 24 firefighters, 15 engineers, 15 captains, 1 fire marshal, 1 fire chief, and

[107] Moraga-Orinda Fire District (MOFD), 2018. http://www.mofd.org/about. Accessed December 28, 2018.

3 battalion chiefs. Each shift has a minimum of 5 firefighters, 5 engineers, 18 paramedics (when fully staffed), and 1 battalion chief.[108]

(2) Facilities and Equipment

MOFD operates five fire stations within the district, three of which are located in the city of Orinda. The City's performance standard for fire response is to respond to all structural fires with three engine companies.[109] MOFD Fire Station 45 is the closest fire station to the project site, located at 33 Orinda Way in Orinda. Station 45 staffing includes 1 captain, 1 firefighter, and 1 engineer. In-service equipment housed at Station 45 includes 1 Type 1 fire engine, 1 Advanced Life Support (ALS) ambulance, 1 Type 3 fire engine, and 1 battalion chief vehicle. There is no reserve equipment at Station 45.[110] There are currently no planned improvements at this fire station, and there are no plans for the construction of new fire stations in the area.[111]

Station 44 at 295 Orchard Road in Orinda is the second closest station to the project site. Station 44 has 1 captain, 1 engineer, and 1 firefighter. This station is equipped with 1 truck and 1 water tender.[112]

(3) Response Times

MOFD's response time goal for fire emergencies within city limits is 5 minutes 45 seconds and the actual average response time is 8 minutes 45 seconds. The average response time to the project site under current conditions is 6 minutes.

MOFD's current Insurance Service Office rating is Class 3 for Orinda and Moraga, and 9 for the rural areas of Bollinger Canyon and Canyon[113] (1 being the highest and 10 being the lowest). This rating considers a community's fire defense capacity verses fire potential and then uses the score to set property insurance premiums for homeowners and commercial property owners.

The project site is located within a very high fire hazard severity zone, as designated by CAL Fire. Structures built within this zone must comply with requirements of California Building Code Chapter 7A.

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[108] Svozil, William, Plans Examiner, Moraga-Orinda Fire District, 2018. Personal communication with Urban Planning Partners, November 28.

[109] City of Orinda, 1987 (last amended 2013). City of Orinda General Plan. Chapter 5: Growth Management, p. 5-6.

[110] Moraga-Orinda Fire District (MOFD), 2018. http://www.mofd.org/contact. Accessed December 8, 2018.

[111] Svozil, William, Plans Examiner, Moraga-Orinda Fire District, 2018. Personal communication with Urban Planning Partners, November 28.

[112] Moraga-Orinda Fire District (MOFD), 2018. http://www.mofd.org/contact. Accessed December 8, 2018.

[113] Moraga-Orinda Fire District (MOFD), 2018. http://www.mofd.org/divisions/operations. Accessed July 28.

b. Ambulatory Service

Ambulatory service is provided by MOFD. MOFD has four ambulances available to respond to medical emergencies. When a medical emergency is reported, the closest engine company is dispatched in conjunction with one of the ambulances. MOFD's response time goal for ALS care is within 6 minutes, 90 percent of the time.[114] In addition, MOFD utilizes the services of private air ambulances (helicopters) to transport severely injured or burned patient to the appropriate hospital.

c. Police Services

The Orinda Police Department provides services to the City of Orinda through a contract with the Contra Costa County Sheriff's Department. The Police Department is located at 22 Orinda Way, near downtown Orinda. The Police Department has an authorized staff of 15 sworn and 2 non-sworn personnel, volunteers, 1cadet, 1 chaplain, and 2 full time support personnel. The current police officer to resident ratio is approximately 0.74 sworn officers per 1,000 residents. The City's performance standard for police is to provide capital facilities sufficient to maintain an average two-beat minimum patrol configuration.[115] The Police Department is currently meeting this goal. The average response time to the project site is 6.5 minutes for non-emergency and 1 minute or less for emergency calls. There are no significant law enforcement issues in the area. Patrols at the project site area are consistent with other areas within the city.[116]

d. Parks and Recreation

The City of Orinda currently has four parks, five sports fields, and an extensive network of walking and bicycle trails and open space. There are currently approximately 143.5 acres of parks and open space land in Orinda, including 33.5 acres of improved park space and 110 acres of open space at Orinda Oaks Park in southeast

Orinda Community Center

[114] Moraga-Orinda Fire District (MOFD), 2018. http://www.mofd.org/divisions/operations. Accessed July 28.

[115] City of Orinda, 1987 (last amended 2013). City of Orinda General Plan., Chapter 5: Growth Management, page 5-6.

[116] Nagel, Mark, Police Chief, Orinda Police Department. 2018. Written communication with Urban Planning Partners, June 27.

Orinda.[117] The project site is adjacent to the five sports fields at Wilder Park as well as a 4.5-acre Art and Garden Center in the Wilder development.[118] The Siesta Valley Recreation Area, home to the California Shakespeare Theater, is located outside of the Orinda city limits on East Bay Municipal Water District (EBMUD) land on the opposite side of State Route 24 (SR 24) from the project site.

Several recreational and community facilities are located in Orinda. The Orinda Community Center, Library Meeting Rooms, and Auditorium are located in downtown Orinda on Orinda Way. The Wagner Ranch Gym, at the Wagner Ranch Elementary School, operates under a joint use agreement with the Orinda Union School District. A community building is located at Wilder Park.[119]

Section 66477 of the Government Code (the Quimby Act) authorizes jurisdictions to establish ordinances requiring residential subdivision developers to dedicate parkland or pay in-lieu fees for park and recreation purposes. Orinda requires payment of a fee in lieu of land dedication, or a combination of both.[120] The recommended standard is 5 acres of parkland per 1,000 residents.[121] Per General Plan Policy 2.2.1-E, the City of Orinda uses the 5 acres per 1,000 residents standard as a threshold to measure how well its citizens are provided with park and recreational facilities access. With an estimated 2017 population of 19,730,[122] 98.65 acres of parkland are required to meet the General Plan Policy. The city currently exceeds this requirement by providing approximately 143.5 acres of parkland, or 7.3 acres per 1,000 residents.

e. Schools

School services in Orinda are provided by the Orinda Union School District and the Acalanes Union High School District. Since the project would be a congregate care facility for seniors, the project would not increase the District's school population. Additionally, any indirect increase in demand on schools resulting from project-related job creation is not anticipated to be significant and would not be sufficient to trigger the need for new facilities. Therefore, this EIR does not include a detailed discussion of school facilities and capacity.

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[117] Trimble, Todd, Director of Parks and Recreation, City of Orinda. 2018. Written communication with Urban Planning Partners, June 22.

[118] Trimble, Todd, Director of Parks and Recreation, City of Orinda. 2018. Written communication with Urban Planning Partners, June 22.

[119] Trimble, Todd, Director of Parks and Recreation, City of Orinda. 2018. Personal communication with Urban Planning Partners, June 22.

[120] City of Orinda, 2013. Orinda Municipal Code, Title 3, Chapter 3.28. December 17.

[121] City of Orinda, 1987 (last amended 2013). General Plan, Chapter 2: Land Use and Circulation, page 20.

[122] United States Census Bureau, 2017. QuickFacts, Orinda city, California. https://www.census.gov/quickfacts/fact/table/orindacitycalifornia/PST045217. Accessed June 27, 2018.

f. Libraries

The Orinda Public Library, located at 26 Orinda Way, serves Orinda residents during weekday and weekend hours. The Orinda Public Library includes a collection of over 70,000 books, recorded books, music, and DVDs. Public computers, an art gallery, community meeting rooms, a tutoring room, and a café are also available at the Orinda Public Library.

g. Water Services

EBMUD manages the distribution, operation, and maintenance of Orinda's water supply system. The city's sources of water, water treatment facilities, and water distribution system are described below.

(1) Water Sources

Potable water is provided to properties within Orinda by EBMUD. EBMUD supplies water to approximately 1.41 million people in Alameda and Contra Costa counties. The District's 321 square-mile service area encompasses East Bay cities from the San Pablo Bay and San Francisco Bay to San Lorenzo and the San Ramon Valley in the south, to Walnut Creek in the east, and Crockett in the north. EBMUD customers include a broad cross-section of residential, offices, commercial businesses, industrial businesses, and public facilities, such as parks and schools.

Approximately 90 percent of the water used by EBMUD comes from the Mokelumne River watershed in the Sierra Nevada and 10 percent comes from runoff from the protected watershed lands in the East Bay area. EBMUD has water rights that generally allow for delivery of up to a maximum of 325 million gallons per day (mgd) from the Mokelumne River.[123] Average daily water demand within the entire EBMUD service area was 232 mgd in 2015 and is projected to reach 267 mgd in 2020.[124]

Both supply and demand vary seasonally and become critical during drought periods which can last several years. For planning purposes and looking to the year 2040, EBMUD's current water supply is sufficient to meet customer needs during normal years and single dry years, but insufficient to meet demand during multi-year droughts. EBMUD is pursuing a range of strategies to reduce demand and increase supply, including through public outreach, leak fixes, water storage, infrastructure improvements and water conservation measures.[125]

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[123] East Bay Municipal Utility District (EBMUD), 2015a. Urban Water Management Plan.

[124] The planning level of demand differs from actual 2015 demand, as the planning level does not reflect the effects of implementing measures to reduce water use. After a drought, a rebound effect is expected wherein demand rises back to projected levels, thus, the projected demand reflects the total planning level demand.

[125] East Bay Municipal Utility District (EBMUD), 2015a. Urban Water Management Plan.

As of the 2010 U.S. Census, the City of Orinda was approximately 92 percent built-out with a number of major development projects in the various stages of planning.[126] By 2040, the population served by EBMUD is expected to be 1.72 million. Table IV.H-1 shows the projected population anticipated in five (5) year increments until the year 2040, as included in the 2015 Urban Water Management Plan.

[126] City of Orinda, 1987 (last amended 2013). General Plan, Chapter 3: Housing Element, pages 3-26.

TABLE IV.H-1 EBMUD SERVICE AREA POPULATION PROJECTIONS

	2020	2025	2030	2035	2040
Service Area Population	1,450,000	1,51,000	1,580,000	1,650,000	1,720,000

Source: EBMUD, 2015. Urban Water Management Plan.

The water supply system consists of a network of reservoirs, aqueducts, water treatment plants, pumping plants, and distribution facilities. The Pardee Dam and Reservoir, located approximately 38 miles northeast of Stockton, are supplied from the Mokelumne River. Approximately 10 miles downstream from the Pardee Dam is the Camanche Dam and Reservoir. The Pardee and Camanche reservoirs, in addition to various downstream obligations, direct water to EBMUD's water treatment plants and reservoirs through the Pardee Tunnel, Mokelumne Aqueducts, and Lafayette Aqueducts.[127]

EBMUD's system storage facilities, in tandem with its regulatory program implementation tools, generally allow EBMUD to continue serving its customers during dry-year events. EBMUD also has regulatory authority and can, for example, require rationing based on the projected storage at the end of September each year. By using regulatory tools such as rationing and incentivized water rates in the first dry year of potential drought, EBMUD attempts to minimize rationing in subsequent years if a drought persists while continuing to meet customer demand, environmental mandates (e.g., current and subsequent-year fishery flow release requirements), and obligations to downstream agencies. EBMUD's primary regulatory tools are set forth in its Water Service Regulations (Section 28) and, for example, provide for special restrictions on water use during a water shortage emergency.[128]

In response to Governor's Executive Order B-29-15, issued on April 1, 2015, EBMUD implemented mandatory water restrictions on all customers within its service area, with the goal of reducing water demand by 20 percent. EBMUD's Policy 3.07 ensures that priority for new water service connections during restrictive periods is given to proposed developments within EBMUD's service area that include housing units affordable to lower income households in accordance with California Government Code 65589.7. The policy also states that EBMUD will not deny an application for services to a proposed development that includes affordable housing unless certain conditions are met (e.g., water shortage emergency conditions are in effect).[129] On

[127] East Bay Municipal Utility District (EBMUD), 2015a. Urban Water Management Plan. Accessed June 27, 2018.

[128] East Bay Municipal Utility District (EBMUD), 2015b. Section 28: Water Use During Water Shortage Emergency Condition. Accessed June 27, 2018. http://www.ebmud.com/sites/default/files/pdfs/water_use_during_water_shortage_emergency_condition.pdf

[129] East Bay Municipal Utility District (EBMUD), 2015a. Urban Water Management Plan. July.

May 10, 2016 EBMUD declared an end to the drought emergency in its service area, and eased the drought level to Stage 0, indicating normal water supplies. On April 7, 2017, the drought emergency was lifted in all counties except Fresno, Kings, Tulare and Tuolumne, with the signing of Governor's Executive Order B-40-17. The Water Board will maintain urban water use reporting requirements and prohibitions on wasteful practices.

The demand for water in EBMUD's service area is projected to increase to 230 mgd by the year 2040. This projection assumes that the existing and future EBMUD water conservation program would achieve water savings of 62 mgd by the year 2040. EBMUD's 2015 Urban Water Management Plan (UWMP) was adopted on June 28, 2016 by the EBMUD Board of Directors to meet year 2040 district-wide demand.[130] The UWMP sets minimum performance goals for water supply in the service area including reliability, flexibility, and the minimization of water rationing. Key components of the UWMP are water conservation and water recycling. The UWMP concludes that EBMUD has sufficient water supplies to meet projected 2040 demands during normal rainfall and single-drought years. Notwithstanding water conservation and recycling programs, EBMUD's current supply is insufficient to accommodate projected 2040 water demand during multi-year droughts. EBMUD's state-mandated Urban Water Shortage Contingency Plan sets a framework for meeting water demand during drought years. The Contingency Plan includes an ongoing effort to seek supplemental water supplies, water rationing measures, measures to increase system water supply efficiency, and emergency services agreements with neighboring water districts.

An existing EBMUD Baseline Pressure Zone would serve the project; however, installation of a main extension to the project site would be required to provide water service. The project sponsor would need to work with EBMUD's New Business Office to establish connection.

(2) Water Treatment, Distribution and Storage Facilities

EBMUD has been recycling water at its main wastewater treatment facility since the early 1970s.[131] Recycled water is suitable for land uses that do not require potable water sources, such as golf course and other outdoor irrigation, some agricultural activities, and some industrial processing. Incentives used by EBMUD to encourage customers to utilize recycled water include rate discounts on recycled water, and low-interest loans used to retrofit buildings so that they can accommodate recycled water.

There are six water treatment plants in the EBMUD water supply and distribution system. Combined, the six plants have a treatment capacity of over 375 mgd. The Orinda Water Treatment Plant, which treats raw water and supplies potable water to

[130] East Bay Municipal Utility District (EBMUD), 2015a. Urban Water Management Plan. July.
[131] East Bay Municipal Utility District (EBMUD), 2015a. Urban Water Management Plan. July.

Orinda and the project site, has a maximum treatment capacity of 200 mgd.[132] The Orinda Plant has the largest output of the six plants and also serves Alameda, Albany, Berkeley, El Cerrito, Emeryville, Moraga, Oakland, Piedmont, Richmond, and San Leandro.

h. Wastewater (Sanitary Sewer) System

The City of Orinda is located within the service area of the Central Contra Costa Sanitary District (CCCSD). The CCCSD, formed as a Special District in 1946, is responsible for collection, treatment, and disposal of wastewater in a 146 square mile area of Central Contra Costa County. The project site is outside of CCCSD's current Sphere of Influence (SOI) and service boundaries and would require annexation to connect to the CCCSD sanitary sewer system. Annexation of the project site into the CCCSD SOI would require approval of the CCCSD Board of Directors and the Contra Costa County Local Agency Formation Commission (LAFCO). The existing collection system and wastewater treatment facilities serving the city and the project area are described below.

(1) Collection System

The CCCSD operates and maintains approximately 1,500 miles of sanitary sewer lines, 19 pumping stations, and associated force mains to ensure that the wastewater generated each day by Central Contra Costa County homes and businesses is pumped to CCCSD's waste water treatment plant.[133] Infrastructure in the vicinity of the project site consists of an 8-inch public main sewer line located in Wilder Road and a City-owned and CCCSD operated pump station just outside of the project site. Wastewater from the Wilder Road main is transported by gravity to CCCSD's sewer system.

CCCSD has identified system capacity deficiencies in various areas between the project site and the Wastewater Treatment Plant Capacity in its Capital Improvement Plan. The needed capital improvements are funded by in part by development fees.[134]

(2) Wastewater Treatment Facilities

Wastewater treatment is provided by the CCCSD Wastewater Treatment Plant, located near the junction of Interstate 680 and Highway 4. Treated wastewater is discharged into the Suisun Bay. The maximum daily dry weather wastewater flow capacity is

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[132] East Bay Municipal Utility District (EBMUD), 2018. Water Treatment. http://www.ebmud.com/water-and-drought/about-your-water/water-quality/water-treatment/. Accessed June 25, 2018.

[133] Central Contra Costa Sanitary District (CCCSD), 2017. Comprehensive Wastewater Master Plan. https://www.centralsan.org/sites/main/files/file-attachments/cwmp_technical_executive_summary.pdf. Accessed June 27, 2018.

[134] Leavitt, Russell, Engineering Assistant III, Central Contra Costa Sanitary District. 2018. Personal communication with Urban Planning Partners, July 6.

54 mgd.[135] In wet weather events, excess flows are typically diverted to up to three wet weather holding basins for temporary storage; the stored flow is returned to the treatment plant after the storm recedes.

Starting in 2008, the District experienced an unprecedented long-term reduction in dry weather flows that lasted through 2015. This reduction was caused by the recession, a persistent drought, and water conservation measures. In 2016, the flows rebounded slightly (from 29 mgd to 32 mgd) but not yet to the pre-drought flows of around 35 mgd.

i. Storm Drainage System

There are existing storm drain inlets adjacent to Wilder Road that serve the project site and surrounding area. Storm drain inlets tie into the City-owned storm drainage infrastructure and convey stormwater underground along SR 24 toward downtown Orinda until discharging into San Pablo Creek just north of SR 24.

j. Solid Waste

The following subsection describes Orinda's non-hazardous and hazardous waste disposal services and capacity, as well as the City's solid waste regulatory context, including source reduction and recycling.

(1) Non-Hazardous and Recyclable Solid Waste

The Contra Costa Environmental Health Division (CCEHD) is certified by the California Integrated Waste Management Board as the Local Enforcement Agency for solid waste in Contra Costa County. The goal of the Local Enforcement Agency is to protect the public health and safety of the citizens of Contra Costa County and the environment through the enforcement of minimum standards for the collection, handling, storage, and disposal of residential, commercial, and industrial solid waste for the protection of air, water, and land from pollution and nuisance. The Local Enforcement Agency is responsible for ensuring that all solid waste disposal facilities and medical waste generators comply with applicable local, State, and federal codes and regulations.

The Central Contra Costa Solid Waste Authority (CCCSWA) is a joint powers agency created by the cities of Lafayette, Orinda, Walnut Creek, and the towns of Danville and Moraga. CCCSWA provides residential and commercial solid waste and recycling services to the project area. The CCCSWA contracts under franchise agreements with Allied Waste Services for hauling and disposal of residential and commercial solid waste, and with Valley Waste Management for collection of residential recycling, green

[135] Central Contra Costa Sanitary District (CCCSD), 2017. Comprehensive Wastewater Master Plan. https://www.centralsan.org/sites/main/files/file-attachments/cwmp_technical_executive_summary.pdf. Accessed June 27, 2018.

waste, and food scraps. Solid waste from Orinda is sent to the Acme Landfill in Martinez or to Keller Canyon Landfill in Pittsburg.[136]

The Acme Landfill facility has a maximum permitted capacity of 6,195,000 cubic yards, with approximately 506,590 cubic yards of remaining capacity as of 2012. The landfill has a permitted throughput of 1,500 tons per day[137] and is anticipated to have sufficient capacity until 2021, its expected closure date.[138]

The Keller Canyon Landfill facility has a total estimated capacity of 75 million cubic yards. As of 2004, Keller Canyon Landfill's total estimated used capacity was approximately 11.6 million cubic yards, or 15 percent of the landfill's total capacity. The landfill has a permitted throughput of 3,500 tons per day and is anticipated to have sufficient capacity until 2030, its expected closure date as of 2004.[139]

In 2012, the Central Contra Costa Solid Waste Authority disposed of approximately 103,545 tons of solid waste at various disposal facilities. Between 1995 and 2006, Orinda increased its solid waste diversion from landfills from a rate of 25 percent to a rate of 45 percent through recycling and/or composting efforts.[140]

(2) Medical Waste

A "congregate care" facility is defined in Health and Safety Code Section 1502(1)(1) and Section 1597.43 as "providing 24-hour non-medical care of persons in need of personal services, supervision, or assistance essential for sustaining the activities of daily living or for the protection of the individual." Although the facility would not provide full medical care, some disposal of some medical waste such as sharps (i.e., needles and syringes) may be required.

The Contra Costa County Environmental Health Division administers and enforces provisions of the Health and Safety Code, including the California Medical Waste Management Act, for the county. The facility would be required to register with the CCEHD, obtain a medical waste generator health permit, and meet the requirements of the Medical Waste Management Act. Sharps would be disposed of in a sharps

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[136] CalRecycle, 2018a. Solid Waste Information System Facility/Site Listing. www.calrecycle.ca.gov/SWFacilities/Directory/search.aspx. Accessed June 25, 2018.

[137] Permitted throughput is the maximum permitted amount of waste a landfill can handle and dispose of in one day. This figure is established in the current solid waste facilities permit issued by CalRecycle.

[138] CalRecycle, 2018a. Solid Waste Information System Facility/Site Listing. www.calrecycle.ca.gov/SWFacilities/Directory/search.aspx. Accessed June 25, 2018.

[139] CalRecycle, 2018a. Solid Waste Information System Facility/Site Listing. www.calrecycle.ca.gov/SWFacilities/Directory/search.aspx. Accessed June 25, 2018.

[140] CalRecycle, 2018b. Jurisdiction Review Reports. http://www.calrecycle.ca.gov/lgcentral/Reports/Jurisdiction/DiversionDisposal.aspx. Accessed June 25, 2018.

container and picked up regularly by a State licensed hauler. CCEHD would inspect the facility every 1 to 3 years, depending on the amount of waste generated.

2. Regulatory Framework

The following describes the state and local regulatory setting as it relates to public services, utilities and infrastructure, and recreation.

a. State

The following State regulations apply to solid waste disposal, water supply and conservation, energy conservation, and medical waste management, and are applicable to the project.

(1) State Mandate Assembly Bill 939

The California Integrated Waste Management Act of 1989 (Assembly Bill [AB] 939) required cities and counties to adopt an Integrated Waste Management Plan to establish objectives, policies, and programs relative to waste disposal, management, source reduction, and recycling. AB 939 mandates that each jurisdiction adopt a Source Reduction and Recycling Element to specify how the community will meet the 50 percent waste diversion goal by the year 2000. Each jurisdiction is also required to take measures to reduce solid waste generation and to provide for the safe disposal of special and hazardous wastes. Certain special and hazardous wastes are included within the purview of the Source Reduction and Recycling Element, but communities are also required to adopt a separate Household Hazardous Waste Element to address hazardous wastes generated by households.

(2) California Code of Regulations, Title 23: California Model Water Efficient Landscape Ordinance

Title 23, California's Model Water Efficient Landscape Ordinance, requires new construction and rehabilitated landscape project applicants to submit a Landscape Documentation Package to the local agency or designate agency, such as EBMUD, for approval. The Landscape Documentation Package includes project and water supply information, and a Water Efficient Landscape Worksheet.[141]

(3) California Code of Regulations, Title 24: California Building Standards Code

Title 24, California's Energy Efficiency Standards for Residential and Non-Residential Buildings, requires construction of new buildings and additions to adhere to energy efficiency standards. These standards include targets for energy efficiency, water consumption, dual plumbing systems for potable and recyclable water, diversion of

[141] California Code of Regulations (CCR), Title 23, Section 490–495.

construction waste from landfills, and the use of environmentally sensitive materials in construction and design.

The City of Orinda follows the most current State building codes, residential codes, and green building codes.

(4) California Medical Waste Management Act, Health and Safety Code, Sections 117600-118360

This section contains requirements for the proper handling and disposal of medical waste. Within the regulatory framework of the act, the Contra Costa Environmental Health Division regulates all aspects of medical waste, including the initial generation of waste, proper handling, and disposal of medical waste.

b. City of Orinda

The City of Orinda regulations related to public services, utilities and service systems, and recreation that are applicable to the project are discussed below.

(1) City of Orinda General Plan

The Open Space, Parks, Schools, and Utility Element, Safety Element, and Growth Management Element of the City of Orinda's General Plan identify and establish policies relating to public services, utilities, and recreation. The current 1987 General Plan has the following applicable guiding and implementing policies, and performance measures (Table IV.H-2): [142]

(1) CCCSWA Ordinance (Orinda Municipal Code Section 8.28.010).

The City of Orinda has adopted by reference in its entirety CCCSWA's ordinance regulating solid waste, green waste and recyclable material collection, processing, disposal and litter (Ordinance No. 97-01 of the CCCSWA). This ordinance seeks to implement the mandate of the California Integrated Waste Management Act and preserve available landfill space for the longest term possible for reducing the amount of disposed waste.

(2) City of Orinda Ordinance 17-06

As part of the building permit application, certain categories of construction projects including newly constructed buildings must divert at least 65 percent of the debris generated to a recycling or reuse facility approved by the Contra Costa County RecycleSmart program and listed on the Green Halo Systems website.

[142] City of Orinda, 1987 (last amended 2013). General Plan.

TABLE IV.H-2 GENERAL PLAN POLICIES

OPEN SPACE, PARKS, SCHOOLS AND UTILITIES ELEMENT
2.2.1 GUIDING POLICY (E) Retain existing private and public recreational open space, and acquire additional land for public park development to meet the needs of all sectors of Orinda and all age groups in the community. A minimum of five acres of land for each 1, 000 city residents should be devoted to public park and recreational purposes but more may be needed.
SAFETY ELEMENT
4.2.1 GUIDING POLICY (H) Minimize damage from grass fires through the development of firebreaks in dedicated open space and fire-access easements. Firebreaks and fire-access easements should be made a condition of project approval.
4.2.2 IMPLEMENTING POLICY (K) Establish standards for public and private roads that ensure adequate access for fire protection equipment.
GROWTH MANAGEMENT ELEMENT
5.4.2 PERFORMANCE STANDARD (A) PARKS Dedication of parkland or payment of an in lieu parkland dedication fee equivalent to five acres of parkland per 1,000 residents for new residential development. This standard is referenced in Orinda's Park Dedication & In Lieu Fee Ordinance and General Plan Policy 2.2.1.E.
5.4.2 PERFORMANCE STANDARD (B) FIRE Respond to all structural fires with three engine companies.
5.4.2 PERFORMANCE STANDARD (C) POLICE Provide capital facilities sufficient to maintain an average two-beat minimum patrol configuration.
5.4.2 PERFORMANCE STANDARD (D) SANITARY SEWER Capacity to carry and treat 100 gallons per capita per day for residential uses and 1 ,500 gallons per acre per day for commercial uses. Sewer mains should be designed to be 2/3 full and trunk lines should be designed to be 100% full. All structures in which plumbing fixtures have been or are proposed to be installed shall be connected to a sanitary sewer all such plumbing fixtures and sanitary drainage systems or parts thereof shall be connected to the sanitary sewer. It is the determination of the health officer when/if any exceptions are granted. This standard is taken from the Environmental Health Division's regulations for installation of individual sewage disposal systems (Chapter 420-6 of the Ordinance Code of Contra Costa County).
5.4.2 PERFORMANCE STANDARD (E) WATER Provide a secure, reliable, high quality water supply to customers.
5.4.2 PERFORMANCE STANDARD (F) FLOOD CONTROL Enforce provisions of existing Ordinances regulating development in Floodplains (Ordinance 04-08) and provisions of existing Subdivision and Clean Water, Drainage and Related Riparian Habitat Regulations Ordinance for new development (Title 16 and 18 of the Municipal Code of Orinda).

3. Impacts and Mitigation Measures

This section discusses public service, utility, and recreation impacts that could result from implementation of the project. The section begins with the significance criteria, which establish the thresholds used to determine whether an impact is significant. The latter part of this section presents the impacts associated with the project and identifies mitigation measures, if appropriate.

a. Significance Criteria

The project would have a significant impact on the environment related to public services, utilities, and recreation if it would:

1. Result in substantial adverse physical impacts associated with the provision of, or need for, new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times, or other performance objectives for any of the following public services:
   - Fire protection and/or emergency response;
   - Police protection;
   - Schools;
   - Parks; or
   - Other public facilities.
2. Increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated.
3. Create a shortage of park facilities for new residents because total park acreage does not meet the Government Code Standards of 5 acres per 1,000 residents per General Plan Guiding Policy 2.2.1-E.
4. Include recreational facilities or require the construction or expansion of recreational facilities that might have an adverse physical effect on the environment.
5. Exceed wastewater treatment requirements of the San Francisco Bay San Regional Water Quality Control Board.
6. Result in a determination by the wastewater treatment provider which serves or may serve the project that it has inadequate capacity to serve the project's projected demand in addition to the provider's existing commitments.
7. Require or result in construction of new water or wastewater facilities, or expansion of existing facilities, the construction of which could cause significant environmental effects.
8. Require or result in construction of new storm water drainage facilities, or expansion of existing facilities, the construction of which could cause significant environmental effects.
9. Cause there to be insufficient water supplies available to serve the project from existing entitlements and resources, or require new or expanded entitlements.
10. Require service by a landfill with insufficient permitted capacity to accommodate the project's solid waste disposal needs.
11. Violate federal, State, and local statutes and regulations related to solid waste.

b. Less than Significant Public Services, Utilities, and Recreation Impacts

Implementation of the project would result in the less-than-significant impacts described below. Since these impacts would not exceed the significance thresholds described above, no mitigation measures are necessary for these less-than-significant impacts.

(1) Fire Protection (Criterion 1)

The project would be required to meet all MOFD and California Fire Code requirements for sprinkler systems, alarms, fire flow, access, and fire hydrant spacing. Because the project site is located within a very high hazard severity zone, it must comply with building requirements set forth in California Building Code Chapter 7A (see Chapter VI, *Effects Found Not to be Significant*, for more information). MOFD has a list of disallowed vegetation which cannot be planted on the project site[143] and also has requirements for exterior hazard control for vegetation management, including specific requirements for parcels within the very high hazard severity zone.[144]

The MOFD response time will increase and service capability will be reduced due to the implementation of the project. The primary response route for emergency calls to the project site is SR 24, which is subject to traffic congestion that could impede the attainment of response goals. However, the construction of new or expanded fire facilities would not be required. The project would be subject to review by the Fire Department to ensure that appropriate measures are implemented to reduce hazardous conditions at the site and provide for adequate emergency access. Compliance with MOFD's requirements would further ensure that potential impacts to fire services would be less than significant.

(2) Police Services (Criterion 1)

The project would add about 38 residents in assisted-living units. The addition of housing to the project site would result in an increase in calls for service as the project site is currently undeveloped. In addition, residential complexes typically utilize police services well into evening and nighttime hours, after businesses typically close. Police services typically required for senior care facilities include locating memory care residents who wander off the property and may not be able to find their way home. To facilitate efficient police service in this potential event, the Orinda Police Department has requested that photos and brief descriptions of each resident be kept on file. [145]

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[143] Moraga-Orinda Fire District (MOFD), 2018. Prohibited Plant List. http://www.mofd.org/docs/ordinances. Accessed July 6, 2018.

[144] Moraga-Orinda Fire District (MOFD), 2014b. Exterior Hazard Control Standards for Vegetation Management within the Fire District. Accessed on July 6, 2018. http://www.mofd.org/docs/ordinances

[145] Nagel, Mark, Police Chief, Orinda Police Department. 2018. Written communication with Urban Planning Partners, June 27.

As described above, the current police officer to resident ratio is approximately 0.74 sworn officers per 1,000 residents. The Police Department is currently meeting the City's performance standard of an average of a two-beat minimum patrol configuration. The addition of project residents would not require any additional police staff.[146] The number of residents that the project would add is within the anticipated range for Orinda's population growth.

No new police facilities would need to be constructed, and therefore, the project would not result in any physical impacts related to the need for new or alteration of existing police facilities. The amount of traffic and the demand for parking would increase at the project site, but would not interfere with the existing operations and response times of the police station. As such, development of the project would result in a less-than-significant impact to police services within the city.

(3) Parks and Recreation (Criteria 1-4)

As previously described, the City of Orinda has a policy of providing 5 acres of parkland per 1,000 residents as a threshold to measure how well its citizens are provided with park and recreational facilities access. With a 2017 population of 19,730, the city currently exceeds this requirement by providing a total of approximately 143.5 acres of parkland, or 7.3 acres per 1,000 residents. The project would add approximately 38 residents to the project site, generating demand for approximately 0.28 acres of parkland. The existing parkland in the city is adequate to accommodate the additional demand generated by the project.

The project would be subject to dedication of land for park and recreational purposes or payment of park fees for each residential unit of the project, pursuant to Municipal Code Title 3, Chapter 3.28. Dedication of land or payment of per unit fee would satisfy City requirements resulting in a less-than-significant impact related to the provision of parks and recreational services.

(4) Schools (Criterion 1)

The project would be a congregate care facility and all residential units within the project would be occupied by seniors. Therefore, no increase in the school district's population is anticipated. Any indirect increase in demand on schools resulting from project-related job creation is anticipated to be negligible. The project would not result in the need for new or physically altered schools; therefore, this impact is less than significant.

[146] Nagel, Mark, Police Chief, Orinda Police Department. 2018. Written communication with Urban Planning Partners, June 27.

(5) Libraries (Criterion 1)

The project would incrementally impact the population of Orinda by adding 38 senior studio units. This incremental increase in population would have a less-than-significant impact on library facilities and services.

(6) Wastewater Treatment (Criteria 5-7)

As described above, annexation of the project site into the CCCSD SOI would be required to be approved by the CCCSD Board of Directors and the Contra Costa County LAFCO prior to issuance of building permits. LAFCO is an independent, regulatory agency with discretion to approve, wholly, partially or conditionally, or disapprove, changes of organization or reorganizations. In accordance with the Cortese-Knox-Hertzberg Local Government Reorganization Act of 2000, LAFCO is required to consider a variety of factors when evaluating a proposal, including, but not limited to the proposal's potential impacts on agricultural land and open space, provision of municipal services and infrastructure to the project site, timely and available supply of water, and fair share of regional housing.

The CCCSD Wastewater Treatment Plant's maximum daily dry weather capacity is 54 mgd and the average daily dry weather flow in 2016 was 32 mgd (approximately 59 percent of capacity). Wastewater from the project would flow by gravity into CCCSD's sewer system. As noted in CCCSD's comment letter on the NOP (see Appendix A), CCCSD completed a limited analysis for the sewer system downstream of the project and determined that the existing main sewer would be adequate for the additional wastewater generated by the project.

Independently of the project, CCCSD facilities located farther downstream have inadequate capacity under CCCSD's current design criteria for ultimate conditions (i.e., long-term regional buildout). [147] To maintain its system and ensure that the system carries adequate capacity into future years, CCCSD has developed a ten-year Capital Improvement Plan (CIP) for the District's capital facilities and financing needs, which is updated every year and funded by various fees and charges levied throughout the District boundaries. Specifically, the CIP identifies and prioritizes capital projects needed to accomplish CCCSD's mission, as well as their estimated costs.

These improvements would occur regardless of development of the project, and are not a part of this project. The project sponsor would be required to pay any applicable development fees and charges noted in the CCCSD's CIP at the time of connection to the sewer system. For the above reasons, the project would result in a less-than-

[147] Leavitt, Russell, Engineering Assistant III, Central Contra Costa Sanitary District. 2018. Personal communication with Urban Planning Partners, July 6.

significant impact on wastewater treatment and disposal, and no new wastewater facilities would be required to serve the project.

(7) Stormwater Drainage Systems (Criterion 8)

As described in Section IV.D, *Hydrology and Water Quality,* subsection 3.b.(3), the project would not exceed the capacity of existing stormwater drainage systems, and therefore would not result in or require the construction of new stormwater drainage facilities. This is a less-than-significant impact.

(8) Water Supplies (Criteria 7 and 9)

As described in subsection IV.H.1.g, EBMUD's current water supply is sufficient to accommodate projected 2040 water demand during normal years and single-year droughts, but insufficient to meet demand during multi-year droughts.[148] EBMUD imposes a system capacity charge on new developments to fund system maintenance and the development of new water sources. Consistent with EBMUD's Water Service Regulations for all new or expanded service, the project sponsor shall include all the applicable water-efficiency measures described in the regulation, such as the installation of low-flow toilets, as a condition of being furnished water service.[149]

Furthermore, the project applicant is required to comply with the California Model Water Efficient Landscape Ordinance. Compliance with the California Model Water Efficient Landscape Ordinance includes submittal and approval of a Landscape Documentation Package, approval of plan check or design review, submittal of the Water Efficient Landscape Worksheet to EBMUD, and submittal of a Certificate of Completion to the City of Orinda, EBMUD, and property owner or designee for review. The Certificate of Completion must ultimately be approved by the City of Orinda.[150]

The implementation of measures required by the State's Water Efficient Landscape Ordinance and Section 31 of EBMUD's Water Service Regulations would ensure the project minimizes water use to the extent required by applicable standards. The project will not require new water supply entitlements or resources, nor will it require an expansion of existing water treatment facilities. Therefore, the project's impacts pertaining to water supplies would be less than significant.

(9) Solid Waste (Criteria 10 and 11)

The project would be served by landfills with the capacity to handle solid wastes generated by the operation and construction phases of the project. As required by AB 939, the California Integrated Waste Management Act, a minimum of 50 percent of

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[148] East Bay Municipal Utility District (EBMUD), 2015a. Urban Water Management Plan.

[149] East Bay Municipal Utility District (EBMUD), 2014. Section 31, Water Efficiency Requirements. https://www.ebmud.com/sites/default/files/pdfs/Section%2031%20 Water%20Efficiency%20Requirements%20070113_0.pdf. Accessed May 30.

[150] California Code of Regulations (CCR), Title 23, Section 490–495.

the City's waste must be recycled. Per California Green Buildings Standards Code (CalGreen) 2016 Building Code and City of Orinda Ordinance 17-06, as part of the building permit application, all newly constructed buildings must divert at least 65 percent of the debris generated to a recycling or reuse facility approved by the Contra Costa County RecycleSmart program and listed on the Green Halo Systems website.

The City of Orinda mandates by ordinance that every use comply with the regulations and standards of the CCCSWA (Orinda Municipal Code Section 8.28.010). The CCCSWA's ordinance regulates solid waste, green waste and recyclable material collection, processing, disposal and litter (Ordinance No. 97-01 of the CCCSWA). Valley Waste Management currently provides recycling services to the project site. These services contribute to a reduction in solid waste generated by proposed development. The design and location of on-site recycling bins serving new development would be subject to City review and approval prior to issuance of building permits.

If operations of the facility would include generation of medical waste (including sharps), the facility would be required to register with the CCEHD, obtain a medical waste generator health permit, and meet the requirements to the Medical Waste Management Act.

Construction and operation of the project would cause an incremental increase in solid waste typical of small- to medium-sized residential projects, but not to an extent that would exceed the capacity at the Acme or Keller Canyon landfills. Compliance with the 65 percent construction waste diversion listed on the City of Orinda building permit and CCSWA's Ordinance would further reduce the solid waste generated by the construction and operation of the project. Therefore, development of the project would have a less-than-significant impact on landfill capacity.

c. Significant Public Services, Utilities and Recreation Impacts

The project would not result in significant impacts related to public services, utilities, or recreation.

d. Cumulative Impacts

The project would have less-than-significant impacts on police services, parks and recreation, schools, libraries, wastewater treatment, drainage systems, and solid waste.

The only cumulative project in the vicinity, the Wilder subdivision, conforms to the housing development anticipated under the 2015-2023 Housing Element Update. The Draft EIR for the Housing Element Update evaluated the impact of all the expected growth under the element and found less-than-significant cumulative impacts on the city's fire and police services. The fire marshal and police chief have also stated that

the addition of the project would not cause the need for new or expanded facilities. In addition, throughout the course of the development review process, the police and fire departments would review plans and other physical features which will provide enhanced life safety standards, such as exterior lighting levels, fire hydrant locations, and other facilities. Therefore, the project would not result in cumulative impacts on fire protection or police services.

With regard to parks, the project—as well as any other development project in Orinda—would be subject to dedication of land for park and recreational purposes or payment of park fees for each residential unit of the project, ensuring that cumulative impacts would be less than significant. As noted in this subsection, the project would not entail any increase in demand for schools.

The project would be required to pay all applicable fees and charges of the CCCSD and EBMUD, thereby ensuring its contribution to cumulative wastewater collection and treatment and water facilities would be less than cumulatively significant.

For the above reasons, implementation of the project together with the impact of planned and future development would not result in cumulatively considerable contributions to any significant public service, utility, or recreation impacts.

I. TRANSPORTATION AND CIRCULATION

This section describes potential transportation and circulation impacts that may result from the proposed CountryHouse Memory Care Project. The project would be a 38-unit assisted living project for seniors. All access to the site would be from Wilder Road just to the southeast of its interchange with State Route (SR) 24. The following transportation analysis for the project fulfils the requirements for a Traffic Impact Analysis and finds that no significant impacts would result from the project and no off-site transportation mitigations would be required.

1. Setting

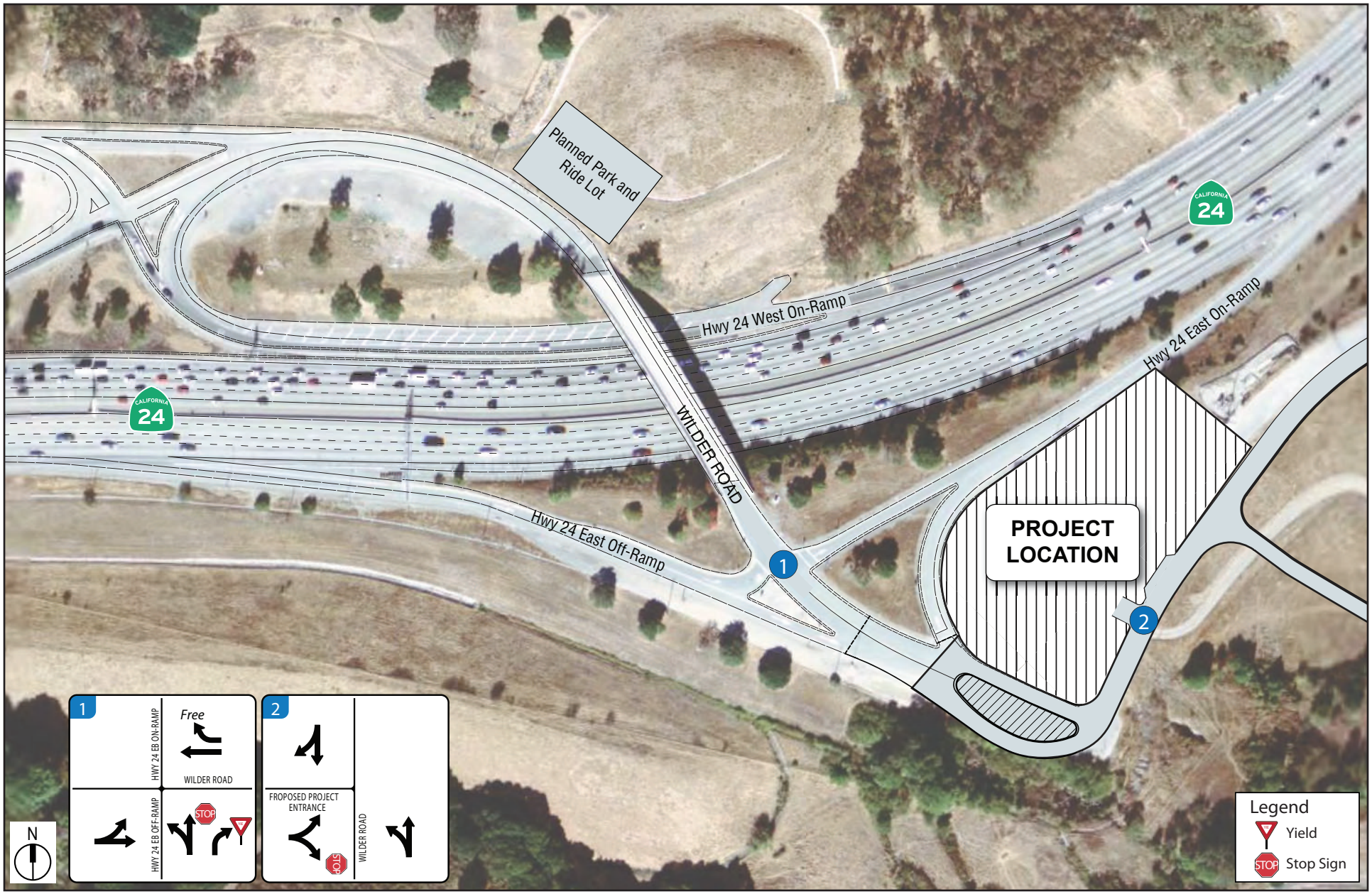
The setting for the transportation and circulation issues and the scope of the analysis documented in this section are described below. This section also presents the analysis methodologies and a discussion of the existing conditions and future background conditions.

The City of Orinda (City) generally requires that a traffic study be performed for all projects that generate 50 or more peak hour trips at a single intersection. This project would generate a maximum of about 10 peak hour vehicle trips during the PM peak hour, with about 10 trips per hour through the nearest intersection at Wilder Road and the SR 24 eastbound ramps. No other intersections in the area would experience an increase of more than 10 peak hour trips. Based on the project trip generation, this intersection and the project entrance are the only intersections where detailed Level of Service (LOS) calculations are required for this project.

a. Scope of Study

This study has been conducted in accordance with the requirements and methodologies set forth by the City of Orinda, the Contra Costa Transportation Authority (CCTA), the California Department of Transportation (Caltrans), and the applicable provisions of CEQA. Intersections, rather than midblock roadway segments, are typically the critical capacity-controlling locations for vehicular travel on urban roadway networks and are the primary basis for determining traffic impacts. The two study intersections analyzed in detail are: 1) Wilder Road and the project driveway; and 2) Wilder Road and SR 24 eastbound ramps (see Figure IV.I-1). Based on the project trip generation, the project would not generate enough traffic to warrant analysis of additional intersections.

The basis of analysis is peak hour level of service calculations for key intersections in the area. The hours identified as the “peak” hours are generally from about 7:30 a.m. and 8:30 a.m. and 5:00 p.m. and 6:00 p.m. for the transportation facilities described. These peak hours are identified as the AM and PM peak hours, respectively. The analysis also includes a review of bicycle and pedestrian safety conditions in the area.



CountryHouse Memory Care Project EIR

Source: Abrams Associates, 2018.

Figure IV.I-1
Study Intersections, Lane Configurations, and Traffic Controls

The potential effect of the project on the study intersections was evaluated during the AM and PM peak hours for the following six scenarios:

- **Scenario 1: Existing Conditions** – Level of service based on existing peak hour volumes and existing intersection configurations.
- **Scenario 2: Existing Conditions Plus Project** – Existing conditions peak-hour volumes plus trips from the project.
- **Scenario 3: Short-Term (Year 2020) Conditions** – Existing traffic plus anticipated traffic from approved developments that would substantially affect the volumes at the project study intersections.
- **Scenario 4: Short-Term Conditions (Year 2020) Plus Project** – Short-term conditions peak-hour volumes plus trips from the project.
- **Scenario 5: Cumulative Conditions (Year 2040) Without the Project** – Existing traffic plus anticipated traffic from projected growth in the area based on the County Traffic Model.
- **Scenario 6: Cumulative Conditions (Year 2040) Plus Project** – Cumulative no project conditions peak-hour volumes plus trips from the proposed mixed use development.

b. Methodology

The methods used to evaluate the traffic conditions are described in the following sections. This discussion includes descriptions of the data requirements, analysis methodologies, and applicable level of service standards.

(1) Data Requirements

For this study data on the intersection lane configurations, turning movement volumes, pedestrian and bicycle facilities, and public transit routes were collected.

(2) Analysis Methodologies and Level of Service Standards

Existing operational conditions at the study intersections have been evaluated according to the requirements set forth by the CCTA using the methodology set forth in the Final Technical Procedures Update (dated January 16, 2013). Analysis of traffic operations was conducted using the 2010 Highway Capacity Manual LOS methodology with Synchro software[151] (see Appendix A for Synchro outputs). The level of service scale describes traffic flow with six ratings ranging from A to F, with "A" indicating relatively free flow of traffic and "F" indicating stop-and-go traffic characterized by traffic jams.

[151] Transportation Research Board, 2011. 2010 Highway Capacity Manual, Washington D.C.

As the amount of traffic moving through a given intersection or roadway segment increases, the traffic flow conditions that motorists experience rapidly deteriorate as the capacity of the intersection or roadway segment is reached. Under such conditions, there is general instability in the traffic flow, which means that relatively small incidents can cause fluctuations in speeds and delays that lead to traffic congestion. This near-capacity situation is labeled LOS E. Beyond LOS E, the intersection or roadway segment capacity has been exceeded, and arriving traffic will exceed the ability of the intersection to accommodate it.

(3) Signalized Intersections

For unsignalized (all-way stop controlled and two-way stop controlled) intersections, the average control delay and LOS operating conditions are calculated by approach (e.g., northbound) and movement (e.g., northbound left-turn) for those movements that are subject to delay. In general, the operating conditions for unsignalized intersections are presented for the worst approach. Table IV.I-1 summarizes the relationship between level of service designation and average delay at unsignalized intersections.

TABLE IV.I-1 UNSIGNALIZED INTERSECTION LEVEL OF SERVICE DEFINITIONS

Level of Service	Description of Operations	Average Delay (sec/veh)
A	No delay for stop-controlled approaches.	0 to 10
B	Operations with minor delays.	> 10 to 15
C	Operations with moderate delays.	> 15 to 25
D	Operations with some delays.	> 25 to 35
E	Operations with high delays and long queues.	> 35 to 50
F	Operation with extreme congestion, with very high delays and long queues unacceptable to most drivers.	> 50

Source: Transportation Research Board, 2011. 2010 Highway Capacity Manual.

c. Existing Transportation Conditions

The proposed CountryHouse Memory Care project would be located southeast of the Wilder Road interchange with SR 24. The following section generally describes the transportation system in the area, which consists of a network of regional roadways, local roadways, transit services, and pedestrian and bicycle facilities.

(1) Existing Roadway Network

Regional access to the project site is provided by SR 24 while local access is provided by Wilder Road. A brief description of these roadways is described below:

- ***State Route 24*** is an east-west freeway that runs along the north boundary of the project site, connecting Interstate 680 in Walnut Creek with Interstate 980 and Interstate 580 in Oakland via the Caldecott Tunnel. The freeway is an eight-lane, divided facility with Bay Area Rapid Transit (BART) tracks running along the median, including BART station platforms in downtown Orinda and Lafayette. SR 24 is a CCTA designated Route of Regional Significance. Routes of Regional Significance are major roadway and freeway corridors that serve regional traffic. These are identified in Action Plans adopted by the CCTA under the countywide Measure C program.
- ***Wilder Road*** is the main access to the approved Wilder subdivision and the Wilder Park sports fields. It is a two-lane road with a 25 miles per hour speed limit.

(2) Existing Pedestrian Facilities

Pedestrian facilities are crosswalks, sidewalks, and pedestrian signals. Currently there are no existing pedestrian facilities in the vicinity of the project.

(3) Existing Bicycle Facilities

There are no existing bicycle lanes or other bicycle facilities in the vicinity of the project.

(4) Existing Transit Service

Two major public mass transit operators provide service within or adjacent to the study area. These include BART and the County Connection. These operators are described below.

- *Bay Area Rapid Transit* – BART is a rapid mass transit system that provides regional transportation connections to much of the Bay Area. In the north-south direction it runs from Richmond and Antioch to Fremont. In the east-west direction it runs from Orinda to the San Francisco Airport and Milbrae with several connections in Orinda. BART trains run from 4:00 a.m. to 12:00 a.m. daily, with a weekday frequency of about 15 minutes.
- *County Connection Transit* – The County Connection currently operates approximately 31 fixed-route bus routes on weekdays throughout Central Contra Costa County with limited service to the West County area. However, the County Connection does not currently offer bus service to Wilder Road and the nearest bus stops are in Downtown Orinda at the BART station.

(5) Existing Parking Characteristics

There is currently no parking in the immediate vicinity of the project except for on-street parking along Wilder Road near the SR 24 interchange and the parking lots for the Wilder Park sports fields.

(6) Existing Conditions, Intersection Configurations, Control and Traffic Volumes

AM and PM peak hour turning movement counts were conducted at intersection #1 (Wilder Road and SR 24 eastbound ramps) on May 21, 2018 at times when local schools were in session. Figure IV.I-1 shows the location of the two study intersections, along with their existing lane configurations and traffic controls. Figure IV.I-2 shows the existing traffic volumes at the study intersections.

Table IV.I-2 summarizes the associated level of service computation results for the existing weekday AM and PM peak hour.

(7) Existing Conditions Intersection Analysis

As shown in Table IV.I-2, the existing study intersection currently operates at acceptable conditions (LOS C or better) during the weekday AM and PM peak hours.

TABLE IV.I-2 EXISTING INTERSECTION OPERATIONS

Intersection	Control	Peak Hour	Existing Delay	Existing LOS
1 Wilder Road and SR 24 eastbound ramps	Side Street Stop Control	AM	9.0	A
		PM	9.6	A
2 Wilder Road and project driveway	Side Street Stop Control	AM	N/A	N/A
		PM	N/A	N/A

Source: Abrams Associates, 2018.

d. Planned Improvements

There are no significant planned roadway improvements in the project study area at the time this analysis was prepared.

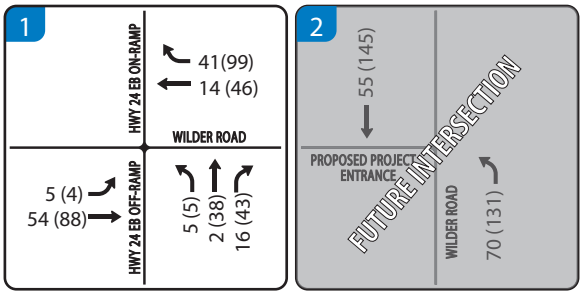
2. Regulatory Framework

A description of the local policies that relate to transportation and circulation is provided below.

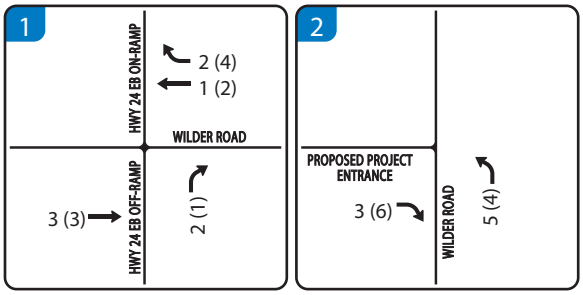
(1) State

Caltrans has jurisdiction over State highways. Therefore, Caltrans controls all construction, modification, and maintenance of State highways, such as SR 24. Any improvements to these roadways would require Caltrans' approval. The Guide for the Preparation of Traffic Impact Studies provides consistent guidance for Caltrans staff who review local development and land use change proposals. The Guide also informs local agencies about the information needed for Caltrans to analyze the traffic

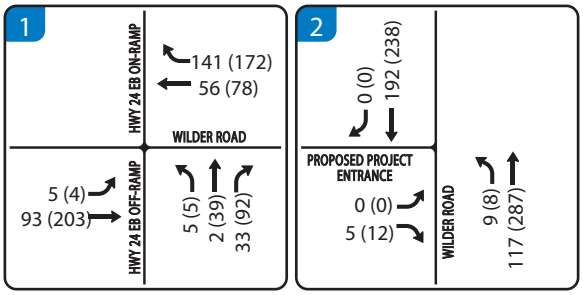
Existing AM (PM) Peak Hour Volumes



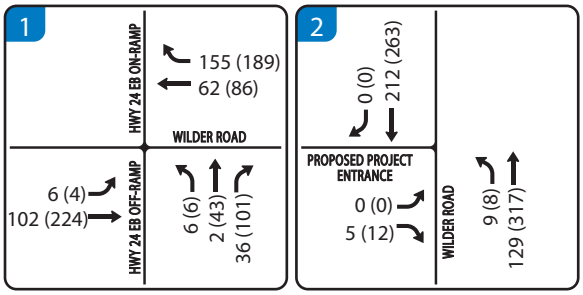
Project AM (PM) Peak Hour Trip Generation



Baseline Plus Project AM (PM) Peak Hour Volumes



Cumulative Plus Project AM (PM) Peak Hour Volumes



Legend

XX	AM Project Trips
(XX)	PM Project Trips

Source: Abrams Associates, 2018.

CountryHouse Memory Care Project EIR

Figure IV.I-2
Peak Hour Trip Volumes and Distribution

impacts to state highway facilities which include freeway segments, on- or off-ramps, and signalized intersections.

(2) Contra Costa Countywide Comprehensive Transportation Plan Update (2017)

The transportation policies that are currently applicable within Contra Costa County are based on the Contra Costa County Comprehensive Transportation Plan. This document identifies the criteria for analyzing transportation impacts and sets forth plans for future roadway improvements in the County.

(3) City of Orinda General Plan

The Transportation and Circulation Element included in the City of Orinda General Plan was prepared pursuant to Section 65302(b) of the California Government Code. The Transportation and Circulation Element addresses the location and extent of existing and planned transportation routes, terminals, and other local public utilities and facilities. The General Plan identifies roadway and transit goals and policies that have been adopted to ensure that the transportation system of the city will have adequate capacity to serve planned growth. These goals and policies are intended to provide a plan and implementation measures for an integrated, multi-modal transportation system that will safely and efficiently meet the transportation needs of all economic and social segments of the city.

3. Impacts and Mitigation Measures

This section discusses potential impacts to transportation and traffic that could result from implementation of the project. The section begins with the significance criteria and then presents the impacts associated with the project and identifies necessary mitigation measures, as appropriate.

a. Criteria of Significance

According to City of Orinda and CEQA Guidelines, a project would have a significant impact if it would:

1. 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.
2. 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.

3. 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.
4. Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment).
5. Result in inadequate emergency vehicle access.
6. Conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities.

Regarding conflicts with plans and policies for effectiveness of the circulation system, project-related operational impacts on unsignalized intersections are considered significant if project-generated traffic causes the worst-case movement (or average of all movements for all-way stop-controlled intersections and roundabouts) to deteriorate from LOS C or better to LOS D, E, or F.

b. Less-than-Significant Transportation and Circulation Impacts

Implementation of the project would result in the less-than-significant impacts described below. Since these impacts would not exceed the significance thresholds described above, no mitigation measures are necessary for these less-than-significant impacts.

(1) Traffic Load Capacity (Criteria 1 and 2)

The project's impacts on traffic load capacity at the study intersections are discussed below using the trip generation and trip distribution of the project.

6. Trip Generation

Traffic created by the project has been added to the "No Project" scenarios described below to determine the potential impacts of the project. Trip generation for development projects is typically calculated based on rates contained in the Institute of Transportation Engineers' (ITE) publication, *Trip Generation 10th Edition*, a standard reference used by jurisdictions throughout the country for the estimation of potential vehicular trips from proposed developments. A summary of the project's trip generation characteristics is shown in Table IV.I-3.

The project includes just one land use that would generate trips. The associated ITE generation category assumed is listed below:

- Assisted Living (ITE Land Use Code 254)—38 Units (with one bed per room)

A "trip" is defined in ITE's *Trip Generation* publication as a single or one-directional vehicular movement with either the origin or destination at the project site. As a result, a trip can be either "to" or "from" the site.

TABLE IV.I-3 PROJECT ITE TRIP GENERATION (TRIPS PER UNIT)

Land Use	Size/ Rate	ADT	AM Peak Hour			PM Peak Hour		
			In	Out	Total	In	Out	Total
ITE Assisted Living Trip Rates	per unit	2.60	0.12	0.07	0.19	0.10	0.16	0.26
CountryHouse Memory Care Trip Generation	***38 units***	***99***	***4***	***3***	***7***	***4***	***6***	***10***

Note: ADT = Average Daily Traffic, ITE = Institute of Transportation Engineers
Source: Abrams Associates, 2018.

For purposes of determining the reasonable worst-case project impacts on the surrounding street network, trip generation is typically estimated for the peak weekday traffic hours – i.e., between the hours of 7:30 to 8:30 a.m. and 5:00 to 6:00 p.m. While a particular individual land use may generate more traffic during some other time of day, the peak of "adjacent street traffic" represents the time period when the land use will generally contribute to the greatest amount of congestion.

7. Trip Distribution

The trip distribution assumptions developed in this analysis are based on the project's proximity to freeway interchanges, existing traffic conditions, and existing land use patterns in the area. Figure IV.I-2 shows the estimated AM and PM peak hour trips generated by the project at the study intersection.

8. Existing Plus Project Intersection Operations

The capacity calculations for the conditions where the project has been implemented are shown in Table IV.I-4. This scenario evaluates the existing conditions with the addition of traffic from the project. Please note that the corresponding LOS analysis calculation sheets are presented in Appendix A. As shown in Table IV.I-4, all of intersections would continue to have acceptable conditions during the weekday AM and PM peak hours based on the applicable LOS standards.

TABLE IV.I-4 EXISTING PLUS PROJECT INTERSECTION OPERATIONS

Intersection	Control	Peak Hour	Existing		Existing Plus Project	
			Delay	LOS	Delay	LOS
1 Wilder Road and SR 24 Eastbound Ramps	Side Street Stop Control	AM	9.0	A	9.0	A
		PM	9.6	A	9.6	A
2 Wilder Road and Project Driveway	Side Street Stop Control	AM	N/A	N/A	8.6	A
		PM	N/A	N/A	9.1	A

Source: Abrams Associates, 2018.

9. Baseline (Year 2020) No Project Conditions Intersection Analysis

The baseline scenario evaluates the existing conditions with the addition of traffic from reasonably foreseeable projects in the area. These include the buildout of the adjacent Wilder residential subdivision. In addition, the general baseline growth in traffic was developed based on the assumption that the project completion date would be 2020. This includes all reasonably foreseeable projects that would significantly affect the traffic volumes in the project study area. As shown in Table IV.I-5, with addition of traffic from the approved projects and background growth in the area all study intersections would continue have acceptable conditions during the weekday AM and PM peak hours.

TABLE IV.I-5 BASELINE (2020) INTERSECTION OPERATIONS

	Intersection	Control	Peak Hour	Baseline		Baseline Plus Project	
				Delay	LOS	Delay	LOS
1	Wilder Road and SR 24 Eastbound Ramps	Side Street Stop Control	AM	9.4	A	9.5	A
			PM	10.6	B	10.7	B
2	Wilder Road and Project Driveway	Side Street Stop Control	AM	N/A	N/A	9.4	A
			PM	N/A	N/A	9.7	A

Source: Abrams Associates, 2018.

10. Baseline (Year 2020) Plus Project Intersection Operations

The capacity calculations for the conditions both with and without the project are shown in Table IV.I-5. It is assumed that no roadway changes would be implemented as part of this development. The baseline plus project traffic forecasts were developed by adding project-related traffic to the baseline traffic volumes. Please note that the corresponding level of service analysis calculation sheets are presented in Appendix A. As shown in Table IV.I-5, all of the project study intersections would continue to have acceptable conditions during the weekday AM and PM peak hours.

11. Cumulative (Year 2040) No Project Conditions Intersection Analysis

The cumulative 2040 scenario traffic volumes were assessed using based on the existing turning movements with the addition of traffic from all planned and approved projects plus the addition of growth estimated by the CCTA's Countywide Travel Demand Model. Figure IV.I-2 shows the estimated AM and PM peak hour volumes under year 2040 no project conditions.

12. Cumulative (Year 2040) Plus Project Intersection Operations

Figure IV.I-2 shows the estimated AM and PM peak hour volumes under cumulative plus project conditions. The resulting levels of service for the cumulative plus project

scenario are shown in Table IV.I-6. As shown on this table, all of the signalized study intersections would continue to have acceptable conditions during the weekday AM and PM peak commute hours.

TABLE IV.I-6 CUMULATIVE (2040) INTERSECTION OPERATIONS

	Intersection	Control	Peak Hour	Cumulative		Cumulative Plus Project	
				Delay	LOS	Delay	LOS
1	Wilder Road and SR 24 Eastbound Ramps	Side Street Stop Control	AM	9.5	A	9.6	A
			PM	11.0	B	11.0	B
2	Wilder Road and Project Driveway	Side Street Stop Control	AM	N/A	N/A	9.5	A
			PM	N/A	N/A	9.9	A

Source: Abrams Associates, 2018.

(2) Air Traffic (Criterion 3)

The project site is not located within two miles of a public or private use airport. It also is not within an Airport Influence Area in any land use compatibility plan for any airport. Therefore, the project would not result in a change in air traffic patterns and would result in no impact.

(3) Internal Circulation and Access (Criteria 4 and 5)

No vehicular circulation or access issues have been identified that would cause any unusual traffic congestion or delay. Based on the analysis of level-of-service and traffic operations, the volumes on Wilder Road would continue to be low enough in the future so that no significant capacity problems would be expected with turning movements at the project driveway.

(4) Transit Ridership (Criterion 6)

The project would not interfere with any existing bus routes and would not remove or relocate any existing bus stops. The project would not be expected to support existing bus services with additional transit ridership until such a time as a bus route is added to serve the area, possibly once the Wilder residential subdivision is completed and occupied. However, the project would not conflict with any transit plans or goals of the City of Orinda or the Contra Costa Transportation Authority. Therefore, the impact of the project on existing transit operations or adopted plans related to transit would be less than significant.

c. Significant Transportation and Circulation Impacts

The project would not result in significant impacts related to transportation and circulation.

d. Cumulative Impacts

As discussed above under the Traffic Load Capacity section, the project would not result in cumulative impacts related to traffic and circulation.

V. ALTERNATIVES

The CEQA Guidelines require the analysis of a range of reasonable alternatives to the project, or to the location of the project, which would feasibly attain most of the project's basic objectives and avoid or substantially lessen any of the significant effects of the project. The range of alternatives required in an EIR is governed by a "rule of reason" that requires the EIR to set forth only those alternatives necessary to permit a reasoned choice.[152] An EIR need not consider every conceivable alternative to a project. Rather, it must consider a reasonable range of potentially feasible alternatives that will foster informed decision-making and public participation.

The primary purpose of an alternatives analysis is to ascertain whether there are alternatives of design, scale, land use, or location that would further lessen a project's significant impacts, even if those alternatives "impede to some degree the attainment of the project objectives, or would be more costly."[153] No significant impacts would result due to the implementation of the proposed project, as detailed in Chapter IV, *Setting, Impacts, and Mitigation Measures*. Therefore, this chapter focuses on identifying less-than-significant impacts that may be further reduced by adoption of an alternative rather than the proposed project.

The three CEQA project alternatives to the proposed project considered include:

- **No Project/No Build Alternative** assumes the project site would remain in its current condition and no new development would be constructed on the project site.
- **Reduced Development Alternative** provides 30 units, rather than 38 as under the proposed project. This alternative results in a building that is approximately 10 percent smaller.
- **Screened Truck Loading Area Alternative** assumes the same densities as the proposed project, but substantially screens the truck loading area from public view using landscaping.

In considering the range of alternatives to be analyzed in an EIR, the CEQA Guidelines state that an alternative site/location should be considered when feasible alternative locations are available and the "significant effects of the project would be avoided or substantially lessened by putting the project in another location." However, there are

[152] California Environmental Quality Act (CEQA) Guidelines, Section 15126.6.
[153] California Environmental Quality Act (CEQA) Guidelines, Section 15126.6(b).

no significant and unavoidable impacts and other locations will have similar impacts, therefore an off-site location was not studied.

Comparisons of these alternatives with the project are provided in Table V-1.

TABLE V-1 SUMMARY OF PROJECT ALTERNATIVE ELEMENTS

	Dwelling (Units)	Residential Building Area (sf)	Common Area (sf)	Total Area (sf)	Parking (spaces)
Project	38	13,692	18,392	32,084	16
Project Alternatives					
No Project/No Build	0	–	–	0	0
Reduced Development Alternative	30	10,882	18,002	28,884	16
Screened Truck Loading Alternative	38	13,692	18,392	32,084	16

Note: sf = square feet
Source: Architects Orange, Unit Plans. Submitted to City of Orinda December 18, 2017.

The remainder of this chapter is organized as follows: overview of project objectives and impacts; description and analysis of CEQA project alternatives; and discussion of the environmentally superior alternative.

A. PROJECT OBJECTIVES AND IMPACTS

To determine what range of alternatives should be considered, the impacts identified for the proposed project were considered along with the project objectives. The proposed project is described in detail in Chapter III, *Project Description*, and the potential environmental effects of the proposed project are analyzed in Chapter IV, *Setting, Impacts, Standard Conditions of Approval and Mitigation Measures*. The project objectives and impacts are summarized below.

1. Project Objectives

The project objectives are as follows:

- Provide a higher-end congregate care facility in Orinda with memory care services[154] to help meet the needs of a growing senior population.
- Provide a care facility for seniors who need assistance and would like to relocate to be, or remain, close to friends and family members.

- Provide specialized memory care housing and services to help meet the needs of a specific sub-group of a growing senior population.
- Provide meeting space within the project for community functions and classes.
- Create an aesthetically pleasing facility that takes in to account the topography of the site.
- Become a model for environmentally-friendly and sustainable congregate care facilities.
- Construct a financially feasible development and provide reasonable returns on investment so as to secure construction and long-term financing.
- Increase both short-term and long-term employment opportunities in Orinda.
- Provide opportunities for local volunteers who have expressed an interest in being a part of CountryHouse's programming.

2. Project Impacts

As detailed in Chapter IV*, Setting, Impacts, and Mitigation Measures*, the proposed project is not anticipated to result in any significant impacts. This EIR finds that for the following two topics, the project's impacts would be potentially significant, but would be reduced to a less-than-significant level with implementation of recommended mitigation measures. For all other topics, impacts are less-than-significant without mitigation.

The potentially significant impacts that would be mitigated to a less-than-significant level with implementation of the recommended mitigation measures (as described in Table II-1, Summary of Impacts and Mitigation Measures, in Chapter II, *Summary*) are:

- Air Quality – Impact AIR-1: Fugitive dust emissions during construction of the project could contribute substantially to an existing or projected air quality violation.
- Biological Resources – Impact BIO-1: Development of the project could potentially harm nesting special-status or common migratory birds.

B. ALTERNATIVES CONSIDERED BUT REJECTED

In considering the range of alternatives to be analyzed in an EIR, potential code-compliant uses that are allowed in the PS zoning district were evaluated. These uses include emergency shelters, public or private schools, religious assemblies, and hospitals. None of the other code-compliant uses would feasibly attain most of the project's basic objectives. They would also not avoid or substantially lessen the project's impacts; any development on this site would result in similar air quality, biological resources, noise, aesthetics, and other impacts, which are inherent in developing a vacant parcel. The exact magnitude of these impacts would

incrementally change depending on the size of the proposed building rather than its use. It is not likely that any of these impacts would be reduced to no impact with any alternative use on the site. In many cases, these alternative uses would result in greater traffic impacts as they are generally recognized to generate greater average daily traffic than a congregate care facility. Therefore, they were rejected from further analysis in this EIR.

C. PROJECT ALTERNATIVES

The principal characteristics of each and associated effects relative to the proposed project are described below for each alternative. The alternatives included are intended to meet the CEQA requirement to consider a range of reasonable alternatives to the project that would feasibly attain most of the basic objectives of the project while avoiding or substantially lessening significant impacts.

1. No Project/No Build Alternative

The No Project/No Build Alternative assumes that the project site would remain in its current condition and would not be subject to development. The No Project/No Build Alternative is considered to compare the impacts of approving the CountryHouse Memory Care Project to not approving the project. Under the No Project/No Build Alternative, no development would occur on the project site and existing conditions would remain. The site would be fenced and remain vacant and undeveloped, thereby not creating any visual change in the project area. No new structures would be developed, and no noise, air pollutant, or greenhouse gas emissions from building construction would occur. As no new uses would be introduced, there would not be an incremental increase in traffic at the interchange of SR 24 eastbound ramps with Wilder Road. The No Project/No Build Alternative would not result in any of the less-than-significant impacts identified for the project in this EIR. However, the No Project/No Build Alternative would also not achieve any of the key project objectives.

2. Reduced Development Alternative

The Reduced Development Alternative assumes that the project site would be developed with 8 less residential units, for a total of 30 senior housing units within a 2-story building. This alternative is considered to compare the impacts of developing a smaller building envelope than what is anticipated under the proposed project. Under the Reduced Development Alternative, development would occur on the project site, but to a lesser degree than under the project. The site and building would be developed with 30 senior residential units totaling 10,882 square feet, 18,002 square feet of common area facilities, and 16 parking spaces. This alternative would result in 21 percent fewer housing units but only a 10 percent reduction in square footage, because the common area would need to remain substantially similar in size.

Implementation of this alternative would result in impacts similar to the project for all environmental topics found to be less than significant in the EIR, although the effects may be incrementally less. The overall reduction in square footage would not be substantial enough to result in a meaningful reduction in impacts. Like the project, the Reduced Development Alternative would be subject to the recommended mitigation measures and would result in the same, although slightly reduced, less-than-significant impacts related to air quality and biological resources.

Traffic trips expected to be generated by this alternative would be less than the proposed project because it involves less development and fewer units. Even though the trips would be reduced, like the project, this alternative would result in the same level of service at the affected intersections as the project and no significant impacts would result.

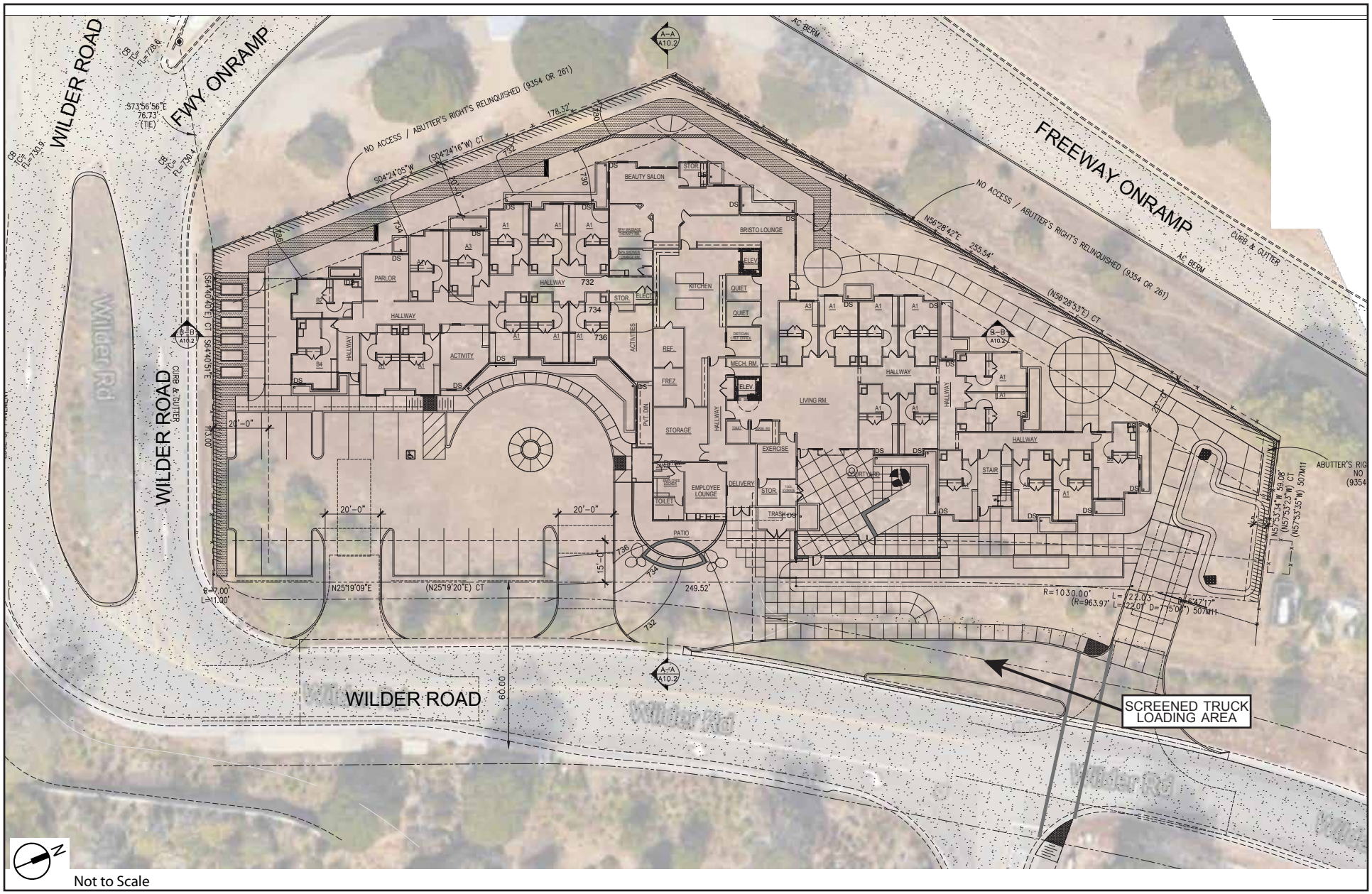
The Reduced Development Alternative would achieve all of the key objectives of the project, but to a lesser extent than the proposed project.

3. Screened Truck Loading Alternative

The Screened Truck Loading Alternative has a revised site plan with a truck loading area along the eastern side of the project, adjacent to but separate from Wilder Road, as shown in Figures V-1 and V-2. Four fastigiate English oaks would be planted in the landscape strip separating the truck loading area from Wilder Road to screen truck deliveries and activity from public view. In all other aspects, this alternative would be identical to the proposed project.

The Screened Truck Loading Alternative would further reduce the already less-than-significant impact pertaining to aesthetics significance criterion 3, visual character (see Section IV.A, *Aesthetics*). The four oaks would largely screen the truck deliveries from public view, minimizing the prominence of this element. For all other environmental topics, implementation of this alternative would result in identical less-than-significant impacts as the project. Like the project, the Screened Truck Loading Alternative would be subject to the recommended mitigation measures pertaining to air quality and biological resources.

The Screened Truck Loading Alternative would achieve all of the key objectives of the project. It would perform slightly better than the proposed project for the objective of creating an aesthetically pleasing facility that takes into account the topography of the site, since it would reduce the visibility of large trucks that would occasionally make deliveries to the site.



CountryHouse Memory Care Project EIR

Source: Architects Orange, 2018.

Figure V-1
Screened Truck Loading Alternative
Upper Site Plan

VIEW TO LOADING AREA

CountryHouse Memory Care Project EIR

Source: Architects Orange, 2018.

Figure V-2
Screened Truck Loading Alternative
Perspective View

D. ENVIRONMENTALLY SUPERIOR ALTERNATIVE

CEQA requires the identification of the environmentally superior alternative in an EIR. The No Project/No Build Alternative is considered the environmentally superior alternative in the strict sense that environmental impacts associated with its implementation would be the least of all scenarios examined, including the CountryHouse Memory Care Project. To maintain the project site at its current conditions would avoid each of the less-than-significant impacts that would result from the CountryHouse Memory Care Project. In cases like this where the No Project is the environmentally superior alternative, CEQA requires that the second most environmentally superior alternative be identified. Comparison of the environmental impacts associated with each alternative as described above indicates that the Screened Truck Loading Alternative would represent the next-best alternative in terms of the fewest significant environmental impacts. This alternative would result in further reducing the already less-than-significant aesthetics impact associated with the project. While the Reduced Development Alternative would incrementally reduce the less-than-significant impacts associated with construction (noise, air quality and greenhouse gas emissions), as well as some operational impacts such as water use, the reduction in impacts would not be as substantial as the clearly reduced aesthetic impact under the Screened Truck Loading Alternative.

VI. EFFECTS FOUND NOT TO BE SIGNIFICANT

Meetings among representatives of the City of Orinda (City) departments involved in project planning and review and consultants for the City were held to preliminarily determine the scope of the EIR. In addition to these meetings, a Notice of Preparation (NOP) was circulated on July 6, 2018. Written comments received on the NOP were considered in the preparation of the final scope for this document and in the evaluation of the project.

The environmental topics analyzed in Chapter IV, *Setting, Impacts and Mitigation Measures*, represent those topics that generated the greatest potential controversy and expectation of adverse impacts among City staff and members of the public. The following topics were excluded from discussion in the EIR because it was determined during the scoping phase that these impacts would be less than significant: Agricultural Resources; Cultural Resources; Geology, Soils, and Seismicity; Hazards and Hazardous Materials; Population and Housing; and Mineral Resources. A brief description of why these topics were found not to be significant is provided below.

A. AGRICULTURAL RESOURCES

The California Department of Conservation classifies the property as Other Land, which is not suitable for livestock grazing.[155] Furthermore, the project site is not zoned for agricultural use and is not under a Williamson Act contract.[156] Finally, the project area contains no forest or timberland and is not zoned for forest land, timberland, or timberland production.

B. CULTURAL RESOURCES

A memorandum summarizing the archival search, literature review, and Native American consultation, completed by Tom Origer & Associates in March 2018, for cultural resources around the project site is attached as Appendix B.

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[155] California Department of Conservation (CDC), 2014. Contra Costa County Important Farmland Map. http://www.conservation.ca.gov/dlrp/fmmp/Pages/Index.aspx. Accessed June 22, 2018.

[156] Contra Costa County Conservation and Development (CCCCD), 2017. 2016 Agricultural Preserves Map, Contra Costa County. http://ca-contracostacounty2.civicplus.com/4338/Williamson-Act. Accessed June 22, 2018.

1. Archival Review

A records search (File No. 17-2608) of the project area and a ¼-mile radius was conducted by the Northwest Information Center (NWIC) of the California Historical Resources Information System, Sonoma State University, Rohnert Park, California. The NWIC, an affiliate of the State of California Office of Historic Preservation, is the official state repository of cultural resources records and reports for Contra Costa County. The NWIC search revealed that the project site has been subjected to a cultural resource study in the past, which found no cultural resources. Three other studies were conducted within the study area, but did not result in the finding of any cultural resources.

2. Ethnographic Review and Native American Consultation

There are no reported ethnographic villages or camps within a 1-mile radius of the project site.

3. Historical Review

A review of historic U.S. Geological Survey topographic maps and county maps revealed that there was a building that was likely located just outside the project site, under State Route 24 (SR 24). The building was located on John Olive's land though his house is shown east of this building's location. No other historical or current maps show buildings or structures within project site after 1915.

4. Cultural Resources Sensitivity

The archival search and literature review included review and analysis of various environmental and cultural factors, including soil surveys, geological data, property history, and the locations of known archaeological sites. The study area is located on relatively level land, lacks nearby freshwater sources, and the geology of the study area consists of Miocene Epoch deposits and cut-and fill-land. Incorporating recent research on the analysis of an area's sensitivity for buried sites, there is a low probability of identifying a buried prehistoric archaeological site within the project area.

5. Native American Consultation

On April 30, 2018, a request was sent to the State of California's Native American Heritage Commission seeking information from the sacred lands files and the names of Native American individuals and groups that would be appropriate to contact regarding this project. Letters were also sent to the following groups:

5. Amah Mutsun Tribal Band
6. Indian Canyon Mutsun Band of Costanoan
7. Muwekma Ohlone Tribe of the San Francisco Bay Area
8. The Ohlone Tribe
9. Trina Marine Ruano Family

In addition, a letter was sent to Jakki Kehl, an individual. No responses have been received as of the date of this EIR.

C. TRIBAL CULTURAL RESOURCES

Under Assembly Bill (AB) 52, lead agencies are required to examine the potential impacts to tribal cultural resources for projects where either a Notice of Preparation or Notice of Intent to Adopt a Negative Declaration/Mitigated Negative Declaration has been filed on or after July 1, 2015. Under the AB 52 process, tribes must first request in writing to be notified by the Lead Agency of projects in the geographic area with which the tribes are traditionally and culturally affiliated. Afterwards, the Lead Agency must provide written notification of any such projects to the tribes which requested it, within 14 days of deciding to undertake a project or determining that a project application is complete.

No tribes have requested notification of projects within the City of Orinda.

D. GEOLOGY, SOILS, AND SEISMICITY

Based on a review of the 2009 Geotechnical Investigation Report[157] and the 2017 Geotechnical Report Update[158] prepared for the project site, the site does not appear to present any significant constraints for development related to geology, soils, and seismicity. The property does not lie within an Alquist-Priolo Earthquake Fault Zone. The 2017 Geotechnical Report Update provides updated seismic design criteria based on the 2013 California Building Code. All the findings, conclusions, and recommendations presented in the 2009 Geotechnical Investigation Report are still valid and applicable for the project. With application of applicable Building Code recommendations and recommendations provided in the 2009 Geotechnical Investigation Report and the 2017 Geotechnical Report Update, impacts related to earthquake shaking, liquefaction, lateral spreading, densification, or landsliding would be less than significant.

E. HAZARDS AND HAZARDOUS MATERIALS

Based on review of the 2009 Phase I Environmental Site Assessment[159], there are no recognized environmental conditions at the project site relative to historic hazardous

[157] Earth Mechanics Consulting Engineers, 2009. Report Geotechnical Investigation for Planned Retirement Complex at 101 Upton Road, Orinda, California. December 9.

[158] Earth Mechanics Consulting Engineers, 2017. Geotechnical Report Update for Proposed Retirement Complex at 101 Upton Road, Orinda, California. June 21.

[159] Diablo Green Consulting, 2009. Phase I Environmental Site Assessment of Vacant Land, 101 Upton Road. March 6.

materials handling and/or releases. It appears that fill material of unknown origin was placed at the site at some time. This material was sampled and analyzed for metals. Metals were not identified above levels of concern. It is not anticipated that the site soils would be affected by aerially-deposited lead from SR 24 because the site is more than 30 feet from the highway. No further investigation or action related to the potential presence of hazardous materials in site soils is recommended.

Based on mapping by the California Department of Forestry and Fire Protection (CAL FIRE), the project site is located in an area of very high fire hazard.[160]

City of Orinda has adopted the 2016 California Fire Code (California Code of Regulations, Title 24, Part 9). Construction in fire hazard zones must comply with California Fire Code minimum requirements for building materials and construction methods to improve exterior wildfire exposure protection. In addition, Chapter 4, Environmental Resources, of the Orinda General Plan includes the following guiding policies and implementing policies to address fire hazards:

> Guiding Policy 4.2.1.B: Encourage a high level of fire protection and fire prevention education.
>
> Implementing Policy 4.2.2.F: Encourage a high level of fire protection to residential and commercial development.
>
> Implementing Policy 4.2.2.G: Ordinances shall be developed requiring fire protection features, such as: fire-retardant roof material for new and replacement roofs, sprinklers for new construction, adequate provisions for emergency access, and other fire protection features.
>
> Implementing Policy 4.2.2.H: Minimize damage from grass fires through the development of firebreaks in dedicated open space and fire-access easements. Firebreaks and fire-access easements should be made a condition of project approval.

Compliance with the 2016 California Fire Code and applicable policies set forth in the Orinda General Plan would ensure that impacts related to wildland fire hazards would be less than significant.

F. POPULATION AND HOUSING

Implementation of the project would result in an estimated residential population increase of 38 people, which would account for only a small percent of population

[160] California Department of Forestry and Fire Protection (CAL FIRE), 2009. Very High Fire Hazard Severity Zones in Local Responsibility Area, Orinda. January 7.

increase in Orinda. Moreover, these residents would be seniors in need of assisted living, who are less likely to work during peak hours and drive vehicles.

This residential growth is within the anticipated population growth for Orinda and is not considered "substantial." Accordingly, implementation of the project would not induce substantial population growth. Further, since the site is undeveloped, the project would not displace existing housing or people and, thereby, necessitate the construction of replacement housing elsewhere. Therefore, the project is not anticipated to have a significant impact on population or housing.

G. MINERAL RESOURCES

There are no known mineral resources present at the project site that would be of value to the region or State. Additionally, the project site is not designated by the City of Orinda General Plan or other land use plans as a local-important mineral recovery site. The General Plan identifies one area as a locally-important mineral recovery site for stone, but this area is approximately 2,500 feet to the south of the project site. For these reasons, impacts to mineral resources would not be significant.

H. ENERGY

Appendix F of the State CEQA Guidelines and Public Resources Code Section 21100(b)(3) provide that a project would be considered to have a significant effect if it would result in wasteful, inefficient, or unnecessary energy use. The project would cause an incremental increased demand for electrical and gas services, but would be developed in a location where such services are already being provided. Connecting new buildings to existing lines would involve relatively minor improvements to the existing energy infrastructure. The project's natural gas and electricity would be supplied by Pacific Gas and Electric. The California Emissions Estimator Model analysis prepared for the project (see Appendix A) shows that the project is expected to use 331,756 kilo British thermal units of natural gas per year and 160,436 kilowatt hours of electricity per year. This amount of energy consumption is similar to other projects of a similar size and design.

The project would comply with the energy efficiency measures mandated by Title 24 and would therefore not result in the wasteful, inefficient, or unnecessary use of energy. The project components would not require or result in construction of new energy facilities or expansion of existing facilities, construction of which could cause significant environmental effects. As such, the project would have a less-than-significant impact on energy.

VII. CEQA-REQUIRED ASSESSMENT CONCLUSIONS

As required by the California Environmental Quality Act, this chapter discusses the following types of impacts that could result from implementation of the CountryHouse Memory Care project: growth-inducing impacts, significant unavoidable environmental impacts, significant irreversible changes, and cumulative impacts. Effects found not to be significant are discussed in Chapter VI, *Effects Found Not to Be Significant*.

A. GROWTH-INDUCING IMPACTS

This section summarizes the project's growth-inducing impacts on the surrounding community. Consistent with section 15126.2(d) of the CEQA Guidelines, a project is considered growth-inducing if it could directly or indirectly foster economic or population growth or the construction of additional housing. Examples of projects likely to have significant growth-inducing impacts include extensions or expansions of infrastructure systems beyond what is needed to serve project-specific demand, and development of new residential subdivisions or industrial parks in areas that are currently only sparsely developed or are undeveloped.

The project would add 38 assisted-living residential units. The project may also result in indirect population growth, which could result from both the new construction-related jobs generated by the project and staffing or management of the assisted-living units. Although the creation of these jobs could cause new employees to move to the City of Orinda (City), the population growth resulting from these jobs would not be substantial.

The project would be developed on a site with existing road access. Existing water supply, wastewater, and storm drainage systems are currently in the project vicinity. Infrastructure improvements would be limited to providing service to the project site. There are no developable greenfield sites in the immediate vicinity of the project site, as it is surrounded by State Route 24 (SR 24), sports fields, a planned development, and hilly open space. As such, the project would not directly or indirectly lead to the development of greenfield sites in the city. The population growth that would occur as a result of project implementation would be limited in scope and would not be considered substantial or adverse.

B. SIGNIFICANT IRREVERSIBLE CHANGES

CEQA requires that Environmental Impact Reports (EIRs) assess whether the project could result in significant irreversible changes to the physical environment. These may include current or future uses of non-renewable resources, and secondary or growth-inducing impacts that commit future generations to similar uses. The CEQA Guidelines

discuss three categories of significant irreversible changes that should be considered. Each is discussed below.

1. Changes in Land Use which Commit Future Generations

The project would entail the development of a 1.1-acre greenfield parcel of land located in Orinda, approximately 1 mile southwest of downtown along SR 24. The project would convert undeveloped land to an assisted living residential use, which would result in permanently committing future generations to development on the site. This parcel is not currently used for open space or any other recreational use, nor does it have important biological resources associated with it; therefore, this commitment of land use would be less than significant.

2. Irreversible Damage from Environmental Accidents

No significant irreversible environmental damage, such as what could occur as a result of an accidental spill or explosion of hazardous materials, is anticipated due to implementation of the project. No use of hazardous materials, beyond standard construction supplies and household hazardous waste, is proposed. Furthermore, compliance with federal, State, and local regulations would reduce to a less-than-significant level the possibility that hazardous substances within the project site could cause significant environmental damage.

3. Consumption of Nonrenewable Resources

Consumption of nonrenewable resources includes the use of non-renewable energy sources, conversion of agricultural lands, and loss of access to mining reserves. Because the site has not been used for mineral extraction, loss of access to any minerals that historically occurred on-site would not be considered significant. Construction and operation of the project would require electricity, natural gas, and possibly other forms of energy. However, the scale of such consumption for the proposed uses would be typical for a residential development of this size. The project would incorporate energy-conserving features, as required by the Uniform Building Code and the California Energy Code (Title 24, Part 6). The project would not convert land used for prime agriculture to residential and public uses, as no agricultural uses or farmland are present within or adjacent to the project site (see Chapter VI, *Effects Found Not to Be Significant*).

C. SIGNIFICANT UNAVOIDABLE ENVIRONMENTAL IMPACTS

As discussed at the end of each topical section in Chapter IV, *Setting, Impacts, and Mitigation Measures*, the project would not have any significant and unavoidable impacts after mitigation.

D. CUMULATIVE IMPACTS

CEQA defines cumulative impacts as "two or more individual effects which, when considered together, are considerable, or which can compound or increase other environmental impacts."[161] Section 15130 of the CEQA Guidelines requires that an EIR evaluate potential environmental impacts that are individually limited, but cumulatively considerable. Per Section 15065(a)(3) of the CEQA Guidelines, "cumulatively considerable" means that the incremental effects of an individual project are significant when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probably future projects. Cumulative effects of the project are discussed under the respective topic sections in Chapter IV, *Setting, Impacts, and Mitigation Measures*.

E. EFFECTS FOUND NOT TO BE SIGNIFICANT

Meetings among representatives of the City of Orinda departments involved in project planning and review and consultants for the City were held to preliminarily determine the scope of the EIR. In addition to these meetings, a Notice of Preparation was circulated on July 6, 2018. Written comments received on the Notice of Preparation were considered in the preparation of the final scope for this document and in the evaluation of the project.

The environmental topics analyzed in Chapter IV, *Setting, Impacts and Mitigation Measures*, represent those topics that generated the greatest potential controversy and expectation of adverse impacts among City staff and members of the public. The following topics were excluded from discussion in the EIR because it was determined during the scoping phase that these impacts would be less than significant: Agricultural Resources; Cultural Resources; Tribal Cultural Resources; Geology, Soils, and Seismicity; Hazards and Hazardous Materials; Population and Housing; Mineral Resources; and Energy. The project's impacts related to each of these topics are described in Chapter IV.

[161] California Environmental Quality Act (CEQA) Guidelines, Section 15355.

VIII. REPORT PREPARERS AND REFERENCES

This EIR was prepared by the following CEQA consultants under the direction of the City of Orinda, Adam Foster, Project Planner.

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B. REFERENCES

Architects Orange, 2017. CountryHouse Memory Care at Orinda, CA plan set. December 18.

Association of Bay Area Governments (ABAG) and Metropolitan Transportation Commission (MTC), 2011. Plan Bay Area.

Bay Area Air Quality Management District (BAAQMD), 2010a. Source Inventory of Bay Area Greenhouse Gas Emissions. Updated February.

Bay Area Air Quality Management District (BAAQMD), 2010b. Bay Area 2010 Clean Air Plan. September 15.

Bay Area Air Quality Management District (BAAQMD), 2011a. Recommended Methods for Screening and Modeling Local Risks and Hazards. May.

Bay Area Air Quality Management District (BAAQMD), 2011b. Highway Screening Analysis Tool. April 29.

Bay Area Air Quality Management District (BAAQMD), 2012. Stationary Source Screening Analysis Tool. May 30.

Bay Area Air Quality Management District (BAAQMD), 2017a. California Environmental Quality Act Air Quality Guidelines. May.

Bay Area Air Quality Management District (BAAQMD), 2017b. Air Quality Standards and Attainment Status. http://www.baaqmd.gov/research-and-data/air-quality-standards-and-attainment-status. Accessed January, 5.

Bay Area Air Quality Management District (BAAQMD), 2017c. The 2017 Clean Air Plan, Spare the Air – Cool the Climate. Adopted on April 19.

California Air Pollution Officers Association (CAPCOA), 2016. California Emissions Estimator Model Version 2016.3.2.

California Air Resources Board (CARB), 2005. Air Quality Land Use Handbook: A Community Perspective.

California Air Resources Board (CARB), 2009. The California Almanac of Emissions and Air Quality.

California Air Resources Board (CARB), 2010. Regional Greenhouse Gas Emission Reduction Targets Pursuant to SB 375.

California Air Resources Board (CARB), 2013. California Greenhouse Gas Inventory for 2000-2011; by Category as Defined in the 2008 Scoping Plan. Last updated August 1.

California Code of Regulations (CCR), Title 14, Section 15382; Public Resources Code Section 21068.

California Code of Regulations (CCR), Title 24, Part 11, Section 5.507.

California Code of Regulations (CCR), Title 24, Part 2, Volume 1, Section1207.4.

California Code of Regulations (CCR), Title 23, Section 490–495.

California Department of Conservation (CDC), 2014. Contra Costa County Important Farmland Map. http://www.conservation.ca.gov/dlrp/fmmp/Pages/Index.aspx. Accessed June 22, 2018.

California Department of Forestry and Fire Protection (CAL FIRE), 2009. Very High Fire Hazard Severity Zones in Local Responsibility Area, Orinda. January 7.

California Department of Transportation (Caltrans), 1998. Technical Noise Supplement: A Technical Supplement to the Traffic Noise Analysis Protocol.

California Department of Transportation (Caltrans), 2008. Landscape Architecture Program. Scenic Highway Guidelines. October. http://www.dot.ca.gov/hq/LandArch/16_livability/scenic_highways/guidelines/scenic_hwy_guidelines_04-12-2012.pdf. Accessed July 1, 2018.

California Department of Transportation (Caltrans), 2018. Route 24 – Scenic Highway. http://www.dot.ca.gov/hq/LandArch/16_livability/scenic_highways/. Accessed July 1, 2018.

California Energy Commission (CEC), 2014. News Release: New Title 24 Standards Will Cut Residential Energy Use by 25 Percent, Save Water, and Reduce Greenhouse Gas Emissions. http://www.energy.ca.gov/releases/2014_releases/2014-07-01_new_title24_standards_nr.html. Accessed November 15, 2016.

California Energy Commission (CEC), 2015. Adoption Hearing: 2016 Building Energy Efficiency Standards. June 10.

California Environmental Quality Act (CEQA) Guidelines, Section 15355(b), 15126.6, 15126.6(b).

California Environmental Protection Agency (CEPA), Office of Environmental Health Hazard Assessment, 2012. Safe Drinking Water and Toxic Enforcement Act of 1986, Chemicals Known to the State to Cause Cancer or Reproductive Toxicity. November 2.

CalRecycle, 2018a. Solid Waste Information System Facility/Site Listing. Accessed June 25, 2018. www.calrecycle.ca.gov/SWFacilities/Directory/search.aspx.

CalRecycle, 2018b. Jurisdiction Review Reports. http://www.calrecycle.ca.gov/lgcentral/Reports/Jurisdiction/DiversionDisposal.aspx. Accessed June 25, 2018.

Central Contra Costa Sanitary District (CCCSD), 2017. Comprehensive Wastewater Master Plan. https://www.centralsan.org/sites/main/files/file-attachments/cwmp_technical_executive_summary.pdf. Accessed June 27, 2018.

Charles M. Salter Associates Inc., 1998. Acoustics – Architecture, Engineering, the Environment, William Stout Publishers.

Charles M. Salter Associates, Inc., 2009. Agemark at Wilder – Environmental Noise Study, Orinda, California. December 22.

City of Orinda, 1987 (last amended 2013). City of Orinda General Plan. https://cityoforinda.app.box.com/generalplan. Accessed July 1, 2018.

City of Orinda, 2012. Orinda Municipal Code.

City of Orinda, 2018. Facilities – Wilder Park. http://www.cityoforinda.org/Facilities/Facility/Details/Wilder-Park-8. Accessed July 1, 2018.

Contra Costa Clean Water Program, 2017. Stormwater C.3 Guidebook. Stormwater Quality Requirements for Development Applications. May 17.

Contra Costa County Conservation and Development (CCCCD), 2017. 2016 Agricultural Preserves Map, Contra Costa County. http://ca-contracosta county2.civicplus.com/4338/Williamson-Act. Accessed June 22, 2018.

Contra Costa Transportation Authority (CCTA), 2013. 2013 Update of the Contra Costa Congestion Management Program. December 18.

Diablo Green Consulting, 2009. Phase I Environmental Site Assessment of Vacant Land, 101 Upton Road. March 6.

Earth Mechanics Consulting Engineers, 2009. Report Geotechnical Investigation for Planned Retirement Complex at 101 Upton Road, Orinda, California. December 9.

Earth Mechanics Consulting Engineers, 2017. Geotechnical Report Update for Proposed Retirement Complex at 101 Upton Road, Orinda, California. June 21.

East Bay Municipal Utilities District (EBMUD), 1996. East Bay Watershed Master plan, February 29. Revised March 15, 1999.

East Bay Municipal Utilities District (EBMUD), 2014. Section 31, Water Efficiency Requirements. https://www.ebmud.com/sites/default/files/pdfs/Section%2031%20Water%20Efficiency%20Requirements%20070113_0.pdf. Accessed May 30.

East Bay Municipal Utilities District (EBMUD), 2015a. Urban Water Management Plan. Accessed June 27, 2018.

East Bay Municipal Utilities District (EBMUD), 2015b. Section 28: Water Use During Water Shortage Emergency Condition. http://www.ebmud.com/sites/default/files/pdfs/water_use_during_water_shortage_emergency_condition.pdf. Accessed June 27, 2018.

East Bay Municipal Utilities District (EBMUD). 2018. Water Treatment. http://www.ebmud.com/water-and-drought/about-your-water/water-quality/water-treatment/. Accessed June 25, 2018.

Federal Emergency Management Agency (FEMA), 2018. National Flood Hazard Layer FIRMette 06013C0405F Not Printed. Exported May 31.

Federal Transit Administration (FTA), 2006. Transit Noise and Vibration Impact Assessment (FTA-VA-90-1003-06).

Intergovernmental Panel on Climate Change (IPCC), 2013. Climate Change 2013; the Physical Science Basis; Working Group I Contribution to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change.

Moraga-Orinda Fire District (MOFD), 2014a. http://www.mofd.org/divisions/operations. Accessed May 30, 2018.

Moraga-Orinda Fire District (MOFD), 2014b. Exterior Hazard Control Standards for Vegetation Management within the Fire District. http://www.mofd.org/docs/ordinances. Accessed on July 6, 2018.

Moraga-Orinda Fire District (MOFD), 2018. Prohibited Plant List. 2018. http://www.mofd.org/docs/ordinances. Accessed July 6, 2018.

Moraga-Orinda Fire District (MOFD), 2018. http://www.mofd.org/about. Accessed December 28, 2018.

National Aeronautics and Space Administration (NASA), 2016. 2016 Climate Trends Continue to Break Records. https://www.nasa.gov/feature/goddard/2016/climate-trends-continue-to-break-records. Last updated July 16.

Natural Resource Conservation Service, 2018. Web Soil Survey. http://websoilsurvey.sc.egov.usda.gov/App/WebSoilSurvey.aspx. Accessed May 31.

Office of Environmental Health Hazard Assessment (OEHHA), 2015. Air Toxics Hot Spots Program, Risk Assessment Guidelines, Guidance Manual for Preparation of Health Risk Assessments. February 2015.

San Francisco Bay Regional Water Quality Control Board (Regional Water Board), 2015. San Francisco Bay Region Municipal Regional Stormwater NPDES Permit, Order No. R2-2015-0049, NPDES Permit No. CAS612008. November 19.

San Francisco Bay Regional Water Quality Control Board (Regional Water Board), 2017. San Francisco Bay Basin (Region 2) Water Quality Control Plan (Basin Plan). Incorporating all amendments as of May 4.

State Water Resources Control Board (State Water Board) Division of Water Quality, 2009. Construction General Permit Fact Sheet. 2009-0009-DWQ amended by 2010-0014-DWQ & 2012-0006-DWQ.

State Water Resources Control Board (State Water Board), 2017. Clean Water Act Sections 303(d) and 305(b) 2016 Integrated Report for the San Francisco Bay Region. April.

The Waterways Restoration Institute, 2001. San Pablo Creek Through Downtown Orinda, Preliminary Restoration Plan, Orinda, California. July 2.

Transportation Research Board, 2011. 2010 Highway Capacity Manual, Washington D.C.

U.S. Geological Survey, 1988. Landslides, Floods, and Marine Effects of the Storm of January 3-5, 1982, in the San Francisco Bay Region, California. U.S. Geological Survey Professional Paper 1434.

United States Census Bureau, 2017. QuickFacts, Orinda city, California. https://www.census.gov/quickfacts/fact/table/orindacitycalifornia/PST045217. Accessed June 27, 2018.

United States Environmental Protection Agency (EPA), Legal Compilation on Noise, Vol.1, page 2-104, 1973.

Weather Underground, 2014. WunderMap. Glorietta Area; Station ID KCAORIND3. http://www.wunderground.com/wundermap/. Accessed on April 29, 2018.

Western Regional Climate Center, 2014. Cooperative Climatological Data Summaries; Orinda Bowman, California (046502). http://www.wrcc.dri.edu/cgi-bin/cliMAIN.pl?ca6502. Accessed May 5, 2018.

Western Regional Climate Center, 2018. General Climate Summary Tables-Precipitation, Orinda Bowman, California. http://www.wrcc.dri.edu/cgi-bin/cliMAIN.pl?ca6502. Accessed May 31, 2018.

C. PERSONAL COMMUNICATIONS

Leavitt, Russell, Engineering Assistant III, Central Contra Costa Sanitary District. 2018. Personal communication with Urban Planning Partners, July 6.

Nagel, Mark, Police Chief, Orinda Police Department. 2018. Written communication with Urban Planning Partners, June 27.

Svozil, William, Plans Examiner, Moraga-Orinda Fire District, 2014. Personal communication with Urban Planning Partners, November 28.

Trimble, Todd, Director of Parks and Recreation, City of Orinda. 2018. Written communication with Urban Planning Partners, June 22.

APPENDIX A: Notice of Preparation and Written Comments Received

NOTICE OF PREPARATION

To:	Affected Agencies, Trustee Agencies, Interested Parties, and Individuals
From:	City of Orinda
Subject:	**Notice of Preparation (NOP) of a Draft Environmental Impact Report (EIR) for CountryHouse Memory Care at 1 Wilder Road**
Date:	July 6, 2018
Lead Agency:	City of Orinda 22 Orinda Way Orinda, CA 94563-2519 Phone (925) 253-4210 Fax (925) 253-7719 **Contact: Adam Foster, Associate Planner (afoster@cityoforinda.org)**
Project Title:	CountryHouse Memory Care
Project Location:	1 Wilder Road, Orinda, CA 94563 Assessor's Parcel Number 273-160-009 (see Figure 1)
Project Applicant:	AMG & Associates, LLC, 16633 Ventura Boulevard, Suite 1014, Encino, California 91436 c/o Mr. Alexis M. Gevorgian

Notice is hereby given that the City of Orinda will be the Lead Agency and will prepare a Draft Environmental Impact Report (EIR) for the project described below. We are requesting comments on the scope and content of this EIR.

Please send comments on the scope of the Draft EIR to Adam Foster, Associate Planner, at the address listed above. Due to the time limits mandated by State law, your response must be sent at the earliest possible date, but *no later than 30 days* after receipt of this notice. When the Draft EIR is published, it will be sent to any Responsible Agencies, persons who respond to this NOP, and to persons who otherwise indicate that they would like to receive a copy.

INTRODUCTION: The purpose of an EIR is to inform decision-makers and the general public of the environmental effects of a proposed project; to provide environmental information sufficient to evaluate a proposed project and its potential to cause significant effects on the environment; examine methods of reducing adverse environmental impacts; and consider alternatives to the proposed project. The City of Orinda will prepare a Draft EIR for the proposed CountryHouse Memory Care Project in accordance with CEQA and the *CEQA Guidelines*. The CountryHouse Memory Care EIR will include:

- Summary of the proposed project and its potential environmental effects;

- Description of the proposed project;
- Description of the existing environmental setting, potential environmental impacts of the project, and mitigation measures;
- Cumulative impacts;
- Alternatives to the proposed project; and
- CEQA-required conclusions.

PROJECT LOCATION: The project site, 1 Wilder Road (APN 273-160-009), is just inside the western boundary of the city of Orinda, approximately 0.9 mile northeast of the Caldecott Tunnel, at the southeast intersection of State Route 24 and Wilder Road. This 1.1-acre oblong property consists of non-native annual grassland. The subject property is zoned PS (Public, Semi-public and Utility District) and has a General Plan designation of Public and Semi-Public.

There is a wireless tower with multiple carriers on the adjacent Caltrans property to the northeast, and the highway on-ramp is to the west. The Wilder subdivision is located beyond the project site to the southeast along Wilder Road. The project site is also near Orinda's downtown office district and East Bay Regional Park trails.

PROJECT DESCRIPTION: The proposed CountryHouse Memory Care project consists of a 38-unit congregate care facility. The project would be a two-story Craftsman-style structure with a total building footprint of 31,113 square feet and would include on-site surface parking and landscaping improvements.

PROBABLE ENVIRONMENTAL EFFECTS: The EIR will consider the following topics to assess whether the project may have significant environmental effects:

- Aesthetics
- Air Quality
- Biological Resources
- Greenhouse Gas Emissions
- Hydrology & Water Quality
- Land Use
- Noise and Vibration
- Public Services
- Recreation
- Transportation and Traffic
- Utilities

The Draft EIR for this project will thoroughly examine the above listed topics. Topics that are not anticipated to be significant and, after review, may be excluded from a detailed analysis in the Draft EIR include: Agricultural Resources, Cultural Resources, Geology, Hazards and Hazardous Materials, Mineral Resources, and Population and Housing. Below is a short description of how the anticipated findings for each of these topics will be confirmed and addressed in the EIR.

Agricultural Resources: California Department of Conservation classifies the property as Urban and Built-Up Land, which is not suitable for livestock grazing. Furthermore, the project site is not zoned for agricultural use and is not under a Williamson Act contract. Finally, the project area contains no forest or timberland and is not zoned for forest land, timberland, or timberland production. This finding will be documented in the EIR.

Cultural Resources: The EIR will include an analysis of the sensitivity of the proposed project location for prehistoric and historical archaeological resources. In addition, while there are no standing structures on the subject parcel, the potential for the proposed project to impact historical buildings on nearby properties will be addressed. The assessment will include the following and be included in the Draft EIR appendix:

- Preliminary analysis will entail archival research at the Northwest Information Center of the California Historical Resources Information System and other sources.
- A request for information will be made to the Native American Heritage Commission and to local tribes and individuals.
- If archival research shows that the potential for impacts to cultural resources is minimal, a report to that effect will be prepared. If archival research indicates the potential for significant impacts to cultural resources exists, additional work will need to be scoped and undertaken.

It is anticipated that the assessment will find that the potential for impacts to cultural resources is minimal. If the assessment confirms this, a brief summary will be provided in the EIR under effects found not to be significant and the assessment will be included in the Draft EIR Appendix.

Hazards and Hazardous Materials: Based on review of the 2009 Phase I Environmental Site Assessment prepared by Diablo Green Consulting, there are no recognized environmental conditions at the project site relative to historic hazardous materials handling and/or releases. It appears that fill material of unknown origin was placed at the site at some time. This material was sampled and analyzed for metals. Metals were not identified above levels of concern. It is not anticipated that the site soils would be affected by aerially-deposited lead from SR 24 because the site is more than 30 feet from the highway. The EIR will include a brief rationale summarizing why the effect would not be significant.

Geology: Based on review of the 2017 geotechnical report prepared for the project site by Earth Mechanics Consulting Engineers, the site does not appear to present any significant constraints for development related to geology, soils, and seismicity. A brief rationale summarizing why the effect would not be significant will be included in the EIR.

Mineral Resources: There are no known mineral resources present at the project site that would be of value to the region or State. Additionally, the project site is not designated by the City of Orinda General Plan or other land use plans as a local-important mineral recovery site. The General Plan identifies one area as a locally-important mineral recovery site for stone, but this area is approximately 2,500 feet to

the south of the project site. The EIR will include a brief rationale summarizing why the effect would not be significant.

Population and Housing: The proposed project is not anticipated to have a significant impact on population or housing. A brief explanation of the reasons why the impact would not be significant will be included in the EIR.

The level of analysis for these subject areas may be refined or additional subject areas may be analyzed based on findings of the EIR analysis, responses to this NOP and/or refinements to the project that may occur subsequent to the publication of this NOP.

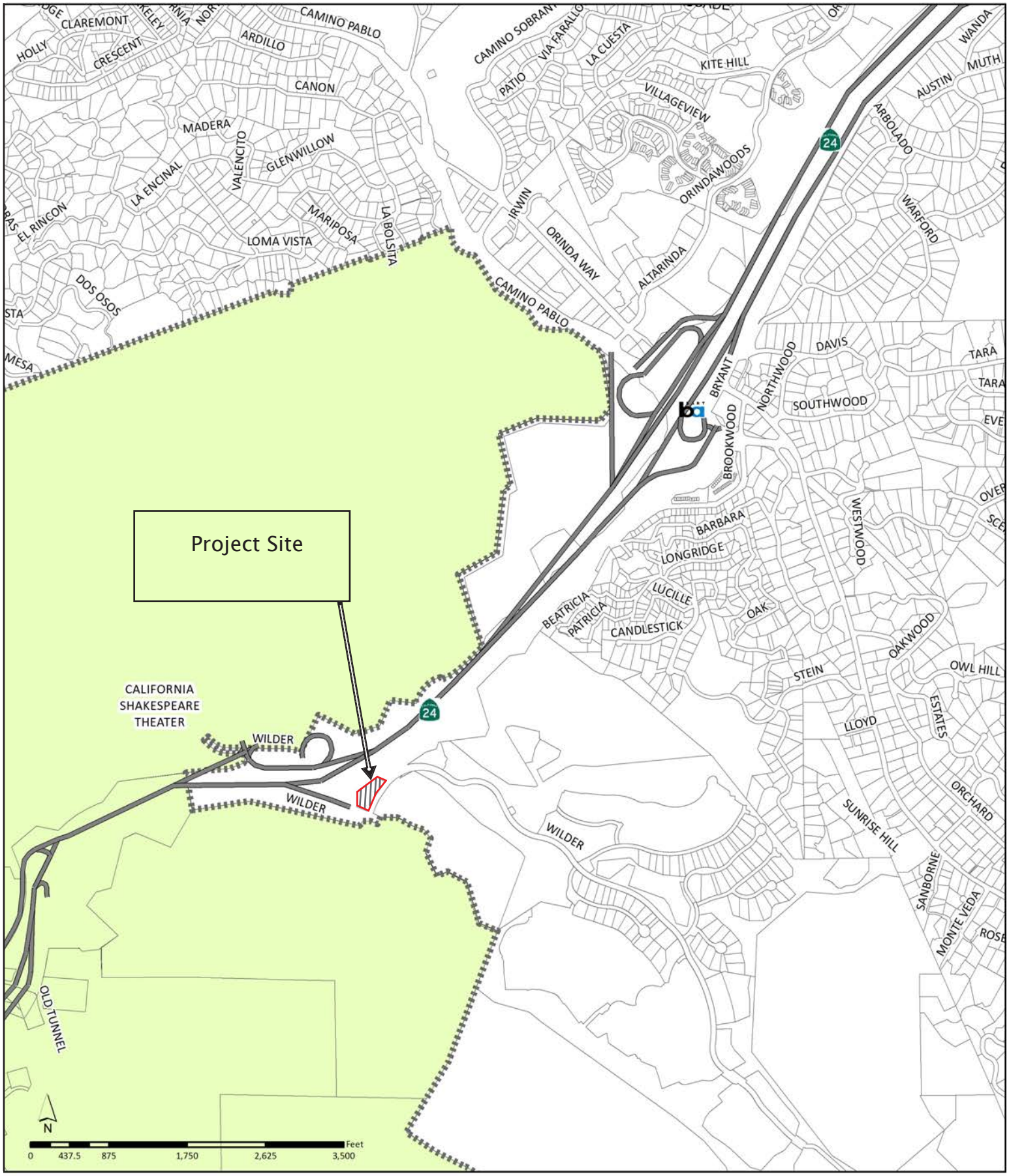
The Draft EIR will also examine a reasonable range of alternatives to the project, including the CEQA-mandated No Project Alternative, and other potential alternatives that may be capable of reducing or avoiding potential environmental effects.

July 6, 2018

Adam Foster

Adam Foster
Associate Planner

Attachments: Figure 1: Project Location
Figure 2: Site Plan
Figure 3-A: Exterior Elevations
Figure 3-B: Exterior Elevations



Source: Contra Costa County Mapping Information Center, accessed January 11, 2011

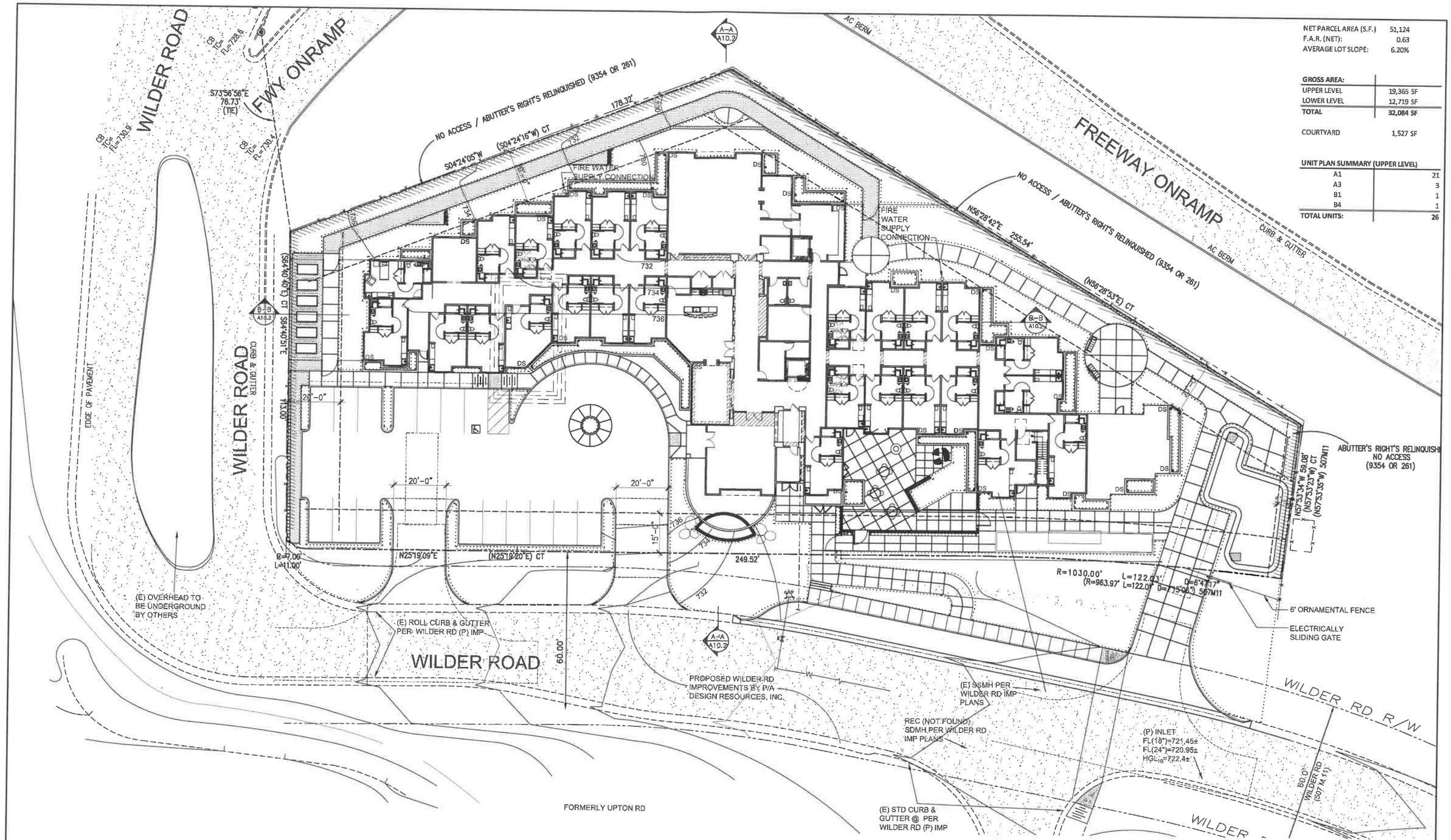
City Limits
Parcel Boundaries
Highway/Freeway
Project Site

Figure 1
Project Location

NET PARCEL AREA (S.F.)	51,124
F.A.R. (NET):	0.63
AVERAGE LOT SLOPE:	6.20%

GROSS AREA:	
UPPER LEVEL	19,365 SF
LOWER LEVEL	12,719 SF
TOTAL	32,084 SF
COURTYARD	1,527 SF

UNIT PLAN SUMMARY (UPPER LEVEL)	
A1	21
A3	3
B1	1
B4	1
TOTAL UNITS:	26



A-1

2015-579 11.01.2017

COUNTRYHOUSE MEMORY CARE at ORINDA, CA

UPPER SITE PLAN

AGEMARK SENIOR LIVING COMMUNITIES

25 AVENIDA DE ORINDA, ORINDA, CALIFORNIA 94563 (510) 548-6600

Figure 2

ARCHITECTS ORANGE

144 NORTH ORANGE ST., ORANGE, CALIFORNIA 92866 (714) 639-9860

SOUTH ELEVATION

ELEVATION KEYNOTES

1 ASPHALT COMPOSITE SHINGLE ROOF CLASS A

2 STONE VENEER OVER BROWN SCRATCH COAT OVER BUILDING PAPER

3 FIBER CEMENT SIDING

4 BOARD AND BATTEN VERTICAL FIBER CEMENT SIDING OVER BUILDING WRAP OVER DENSGLASS BOARD

5 2X FASCIA

6 4X SHAPED KICKER BRACES

7 HARDI STYLE TRIM

8 PLANT-ON RAILING

9 FAUX CHIMNEY STACK

10 HARDI TRIM

EAST ELEVATION (WIDLER RD)

NOTE: EXISTING GRADES SHOWN IN RED

A-6

2015-579 9.22.2017

0' 5' 10' 20' 30'

SCALE: 1/10" = 1'

EXTERIOR ELEVATIONS

COUNTRYHOUSE MEMORY CARE at ORINDA, CA

AGEMARK SENIOR LIVING COMMUNITIES

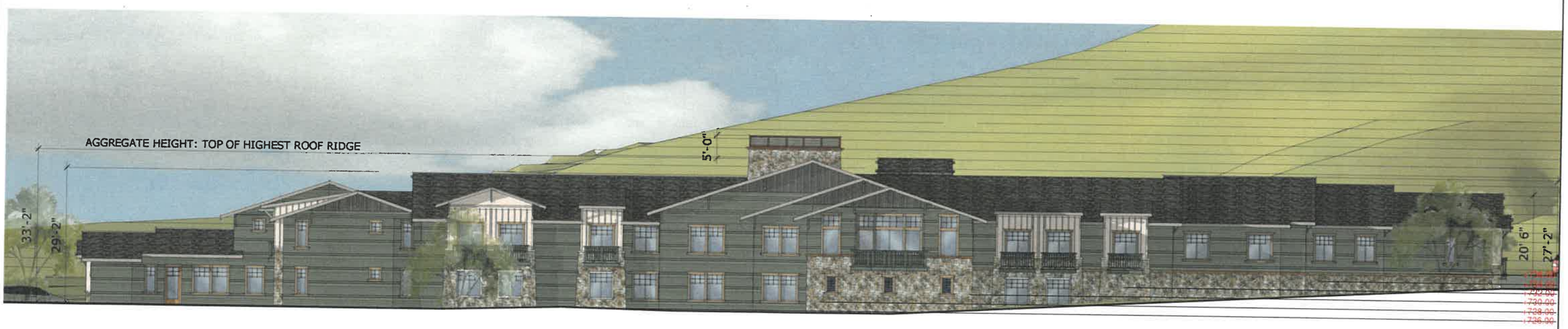
25 AVENIDA DE ORINDA, ORINDA, CALIFORNIA 94563 (510) 548-6600

Figure 3-A

ARCHITECTS ORANGE

144 NORTH ORANGE ST., ORANGE, CALIFORNIA 92866 (714) 639-9860

NORTH ELEVATION



WEST ELEVATION

NOTE: EXISTING GRADES SHOWN IN RED

A-7

0' 5' 10' 20 30'

SCALE: 1/10" = 1'

2015-579 9.22.2017

COUNTRYHOUSE MEMORY CARE at ORINDA, CA

EXTERIOR ELEVATIONS

AGEMARK SENIOR LIVING COMMUNITIES

25 AVENIDA DE ORINDA, ORINDA, CALIFORNIA 94563 (510) 548-6600

Figure 3-B

ARCHITECTS ORANGE

144 NORTH ORANGE ST., ORANGE, CALIFORNIA 92866 (714) 639-9860

STATE OF CALIFORNIA

GOVERNOR'S OFFICE *of* PLANNING AND RESEARCH

EDMUND G. BROWN JR.
GOVERNOR

KEN ALEX
DIRECTOR

Notice of Preparation

July 6, 2018

To: Reviewing Agencies

Re: Country House Memory Care
SCH# 2018072015

Attached for your review and comment is the Notice of Preparation (NOP) for the Country House Memory Care draft Environmental Impact Report (EIR).

Responsible agencies must transmit their comments on the scope and content of the NOP, focusing on specific information related to their own statutory responsibility, within 30 days of receipt of the NOP from the Lead Agency. This is a courtesy notice provided by the State Clearinghouse with a reminder for you to comment in a timely manner. We encourage other agencies to also respond to this notice and express their concerns early in the environmental review process.

Please direct your comments to:

Adam Foster
City of Orinda
22 Orinda Way
Orinda, CA 94563

with a copy to the State Clearinghouse in the Office of Planning and Research. Please refer to the SCH number noted above in all correspondence concerning this project.

If you have any questions about the environmental document review process, please call the State Clearinghouse at (916) 445-0613.

Sincerely,

Scott Morgan
Director, State Clearinghouse

Attachments
cc: Lead Agency

1400 10th Street P.O. Box 3044 Sacramento, California 95812-3044
1-916-322-2318 FAX 1-916-558-3184 www.opr.ca.gov

Document Details Report
State Clearinghouse Data Base

SCH# 2018072015
Project Title Country House Memory Care
Lead Agency Orinda, City of

Type NOP Notice of Preparation

Description The proposed CountryHouse Memory Care project consists of a 38-unit cngregate care facility. The project would be a two-story Craftsman-Style Structure with a total building footprint of 31,113 square feet and would include on-site surface parking and landscaping improvements.

Lead Agency Contact

Name Adam Foster
Agency City of Orinda
Phone (925) 253-4210 **Fax**
email afoster@cityoforinda.org
Address 22 Orinda Way
City Orinda **State** CA **Zip** 94563

Project Location

AF called OPR on 7/11/18. They said Contra Costa shows in their database.

County Los Angeles
City Contra Costa
Region
Cross Streets 1 Wilder Rd, Orinda, CA
Lat / Long
Parcel No. 273-160-009
Township **Range** **Section** **Base**

Proximity to:

Highways SR 24
Airports
Railways
Waterways
Schools
Land Use

Project Issues Aesthetic/Visual; Air Quality; Biological Resources; Water Quality; Landuse; Noise; Public Services; Traffic/Circulation; Geologic/Seismic; Toxic/Hazardous; Population/Housing Balance; Minerals; Housing; Other Issues

Reviewing Agencies Resources Agency; Office of Historic Preservation; Department of Parks and Recreation; Department of Water Resources; Department of Fish and Wildlife, Region 3; Delta Protection Commission; Delta Stewardship Council; Native American Heritage Commission; Public Utilities Commission; California Highway Patrol; Caltrans, District 4; State Water Resources Control Board, Division of Drinking Water, District 4; Regional Water Quality Control Board, Region 2

Date Received 07/06/2018 **Start of Review** 07/06/2018 **End of Review** 08/06/2018

Note: Blanks in data fields result from insufficient information provided by lead agency.

NOP Distribution List

County: Contra Costa

SCH# 2018072015

Resources Agency

- [x] **Resources Agency**
  Nadell Gayou
- [ ] **Dept. of Boating & Waterways**
  Denise Peterson
- [ ] **California Coastal Commission**
  Allyson Hitt
- [ ] **Colorado River Board**
  Elsa Contreras
- [ ] **Dept. of Conservation**
  Crina Chan
- [ ] **Cal Fire**
  Dan Foster
- [ ] **Central Valley Flood Protection Board**
  James Herota
- [x] **Office of Historic Preservation**
  Ron Parsons
- [x] **Dept of Parks & Recreation**
  Environmental Stewardship Section
- [ ] **S.F. Bay Conservation & Dev't. Comm.**
  Steve Goldbeck
- [x] **Dept. of Water Resources**
  Resources Agency
  Nadell Gayou

Fish and Game

- [ ] **Depart. of Fish & Wildlife**
  Scott Flint
  Environmental Services Division
- [ ] **Fish & Wildlife Region 1**
  Curt Babcock
- [ ] **Fish & Wildlife Region 1E**
  Laurie Harnsberger
- [ ] **Fish & Wildlife Region 2**
  Jeff Drongesen
- [x] **Fish & Wildlife Region 3**
  Craig Weightman
- [ ] **Fish & Wildlife Region 4**
  Julie Vance
- [ ] **Fish & Wildlife Region 5**
  Leslie Newton-Reed
  Habitat Conservation Program
- [ ] **Fish & Wildlife Region 6**
  Tiffany Ellis
  Habitat Conservation Program
- [ ] **Fish & Wildlife Region 6 I/M**
  Heidi Calvert
  Inyo/Mono, Habitat Conservation Program
- [ ] **Dept. of Fish & Wildlife M**
  William Paznokas
  Marine Region

Other Departments

- [ ] **California Department of Education**
  Lesley Taylor
- [ ] **OES (Office of Emergency Services)**
  Monique Wilber
- [ ] **Food & Agriculture**
  Sandra Schubert
  Dept. of Food and Agriculture
- [ ] **Dept. of General Services**
  Cathy Buck
  Environmental Services Section
- [ ] **Housing & Comm. Dev.**
  CEQA Coordinator
  Housing Policy Division

Independent Commissions,Boards

- [x] **Delta Protection Commission**
  Erik Vink
- [x] **Delta Stewardship Council**
  Anthony Navasero
- [ ] **California Energy Commission**
  Eric Knight
- [x] **Native American Heritage Comm.**
  Debbie Treadway
- [x] **Public Utilities Commission**
  Supervisor
- [ ] **Santa Monica Bay Restoration**
  Guangyu Wang
- [ ] **State Lands Commission**
  Jennifer Deleong
- [ ] **Tahoe Regional Planning Agency (TRPA)**
  Cherry Jacques

Cal State Transportation Agency CalSTA

- [ ] **Caltrans - Division of Aeronautics**
  Philip Crimmins
- [ ] **Caltrans – Planning HQ LD-IGR**
  Christian Bushong
- [x] **California Highway Patrol**
  Suzann Ikeuchi
  Office of Special Projects

Dept. of Transportation

- [ ] **Caltrans, District 1**
  Rex Jackman
- [ ] **Caltrans, District 2**
  Marcelino Gonzalez
- [ ] **Caltrans, District 3**
  Susan Zanchi - North
- [x] **Caltrans, District 4**
  Patricia Maurice
- [ ] **Caltrans, District 5**
  Larry Newland
- [ ] **Caltrans, District 6**
  Michael Navarro
- [ ] **Caltrans, District 7**
  Dianna Watson
- [ ] **Caltrans, District 8**
  Mark Roberts
- [ ] **Caltrans, District 9**
  Gayle Rosander
- [ ] **Caltrans, District 10**
  Tom Dumas
- [ ] **Caltrans, District 11**
  Jacob Armstrong
- [ ] **Caltrans, District 12**
  Maureen El Harake

Cal EPA

Air Resources Board

- [ ] **Airport & Freight**
  Jack Wursten
  - [ ] **Transportation Projects**
    Nesamani Kalandiyur
  - [ ] **Industrial/Energy Projects**
    Mike Tollstrup
- [ ] **California Department of Resources, Recycling & Recovery**
  Kevin Taylor/Jeff Esquivel
- [ ] **State Water Resources Control Board**
  Regional Programs Unit
  Division of Financial Assistance
- [ ] **State Water Resources Control Board**
  Cindy Forbes – Asst Deputy
  Division of Drinking Water
- [x] **State Water Resources Control Board**
  Div. Drinking Water # 4
- [ ] **State Water Resources Control Board**
  Student Intern, 401 Water Quality Certification Unit
  Division of Water Quality
- [ ] **State Water Resouces Control Board**
  Phil Crader
  Division of Water Rights
- [ ] **Dept. of Toxic Substances Control Reg. #**_____
  CEQA Tracking Center
- [ ] **Department of Pesticide Regulation**
  CEQA Coordinator

Regional Water Quality Control Board (RWQCB)

- [ ] **RWQCB 1**
  Cathleen Hudson
  North Coast Region (1)
- [x] **RWQCB 2**
  Environmental Document Coordinator
  San Francisco Bay Region (2)
- [ ] **RWQCB 3**
  Central Coast Region (3)
- [ ] **RWQCB 4**
  Teresa Rodgers
  Los Angeles Region (4)
- [ ] **RWQCB 5S**
  Central Valley Region (5)
  - [ ] **RWQCB 5F**
    Central Valley Region (5)
    Fresno Branch Office
  - [ ] **RWQCB 5R**
    Central Valley Region (5)
    Redding Branch Office
- [ ] **RWQCB 6**
  Lahontan Region (6)
  - [ ] **RWQCB 6V**
    Lahontan Region (6)
    Victorville Branch Office
- [ ] **RWQCB 7**
  Colorado River Basin Region (7)
- [ ] **RWQCB 8**
  Santa Ana Region (8)
- [ ] **RWQCB 9**
  San Diego Region (9)

- [ ] **Other** _____
- [ ] _____
  Conservancy

Last Updated 5/22/18

From: Russ Leavitt [mailto:RLeavitt@centralsan.org]
Sent: Friday, July 06, 2018 10:55 AM
To: Adam Foster <afoster@cityoforinda.org>
Subject: RE: 1 Wilder Road Notice of Preparation

Adam,

Attached is my response to an earlier NOP on a larger, but similar use project at the same location. The concerns identified, particularly the need for LAFCO review and action, remain the same.

Russ Leavitt

Central Contra Costa Sanitary District
Protecting public health and the environment
5019 Imhoff Place, Martinez, CA 94553-4392

FAX: (925) 228-4624

ROGER S. BAILEY
General Manager

KENTON L. ALM
Counsel for the District
(510) 808-2000

ELAINE R. BOEHME
Secretary of the District

May 6, 2014

Christina Ratcliffe, Senior Planner
City of Orinda
22 Orinda Way
Orinda, CA 94563-2519

Dear Ms. Ratcliffe:

RESPONSE TO NOTICE OF PREPARATION; 67-UNIT ASSISTED LIVING FACILITY, 1 WILDER ROAD, ORINDA; APN: 273-160-009; WS 3; MAP 69D7; JOB 6423

I am responding to the above-referenced Notice of Preparation with regard to Central Contra Costa Sanitary District's (CCCSD) jurisdiction and willingness to provide wastewater utility service to this proposed assisted living facility.

Jurisdiction

This project site is just outside CCCSD's Sphere of Influence (SOI) and service boundaries. An SOI change and annexation of this parcel to CCCSD would be required before service could be provided. The SOI change and annexation would require the approval of the CCCSD Board of Directors and the Contra Costa Local Agency Formation Commission (LAFCO). This information needs to be included in the Environmental Impact Report (EIR). LAFCO and CCCSD need to be listed as Responsible Agencies that will use the EIR for subsequent approvals and receive copies of the Draft and Final EIR when they become available.

Plans to Provide Service

LAFCO will take the following information into consideration when considering whether CCCSD should provide service to the project site.

1. CCCSD is the only wastewater utility service provider serving Orinda.

2. Wastewater from the subject property can flow by gravity into CCCSD's sewer system. An existing eight-inch diameter public main sewer is located in Wilder Road.

3. CCCSD has completed a limited analysis for the sewer system downstream of the proposed project. This analysis consisted of a review of CCCSD records for capacity deficiencies and a determination that the proposed project will generate less wastewater than our "trigger" for further analysis. The existing main sewer is adequate for the additional wastewater that will be generated by this project, but CCCSD facilities farther

downstream do not have adequate flow carrying capacity under CCCSD's current design criteria for ultimate conditions. Improvements to correct the deficiencies are or will be included in CCCSD's Capital Improvement Plan. Improvements to CCCSD's existing facilities that are required as a result of new development will be funded from applicable fees and charges. The developer will be required to pay these fees and charges at the time of connection to the sewer system.

4. CCCSD prefers to annex properties that are: a) developed, but converting from septic system to public sewer service; or b) undeveloped, but have been approved for development by a land use planning agency. The subject parcel has not been approved for development by the City of Orinda.

Based on these factors, and CCCSD's policies and practices, once the subject property receives development approval, there is no indication that LAFCO would object changing the SOI and allowing CCCSD to annex and serve the property.

If you have any questions regarding these comments, please contact me at 925-229-7255 or rleavitt@centralsan.org.

Sincerely,

Russell B. Leavitt
Engineering Assistant III

RBL/sdh

From: Lou Ann Texeira [mailto:LouAnn.Texeira@lafco.cccounty.us]
Sent: Tuesday, July 10, 2018 12:10 PM
To: Adam Foster <afoster@cityoforinda.org>
Cc: Kate Sibley <Kate.Sibley@lafco.cccounty.us>
Subject: RE: 1 Wilder Road Notice of Preparation

Hi Adam,

Thank you for including Contra Costa LAFCO on the notification list for the 1 Wilder Road project.

It appears that the project site is within the City's boundary and sphere of influence (SOI), and within the EBMUD service boundary and SOI.

Regarding wastewater services, LAFCO staff has consulted with Central Contra Costa Sanitary District (CCCSD), the County Assessor's Office, and County GIS, and it appears that the project site is **outside** CCCSD's SOI and service boundary. Should the project require wastewater service, a SOI amendment and annexation will be required.

As a Responsible Agency pursuant to the CEQA, LAFCO may need to rely on the City's environmental document in consideration of any future boundary change (e.g., annexation, SOI amendment, etc.) application relating to this project.

LAFCO is an independent, regulatory agency with discretion to approve, wholly, partially or conditionally, or disapprove, changes of organization or reorganizations. In accordance with the Cortese-Knox-Hertzberg Local Government Reorganization Act of 2000 (CKH Act), LAFCO is required to consider a variety of factors when evaluating a proposal, including, but not limited to the proposal's potential impacts on agricultural land and open space, provision of municipal services and infrastructure to the project site, timely and available supply of water, fair share of regional housing, etc..

The factors relating to boundary and SOI changes are contained in Government Code sections 56668 and 56425, respectively. Including an assessment of these factors in the City's environmental document will facilitate LAFCO's review and the LAFCO process. Deficiencies in the environmental document as required by LAFCO may result in the need for additional CEQA compliance work.

If LAFCO will be asked to rely on the City's environmental document for a future boundary change, the document should specifically 1) reference the LAFCO action(s) in the Project Description (i.e., annexation, SOI amendment), 2) list LAFCO as "Other Public Agencies Whose Approval is Required", and 3) most importantly, the LAFCO action(s) and relevant factors should be adequately evaluated in the environmental document. For example, if the project will require annexation to a sewer district, this action and the relevant analysis (e.g., demand, capacity, infrastructure) should be specifically addressed in the environmental document.

We look forward to receiving future notices regarding this project. Feel free to contact us if you have any questions.

Lou Ann Texeira, Executive Officer
Contra Costa LAFCO
651 Pine Street, 6th Floor
Martinez, CA 94553
925-335-1094
LouAnn.Texeira@lafco.cccounty.us

From: BAHADOUR ZARRIN <ben@paymun.com<mailto:ben@paymun.com>>
Date: August 5, 2018 at 11:28:35 AM PDT
To: Adam Foster <afoster@cityoforinda.org<mailto:afoster@cityoforinda.org>>
Subject: Re: Questions about zoning and development

Hi Adam, Thank you very much for the information. I understand today is the last day to give feedback regarding particular points of view for City to address with the Environmental study group so they include in their area of assessment. I will share with you my primary three concerns which I also mentioned during our meeting. Before going over the issues I do want to give you a bit of my feedback overall regarding this study. If I remember correctly you mentioned the applicant has volunteered and is paying for this study and it's not a city zoning requirement (at least at this stage). My thought process on this is, applicant would only volunteer to pay for such study if they feel it is going to benefit their case so overall I am not very optimistic on this entire process, but regardless will give you my areas of concern and perhaps areas that impacts the area/environment negatively.

1) Aesthetically this structure will negatively impact the surrounding environment. At the present time there is no structure or facility in this area and such large structure on such small lot (for the size of facility) is really imposing. Also if we are going to really discuss Aesthetics we should truly evaluate "the way this facility gives pleasure through beauty." That's the real definition of Aesthetics, which in this case the natural beauty is being taken away and something completely out of norm in this area is being proposed to be constructed. Both from aspect of this particular area as well as gateway entry of Wilder Sub-division.

2) The issue of traffic - I like to ask that you guys ask them to do specific study and assessment of the Wilder community at full complicity with 245 homes and over 1000 cars going in and out of this sub-division before we even take into account the other 200-500 cars for the already existing ball fields and art & garden center as well as already existing club house with events 2-4 times a week once community at full capacity. At this time we have on an average 1 event per week and we are not even 25% at capacity yet for occupied homes. This is right at the entrance of soon to be busy sub-division with only one lane in and one lane out, and there will be delivery trucks coming to deliver food and supplies as well as emergency vehicles with no Horse shoe driveway option for such Trucks to pull in and not need to back into incoming traffic and create hold ups and extensive delays. As you and I discussed if there was to be a turning lane added then it narrows the size of incoming and outgoing lanes to 9' or so which also slows down the traffic and creates big back ups.

3) Number of parking spots for facility this size if for sure not sufficient. At least 3 times a day there will be shift changes with incoming crew and outgoing along with other people providing care, food prep, janitorial services, nursing, visitors…. This is going to result in people having to pull out of the parking and go look for parting by ball fields then

cross the street which is now going to result in parking in un-permitted parking areas and crosswalk…

4) This one is more for planning department and commissioners, which is #3 of the 5 elements they take into consideration which is how conforming this facility is with surrounding facilities and clearly the answer to that is 0% conformity which should be a serious consideration element with the Use Permit Approval.

Thank you again for all your help.

Bahadour (Ben) Zarrin
PAYMUN, INC.

Real Estate Broker
BRE Lic.# 01425645

Real Estate Developer
GBC Lic.# 991725

Mortgage Broker
NMLS Lic. #357831

DEPARTMENT OF TRANSPORTATION
DISTRICT 4
OFFICE OF TRANSIT AND COMMUNITY PLANNING
P.O. BOX 23660, MS-10D
OAKLAND, CA 94623-0660
PHONE (510) 286-5528
FAX (510) 286-5559
TTY 711
www.dot.ca.gov

Making Conservation a California Way of Life.

August 7, 2018

Adam Foster, Associate Planner
City of Orinda
22 Orinda Way
Orinda, California 94563

SCH #: 2018072015
GTS #: 04-CC-2018-00235
GTS ID: 11531
Post Mile: CC-24-1.217

Subject: Regarding Notice of Preparation (NOP) for the Country House draft Environmental Impact Report (EIR).

Mr. Foster:

Thank you for including the California Department of Transportation (Caltrans) in the environmental review process for the above-referenced project. In tandem with the Metropolitan Transportation Commission's (MTC) Sustainable Communities Strategy (SCS), Caltrans mission signals a modernization of our approach to evaluate and mitigate impacts to the State Transportation Network (STN). Caltrans *Strategic Management Plan 2015-2020* aims to reduce Vehicle Miles Travelled (VMT) by tripling bicycle and doubling both pedestrian and transit travel by 2020. Our comments are based on the Notice of Preparation (NOP) for the Country House draft Environmental Impact Report (EIR) that you submitted to this office for review and comment.

Project Understanding

The proposal is to build a 38-unit congregate care facility with a total building footprint of 31,113 square feet. Project would also include a surfaced parking area and landscaping. The project is adjacent to East Bound State Route 24 at the Wilder Road On-and Off-Ramps (Exit 7B) and abuts the California Department of Transportation (Caltrans) Right of Way (ROW) at Post Mile 1.217.

Environmental Planning-Cultural Resources

As part of the environmental review for the proposed project, and pursuant to CEQA Guidelines Section 15064.5, we recommend that the City of Orinda conduct a cultural resource technical study that at a minimum includes a records search at the Northwest Information Center of the California Historical Resources Information System (CHRIS), a field survey of the project area by a qualified archaeologist, and Native American consultation. If an encroachment permit is needed for work within Caltrans right-of-way, we may require that cultural resource technical studies be prepared in compliance with CEQA, Public Resources Code (PRC) 5024, and the Caltrans Standard Environmental Reference (SER) Chapter 2 (http://www.dot.ca.gov/ser/vol2/vol2.htm).

Should ground-disturbing activities take place within Caltrans right-of-way and there is an inadvertent archaeological or burial discovery, in compliance with CEQA, PRC 5024.5, and the SER, all construction within 60 feet of the find shall cease and the Caltrans District 4 Office of Cultural Resource Studies (OCRS) shall be immediately contacted at (510) 622-1673.

Encroachment Permit

Please be advised that any sign or work within Caltrans ROW will require an encroachment permit prior to construction. To apply for an encroachment permit, please complete an encroachment permit application, environmental documentation, and five (5) sets of plans clearly indicating State ROW, and submit to the following address:

David Salladay, District Office Chief
Office of Permits
California Department of Transportation, District 4
PO Box 23660
Oakland, CA 94623-0660.

Traffic-related mitigation measures should be incorporated into the construction plans prior to the encroachment permit process. See the website link below for more information:

http://www.dot.ca.gov/hq/traffops/developserv/permits.

If you have any questions, please contact Michael Meloy, Associate Environmental Planner, at (510) 286-5433 or michael.meloy@dot.ca.gov.

Sincerely,

PATRICIA MAURICE
District Branch Chief
Local Development - Intergovernmental Review

STATE OF CALIFORNIA Edmund G. Brown Jr., Governor
NATIVE AMERICAN HERITAGE COMMISSION
Cultural and Environmental Department
1550 Harbor Blvd., Suite 100
West Sacramento, CA 95691
Phone (916) 373-3710

August 8, 2018

Adam Foster
City of Orinda
22 Orinda Way
Orinda, CA 94563

Also sent via e-mail: afoster@cityoforinda.org

RE: SCH# 2018072015, Country House Memory Care Project, City of Orinda; Los Angeles County, California

Dear Mr. Foster:

The Native American Heritage Commission has received the Notice of Preparation (NOP) for Draft Environmental Impact Report for the project referenced above. The California Environmental Quality Act (CEQA) (Pub. Resources Code § 21000 et seq.), specifically Public Resources Code section 21084.1, states that a project that may cause a substantial adverse change in the significance of an historical resource is a project that may have a significant effect on the environment. (Pub. Resources Code § 21084.1; Cal. Code Regs., tit.14, § 15064.5 (b) (CEQA Guidelines Section 15064.5 (b)). If there is substantial evidence, in light of the whole record before a lead agency, that a project may have a significant effect on the environment, an environmental impact report (EIR) shall be prepared. (Pub. Resources Code § 21080 (d); Cal. Code Regs., tit. 14, § 15064 subd. (a)(1) (CEQA Guidelines § 15064 (a)(1)). In order to determine whether a project will cause a substantial adverse change in the significance of a historical resource, a lead agency will need to determine whether there are historical resources with the area of project effect (APE).

CEQA was amended significantly in 2014. Assembly Bill 52 (Gatto, Chapter 532, Statutes of 2014) (AB 52) amended CEQA to create a **separate category of cultural resources**, "tribal cultural resources" (Pub. Resources Code § 21074) and provides that a project with an effect that may cause a substantial adverse change in the significance of a tribal cultural resource is a project that may have a significant effect on the environment (Pub. Resources Code § 21084.2). Please reference California Natural Resources Agency (2016) "Final Text for tribal cultural resources update to Appendix G: Environmental Checklist Form," http://resources.ca.gov/ceqa/docs/ab52/Clean-final-AB-52-App-G-text-Submitted.pdf. Public agencies shall, when feasible, avoid damaging effects to any tribal cultural resource. (Pub. Resources Code § 21084.3 (a)). **AB 52 applies to any project for which a notice of preparation or a notice of negative declaration or mitigated negative declaration is filed on or after July 1, 2015.** If your project involves the adoption of or amendment to a general plan or a specific plan, or the designation or proposed designation of open space, on or after March 1, 2005, it may also be subject to Senate Bill 18 (Burton, Chapter 905, Statutes of 2004) (SB 18). **Both SB 18 and AB 52 have tribal consultation requirements**. If your project is also subject to the federal National Environmental Policy Act (42 U.S.C. § 4321 et seq.) (NEPA), the tribal consultation requirements of Section 106 of the National Historic Preservation Act of 1966 (154 U.S.C. 300101, 36 C.F.R. § 800 et seq.) may also apply.

The NAHC recommends **lead agencies consult with all California Native American tribes** that are traditionally and culturally affiliated with the geographic area of your proposed project as early as possible in order to avoid inadvertent discoveries of Native American human remains and best protect tribal cultural resources. Below is a brief summary of portions of AB 52 and SB 18 as well as the NAHC's recommendations for conducting cultural resources assessments. **Consult your legal counsel about compliance with AB 52 and SB 18 as well as compliance with any other applicable laws**.

AB 52

AB 52 has added to CEQA the additional requirements listed below, along with many other requirements:

1. Fourteen Day Period to Provide Notice of Completion of an Application/Decision to Undertake a Project: Within fourteen (14) days of determining that an application for a project is complete or of a decision by a public agency to undertake a project, a **lead agency** shall provide formal notification to a designated contact of, or tribal representative of, traditionally and culturally affiliated California Native American tribes that have requested notice, to be accomplished by at least one written notice that includes:

- **a.** A brief description of the project.
- **b.** The lead agency contact information.
- **c.** Notification that the California Native American tribe has 30 days to request consultation. (Pub. Resources Code § 21080.3.1 (d)).
- **d.** A "California Native American tribe" is defined as a Native American tribe located in California that is on the contact list maintained by the NAHC for the purposes of Chapter 905 of Statutes of 2004 (SB 18). (Pub. Resources Code § 21073).

2. Begin Consultation Within 30 Days of Receiving a Tribe's Request for Consultation and Before Releasing a Negative Declaration, Mitigated Negative Declaration, or Environmental Impact Report: A **lead agency** shall begin the consultation process within 30 days of receiving a request for consultation from a California Native American tribe that is traditionally and culturally affiliated with the geographic area of the proposed project. (Pub. Resources Code § 21080.3.1, subds. (d) and (e)) and prior to the release of a negative declaration, mitigated negative declaration or environmental impact report. (Pub. Resources Code § 21080.3.1(b)).

- **a.** For purposes of AB 52, "consultation shall have the same meaning as provided in Gov. Code § 65352.4 (SB 18). (Pub. Resources Code § 21080.3.1 (b)).

3. Mandatory Topics of Consultation If Requested by a Tribe: The following topics of consultation, if a tribe requests to discuss them, are mandatory topics of consultation:

- **a.** Alternatives to the project**.**
- **b.** Recommended mitigation measures**.**
- **c.** Significant effects**.** (Pub. Resources Code § 21080.3.2 (a)).

4. Discretionary Topics of Consultation: The following topics are discretionary topics of consultation:

- **a.** Type of environmental review necessary.
- **b.** Significance of the tribal cultural resources.
- **c.** Significance of the project's impacts on tribal cultural resources.
- **d.** If necessary, project alternatives or appropriate measures for preservation or mitigation that the tribe may recommend to the lead agency. (Pub. Resources Code § 21080.3.2 (a)).

5. Confidentiality of Information Submitted by a Tribe During the Environmental Review Process: With some exceptions, any information, including but not limited to, the location, description, and use of tribal cultural resources submitted by a California Native American tribe during the environmental review process shall not be included in the environmental document or otherwise disclosed by the lead agency or any other public agency to the public, consistent with Government Code sections 6254 (r) and 6254.10. Any information submitted by a California Native American tribe during the consultation or environmental review process shall be published in a confidential appendix to the environmental document unless the tribe that provided the information consents, in writing, to the disclosure of some or all of the information to the public. (Pub. Resources Code § 21082.3 (c)(1)).

6. Discussion of Impacts to Tribal Cultural Resources in the Environmental Document: If a project may have a significant impact on a tribal cultural resource, the lead agency's environmental document shall discuss both of the following:

- **a.** Whether the proposed project has a significant impact on an identified tribal cultural resource.
- **b.** Whether feasible alternatives or mitigation measures, including those measures that may be agreed to pursuant to Public Resources Code section 21082.3, subdivision (a), avoid or substantially lessen the impact on the identified tribal cultural resource. (Pub. Resources Code § 21082.3 (b)).

7. Conclusion of Consultation: Consultation with a tribe shall be considered concluded when either of the following occurs:
    - **a.** The parties agree to measures to mitigate or avoid a significant effect, if a significant effect exists, on a tribal cultural resource; or
    - **b.** A party, acting in good faith and after reasonable effort, concludes that mutual agreement cannot be reached. (Pub. Resources Code § 21080.3.2 (b)).

8. Recommending Mitigation Measures Agreed Upon in Consultation in the Environmental Document: Any mitigation measures agreed upon in the consultation conducted pursuant to Public Resources Code section 21080.3.2 shall be recommended for inclusion in the environmental document and in an adopted mitigation monitoring and reporting program, if determined to avoid or lessen the impact pursuant to Public Resources Code section 21082.3, subdivision (b), paragraph 2, and shall be fully enforceable. (Pub. Resources Code § 21082.3 (a)).

9. Required Consideration of Feasible Mitigation: If mitigation measures recommended by the staff of the lead agency as a result of the consultation process are not included in the environmental document or if there are no agreed upon mitigation measures at the conclusion of consultation, or if consultation does not occur, and if substantial evidence demonstrates that a project will cause a significant effect to a tribal cultural resource, the lead agency shall consider feasible mitigation pursuant to Public Resources Code section 21084.3 (b). (Pub. Resources Code § 21082.3 (e)).

10. Examples of Mitigation Measures That, If Feasible, May Be Considered to Avoid or Minimize Significant Adverse Impacts to Tribal Cultural Resources:
    - **a.** Avoidance and preservation of the resources in place, including, but not limited to**:**
        - **i.** Planning and construction to avoid the resources and protect the cultural and natural context.
        - **ii.** Planning greenspace, parks, or other open space, to incorporate the resources with culturally appropriate protection and management criteria.
    - **b.** Treating the resource with culturally appropriate dignity, taking into account the tribal cultural values and meaning of the resource, including, but not limited to, the following:
        - **i.** Protecting the cultural character and integrity of the resource.
        - **ii.** Protecting the traditional use of the resource.
        - **iii.** Protecting the confidentiality of the resource.
    - **c.** Permanent conservation easements or other interests in real property, with culturally appropriate management criteria for the purposes of preserving or utilizing the resources or places.
    - **d.** Protecting the resource. (Pub. Resource Code § 21084.3 (b)).
    - **e.** Please note that a federally recognized California Native American tribe or a nonfederally recognized California Native American tribe that is on the contact list maintained by the NAHC to protect a California prehistoric, archaeological, cultural, spiritual, or ceremonial place may acquire and hold conservation easements if the conservation easement is voluntarily conveyed. (Civ. Code § 815.3 (c)).
    - **f.** Please note that it is the policy of the state that Native American remains and associated grave artifacts shall be repatriated. (Pub. Resources Code § 5097.991).

11. Prerequisites for Certifying an Environmental Impact Report or Adopting a Mitigated Negative Declaration or Negative Declaration with a Significant Impact on an Identified Tribal Cultural Resource: An environmental impact report may not be certified, nor may a mitigated negative declaration or a negative declaration be adopted unless one of the following occurs:
    - **a.** The consultation process between the tribes and the lead agency has occurred as provided in Public Resources Code sections 21080.3.1 and 21080.3.2 and concluded pursuant to Public Resources Code section 21080.3.2.
    - **b.** The tribe that requested consultation failed to provide comments to the lead agency or otherwise failed to engage in the consultation process.
    - **c.** The lead agency provided notice of the project to the tribe in compliance with Public Resources Code section 21080.3.1 (d) and the tribe failed to request consultation within 30 days. (Pub. Resources Code § 21082.3 (d)).

    This process should be documented in the Cultural Resources section of your environmental document.

The NAHC's PowerPoint presentation titled, "Tribal Consultation Under AB 52: Requirements and Best Practices" may be found online at: http://nahc.ca.gov/wp-content/uploads/2015/10/AB52TribalConsultation_CalEPAPDF.pdf

SB 18

SB 18 applies to local governments and requires **local governments** to contact, provide notice to, refer plans to, and consult with tribes prior to the adoption or amendment of a general plan or a specific plan, or the designation of open space. (Gov. Code § 65352.3). Local governments should consult the Governor's Office of Planning and Research's "Tribal Consultation Guidelines," which can be found online at: https://www.opr.ca.gov/docs/09_14_05_Updated_Guidelines_922.pdf

Some of SB 18's provisions include:

1. Tribal Consultation: If a local government considers a proposal to adopt or amend a general plan or a specific plan, or to designate open space it is required to contact the appropriate tribes identified by the NAHC by requesting a "Tribal Consultation List." If a tribe, once contacted, requests consultation the local government must consult with the tribe on the plan proposal. **A tribe has 90 days from the date of receipt of notification to request consultation unless a shorter timeframe has been agreed to by the tribe.** (Gov. Code § 65352.3 (a)(2)).
2. No Statutory Time Limit on SB 18 Tribal Consultation. There is no statutory time limit on SB 18 tribal consultation.
3. Confidentiality: Consistent with the guidelines developed and adopted by the Office of Planning and Research pursuant to Gov. Code section 65040.2, the city or county shall protect the confidentiality of the information concerning the specific identity, location, character, and use of places, features and objects described in Public Resources Code sections 5097.9 and 5097.993 that are within the city's or county's jurisdiction. (Gov. Code § 65352.3 (b)).
4. Conclusion of SB 18 Tribal Consultation: Consultation should be concluded at the point in which:
    - **a.** The parties to the consultation come to a mutual agreement concerning the appropriate measures for preservation or mitigation; or
    - **b.** Either the local government or the tribe, acting in good faith and after reasonable effort, concludes that mutual agreement cannot be reached concerning the appropriate measures of preservation or mitigation. (Tribal Consultation Guidelines, Governor's Office of Planning and Research (2005) at p. 18).

Agencies should be aware that neither AB 52 nor SB 18 precludes agencies from initiating tribal consultation with tribes that are traditionally and culturally affiliated with their jurisdictions before the timeframes provided in AB 52 and SB 18. For that reason, we urge you to continue to request Native American Tribal Contact Lists and "Sacred Lands File" searches from the NAHC. The request forms can be found online at: http://nahc.ca.gov/resources/forms/

NAHC Recommendations for Cultural Resources Assessments

To adequately assess the existence and significance of tribal cultural resources and plan for avoidance, preservation in place, or barring both, mitigation of project-related impacts to tribal cultural resources, the NAHC recommends the following actions:

1. Contact the appropriate regional California Historical Research Information System (CHRIS) Center (http://ohp.parks.ca.gov/?page_id=1068) for an archaeological records search. The records search will determine:
    - **a.** If part or all of the APE has been previously surveyed for cultural resources.
    - **b.** If any known cultural resources have been already been recorded on or adjacent to the APE.
    - **c.** If the probability is low, moderate, or high that cultural resources are located in the APE.
    - **d.** If a survey is required to determine whether previously unrecorded cultural resources are present.

2. If an archaeological inventory survey is required, the final stage is the preparation of a professional report detailing the findings and recommendations of the records search and field survey.
    - **a.** The final report containing site forms, site significance, and mitigation measures should be submitted immediately to the planning department. All information regarding site locations, Native American human remains, and associated funerary objects should be in a separate confidential addendum and not be made available for public disclosure.

b. The final written report should be submitted within 3 months after work has been completed to the appropriate regional CHRIS center.

3. Contact the NAHC for:

a. A Sacred Lands File search. Remember that tribes do not always record their sacred sites in the Sacred Lands File, nor are they required to do so. A Sacred Lands File search is not a substitute for consultation with tribes that are traditionally and culturally affiliated with the geographic area of the project's APE.

b. A Native American Tribal Consultation List of appropriate tribes for consultation concerning the project site and to assist in planning for avoidance, preservation in place, or, failing both, mitigation measures.

4. Remember that the lack of surface evidence of archaeological resources (including tribal cultural resources) does not preclude their subsurface existence.

a. Lead agencies should include in their mitigation and monitoring reporting program plan provisions for the identification and evaluation of inadvertently discovered archaeological resources per Cal. Code Regs., tit. 14, section 15064.5(f) (CEQA Guidelines section 15064.5(f)). In areas of identified archaeological sensitivity, a certified archaeologist and a culturally affiliated Native American with knowledge of cultural resources should monitor all ground-disturbing activities.

b. Lead agencies should include in their mitigation and monitoring reporting program plans provisions for the disposition of recovered cultural items that are not burial associated in consultation with culturally affiliated Native Americans.

c. Lead agencies should include in their mitigation and monitoring reporting program plans provisions for the treatment and disposition of inadvertently discovered Native American human remains. Health and Safety Code section 7050.5, Public Resources Code section 5097.98, and Cal. Code Regs., tit. 14, section 15064.5, subdivisions (d) and (e) (CEQA Guidelines section 15064.5, subds. (d) and (e)) address the processes to be followed in the event of an inadvertent discovery of any Native American human remains and associated grave goods in a location other than a dedicated cemetery.

Please contact me if you need any additional information at gayle.totton@nahc.ca.gov.

Sincerely,

Gayle Totton

Gayle Totton, M.A., PhD.
Associate Governmental Program Analyst
(916) 373-3714

cc: State Clearinghouse

EAST BAY
MUNICIPAL UTILITY DISTRICT

September 27, 2018

Adam Foster, Associate Planner
City of Orinda Planning Department
22 Orinda Way
Orinda, CA 94563

Re: Notice of Preparation of a Draft Environmental Impact Report – CountryHouse Memory Care at 1 Wilder Road, Orinda

Dear Mr. Foster:

East Bay Municipal Utility District (EBMUD) appreciates the opportunity to comment on the Notice of Preparation of a Draft Environmental Impact Report for CountryHouse Memory Care at 1 Wilder Road located in the City of Orinda (City). EBMUD has the following comments.

WATER SERVICE

EBMUD's Baseline Pressure Zone, with a service elevation between 700 and 900 feet, will serve the proposed development. A main extension, at the project sponsor's expense, will be required to serve the proposed development. When the development plans are finalized, the project sponsor should contact EBMUD's New Business Office and request a water service estimate to determine costs and conditions for providing water service to the proposed development. Engineering and installation of water mains and services require substantial lead time, which should be provided for in the project sponsor's development schedule.

WATER CONSERVATION

The proposed project presents an opportunity to incorporate water conservation measures. EBMUD requests that the City include in its conditions of approval a requirement that the project sponsor comply with Assembly Bill 325, "Model Water Efficient Landscape Ordinance," (Division 2, Title 23, California Code of Regulations, Chapter 2.7, Sections 490 through 495). The project sponsor should be aware that Section 31 of EBMUD's Water Service Regulations requires that water service shall not be furnished for new or expanded service unless all the applicable water-efficiency measures described in the regulation are installed at the project sponsor's expense.

If you have any questions concerning this response, please contact Timothy R. McGowan, Senior Civil Engineer, Major Facilities Planning Section at (510) 287-1981.

Sincerely,

David J. Rehnstrom
Manager of Water Distribution Planning

DJR:KKN:dks
sb18_163.doc

cc: AMG & Associates, LLC
Attn: Mr. Alexis M. Gevorgian
16633 Ventura Boulevard, Suite 1014
Encino, CA 91436

APPENDIX B: CalEEMod Output

Country House Memory Care Facility

Contra Costa County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Congregate Care (Assisted Living)	38.00	Dwelling Unit	1.10	32,084.00	109

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	58
Climate Zone	5			**Operational Year**	2020
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	427	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - PG&E's default 2008 CO2 intensity factor updated to the most recent (2013) emission factor verified by a 3rd party in PG&E's (2015) GHG Emission Factors: Guidance for PG&E's Customers

Land Use - Units, gross square footage, and lot acreage based on project description

Construction Phase - No Demolition. Other than the demolition phase, all phase durations are CalEEMod defaults.

Off-road Equipment -

Off-road Equipment -

Off-road Equipment - No demolition according to the PD.

Off-road Equipment -

Off-road Equipment -

Off-road Equipment -

Trips and VMT - No demolition according to the PD.

Demolition - No demolition according to the PD.

Grading - Assume that 200 CYD of soil will be exported.

Vehicle Trips - Trip rate adjusted according to the Transportation section.

Woodstoves - According to the BAAQMD, effective November 1, 2016, no wood-burning devices of any kind may be installed in new homes or buildings being constructed in the Bay area.

Energy Use -

Water And Wastewater - The project is serviced by Central Contra Costa Sanitary District, whose cogeneration facility supply about 80 percent of the plant's daily power needs. No septic tanks or lagoons are used for wastewater treatment.

Table Name	Column Name	Default Value	New Value
tblFireplaces	NumberNoFireplace	1.52	0.00
tblFireplaces	NumberWood	6.46	0.00
tblGrading	MaterialExported	0.00	200.00
tblLandUse	LandUseSquareFeet	38,000.00	32,084.00
tblLandUse	LotAcreage	2.38	1.10
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	0.00
tblProjectCharacteristics	CO2IntensityFactor	641.35	427
tblVehicleTrips	ST_TR	2.20	2.60
tblVehicleTrips	SU_TR	2.44	2.60
tblVehicleTrips	WD_TR	2.74	2.60
tblWater	AnaDigestCogenCombDigestGasPercent	0.00	80.00
tblWater	AnaDigestCombDigestGasPercent	100.00	20.00
tblWoodstoves	NumberCatalytic	0.76	0.00
tblWoodstoves	NumberNoncatalytic	0.76	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	0.4759	1.7671	1.5166	2.6800e-003	0.0408	0.0977	0.1385	0.0148	0.0942	0.1090	0.0000	226.1138	226.1138	0.0396	0.0000	227.1041
Maximum	**0.4759**	**1.7671**	**1.5166**	**2.6800e-003**	**0.0408**	**0.0977**	**0.1385**	**0.0148**	**0.0942**	**0.1090**	**0.0000**	**226.1138**	**226.1138**	**0.0396**	**0.0000**	**227.1041**

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	0.4759	1.7671	1.5166	2.6800e-003	0.0408	0.0977	0.1385	0.0148	0.0942	0.1090	0.0000	226.1135	226.1135	0.0396	0.0000	227.1039
Maximum	**0.4759**	**1.7671**	**1.5166**	**2.6800e-003**	**0.0408**	**0.0977**	**0.1385**	**0.0148**	**0.0942**	**0.1090**	**0.0000**	**226.1135**	**226.1135**	**0.0396**	**0.0000**	**227.1039**

	ROG	**NOx**	**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	**1-1-2019**	**3-31-2019**	0.6126	0.6126
2	**4-1-2019**	**6-30-2019**	0.6158	0.6158
3	**7-1-2019**	**9-30-2019**	0.6226	0.6226
		Highest	0.6226	0.6226

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	0.1566	3.8900e-003	0.2834	2.0000e-005		1.6100e-003	1.6100e-003		1.6100e-003	1.6100e-003	0.0000	1.1725	1.1725	4.6000e-004	1.0000e-005	1.1879
Energy	1.7900e-003	0.0153	6.5100e-003	1.0000e-004		1.2400e-003	1.2400e-003		1.2400e-003	1.2400e-003	0.0000	48.7776	48.7776	2.4500e-003	7.6000e-004	49.0657
Mobile	0.0288	0.1293	0.3276	1.0300e-003	0.0852	1.0200e-003	0.0863	0.0229	9.6000e-004	0.0238	0.0000	94.0128	94.0128	3.6400e-003	0.0000	94.1037
Waste						0.0000	0.0000		0.0000	0.0000	7.0377	0.0000	7.0377	0.4159	0.0000	17.4356
Water						0.0000	0.0000		0.0000	0.0000	0.7855	3.4795	4.2650	0.0809	1.9500e-003	6.8700
Total	**0.1872**	**0.1485**	**0.6175**	**1.1500e-003**	**0.0852**	**3.8700e-003**	**0.0891**	**0.0229**	**3.8100e-003**	**0.0267**	**7.8232**	**147.4423**	**155.2655**	**0.5034**	**2.7200e-003**	**168.6629**

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	0.1566	3.8900e-003	0.2834	2.0000e-005		1.6100e-003	1.6100e-003		1.6100e-003	1.6100e-003	0.0000	1.1725	1.1725	4.6000e-004	1.0000e-005	1.1879
Energy	1.7900e-003	0.0153	6.5100e-003	1.0000e-004		1.2400e-003	1.2400e-003		1.2400e-003	1.2400e-003	0.0000	48.7776	48.7776	2.4500e-003	7.6000e-004	49.0657
Mobile	0.0288	0.1293	0.3276	1.0300e-003	0.0852	1.0200e-003	0.0863	0.0229	9.6000e-004	0.0238	0.0000	94.0128	94.0128	3.6400e-003	0.0000	94.1037
Waste						0.0000	0.0000		0.0000	0.0000	7.0377	0.0000	7.0377	0.4159	0.0000	17.4356
Water						0.0000	0.0000		0.0000	0.0000	0.7855	3.4795	4.2650	0.0809	1.9500e-003	6.8700
Total	**0.1872**	**0.1485**	**0.6175**	**1.1500e-003**	**0.0852**	**3.8700e-003**	**0.0891**	**0.0229**	**3.8100e-003**	**0.0267**	**7.8232**	**147.4423**	**155.2655**	**0.5034**	**2.7200e-003**	**168.6629**

	ROG	**NOx**	**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	Demolition	Demolition	1/1/2019	12/31/2018	5	20	
2	Site Preparation	Site Preparation	1/1/2019	1/2/2019	5	2	
3	Grading	Grading	1/3/2019	1/8/2019	5	4	
4	Building Construction	Building Construction	1/9/2019	10/15/2019	5	200	
5	Paving	Paving	10/16/2019	10/29/2019	5	10	
6	Architectural Coating	Architectural Coating	11/29/2019	12/12/2019	5	10	

Acres of Grading (Site Preparation Phase): 1

Acres of Grading (Grading Phase): 1.5

Acres of Paving: 0

Residential Indoor: 64,970; Residential Outdoor: 21,657; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)

<u>OffRoad Equipment</u>

Country House Memory Care Facility - Contra Costa County, Annual

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Concrete/Industrial Saws	0	8.00	81	0.73
Demolition	Rubber Tired Dozers	0	8.00	247	0.40
Demolition	Tractors/Loaders/Backhoes	0	8.00	97	0.37
Site Preparation	Graders	1	8.00	187	0.41
Site Preparation	Rubber Tired Dozers	1	7.00	247	0.40
Site Preparation	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Grading	Graders	1	6.00	187	0.41
Grading	Rubber Tired Dozers	1	6.00	247	0.40
Grading	Tractors/Loaders/Backhoes	1	7.00	97	0.37
Building Construction	Cranes	1	6.00	231	0.29
Building Construction	Forklifts	1	6.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	1	6.00	97	0.37
Building Construction	Welders	3	8.00	46	0.45
Paving	Cement and Mortar Mixers	1	6.00	9	0.56
Paving	Pavers	1	6.00	130	0.42
Paving	Paving Equipment	1	8.00	132	0.36
Paving	Rollers	1	7.00	80	0.38
Paving	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Architectural Coating	Air Compressors	1	6.00	78	0.48

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	0	0.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	3	8.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	3	8.00	0.00	25.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	7	27.00	4.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	5	13.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	5.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.3 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					5.8000e-003	0.0000	5.8000e-003	2.9500e-003	0.0000	2.9500e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.7100e-003	0.0195	7.8900e-003	2.0000e-005		8.8000e-004	8.8000e-004		8.1000e-004	8.1000e-004	0.0000	1.5467	1.5467	4.9000e-004	0.0000	1.5589
Total	**1.7100e-003**	**0.0195**	**7.8900e-003**	**2.0000e-005**	**5.8000e-003**	**8.8000e-004**	**6.6800e-003**	**2.9500e-003**	**8.1000e-004**	**3.7600e-003**	**0.0000**	**1.5467**	**1.5467**	**4.9000e-004**	**0.0000**	**1.5589**

3.3 Site Preparation - 2019

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	3.0000e-005	2.0000e-005	2.2000e-004	0.0000	6.0000e-005	0.0000	6.0000e-005	2.0000e-005	0.0000	2.0000e-005	0.0000	0.0575	0.0575	0.0000	0.0000	0.0575
Total	**3.0000e-005**	**2.0000e-005**	**2.2000e-004**	**0.0000**	**6.0000e-005**	**0.0000**	**6.0000e-005**	**2.0000e-005**	**0.0000**	**2.0000e-005**	**0.0000**	**0.0575**	**0.0575**	**0.0000**	**0.0000**	**0.0575**

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					5.8000e-003	0.0000	5.8000e-003	2.9500e-003	0.0000	2.9500e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.7100e-003	0.0195	7.8900e-003	2.0000e-005		8.8000e-004	8.8000e-004		8.1000e-004	8.1000e-004	0.0000	1.5467	1.5467	4.9000e-004	0.0000	1.5589
Total	**1.7100e-003**	**0.0195**	**7.8900e-003**	**2.0000e-005**	**5.8000e-003**	**8.8000e-004**	**6.6800e-003**	**2.9500e-003**	**8.1000e-004**	**3.7600e-003**	**0.0000**	**1.5467**	**1.5467**	**4.9000e-004**	**0.0000**	**1.5589**

3.3 Site Preparation - 2019

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	3.0000e-005	2.0000e-005	2.2000e-004	0.0000	6.0000e-005	0.0000	6.0000e-005	2.0000e-005	0.0000	2.0000e-005	0.0000	0.0575	0.0575	0.0000	0.0000	0.0575
Total	**3.0000e-005**	**2.0000e-005**	**2.2000e-004**	**0.0000**	**6.0000e-005**	**0.0000**	**6.0000e-005**	**2.0000e-005**	**0.0000**	**2.0000e-005**	**0.0000**	**0.0575**	**0.0575**	**0.0000**	**0.0000**	**0.0575**

3.4 Grading - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					9.8400e-003	0.0000	9.8400e-003	5.0500e-003	0.0000	5.0500e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	2.8400e-003	0.0321	0.0132	3.0000e-005		1.4700e-003	1.4700e-003		1.3600e-003	1.3600e-003	0.0000	2.5336	2.5336	8.0000e-004	0.0000	2.5536
Total	**2.8400e-003**	**0.0321**	**0.0132**	**3.0000e-005**	**9.8400e-003**	**1.4700e-003**	**0.0113**	**5.0500e-003**	**1.3600e-003**	**6.4100e-003**	**0.0000**	**2.5336**	**2.5336**	**8.0000e-004**	**0.0000**	**2.5536**

3.4 Grading - 2019

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	1.1000e-004	3.8900e-003	7.1000e-004	1.0000e-005	2.1000e-004	2.0000e-005	2.3000e-004	6.0000e-005	1.0000e-005	7.0000e-005	0.0000	0.9574	0.9574	4.0000e-005	0.0000	0.9585
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	6.0000e-005	4.0000e-005	4.5000e-004	0.0000	1.3000e-004	0.0000	1.3000e-004	3.0000e-005	0.0000	3.0000e-005	0.0000	0.1150	0.1150	0.0000	0.0000	0.1151
Total	**1.7000e-004**	**3.9300e-003**	**1.1600e-003**	**1.0000e-005**	**3.4000e-004**	**2.0000e-005**	**3.6000e-004**	**9.0000e-005**	**1.0000e-005**	**1.0000e-004**	**0.0000**	**1.0723**	**1.0723**	**4.0000e-005**	**0.0000**	**1.0735**

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					9.8400e-003	0.0000	9.8400e-003	5.0500e-003	0.0000	5.0500e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	2.8400e-003	0.0321	0.0132	3.0000e-005		1.4700e-003	1.4700e-003		1.3600e-003	1.3600e-003	0.0000	2.5336	2.5336	8.0000e-004	0.0000	2.5536
Total	**2.8400e-003**	**0.0321**	**0.0132**	**3.0000e-005**	**9.8400e-003**	**1.4700e-003**	**0.0113**	**5.0500e-003**	**1.3600e-003**	**6.4100e-003**	**0.0000**	**2.5336**	**2.5336**	**8.0000e-004**	**0.0000**	**2.5536**

3.4 Grading - 2019

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	1.1000e-004	3.8900e-003	7.1000e-004	1.0000e-005	2.1000e-004	2.0000e-005	2.3000e-004	6.0000e-005	1.0000e-005	7.0000e-005	0.0000	0.9574	0.9574	4.0000e-005	0.0000	0.9585
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	6.0000e-005	4.0000e-005	4.5000e-004	0.0000	1.3000e-004	0.0000	1.3000e-004	3.0000e-005	0.0000	3.0000e-005	0.0000	0.1150	0.1150	0.0000	0.0000	0.1151
Total	**1.7000e-004**	**3.9300e-003**	**1.1600e-003**	**1.0000e-005**	**3.4000e-004**	**2.0000e-005**	**3.6000e-004**	**9.0000e-005**	**1.0000e-005**	**1.0000e-004**	**0.0000**	**1.0723**	**1.0723**	**4.0000e-005**	**0.0000**	**1.0735**

3.5 Building Construction - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.2272	1.5980	1.3487	2.2000e-003		0.0916	0.0916		0.0885	0.0885	0.0000	183.0719	183.0719	0.0352	0.0000	183.9518
Total	**0.2272**	**1.5980**	**1.3487**	**2.2000e-003**		**0.0916**	**0.0916**		**0.0885**	**0.0885**	**0.0000**	**183.0719**	**183.0719**	**0.0352**	**0.0000**	**183.9518**

3.5 Building Construction - 2019

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	1.9800e-003	0.0509	0.0133	1.1000e-004	2.6300e-003	3.7000e-004	3.0100e-003	7.6000e-004	3.6000e-004	1.1200e-003	0.0000	10.4944	10.4944	5.6000e-004	0.0000	10.5084
Worker	9.9400e-003	7.4300e-003	0.0759	2.1000e-004	0.0214	1.5000e-004	0.0216	5.7000e-003	1.3000e-004	5.8300e-003	0.0000	19.4034	19.4034	5.3000e-004	0.0000	19.4167
Total	**0.0119**	**0.0583**	**0.0892**	**3.2000e-004**	**0.0240**	**5.2000e-004**	**0.0246**	**6.4600e-003**	**4.9000e-004**	**6.9500e-003**	**0.0000**	**29.8979**	**29.8979**	**1.0900e-003**	**0.0000**	**29.9251**

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	0.2272	1.5980	1.3487	2.2000e-003		0.0916	0.0916		0.0885	0.0885	0.0000	183.0717	183.0717	0.0352	0.0000	183.9515
Total	**0.2272**	**1.5980**	**1.3487**	**2.2000e-003**		**0.0916**	**0.0916**		**0.0885**	**0.0885**	**0.0000**	**183.0717**	**183.0717**	**0.0352**	**0.0000**	**183.9515**

3.5 Building Construction - 2019

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	1.9800e-003	0.0509	0.0133	1.1000e-004	2.6300e-003	3.7000e-004	3.0100e-003	7.6000e-004	3.6000e-004	1.1200e-003	0.0000	10.4944	10.4944	5.6000e-004	0.0000	10.5084
Worker	9.9400e-003	7.4300e-003	0.0759	2.1000e-004	0.0214	1.5000e-004	0.0216	5.7000e-003	1.3000e-004	5.8300e-003	0.0000	19.4034	19.4034	5.3000e-004	0.0000	19.4167
Total	**0.0119**	**0.0583**	**0.0892**	**3.2000e-004**	**0.0240**	**5.2000e-004**	**0.0246**	**6.4600e-003**	**4.9000e-004**	**6.9500e-003**	**0.0000**	**29.8979**	**29.8979**	**1.0900e-003**	**0.0000**	**29.9251**

3.6 Paving - 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	4.5200e-003	0.0459	0.0445	7.0000e-005		2.6100e-003	2.6100e-003		2.4100e-003	2.4100e-003	0.0000	6.0105	6.0105	1.8700e-003	0.0000	6.0572
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**4.5200e-003**	**0.0459**	**0.0445**	**7.0000e-005**		**2.6100e-003**	**2.6100e-003**		**2.4100e-003**	**2.4100e-003**	**0.0000**	**6.0105**	**6.0105**	**1.8700e-003**	**0.0000**	**6.0572**

3.6 Paving - 2019

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.4000e-004	1.8000e-004	1.8300e-003	1.0000e-005	5.2000e-004	0.0000	5.2000e-004	1.4000e-004	0.0000	1.4000e-004	0.0000	0.4671	0.4671	1.0000e-005	0.0000	0.4674
Total	**2.4000e-004**	**1.8000e-004**	**1.8300e-003**	**1.0000e-005**	**5.2000e-004**	**0.0000**	**5.2000e-004**	**1.4000e-004**	**0.0000**	**1.4000e-004**	**0.0000**	**0.4671**	**0.4671**	**1.0000e-005**	**0.0000**	**0.4674**

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	4.5200e-003	0.0459	0.0445	7.0000e-005		2.6100e-003	2.6100e-003		2.4100e-003	2.4100e-003	0.0000	6.0105	6.0105	1.8700e-003	0.0000	6.0572
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**4.5200e-003**	**0.0459**	**0.0445**	**7.0000e-005**		**2.6100e-003**	**2.6100e-003**		**2.4100e-003**	**2.4100e-003**	**0.0000**	**6.0105**	**6.0105**	**1.8700e-003**	**0.0000**	**6.0572**

3.6 Paving - 2019

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.4000e-004	1.8000e-004	1.8300e-003	1.0000e-005	5.2000e-004	0.0000	5.2000e-004	1.4000e-004	0.0000	1.4000e-004	0.0000	0.4671	0.4671	1.0000e-005	0.0000	0.4674
Total	**2.4000e-004**	**1.8000e-004**	**1.8300e-003**	**1.0000e-005**	**5.2000e-004**	**0.0000**	**5.2000e-004**	**1.4000e-004**	**0.0000**	**1.4000e-004**	**0.0000**	**0.4671**	**0.4671**	**1.0000e-005**	**0.0000**	**0.4674**

3.7 Architectural Coating - 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					
Archit. Coating	0.2259					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.3300e-003	9.1800e-003	9.2100e-003	1.0000e-005		6.4000e-004	6.4000e-004		6.4000e-004	6.4000e-004	0.0000	1.2766	1.2766	1.1000e-004	0.0000	1.2793
Total	**0.2272**	**9.1800e-003**	**9.2100e-003**	**1.0000e-005**		**6.4000e-004**	**6.4000e-004**		**6.4000e-004**	**6.4000e-004**	**0.0000**	**1.2766**	**1.2766**	**1.1000e-004**	**0.0000**	**1.2793**

3.7 Architectural Coating - 2019

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	9.0000e-005	7.0000e-005	7.0000e-004	0.0000	2.0000e-004	0.0000	2.0000e-004	5.0000e-005	0.0000	5.0000e-005	0.0000	0.1797	0.1797	0.0000	0.0000	0.1798
Total	**9.0000e-005**	**7.0000e-005**	**7.0000e-004**	**0.0000**	**2.0000e-004**	**0.0000**	**2.0000e-004**	**5.0000e-005**	**0.0000**	**5.0000e-005**	**0.0000**	**0.1797**	**0.1797**	**0.0000**	**0.0000**	**0.1798**

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	0.2259					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.3300e-003	9.1800e-003	9.2100e-003	1.0000e-005		6.4000e-004	6.4000e-004		6.4000e-004	6.4000e-004	0.0000	1.2766	1.2766	1.1000e-004	0.0000	1.2793
Total	**0.2272**	**9.1800e-003**	**9.2100e-003**	**1.0000e-005**		**6.4000e-004**	**6.4000e-004**		**6.4000e-004**	**6.4000e-004**	**0.0000**	**1.2766**	**1.2766**	**1.1000e-004**	**0.0000**	**1.2793**

3.7 Architectural Coating - 2019

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	9.0000e-005	7.0000e-005	7.0000e-004	0.0000	2.0000e-004	0.0000	2.0000e-004	5.0000e-005	0.0000	5.0000e-005	0.0000	0.1797	0.1797	0.0000	0.0000	0.1798
Total	**9.0000e-005**	**7.0000e-005**	**7.0000e-004**	**0.0000**	**2.0000e-004**	**0.0000**	**2.0000e-004**	**5.0000e-005**	**0.0000**	**5.0000e-005**	**0.0000**	**0.1797**	**0.1797**	**0.0000**	**0.0000**	**0.1798**

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	0.0288	0.1293	0.3276	1.0300e-003	0.0852	1.0200e-003	0.0863	0.0229	9.6000e-004	0.0238	0.0000	94.0128	94.0128	3.6400e-003	0.0000	94.1037
Unmitigated	0.0288	0.1293	0.3276	1.0300e-003	0.0852	1.0200e-003	0.0863	0.0229	9.6000e-004	0.0238	0.0000	94.0128	94.0128	3.6400e-003	0.0000	94.1037

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Congregate Care (Assisted Living)	98.80	98.80	98.80	228,189	228,189
Total	98.80	98.80	98.80	228,189	228,189

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
Congregate Care (Assisted	10.80	4.80	5.70	31.00	15.00	54.00	86	11	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Congregate Care (Assisted Living)	0.577244	0.040114	0.186710	0.126359	0.018084	0.005120	0.010527	0.023222	0.001588	0.001850	0.005513	0.002759	0.000910

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	31.0738	31.0738	2.1100e-003	4.4000e-004	31.2567
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	31.0738	31.0738	2.1100e-003	4.4000e-004	31.2567
NaturalGas Mitigated	1.7900e-003	0.0153	6.5100e-003	1.0000e-004		1.2400e-003	1.2400e-003		1.2400e-003	1.2400e-003	0.0000	17.7038	17.7038	3.4000e-004	3.2000e-004	17.8090
NaturalGas Unmitigated	1.7900e-003	0.0153	6.5100e-003	1.0000e-004		1.2400e-003	1.2400e-003		1.2400e-003	1.2400e-003	0.0000	17.7038	17.7038	3.4000e-004	3.2000e-004	17.8090

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					
Congregate Care (Assisted Living)	331756	1.7900e-003	0.0153	6.5100e-003	1.0000e-004		1.2400e-003	1.2400e-003		1.2400e-003	1.2400e-003	0.0000	17.7038	17.7038	3.4000e-004	3.2000e-004	17.8090
Total		**1.7900e-003**	**0.0153**	**6.5100e-003**	**1.0000e-004**		**1.2400e-003**	**1.2400e-003**		**1.2400e-003**	**1.2400e-003**	**0.0000**	**17.7038**	**17.7038**	**3.4000e-004**	**3.2000e-004**	**17.8090**

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					
Congregate Care (Assisted Living)	331756	1.7900e-003	0.0153	6.5100e-003	1.0000e-004		1.2400e-003	1.2400e-003		1.2400e-003	1.2400e-003	0.0000	17.7038	17.7038	3.4000e-004	3.2000e-004	17.8090
Total		**1.7900e-003**	**0.0153**	**6.5100e-003**	**1.0000e-004**		**1.2400e-003**	**1.2400e-003**		**1.2400e-003**	**1.2400e-003**	**0.0000**	**17.7038**	**17.7038**	**3.4000e-004**	**3.2000e-004**	**17.8090**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Congregate Care (Assisted Living)	160436	31.0738	2.1100e-003	4.4000e-004	31.2567
Total		**31.0738**	**2.1100e-003**	**4.4000e-004**	**31.2567**

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Congregate Care (Assisted Living)	160436	31.0738	2.1100e-003	4.4000e-004	31.2567
Total		**31.0738**	**2.1100e-003**	**4.4000e-004**	**31.2567**

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	0.1566	3.8900e-003	0.2834	2.0000e-005		1.6100e-003	1.6100e-003		1.6100e-003	1.6100e-003	0.0000	1.1725	1.1725	4.6000e-004	1.0000e-005	1.1879
Unmitigated	0.1566	3.8900e-003	0.2834	2.0000e-005		1.6100e-003	1.6100e-003		1.6100e-003	1.6100e-003	0.0000	1.1725	1.1725	4.6000e-004	1.0000e-005	1.1879

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	0.0226					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.1253					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	7.0000e-005	6.1000e-004	2.6000e-004	0.0000		5.0000e-005	5.0000e-005		5.0000e-005	5.0000e-005	0.0000	0.7116	0.7116	1.0000e-005	1.0000e-005	0.7158
Landscaping	8.6200e-003	3.2700e-003	0.2831	1.0000e-005		1.5600e-003	1.5600e-003		1.5600e-003	1.5600e-003	0.0000	0.4609	0.4609	4.5000e-004	0.0000	0.4721
Total	**0.1566**	**3.8800e-003**	**0.2834**	**1.0000e-005**		**1.6100e-003**	**1.6100e-003**		**1.6100e-003**	**1.6100e-003**	**0.0000**	**1.1725**	**1.1725**	**4.6000e-004**	**1.0000e-005**	**1.1879**

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	0.0226					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.1253					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	7.0000e-005	6.1000e-004	2.6000e-004	0.0000		5.0000e-005	5.0000e-005		5.0000e-005	5.0000e-005	0.0000	0.7116	0.7116	1.0000e-005	1.0000e-005	0.7158
Landscaping	8.6200e-003	3.2700e-003	0.2831	1.0000e-005		1.5600e-003	1.5600e-003		1.5600e-003	1.5600e-003	0.0000	0.4609	0.4609	4.5000e-004	0.0000	0.4721
Total	**0.1566**	**3.8800e-003**	**0.2834**	**1.0000e-005**		**1.6100e-003**	**1.6100e-003**		**1.6100e-003**	**1.6100e-003**	**0.0000**	**1.1725**	**1.1725**	**4.6000e-004**	**1.0000e-005**	**1.1879**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	4.2650	0.0809	1.9500e-003	6.8700
Unmitigated	4.2650	0.0809	1.9500e-003	6.8700

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Congregate Care (Assisted Living)	2.47585 / 1.56086	4.2650	0.0809	1.9500e-003	6.8700
Total		**4.2650**	**0.0809**	**1.9500e-003**	**6.8700**

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Congregate Care (Assisted Living)	2.47585 / 1.56086	4.2650	0.0809	1.9500e-003	6.8700
Total		**4.2650**	**0.0809**	**1.9500e-003**	**6.8700**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	7.0377	0.4159	0.0000	17.4356
Unmitigated	7.0377	0.4159	0.0000	17.4356

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Congregate Care (Assisted Living)	34.67	7.0377	0.4159	0.0000	17.4356
Total		**7.0377**	**0.4159**	**0.0000**	**17.4356**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Congregate Care (Assisted Living)	34.67	7.0377	0.4159	0.0000	17.4356
Total		**7.0377**	**0.4159**	**0.0000**	**17.4356**

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

Summary of ISCST3 Model Parameters, Assumptions, and Results for DPM and $PM_{2.5}$ Emissions during Construction

ISCST3 Model Parameters and Assumptions			
Source Type	**Units**	**Value**	**Notes**
Volume Source: Off-Road Equipment Exhaust (without Mitigation Measure)			
Hours/Work Day	hours/day	10	construction is allowed between 8 to 6 M-F, 10 to 5 SS. Assume no construction work on weekends.
DPM Emission Rate	gram/second	0.00937	Exhaust PM_{10} from off-road equipment
Number of Sources	count	29	SMAQMD, 2015
Emission Rate/Source	gram/second	0.00032	This is the scaling factor
Release Height	meters	5.0	SMAQMD, 2015
Length of Side	meters	10.0	SMAQMD, 2015
Initial Lateral Dimension	meters	2.3	ISCST3 Calculator
Initial Vertical Dimension	meters	1.0	SMAQMD, 2015

ISCST3 Model Results				
Location Type	**Emissions Source**	**Pollutant**	**Annual Average Concentration**	**Notes**
Sensitive receptor	Construction (without Mitigation Measure)	DPM ($\mu g/m^{3)}$	0.095	The nearest sensitive receptors to the project are recreational fields located about 250 feet to the east.
		$PM_{2.5}$ ($\mu g/m^{3)}$	0.091	

Notes:

DPM = diesel particulate matter

PM_{10} = particulate matter with aerodynamic resistance diameters equal to or less than 10 microns

$PM_{2.5}$ = particulate matter with aerodynamic resistance diameters equal to or less than 2.5 microns

$\mu g/m^3$ = micrograms per cubic meter

Sacramento Metropolitan Air Quality Management District (SMAQMD), 2015. *Guide to Air Quality Assessment in Sacramento County* . June.

Summary of Health Risk Assessment for DPM Emissions during Construction

Health Risk Assessment Parameters and Results				
DPM Emissions without Mitigation Measure				
Inhalation Cancer Risk Assessment for DPM	**Units**	**Age Group**		**Notes**
		0-2 Years	**2-9 Years**	
DPM Concentration (C)	$\mu g/m^3$	0.095	0.095	ISCST3 Annual Average
Daily Breathing Rate (DBR)	L/kg-day	1090	861	95th percentile for both groups because of elevated breathing rates during activities (BAAQMD, 2016; OEHHA, 2015)
Inhalation absorption factor (A)	unitless	1.0	1.0	OEHHA, 2015
Exposure Frequency (EF)	unitless	0.68	0.68	Equivalent to working 5 days/week, 50 weeks/year (OE
Dose Conversion Factor (CF_D)	$mg\text{-}m^3/\mu g\text{-}L$	0.000001	0.000001	Conversion of µg to mg and L to m^3
Dose	mg/kg/day	0.000070	0.000055	$C*DBR*A*EF*CF_D$ (OEHHA, 2015)
Cancer Potency Factor (CPF)	$(mg/kg/day)^{-1}$	1.1	1.1	OEHHA, 2015
Age Sensitivity Factor (ASF)	unitless	10	3	OEHHA, 2015
Annual Exposure Duration (ED)	years	0.17	0.17	Project assumption
Averaging Time (AT)	years	70	70	70 years assuming lifetime exposure (OEHHA, 2015)
Fraction of time at home (FAH)	unitless	0.85	0.85	OEHHA, 2015
Cancer Risk Conversion Factor (CF)	m^3/L	1000000	1000000	Chances per million (OEHHA, 2015)
Cancer Risk	per million	1.56	0.37	D*CPF*ASF*ED/AT*FAH*CF (OEHHA, 2015)
Hazard Index for DPM	**Units**	**Value**	**Notes**	
Chronic REL	$\mu g/m^3$	5.0	OEHHA, 2015	
Chronic Hazard Index for DPM	unitless	0.02	At MEIR location	

Notes:

DPM = diesel particulate matter

REL = reference exposure level

$\mu g/m^3$ = micrograms per cubic meter

L/kg-day = liters per kilogram-day

m^3/L = cubic meters per liter

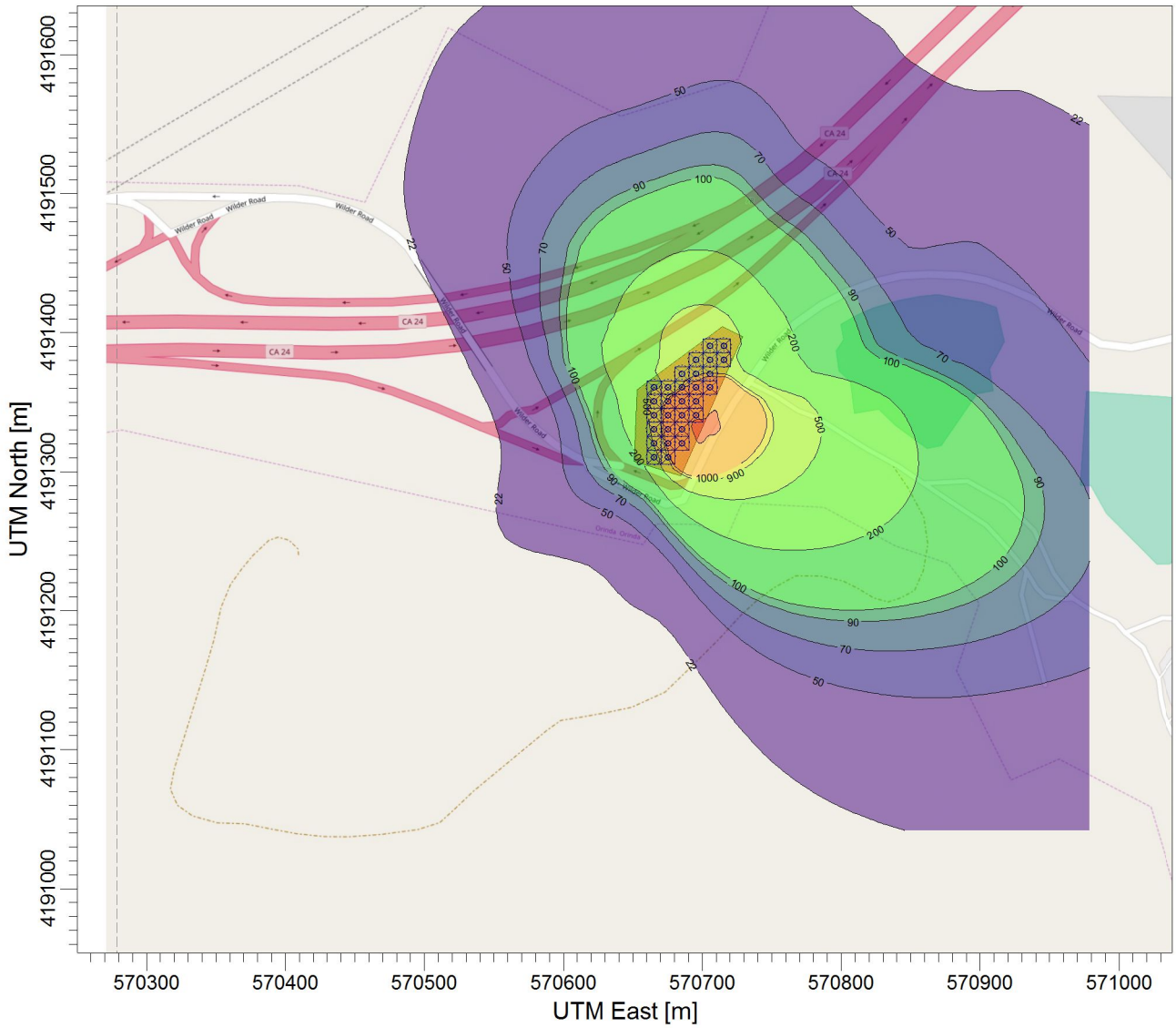
$(mg/kg/day)^{-1}$ = 1/milligrams per kilograms per day

MEIR = maximum exposed individual resident

Bay Area Air Quality Management District (BAAQMD), 2016. Air Toxics NSR Program, Health Risk Assessment Guidelines. December.
Office of Environmental Health Hazard Assessment (OEHHA), 2015. *Air Toxics Hot Spots Program Guidance Manual for Preparation of Health Risk Assessments. February.*

PROJECT TITLE:

Country House Memory Care Facility Dispersion Based on Unit Emissions



PLOT FILE OF PERIOD VALUES FOR SOURCE GROUP: ALL

ug/m^3

Max: 2181 [ug/m^3] at (570708.63, 4191332.00)

22 50 70 90 100 200 500 900 1000 2000 2181

COMMENTS:	SOURCES:	COMPANY NAME:	
Dispersion pattern based on unit emission rate of 1 g/s/volume source.	**29**	**BASELINE Environmental Consulting**	
	RECEPTORS: **3721**	MODELER:	
	OUTPUT TYPE: **Concentration**	SCALE: 1:4,957 0 0.1 km	
	MAX: **2181 ug/m^3**	DATE: **6/22/2018**	PROJECT NO.:

APPENDIX C: Biological Resources Assessments

July 16, 2010

Holly Moore
Diablo Green Consulting
231 Market Place #186
San Ramon, California 94583

RE: **Biological Resources Assessment: 101 Upton Road, Orinda (APN 273-160-009)**

Dear Ms. Moore,

On July 14, 2010, WRA, Inc. performed an assessment of biological resources at the 1.2-acre parcel (Project Area) in Orinda, Contra Costa County, California. The purpose of the assessment was to gather information necessary to complete a review of biological resources under the California Environmental Quality Act (CEQA). This report describes the results of the site visit, which assessed the Project Area for the (1) potential to support special status species; and (2) presence of other sensitive biological resources protected by local, state, and federal laws and regulations. If special status species were observed during the site visit, they were recorded. Specific findings on the habitat suitability or presence of special status species or sensitive habitats may require that protocol level surveys be conducted. This report also contains an evaluation of potential impacts to special status species and sensitive biological resources that may occur as a result of the proposed project and potential mitigation measures to compensate for those impacts.

A biological resources assessment provides general information on the potential presence of sensitive species and habitats. The biological assessment is not an official protocol level survey for listed species that may be required for project approval by local, state, or federal agencies. This assessment is based on information available at the time of the study and on site conditions that were observed on the date of the site visit.

Regulatory Background

The following sections explain the regulatory context of the biological assessment, including applicable laws and regulations that were applied to the field investigations and analysis of potential project impacts.

Sensitive Biological Communities

Sensitive biological communities include habitats that fulfill special functions or have special values, such as wetlands, streams, and riparian habitat. These habitats are protected under federal regulations (such as the Clean Water Act), state regulations (such as the Porter-Cologne Act, the CDFG Streambed Alteration Program, and CEQA), or local ordinances or policies (City or County Tree Ordinances, Special Habitat Management Areas, and General Plan Elements).

Waters of the United States. The U.S. Army Corps of Engineers (Corps) regulates "Waters of the United States" under Section 404 of the Clean Water Act. "Waters of the U.S." are defined broadly as waters susceptible to use in commerce, including interstate waters and wetlands, all other waters (intrastate waterbodies, including wetlands), and their tributaries (33 CFR 328.3). Potential wetland areas, according to the three criteria used to delineate wetlands stated in the *Corps of Engineers Wetlands Delineation Manual* (Environmental Laboratory 1987), are identified by the presence of (1) hydrophytic vegetation, (2) hydric soils, and (3) wetland hydrology. Areas that are inundated for sufficient duration and depth to exclude growth of hydrophytic vegetation are subject to Section 404 jurisdiction as "other waters" and are often characterized by an ordinary high water mark (OHWM). Other waters, for example, generally include lakes, rivers, and streams. The placement of fill material into "Waters of the U.S." (including wetlands) generally requires an individual or nationwide permit from the Corps under Section 404 of the Clean Water Act.

Waters of the State. The term "Waters of the State" is defined by the Porter-Cologne Act as "any surface water or groundwater, including saline waters, within the boundaries of the state." The Regional Water Quality Control Board (RWQCB) protects all waters in its regulatory scope, but has special responsibility for wetlands, riparian areas, and headwaters. These waterbodies have high resource value, are vulnerable to filling, and are not systematically protected by other programs. RWQCB jurisdiction includes "isolated" wetlands and waters that may not be regulated by the Corps under Section 404. "Waters of the State" are regulated by the RWQCB under the State Water Quality Certification Program which regulates discharges of fill and dredged material under Section 401 of the Clean Water Act and the Porter-Cologne Water Quality Control Act. Projects that require a Corps permit, or fall under other federal jurisdiction, and have the potential to impact "Waters of the State," are required to comply with the terms of the Water Quality Certification determination. If a proposed project does not require a federal permit, but does involve dredge or fill activities that may result in a discharge to "Waters of the State," the RWQCB has the option to regulate the dredge and fill activities under its state authority in the form of Waste Discharge Requirements.

Streams, Lakes, and Riparian Habitat. Streams and lakes, as habitat for fish and wildlife species, are subject to jurisdiction by CDFG under Sections 1600-1616 of California Fish and Game Code. Alterations to or work within or adjacent to streambeds or lakes generally require a 1602 Lake and Streambed Alteration Agreement. The term stream, which includes creeks and rivers, is defined in the California Code of Regulations (CCR) as follows: "a body of water that flows at least periodically or intermittently through a bed or channel having banks and supports fish or other aquatic life. This includes watercourses having a surface or subsurface flow that supports or has supported riparian vegetation" (14 CCR 1.72). In addition, the term stream can include ephemeral streams, dry washes, watercourses with subsurface flows, canals, aqueducts, irrigation ditches, and other means of water conveyance if they support aquatic life, riparian vegetation, or stream-dependent terrestrial wildlife (CDFG ESD 1994). Riparian is defined as, "on, or pertaining to, the banks of a stream;" therefore, riparian vegetation is defined as, "vegetation which occurs in and/or adjacent to a stream and is dependent on, and occurs because of, the stream itself" (CDFG ESD 1994). Removal of riparian vegetation also requires a Section 1602 Lake and Streambed Alteration Agreement from CDFG.

Other Sensitive Biological Communities. Other sensitive biological communities not discussed above include habitats that fulfill special functions or have special values. Natural communities considered sensitive are those identified in local or regional plans, policies, regulations, or by

the CDFG. CDFG ranks sensitive communities as “threatened” or “very threatened” and keeps records of their occurrences in its Natural Diversity Database. Sensitive plant communities are also identified by CDFG on their *List of California Natural Communities Recognized by the CNDDB*. Impacts to sensitive natural communities identified in local or regional plans, policies, regulations or by the CDFG or USFWS must be considered and evaluated under CEQA (California Code of Regulations: Title 14, Div. 6, Chap. 3, Appendix G). Specific habitats may also be identified as sensitive in City or County General Plans or ordinances.

Special Status Species

Special status species include those plants and wildlife species that have been formally listed, are proposed as endangered or threatened, or are candidates for such listing under the federal Endangered Species Act (ESA) or California Endangered Species Act (CESA). These acts afford protection to both listed and proposed species. In addition, California Department of Fish and Game (CDFG) Species of Special Concern, which are species that face extirpation in California if current population and habitat trends continue, U.S. Fish and Wildlife Service (USFWS) Birds of Conservation Concern, sensitive species included in USFWS Recovery Plans, and CDFG special status invertebrates are all considered special status species. Although CDFG Species of Special Concern generally have no special legal status, they are given special consideration under the California Environmental Quality Act (CEQA). In addition to regulations for special status species, most birds in the United States, including non-status species, are protected by the Migratory Bird Treaty Act of 1918. Under this legislation, destroying active nests, eggs, and young is illegal. Plant species on California Native Plant Society (CNPS) Lists 1 and 2 are also considered special status plant species and must be considered under CEQA.

Critical Habitat

Critical habitat is a term defined and used in the Federal Endangered Species Act as a specific geographic area that contains features essential for the conservation of a threatened or endangered species and that may require special management and protection. The FESA requires federal agencies to consult with the USFWS to conserve listed species on their lands and to ensure that any activities or projects they fund, authorize, or carry out will not jeopardize the survival of a threatened or endangered species. In consultation for those species with critical habitat, federal agencies must also ensure that their activities or projects do not adversely modify critical habitat to the point that it will no longer aid in the species’ recovery. In many cases, this level of protection is similar to that already provided to species by the FESA “jeopardy standard.” However, areas that are currently unoccupied by the species but which are needed for the species’ recovery, are protected by the prohibition against adverse modification of critical habitat.

Methods

On July 14, 2010, the Project Area was traversed on foot to determine (1) plant communities present within the Project Area, (2) if existing conditions provided suitable habitat for any special status plant or wildlife species, and (3) if sensitive habitats are present. All plant and wildlife species encountered were recorded, and are summarized in Attachment 1.

Biological Communities

Biological communities present in the Project Area were classified based on existing plant community descriptions described in the *Preliminary Descriptions of the Terrestrial Natural Communities of California* (Holland 1986). However, in some cases it is necessary to identify variants of community types or to describe non-vegetated areas that are not described in the literature. Biological communities were classified as sensitive or non-sensitive as defined by CEQA and other applicable laws and regulations.

Non-sensitive biological communities are those communities that are not afforded special protection under CEQA, and other state, federal, and local laws, regulations and ordinances. These communities may, however, provide suitable habitat for some special status plant or wildlife species.

Sensitive biological communities are defined as those communities that are given special protection under CEQA and other applicable federal, state, and local laws, regulations and ordinances.

Wetlands and Waters

The Project Area was surveyed to determine if any wetlands and waters potentially subject to jurisdiction by the Corps, RWQCB, or CDFG were present. The assessment was based primarily on the presence of wetland plant indicators, but may also include any observed indicators of wetland hydrology or wetland soils. Any potential wetland areas were identified as areas dominated by plant species with a wetland indicator status[1] of OBL, FACW, or FAC as given on the U.S. Fish and Wildlife Service List of Plant Species that Occur in Wetlands (Reed 1988). Evidence of wetland hydrology can include direct evidence (primary indicators), such as visible inundation or saturation, surface sediment deposits, algal mats and drift lines, or indirect indicators (secondary indicators), such as oxidized root channels. Some indicators of wetland soils include dark colored soils, soils with a sulfidic odor, and soils that contain redoximorphic features as defined by the Corps Manual (Environmental Laboratory, 1987) and Field Indicators of Hydric Soils in the United States (NRCS, 2002).

The preliminary waters assessment was based primarily on the presence of unvegetated, ponded areas or flowing water, or evidence indicating their presence such as a high water mark or a defined drainage course.

Special Status Species

Potential occurrence of special status species in the Project Area was evaluated by first determining which special status species occur in the vicinity of the Project Area through a literature and database search. The following sources were reviewed to determine which

[1] OBL = Obligate, always found in wetlands (> 99% frequency of occurrence); FACW = Facultative wetland, usually found in wetlands (67-99% frequency of occurrence); FAC = Facultative, equal occurrence in wetland or non-wetlands (34-66% frequency of occurrence).

special status plant and wildlife species have been documented to occur in the vicinity of the Project Area:

- California Natural Diversity Database records (CNDDB) (CDFG 2010)
- CDFG publication "California's Wildlife, Volumes I-III" (Zeiner et al. 1990)
- CDFG publication "Amphibians and Reptile Species of Special Concern in California" (Jennings and Hayes 1994)
- CDFG publication "Bird Species of Special Concern in California" (Shuford and Gardali 2008)
- Breeding Bird Atlas of Contra Costa County (Glover 2009)

Based on the site visit and a review of aerial photographs, the potential for each special status species to occur in the Project Area was then evaluated according to the following criteria:

1. Not Present. Habitat on and adjacent to the site is clearly unsuitable for the species requirements (foraging, breeding, cover, substrate, elevation, hydrology, plant community, site history, disturbance regime).

2. Unlikely. Few of the habitat components meeting the species requirements are present, and/or the majority of habitat on and adjacent to the site is unsuitable or of very poor quality. The species is not likely to be found on the site.

3. Moderate Potential. Some of the habitat components meeting the species requirements are present, and/or only some of the habitat on or adjacent to the site is unsuitable. The species has a moderate probability of being found on the site.

4. High Potential. All of the habitat components meeting the species requirements are present and/or most of the habitat on or adjacent to the site is highly suitable. The species has a high probability of being found on the site.

5. Present. Species is observed on the site or has been recorded (i.e. CNDDB, other reports) on the site recently.

The site assessment is intended to identify the presence or absence of suitable habitat for each special status species known to occur in the vicinity in order to determine its potential to occur in the Project Area. The site visit did not constitute a protocol-level survey and is not intended to determine the actual presence or absence of a species. Attachment 1 presents the evaluation of potential for occurrence of each special status plant and wildlife species known to occur in the vicinity of the Project Area with their habitat requirements, potential for occurrence, and rationale for the classification based on criteria listed above.

Critical Habitat

The USFWS Sacramento Fish and Wildlife Office internet site and WRA files were searched to determine if the Project Area was located within a designated Critical Habitat unit. If the site was located within a unit, the presence of the Primary Constituent Elements (PCEs) of the specific Critical Habitat was evaluated.

Wildlife Movement Corridors

A wildlife movement corridor is a linear habitat whose primary wildlife function is to connect two or more significant habitat areas (Beier and Loe 1992). The critical features of a wildlife corridor are not physical traits such as its length, width, or vegetation but rather how well a particular piece of land fulfills several functions. The Project Area was evaluated to identify if the following functions were provided:

- Wide-ranging animals can travel, migrate, and meet mates.
- Plants can propagate.
- Genetic interchange can occur.
- Populations can move in response to environmental changes and natural disasters.
- Individuals can recolonize habitats from which populations have been locally extirpated.

These functions were used to evaluate the suitability of the Project Area (both pre- and post-construction) as a wildlife corridor. This functional approach makes it clear that corridor width is determined by many factors, such as length, the topography and vegetation of the corridor, the species of interest, and adjacent human activities. The most important determinant is the species of interest. Because the site is effectively isolated by human disturbance, the species of interest include medium to large-sized mammals that are common in disturbed settings, such as Coyote (*Canis latrans*), Raccoon (*Procyon lotor*), and Mule Deer (*Odocoileus hemionus*).

Results

The Project Area is located at the intersection of State Route 24 and Wilder Road in Orinda. Wilder Road is located along the west and south boundaries, while the eastbound on-ramp to State Route 24 is located along the northern boundary of the site. Immediately east of the parcel is a narrow strip of disturbed land between Wilder Road and the freeway on-ramp. The majority of the site is characterized by non-native annual grassland. The proximity of the freeway, on-ramp, and construction activities associated with the nearby Wilder Project suggests that the small parcel is isolated, and provides poor habitat conditions for most special status plant and wildlife species. The following sections present the results and discussion of the biological assessment within the Project Area.

Biological Communities

Ruderal grassland is the only biological community found within the project site. Adjacent to the project site are paved and un-paved roads and ruderal grassland.

The one biological community present on the project site most closely matches Holland's "Non-native Grassland" type (Holland, 1986). However, it is better described as ruderal herbaceous grassland, or ruderal field, since ruderal species such as yellow star thistle (*Centaurea solstitialis*), chicory (*Cichorium intybus*), and bristly ox-tongue (*Picris echioides*) are prevalent, and the site has a history of disturbance. Ruderal grassland is generally present in areas that have been disturbed in the past, but have been left fallow or undeveloped for a number of years following the disturbance. Portions of the site are dominated by non-native grasses such as wild oats (*Avena* sp.) and bromes (*Bromus* spp.), and there are scattered coyote brush

(*Baccharis pilularis*) and poison oak (*Toxicodendron diversilobum*) near the edges of the site. Since the on-site ruderal grassland is isolated and dominated by non-native species, it is not likely to provide suitable habitat value for native plants.

Ruderal grassland is considered low-value habitat for native wildlife. Common species such as Striped Skunk (*Mephitis mephitis*), California Vole (*Microtus californicus*), Black-tailed Jackrabbit (*Lepus californicus*), California Ground Squirrel (*Spermophilus beecheyi*), Western Fence Lizard (*Sceloporus occidentalis*), Coast Garter Snake (*Thamnophis elegans terrestris*), Western Scrub-jay (*Aphelocoma californica*), American Crow (*Corvus brachyrhynchos*), Brewers's Blackbird (*Euphagus cyanocephalus*), and others may use these areas. The non-native vegetation that covers the project site does not comprise suitable habitat for most native or special-status species and, therefore, these species are generally unlikely to be found on the project site.

No sensitive biological communities are present on the project site.

Wetlands and Waters

No potential jurisdictional wetlands or waters are present in the Project Area.

Special Status Species

Based upon a review of relevant resources and databases, no special status plant species have been documented in the vicinity of the Project Area. The Project Area does not contain habitat conditions that would support any of these species. Attachment 1 summarizes the potential for occurrence within the Project Area for each special status plant species that occur in the region.

Sixty-six special status species of wildlife have been recorded or may occur in central Contra Costa County. Attachment 1 summarizes the potential for each of these species to occur in the Project Area. No special status wildlife species have been observed within the Project Area. Based on isolation, human disturbance, and existing habitat conditions, no special status wildlife species are likely to occur in the Project Area.

Critical Habitat

The Project Area is not within a designated Critical Habitat unit.

Wildlife Movement Corridor

The wildlife movement corridor analysis determined that the Project Area under existing conditions does not represent a significant wildlife movement corridor. The site does not connect two or more significant habitat areas.

Summary and Recommendations

No sensitive plant communities or potentially jurisdictional wetlands and waters were identified within the Project Area. No special status plant or wildlife species are likely to occur within the Project Area, and it is not located within a Critical Habitat unit. The site does not function as an important wildlife movement corridor.

The assessment determined that special status bird species are unlikely to occur in the Project Area; however, some common bird species may occasionally nest in the shrubs that occur along the margins of the site. Common bird species are protected by the Migratory Bird Treaty Act and other regulations; therefore, activities that result in the destruction or abandonment of an active nest is considered a significant impact. Recommended measures to avoid impacts to breeding birds are summarized as follows:

- Nesting birds protected by the Migratory Bird Treaty Act and other regulations may be impacted by construction and clearing of vegetation during the bird breeding season. The breeding bird season generally lasts from February 1 to August 31. Ideally, the clearing of vegetation and the initiation of construction can be done in the non-breeding season between September and January. If these activities cannot be done in the non-breeding season, a qualified biologist should perform pre-construction bird surveys within 30 days of the onset of construction or clearing of vegetation. If nesting birds are discovered in the vicinity of planned development, it will likely be necessary to establish buffer areas around the nest until the nest is vacated. The size of the buffer would be dependent on the particular species of nesting bird. Following these measures should eliminate the possibility that special status birds or nesting birds will be impacted by work within the Project Area.

Please let me know if you have any questions.

Sincerely,

Jeff Dreier
Senior Wildlife Ecologist

References

Beier, P. and S. Loe. 1992. A Checklist for Evaluating Impacts to Wildlife Movement Corridors. Wildlife Society Bulletin. 20:434-440.

California Department of Fish and Game. 2010. Natural Diversity Database, Wildlife and Habitat Data Analysis Branch. Sacramento.

California Department of Fish and Game. Environmental Services Division (ESD). 1994. A Field Guide to Lake and Streambed Alteration Agreements, Sections 1600-1607, California Fish and Game Code.

Environmental Laboratory. 1987. Corps of Engineers Wetlands Delineation Manual. Department of the Army, Waterways Experiment Station, Vicksburg, Mississippi 39180-0631.

Glover, S. 2009. Breeding Bird Atlas of Contra Costa County. Mount Diablo Audubon Society, Walnut Creek, California.

Holland, R. F. 1986. Preliminary Descriptions of the Terrestrial Natural Communities of California. Prepared for the California Department of Fish and Game, Sacramento, California

Jennings, M.R and M.P. Hayes. 1994. Amphibian and Reptile Species of Special Concern in California. California Department of Fish and Game, Inland Fisheries Division. Rancho Cordova, California.

Natural Resources Conservation Service (NRCS). 2002. Field Indicators of Hydric Soils in the United States, version 5.0. G.W. Hurt, P.M. Whited, eds. USDA, NRCS in cooperation with the National Technical Committee for Hydric Soils, Fort Worth, TX.

Reed, Jr., Porter B. 1988. National List of Plant Species That Occur in Wetlands: National Summary. U.S. Fish & Wildlife Service. Biol. Rep. 88 (24). 244 pp.

Shuford, W.D., and Gardali, T., editors. 2008. California Bird Species of Special Concern: A ranked assessment of species, subspecies, and distinct populations of birds of immediate conservation concern in California. Studies of Western Birds 1. Western Field Ornithologists, Camarillo, California, and CDFG, Sacramento.

Zeiner, D. C., W. F. Laudenslayer, Jr., K. E. Mayer, and M. White. 1990. California's Wildlife, Volume I-III: Amphibians and Reptiles, Birds, Mammals. California Statewide Wildlife Habitat Relationships System, California Department of Fish and Game, Sacramento.

Attachment 1. Special Status Plant and Wildlife Species Habitat Suitability in the Project Area. List compiled from July 2010 searches of the California Department of Fish and Game (CDFG) Natural Diversity Database for the Richmond, Oakland West, Oakland East, Las Trampas Ridge, Walnut Creek, Hunter's Point, San Leandro, Hayward and Briones Valley USGS 7.5' quadrangles. Other CDFG lists and publications were also reviewed (Jennings and Hayes 1994; Shuford and Gardali 2008; Zeiner et al. 1990).

SPECIES	STATUS*	HABITAT REQUIREMENTS	HABITAT SUITABILITY OF PROJECT AREA	RECOMMENDATIONS
INVERTEBRATES				
Bay checkerspot butterfly *Euphydryas editha bayensis*	FT	Restricted to native grasslands on outcrops of serpentine soil in the vicinity of San Francisco Bay	**Not Present**. No native serpentine grasslands occur within Project Area.	No further actions are recommended for this species.
monarch butterfly *Danaus plexippus*	SSI	Winter roost sites extend along the coast from northern Mendocino to Baja California, Mexico. Roosts located in wind-protected tree groves (eucalyptus, Monterey pine, Monterey cypress), with nectar and water sources nearby.	**Unlikely.** No winter roost sites known in the immediate area. Large eucalyptus grove not present.	No further actions are recommended for this species.
Callippe silverspot butterfly *Speyeria callippe callippe*	FE	The potential for this species to occur is dependent on the presence of the silverspot's hostplant, Johnny jump-up (*Viola pedunculata*).	**Not Present**. Host plant not present.	No further actions are recommended for this species.
longhorn fairy shrimp *Branchinecta longiantenna*	FE	Inhabit small, clear-water depressions in sandstone and clear-to-turbid clay-grass-bottomed pools in shallow swales.	**Not Present**. Vernal pool habitats are not present in the Project Area.	No further actions are recommended for this species.
vernal pool fairy shrimp *Branchinecta lynchi*	FT	Inhabit small, clear-water sandstone-depression pools, grassy swales, slumps, or basalt-flow depression pools.	**Not Present**. Vernal pool habitats are not present in the Project Area.	No further actions are recommended for this species.

SPECIES	STATUS*	HABITAT REQUIREMENTS	HABITAT SUITABILITY OF PROJECT AREA	RECOMMENDATIONS
AMPHIBIANS AND REPTILES				
California Tiger Salamander *Ambystoma californiense*	FT	Inhabits annual grass habitat and mammal burrows. Seasonal ponds and vernal pools crucial to breeding	**Not Present**. Suitable breeding habitat not present; no nearby occurrences.	No further actions are recommended for this species.
California Red-legged Frog *Rana draytonii*	FT	Associated with quiet perennial to intermittent ponds, stream pools and wetlands. Prefers shorelines with extensive vegetation. Documented to disperse through upland habitats after rains.	**Not Present**. The Project Area does not contain aquatic habitat and is isolated by roads on all sides. Documented to occur 1 mile southeast of site (CDFG 2010)	No further actions are recommended for this species.
Foothill Yellow-legged Frog *Rana boylii*	SSC	Found in or near rocky streams in a variety of habitats. Feed on both aquatic and terrestrial invertebrates.	**Not Present**. The Project Area does not contain stream habitat.	No further actions are recommended for this species.
California Horned Lizard *Phrynosoma coronatum frontale*	SSC	Occurs in valley-foothill hardwood, conifer and riparian habitats, as well as in pine-cypress juniper and annual grass habitats. Prefers sand areas, washes, flood plains and wind-blown deposits.	**Not Present.** The Project Area does not contain habitat types associated with this species.	No further actions are recommended for this species.
Silvery Legless Lizard *Anniella pulchra pulchra*	SSC	Found in sandy or loose loamy soils under sparse vegetation. Soil moisture is essential.	**Not Present.** Loamy soils and perennial soil moisture are not present.	No further actions are recommended for this species.
Western Pond Turtle *Clemmys marmorata marmorata*	SSC	Occurs in perennial ponds, lakes, rivers, and streams with suitable basking habitat and submerged shelter	**Not Present.** The Project Area does not contain suitable perennial aquatic habitat.	No further actions are recommended for this species.

SPECIES	STATUS*	HABITAT REQUIREMENTS	HABITAT SUITABILITY OF PROJECT AREA	RECOMMENDATIONS
Alameda Whipsnake *Masticophis lateralis euryxanthus*	FT, ST	Restricted to valley-foothill hardwood habitat of the Diablo Range. Associated with rock outcrops and scrub habitats.	**Not Present.** The Project Area does not contain suitable scrub and rock outcrop habitat for this species and is isolated by major roads from surrounding areas.	No further actions are recommended for this species.
BIRDS				
California Clapper Rail *Rallus longirostris obsoletus*	FE, SE, CFP	Resident in tidal marshes of the San Francisco Bay Estuary. Requires tidal sloughs and mud flats for foraging, and dense vegetation for nesting. Associated with abundant growth of cordgrass and pickleweed. Largest populations in south San Francisco Bay.	**Not Present**. Suitable salt marsh habitat not present.	No further actions are recommended for this species.
California Black Rail *Laterallus jamaicensis coturniculus*	ST, BCC, CFP	Resident in marshes (saline to freshwater) with dense vegetation below four inches in height. Prefers larger, undisturbed marshes close to a major water source.	**Not Present**. Suitable tidal marsh habitat not present.	No further actions are recommended for this species.
California Least Tern *Sterna antillarum browni*	FE, SE, CFP	Nests along the coast from San Francisco Bay south to northern Baja California. Breeding colonies in San Francisco Bay found in abandoned salt ponds and along estuarine shores. Colonial breeder on barren or sparsely vegetated, flat substrates near water.	**Not Present**. Suitable foraging and breeding habitat not present.	No further actions are recommended for this species.

SPECIES	STATUS*	HABITAT REQUIREMENTS	HABITAT SUITABILITY OF PROJECT AREA	RECOMMENDATIONS
Caspian Tern *Sterna caspia*	BCC	Nests in small colonies inland and along the coast. Inland fresh-water lakes and marshes; also, brackish or salt waters of estuaries and bays.	**Not Present**. Suitable breeding habitat not present.	No further actions are recommended for this species.
Black Skimmer *Rynchops niger*	BCC, SSC	Nests along the north and south ends of the Salton Sea; also, on salt pond dikes of south San Diego bay. Nests on gravel bars, low islets, and sandy beaches, in unvegetated sites. Nesting colonies usually less than 200 pairs.	**Not Present**. Suitable breeding habitat not present.	No further actions are recommended for this species.
Western Snowy Plover *Charadrius alexandrinus nivosus*	FT, SSC, BCC, RP	Found on sandy beaches, salt pond levees and shores of large alkali lakes. Requires sandy, gravelly or friable soils for nesting.	**Not Present**. Suitable foraging and breeding habitat not present.	No further actions are recommended for this species.
Bald Eagle *Haliaeetus leucocephalus*	SE, CFP	Requires large bodies of water, or free-flowing rivers with abundant fish and adjacent snags or other perches. Most nests are located within 1 mile of water. Nests in large, old-growth, or dominant live tree with open branchwork.	**Not Present**. Suitable nesting and foraging habitat not present.	No further actions are recommended for this species.
Golden Eagle *Aquila chrysaetos*	CFP, BCC	Open grassy hilltops and open spaces in chaparral and blue oak/digger pine woodlands	**Unlikely**. Typical nesting habitat not present. Project Area lacks prey species, providing unsuitable foraging habitat.	No further actions are recommended for this species.

SPECIES	STATUS*	HABITAT REQUIREMENTS	HABITAT SUITABILITY OF PROJECT AREA	RECOMMENDATIONS
Northern Harrier *Circus cyaneus*	SSC	Forages in open to herbaceous stages of many habitats. Nests on ground in shrubby vegetation, usually near wetlands.	**Not Present**. Typical grassland/wetland for nesting and foraging not present within Project Area. No breeding records in vicinity (Glover 2009).	No further actions are recommended for this species.
White-tailed Kite *Elanus leucurus*	CFP	Forages in open to herbaceous stages of many habitats. Nests in shrubs and trees adjacent to grasslands.	**Unlikely.** Low-quality foraging habitat present in Project Area. May use shrubs for nesting; however, significant human disturbance likely precludes nesting attempts.	No further actions are recommended for this species.
Prairie Falcon *Falco mexicanus*	SSC	Distributed from annual grasslands to alpine meadows, but associated primarily with perennial grasslands, savannahs, and rangeland.	**Not Present**. Typical foraging and nesting habitat not present within Project Area. No breeding records in vicinity (Glover 2009).	No further actions are recommended for this species.
Peregrine Falcon *Falco peregrinus*	SE	Forages in many habitats; requires cliffs for nesting.	**Not Present**. Typical nesting habitat not present within Project Area. No breeding records in vicinity (Glover 2009).	No further actions are recommended for this species.
Western Burrowing Owl *Athene cunicularia hypugea*	SSC	Nests and forages in low-growing grasslands that support burrowing mammals. May also use artificial structures for roosting and nesting.	**Not Present**. Burrow habitat is not present in the Project Area. No breeding records in vicinity (Glover 2009).	No further actions are recommended for this species.

SPECIES	STATUS*	HABITAT REQUIREMENTS	HABITAT SUITABILITY OF PROJECT AREA	RECOMMENDATIONS
Long-eared Owl *Asio otus*	SSC	Inhabit open woodlands, forest edges, riparian strips along rivers, hedgerows, juniper thickets, woodlots, and wooded ravines and gullies. Breeding habitat must include thickly wooded areas for nesting and roosting with nearby open spaces for hunting.	**Not Present**. Suitable foraging and nesting habitat not present within Project Area. No breeding records in vicinity (Glover 2009).	No further actions are recommended for this species.
Short-eared Owl *Asio flammeus*	SSC	Found in open, treeless areas with elevated sites for perches and dense vegetation for roosting and nesting. Tule patches/tall grass needed for nesting and daytime seclusion.	**Not Present.** Suitable habitat for this species not present in the Project Area. No breeding records in vicinity (Glover 2009).	No further actions are recommended for this species.
Black Swift *Cyseloides niger*	SSC	Nests in riparian jungles of willow, often mixed with cottonwoods with thick lower story.	**Not Present.** The Project Area does not contain typical nesting habitat.	No further actions are recommended for this species.
Vaux's Swift *Chaetura vauxi*	SSC	Forages high in the air over most terrain and habitats but prefers rivers/lakes. Requires large hollow trees for nesting.	**Unlikely.** The Project Area does not contain typical nesting habitat. May rarely forage over site during migration.	No further actions are recommended for this species.
Lewis's Woodpecker *Melanerpes lewis*	BCC	Uncommon winter resident occurring on open oak savannahs, broken deciduous and coniferous habitats.	**Not Present.** The Project Area does not contain typical woodland or savannah habitat. No County breeding records (Glover 2009).	No further actions are recommended for this species.

SPECIES	STATUS*	HABITAT REQUIREMENTS	HABITAT SUITABILITY OF PROJECT AREA	RECOMMENDATIONS
Olive-sided Flycatcher *Contopus cooperi*	SSC	Most often found in montane conifer forests where tall trees overlook canyons, meadows, lakes or other open terrain	**Not Present.** Suitable habitat for this species not present in the Project Area.	No further actions are recommended for this species.
Purple Martin *Progne subis*	SSC	Aerial insectivores that nest in open and semi-open areas, including savannas, cultivated lands, fields, parks, pastures, near lakes and marshes and in towns and suburbs.	**Not Present.** The Project Area does not contain typical nesting habitat.	No further actions are recommended for this species.
Bank Swallow *Riparia riparia*	ST	Migrant in riparian and other lowland habitats in western California. Nests in riparian areas with vertical cliffs and bands with fine-textured or sandy soils in which to nest.	**Not Present.** The Project Area does not contain suitable nesting habitat for this species	No further actions are recommended for this species.
Loggerhead Shrike *Lanius ludovicianus*	SSC	Prefers open habitats with scattered shrubs, posts, or other perches. Open-canopied valley foothill hardwood, valley foothill riparian	**Unlikely.** Low-quality foraging and nesting habitat present in Project Area, but isolation and small size may preclude presence.	No further actions are recommended for this species.
Tricolored Blackbird *Agelaius tricolor*	SSC	Breeds near freshwater marsh with dense emergent vegetation near trees and shrubs. Nests in stands of cattails, bulrushes, or willows.	**Not Present**. Suitable habitat is not present within Project Area.	No further actions are recommended for this species.
Yellow Warbler *Dendroica petechia brewsteri*	SSC	Breeds in riparian woodlands, particularly those dominated by willows and cottonwoods.	**Not Present**. Typical riparian habitat not present.	No further actions are recommended for this species.

SPECIES	STATUS*	HABITAT REQUIREMENTS	HABITAT SUITABILITY OF PROJECT AREA	RECOMMENDATIONS
Bryant's Savannah Sparrow *Passerculus sandwichensis alaudinus*	SSC	Associated with the coastal fog belt, primarily between Humboldt and northern Monterey Counties. Occupies low tidally-influenced habitats, adjacent to ruderal areas; often found where pickleweed communities merge into grassland.	**Unlikely.** Open grasslands or tidally-influenced areas not present.	No further actions are recommended for this species.
San Pablo Song Sparrow *Melospiza melodia samuelis*	BCC, SSC	Resident of salt marshes along the north side of San Francisco and San Pablo Bays. Inhabits tidal sloughs in the *Salicornia* marshes; nests in *Grindelia* bordering slough channels.	**Not Present**. Typical tidal breeding and foraging habitat not present.	No further actions are recommended for this species.
Alameda Song Sparrow *Melospiza melodia pusillula*	BCC, SSC	Resident of salt marshes bordering south arm of San Francisco Bay. Inhabits *Salicornia* marshes; nests low in *Grindelia* bushes (high enough to escape high tides) and in *Salicornia*.	**Not Present.** Typical tidal breeding and foraging habitat not present.	No further actions are recommended for this species.
Grasshopper Sparrow *Ammodramus savannarum*	SSC	Nests in dense grasslands on rolling hills, lowland plains, in valleys and on hillsides on lower mountain slopes. Favors native grasslands with a mix of grasses, forbs, and scattered shrubs. Loosely colonial when nesting.	**Unlikely.** Formerly occurred in grasslands of Gateway Valley. Project site is too small and disturbed to support this species.	No further actions are recommended for this species.

SPECIES	STATUS*	HABITAT REQUIREMENTS	HABITAT SUITABILITY OF PROJECT AREA	RECOMMENDATIONS
Saltmarsh Common Yellowthroat *Geothlypis trichas sinuosa*	BCC, SSC	Resident of the San Francisco Bay region, in fresh and salt water marshes. Requires thick, continuous cover down to water surface for foraging; tall grasses, tule patches, willows for nesting.	**Not Present.** Typical wetland and riparian breeding and foraging habitat not present.	No further actions are recommended for this species.
Yellow-breasted Chat *Icteria virens*	SSC	Breeds in riparian thickets and woodlands, particularly those dominated by willows and cottonwoods.	**Not Present**. Suitable dense riparian habitat not present within Project Area.	No further actions are recommended for this species.
Lawrence's Goldfinch *Carduelis lawrencei*	BCC	Inhabits oak woodlands, chaparral, riparian woodlands, pinyon-juniper associations, and weedy areas near water during the breeding season; highly erratic and localized in occurrence.	**Not Present.** Chaparral and woodlands are not present.	No further actions are recommended for this species.
MAMMALS				
Salt-marsh Wandering Shrew *Sorex vagrans halicoetes*	SSC	Salt marshes of the south arm of San Francisco Bay. Medium high marsh 6 to 8 feet above sea level where abundant driftwood is scattered among *Salicornia*.	**Not Present**. Suitable tidal habitat not present within Project Area.	No further actions are recommended for this species.
Hoary Bat *Lasiurus cinereus*	WBWG:M	Prefers open habitats or habitat mosaics, with access to trees for cover and open areas or habitat edges for feeding. Roosts in dense foliage of medium to large trees. Feeds primarily on moths. Requires water.	**Unlikely.** Project Area lacks trees for suitable roosting habitat. May rarely forage over the site.	No further actions are recommended for this species.

SPECIES	STATUS*	HABITAT REQUIREMENTS	HABITAT SUITABILITY OF PROJECT AREA	RECOMMENDATIONS
Western Red Bat *Lasiurus blossevillii*	SSC, WBWG:H	Roosts primarily in trees, less often in shrubs. Roost sites often are in edge habitats adjacent to streams, fields, or urban areas.	**Unlikely.** Project Area lacks trees for suitable roosting habitat. May rarely forage over the site.	No further actions are recommended for this species.
Pallid Bat *Antrozous pallidus*	SSC, WBWG:H	Roosts found in rock outcrops, caverns, hollow trees, buildings, and bridges.	**Unlikely.** Project Area lacks roosting habitat. May rarely forage over the site.	No further actions are recommended for this species.
Townsend's Big-eared Bat *Corynorhinus townsendii*	SSC, WBWG:H	Caverns and buildings provide roost habitat.	**Not Present.** Project Area lacks caverns or buildings for suitable roost habitat.	No further actions are recommended for this species.
Long-eared Myotis *Myotis evotis*	WBWG:M	Roost sites include hollow trees, exfoliating bark, outcrops, caverns, buildings.	**Unlikely.** Project Area lacks trees and other structure for suitable roosting habitat.	No further actions are recommended for this species.
Fringed Myotis *Myotis thysanodes*	WBWG:H	Caverns, trees, buildings provide suitable roost habitat.	**Unlikely.** Project Area lacks suitable roosting habitat.	No further actions are recommended for this species.
Long-legged Myotis *Myotis volans*	WBWG:H	Roost habitat includes hollow trees, crevices, caverns, buildings	**Unlikely.** Project Area lacks suitable roosting habitat.	No further actions are recommended for this species.
Silver-haired Bat *Lasionycteris noctivagans*	WBWG:M	Roosts in hollow trees, snags, buildings, rock crevices, caves, and under bark. Females may form nursery colonies or occur as solitary individuals in dense foliage or hollow trees.	**Unlikely.** Project Area lacks trees and other structure used by this species for roosting habitat.	No further actions are recommended for this species.

SPECIES	STATUS*	HABITAT REQUIREMENTS	HABITAT SUITABILITY OF PROJECT AREA	RECOMMENDATIONS
Western Mastiff Bat *Eumops perotis*	SSC, WBWG:H	Cliff crevices, cracks in boulders, and buildings provide roosting sites.	**Unlikely.** Project Area lacks cliffs or buildings for suitable roost habitat.	No further actions are recommended for this species.
Salt Marsh Harvest Mouse *Reithrodontomys raviventris*	FE, SE, CFP	Found only in the saline emergent wetlands of San Francisco Bay and its tributaries. Pickleweed is primary habitat. Do not burrow, build loosely organized nests. Require higher areas for flood escape.	**Not Present**. Suitable tidal habitat not present within Project Area.	No further actions are recommended for this species.
San Pablo Vole *Microtus californicus sanpabloensis*	SSC	Saltmarshes of San Pablo Creek, on the south shore of San Pablo Bay. Constructs burrow in soft soil. Feeds on grasses, sedges and herbs. Forms a network of runways leading from the burrow.	**Not Present**. Suitable habitat not present within Project Area.	No further actions are recommended for this species.
San Francisco Dusky-footed Woodrat *Neotoma fuscipes annectens*	SSC	Forest habitats of moderate canopy and moderate to dense understory. Also in chaparral habitats. Constructs nests of shredded grass, leaves, and other material. May be limited by availability of nest-building materials.	**Not Present**. Project Area is too isolated and small in size to support this species. Known to occur in Gateway Valley area to south.	No further actions are recommended for this species.
American Badger *Taxidea taxus*	SSC	Most abundant in drier open stages of most shrub, forest, and herbaceous habitats, with friable soils. Requires friable soils and open, uncultivated ground. Preys on burrowing rodents.	**Not Present.** Small size and isolated, disturbed nature of Project Area precludes presence.	No further actions are recommended for this species.

SPECIES	STATUS*	HABITAT REQUIREMENTS	HABITAT SUITABILITY OF PROJECT AREA	RECOMMENDATIONS
Ring-tailed Cat *Bassariscus astutus*	CFP	Found in a variety of habitats throughout the western US including riparian areas, semi-arid country, deserts, chaparral, oak woodlands, pinyon pine woodlands, juniper woodlands and montane conifer forests usually under 1400m in elevation. Typically uses cliffs or large trees for shelter.	**Not Present.** Small size, lack of cover, and isolated, disturbed nature of Project Area preclude presence.	No further actions are recommended for this species.
Plants				
Amsinckia lunaris bent-flowered fiddleneck	List 1B	Coastal bluff scrub, cismontane woodland, valley and foothill grassland. 3-500 meters(m). Blooms March-June.	**Unlikely.** Grassland communities within the Project Area are disturbed and dominated by weedy species.	No further actions are recommended for this species.
Anomobryum julaceum slender silver-moss	List 2	Broad leafed upland forest, lower montane coniferous forest, north coast coniferous forest. Moss which grows on damp rocks and soil; usually seen on road cuts. 100-1000m.	**Not Present.** Suitable forested habitat is not present within the Project Area.	No further actions are recommended for this species.
Arctostaphylos pallida pallid manzanita	FT, SE, List 1B	Broad-leafed upland forest, closed-cone coniferous forest, chaparral, cismontane woodland, coastal scrub/siliceous shale, sandy or gravelly. 185-465 m. Blooms December-March.	**Not Present.** No manzanita shrubs were observed in the Project Area.	No further actions are recommended for this species.

SPECIES	STATUS*	HABITAT REQUIREMENTS	HABITAT SUITABILITY OF PROJECT AREA	RECOMMENDATIONS
Astragalus tener var. *tener* alkali milk-vetch	RP, List 1B	Playas, valley and foothill grassland (adobe clay), vernal pools/alkaline. 1-60 m. Blooms March-June.	**Not Present.** Vernal habitats are not present in the Project. Area. Site is above typical elevation range of species.	No further actions are recommended for this species.
Atriplex joaquiniana San Joaquin spearscale	List 1B	Chenopod scrub, meadows and seeps, playas, valley and foothill grassland/ alkaline. 1-835 m. Blooms April-October.	**Unlikely.** Alkaline grassland is not present within the Project Area.	No further actions are recommended for this species.
Balsamorhiza macrolepis var. *macrolepis* big-scale balsamroot	List 1B	Chaparral, cismontane woodland, valley and foothill grassland/ sometimes serpentinite. 90-1400 m. Blooms March-June.	**Unlikely.** Grassland communities within the Project Area are disturbed and dominated by weedy species.	No further actions are recommended for this species.
Blepharizonia plumosa big tarplant	List 1B	Valley and foothill grassland. 30-505 m. Blooms July-October.	**Unlikely.** Grasslands within the Project Area are disturbed and dominated by weedy species.	No further actions are recommended for this species.
California macrophylla round-leaved filaree	List 1B	Cismontane woodland and valley and foothill grassland. 15-200 m. Blooms March-May.	**Unlikely.** Grasslands within the Project Area are disturbed and dominated by weedy species. Site is above typical elevation range of species.	No further actions are recommended for this species.
Calochortus pulchellus Mt. Diablo fairy-lantern	List 1B	Chaparral, cismontane woodland, riparian woodland, valley and foothill grassland. 30-840 m. Blooms April-June.	**Unlikely.** Chaparral and woodland communities are not present within the Project Area.	No further actions are recommended for this species.

SPECIES	STATUS*	HABITAT REQUIREMENTS	HABITAT SUITABILITY OF PROJECT AREA	RECOMMENDATIONS
Calystegia purpurata ssp. *saxicola* coastal bluff morning-glory	List 1B	Coastal dunes, coastal scrub, and north coast coniferous forest. 10-105 m. Blooms May- September.	**Not Present.** Coastal habitats are not present within the Project Area. Site is above typical elevation range of species.	No further actions are recommended for this species.
Carex comosa bristly sedge	List 2	Coastal prairie, marshes and swamps (lake margins), valley and foothill grassland. 0-625 m. Blooms May-September.	**Not Present.** Wetlands and wet grassland habitats are not present within the Project Area.	No further actions are recommended for this species.
Centromadia parryi ssp. *congdonii* Congdon's tarplant	List 1B	Valley and foothill grassland (alkaline). 1-230 m. Blooms May-October.	**Unlikely.** Alkaline grassland are not present within the Project Area.	No further actions are recommended for this species.
Chorizanthe cuspidata var. *cuspidata* San Francisco Bay spineflower	List 1B	Coastal bluff scrub, coastal dunes, coastal prairie, and coastal scrub. 3-215 m. Blooms April-July.	**Not Present.** Coastal habitats with which this species is associated, are not present.	No further actions are recommended for this species.
Chorizanthe robusta var. *robusta* robust spineflower	FE, List 1B	Chaparral (maritime), cismontane woodland (openings), coastal dunes, coastal scrub/ sandy or gravelly. 3-300 m. Blooms April-September.	**Not Present.** The Project Area does not contain typical coastal habitat for this species.	No further actions are recommended for this species.
Cirsium andrewsii Franciscan thistle	List 1B	Broad-leafed upland forest, coastal bluff scrub, coastal prairie, and coastal scrub. 0-150 m. Blooms March-July.	**Not Present.** Suitable habitat is not present within the Project Area. Site is above typical elevation range of species.	No further actions are recommended for this species.
Clarkia franciscana Presidio clarkia	FE, SE, List 1B	Coastal scrub, valley and foothill grassland (serpentinite). 25-335 m. Blooms May-July.	**Unlikely.** Serpentine soils are not apparent on the Project site.	No further actions are recommended for this species.

SPECIES	STATUS*	HABITAT REQUIREMENTS	HABITAT SUITABILITY OF PROJECT AREA	RECOMMENDATIONS
Cordylanthus maritimus ssp. *palustris* Point Reyes bird's-beak	List 1B	Marshes and swamps (coastal salt). 0-10 m. Blooms June-October.	**Not Present.** Suitable wetland habitat is not present within the Project Area. Site is above typical elevation range of species.	No further actions are recommended for this species.
Dirca occidentalis western leatherwood	List 1B	Broad-leafed upland forest, closed-cone coniferous forest, chaparral, cismontane woodland, North Coast coniferous forest, riparian forest, riparian woodland/ mesic. 50-395 m. Blooms January-March.	**Not Present.** Suitable forested habitat is not present within the Project Area. Documented to occur within 1 mile to the north and south (CDFG 2010).	No further actions are recommended for this species.
Fritillaria liliacea fragrant fritillary	List 1B	Cismontane woodland, coastal prairie, coastal scrub, valley and foothill grassland/ often serpentinite. 3-410 m. Blooms February-April.	**Unlikely.** Grasslands within the Project Area are disturbed and dominated by weedy species. Serpentine soils are not apparent on the Project site.	No further actions are recommended for this species.
Gilia capitata ssp.*chamissonis* blue coast gilia	List 1B	Coastal dunes and coastal scrub. 2-200 m. Blooms April-July.	**Not Present.** Suitable coastal habitat is not present within the Project Area.	No further actions are recommended for this species.
Helianthella castanea Diablo helianthella	List 1B	Broad-leafed upland forest, chaparral, cismontane woodland, coastal scrub, riparian woodland, valley and foothill grassland. 60-1300 m. Blooms March-June.	**Unlikely.** Grasslands within the Project Area are disturbed and dominated by weedy species.	No further actions are recommended for this species.
Hemizonia congesta ssp. congesta seaside tarplant	List 1B	Occurs in coastal scrub, valley and foothill grassland. Found in grassy valleys and on hills, often in fallow fields. 25-200 m.	**Unlikely.** Grasslands within the Project Area are disturbed and dominated by weedy species.	No further actions are recommended for this species.

SPECIES	STATUS*	HABITAT REQUIREMENTS	HABITAT SUITABILITY OF PROJECT AREA	RECOMMENDATIONS
Hoita strobilina Loma Prieta hoita	List 1B	Chaparral, cismontane woodland, riparian woodland/ usually serpentinite, mesic. 30-860 m. Blooms May-July.	**Not Present.** Suitable habitat is not present within the Project Area. Serpentine soils are not apparent on the Project site.	No further actions are recommended for this species.
Holocarpha macradenia Santa Cruz tarplant	FT, SE, List 1B	Coastal prairie, coastal scrub, valley and foothill grassland/ often clay, sandy. 10-220 m. Blooms June-October.	**Unlikely.** Sandy soils are not present. Grasslands within the Project Area are disturbed and dominated by weedy species.	No further actions are recommended for this species.
Horkelia cuneata ssp. *sericea* Kellogg's horkelia	List 1B	Closed-cone coniferous forest, chaparral (maritime), coastal dunes, coastal scrub/ sandy or gravelly, openings. 10-200 m. Blooms April-September.	**Not Present.** Suitable soils and general plant communities are not present.	No further actions are recommended for this species.
Juglans hindsii Northern California black walnut	List 1B	Naturally-occurring stands in riparian forest and riparian woodland. 0-440 m. Blooms April-May.	**Not Present.** Riparian habitat is not present within the Project Area.	No further actions are recommended for this species.
Lasthenia conjugens Contra Costa goldfields	FE, RP, List 1B	Cismontane woodland, playas (alkaline), valley and foothill grassland, vernal pools/ mesic. 0 to 470 m. Blooms March-June.	**Not Present.** Wetland habitat suitable for this species is not present within the Project Area.	No further actions are recommended for this species.
Lathyrus jepsonii var. *jepsonii* Delta tule pea	List 1B	Marshes and Swamps. 0-4 m. Blooms May-July.	**Not Present.** Wetland habitat is not present within the Project Area. Site is above typical elevation range of species.	No further actions are recommended for this species.

SPECIES	STATUS*	HABITAT REQUIREMENTS	HABITAT SUITABILITY OF PROJECT AREA	RECOMMENDATIONS
Layia carnosa beach layia	FE, SE, List 1B	Coastal dunes and coastal scrub with sandy soils. 0- 60 m. Blooms March- July.	**Not Present.** Coastal dune and coastal scrub habitat is not present in the Study Area. Site is above typical elevation range of species.	No further actions are recommended for this species.
Leptosiphon rosaceus rose leptosiphon	List 1B	Coastal bluff scrub. 0- 100 m. Blooms April- July.	**Not Present.** Coastal bluff scrub habitat is not present in the Study Area. Site is above typical elevation range of species.	No further actions are recommended for this species.
Malacothamnus hallii Hall's bush mallow	List 1B	Chaparral, coastal scrub. 10-760 m. Blooms May-September.	**Not Present.** Chaparral and scrub habitats are not present within the Project Area.	No further actions are recommended for this species.
Meconella oregana Oregon meconella	List 1B	Coastal prairie, coastal scrub. 250-620 m. Blooms March-April.	**Not Present.** Suitable coastal habitat is not present within the Project Area. Site is generally below typical elevation range of species.	No further actions are recommended for this species.
Monardella villosa ssp. *globosa* robust monardella	List 1B	Broad-leafed upland forest, chaparral, cismontane woodland, coastal scrub, and valley and foothill grassland. 100-915 m. Blooms June-July.	**Unlikely.** Grasslands within the Project Area are disturbed and dominated by weedy species.	No further actions are recommended for this species.
Navarretia gowenii Lime Ridge navarretia	List 1B	Chaparral. 180-305 m. Blooms May-June.	**Not Present.** Chaparral habitat is not present within the Project Area.	No further actions are recommended for this species.

SPECIES	STATUS*	HABITAT REQUIREMENTS	HABITAT SUITABILITY OF PROJECT AREA	RECOMMENDATIONS
Plagiobothrys chorisianus var. *chorisianus* Choris' popcorn-flower	List 1B	Chaparral, coastal prairie, and coastal scrub. 15-160 m. Blooms March-June.	**Not Present.** Coastal habitat is not present within the Project Area. Site is above typical elevation range of species.	No further actions are recommended for this species.
Plagiobothrys diffusus San Francisco popcorn-flower	SE, List 1B	Coastal prairie, valley and foothill grassland. 60-360 m. Blooms March-June.	**Unlikely.** Coastal prairie is not present. Grasslands within the Project Area are disturbed and dominated by weedy species.	No further actions are recommended for this species.
Plagiobothrys glaber hairless popcorn-flower	List 1A	Meadows and seeps (alkaline), marshes and swamps (coastal salt). 15-180 m. Blooms March-May.	**Not Present.** Wetland habitats are not present within the Project Area. Site is above typical elevation range of species.	No further actions are recommended for this species.
Potamogeton filiformis slender-leaved pondweed	List 2	Marshes and swamps (assorted shallow freshwater). 300-2150 m. Blooms May-July.	**Not Present.** Wetland habitats are not present within the Project Area.	
Sanicula maritima adobe sanicle	SR, List 1B	Chaparral, coastal prairie, meadows and seeps, valley and foothill grassland/ clay, serpentinite. 30-240 m. Blooms February-May.	**Unlikely.** Serpentine soils are not apparent on the Project site. Grasslands within the Project Area are disturbed and dominated by weedy species.	No further actions are recommended for this species.
Streptanthus albidus ssp. *peramoenus* most beautiful jewel-flower	List 1B	Chaparral, cismontane woodland, valley and foothill grassland/ serpentinite. 94-1000 m. Blooms April-September.	**Unlikely.** Serpentine soils are not apparent on the Project site. Typical habitat is not present within the Project Area.	No further actions are recommended for this species.

SPECIES	STATUS*	HABITAT REQUIREMENTS	HABITAT SUITABILITY OF PROJECT AREA	RECOMMENDATIONS
Suaeda californica California seablite	FE, List 1B	Marshes and swamps (coastal salt). 0-15 m. Blooms July-October.	**Not Present.** Tidal wetlands are not present within the Project Area. Site is above typical elevation range of species.	No further actions are recommended for this species.
Trifolium depauperatum var. *hydrophilum* saline clover	List 1B	Marshes and swamps, valley and foothill grassland (mesic, alkaline), vernal pools. 0- 300 m. Blooms April-June.	**Not Present.** Suitable mesic and alkaline habitats are not present within the Project Area.	No further actions are recommended for this species.
Viburnum ellipticum oval-leaved viburnum	List 2	Chaparral, cismontane woodland, lower montane coniferous forest. 215-1400 m. Blooms May-June.	**Not Present.** Chaparral and forested habitats are not present within the Project Area.	No further actions are recommended for this species.

*** Key to status codes:**

FE	Federal Endangered
FT	Federal Threatened
FC	Federal Candidate
BCC	USFWS Birds of Conservation Concern
RP	Sensitive species included in a USFWS Recovery Plan or Draft Recovery Plan
SE	State Endangered
ST	State Threatened
SSC	CDFG Species of Special Concern
CFP	CDFG Fully Protected Animal
SSI	CDFG Special Status Invertebrates
WBWG	Western Bat Working Group Priority species (Medium and High)
List 1A	CNPS List 1A: Plants presumed extinct in California
List 1B	CNPS List 1B: Plants rare, threatened or endangered in California and elsewhere
List 2	CNPS List 2: Plants rare, threatened, or endangered in California, but more common elsewhere

May 30, 2014

Ms. Dana Turrey
Urban Planning Partners, Inc.
505 17th Street, 2nd Floor
Oakland, California 94612

Re: Biological Resource Assessment Update, 101 Upton Road, Orinda, California

Dear Ms. Turrey,

This letter report serves to supplement the Biological Resource Assessment (BRA) that WRA, Inc. prepared July 16, 2010 for the property of 101 Upton Road in Orinda, California (Project Area). WRA staff previously conducted a biological reconnaissance site visit on July 14, 2010 along with a literature review to determine potential for biological constraints within the Project Area; however, given that over four years have passed since the preparation of the final report, an additional biological evaluation is warranted to supplement the existing report. Of the species identified in the 2010 BRA, no sensitive biological communities, special-status plants, or wildlife species currently have the potential to occur within the Project Area. Additionally, since 2010, no additional plant or wildlife-species have been documented to occur within two miles of the Project Area.

Project Area

The Project Area is a 1.2 acre parcel located at the intersection of State Route 24 and Wilder Road in Orinda. Wilder Road is located along the west and south boundaries, while the eastbound on-ramp to State Route 24 is located along the northern boundary of the site. Immediately east of the parcel is a narrow strip of disturbed land between Wilder Road and the freeway on-ramp.

Methods

On May 12, 2014, the Project Area was traversed on foot to determine (1) plant communities present within the Project Area, (2) if existing conditions provided suitable habitat for any special-status plant or wildlife species, and (3) if sensitive habitats are present. Plant and wildlife species encountered were recorded, and a list of wildlife species observed onsite are included with the attached table.

Database searches for known occurrences of special-status species were also conducted and focused on the USGS 7.5-minute maps for the Oakland East and Briones Valley quadrangles within two miles of the Project Area. These searches were conducted to determine if any new special-status species have been documented in the vicinity of the Project Area or if there have been any changes to the listing status of any species already documented near the Project Area in the time since the original report was prepared. The following sources were reviewed to

determine which special-status plant and wildlife species have been documented from the referenced quadrangles:

- California Natural Diversity Database (CNDDB) records (CDFW 2014)
- California Native Plant Society (CNPS) Inventory records (CNPS 2014)
- U.S. Fish and Wildlife Service (USFWS) quadrangle species list (USFWS 2014)

Results and Discussion

According to the database searches described above, no additional special-status plant species have been documented within two miles of the Project Area. Additionally, no changes have been made to the CNPS rankings of the special-status plants already documented in the 2010 report that occur within two miles of the Project Area.

No additional special-status wildlife species were documented to occur within two miles of the Project Area since the 2010 report and no changes to the listing status of previously identified special-status wildlife species were found.

The May 12, 2014 site visit found no changes to the biological communities within the Project Area as documented in the 2010 BRA. The Project Area continues to be composed of ruderal grassland with a few shrubs, surrounded by paved roads. Several trees are located along the edge of the parcel; however, this thin margin does not support habitat for special-status species. No special-status wildlife or plant species were observed during this site visit. Additionally, wildlife movement corridor potential remains the same as the analysis conducted in 2010 since the Project Area does not connect two or more significant habitat areas and therefore does not represent a significant wildlife movement corridor.

Conclusion

Habitat conditions remain largely unchanged from the 2010 evaluation. No sensitive plant communities or potentially jurisdictional wetlands and waters were identified during the site visit. No special-status plant or wildlife species are likely to occur within the Project Area, and it is not located within a Critical Habitat unit. The site does not function as an important wildlife movement corridor

Consistent with the previous finding in the 2010 BRA, this update determined that special-status bird species are unlikely to occur in the Project Area; however, some common bird species may occasionally nest in the Project Area. Common bird species are protected by the Migratory Bird Treaty Act and California Department of Wildlife Fish and Game Codes; therefore, activities that result in the destruction or abandonment of an active nest are considered a significant impact. In order to avoid the destruction, abandonment or other impacts to active nests, a breeding bird survey is recommended if vegetation removal and/or ground disturbance is to occur within the breeding bird season between February 1 and August 31.

Please do not hesitate to contact me if you have any questions or if you require any additional information.

Sincerely,

Daniel Chase
Wildlife Biologist

References

California Department of Fish and Wildlife (CDFW). 2014. California Natural Diversity Database. Wildlife and Habitat Data Analysis Branch, Sacramento, CA.

California Native Plant Society (CNPS). 2014. Inventory of Rare and Endangered Plants of California. California Native Plant Society, Sacramento, California. Online at: http://www.rareplants.cnps.org; most recently accessed: May 2014.

WRA, Inc. (WRA). 2010. Biological Resources Assessment – 101 Upton Road, Orinda California. APN 273-160-009. Prepared for: Ms. Holly Moore. July 2010

Table 1. Species observed during the May 12, 2014 site visit.

Scientific Name	**Common Name**
Carpodacus mexicanus	house finch
Buteo jamaicensis	red-tailed hawk (fly-over)
Charadrius vociferus	killdeer (fly-over)
Poecile rufescens	chestnut-backed chickadee
Sceloperous (sp.)	western fence lizard
Odocoileus hemionus	blacktailed deer

June 4, 2018

Mr. Julian Bobilev
Urban Planning Partners, Inc.
505 17th Street, 2nd Floor
Oakland, California 94612

Re: Biological Resource Assessment 2018 Update, 101 Upton Road, Orinda, California

Dear Mr. Bobilev,

This letter report serves to supplement the Biological Resource Assessment (BRA) that WRA, Inc. prepared July 16, 2010 for the property of 101 Upton Road in Orinda, California (Project Area) and update dated May 30, 2014. WRA staff previously conducted a biological reconnaissance site visit on July 14, 2010 along with a literature review to determine potential for biological constraints within the Project Area. However, given that four years have passed since the last update, and eight since the preparation of the original report, an additional biological evaluation is warranted to supplement the existing report work completed. Of the species identified in the 2010 BRA, no sensitive biological communities, special-status plants, or wildlife species currently have the potential to occur within the Project Area. Additionally, since 2010, no new plant or wildlife-species have been documented to occur within two miles of the Project Area.

Project Area

The Project Area is a 1.2 acre parcel located at the intersection of State Route 24 and Wilder Road in Orinda. Wilder Road is located along the west and south boundaries, while the eastbound on-ramp to State Route 24 is located along the northern boundary of the site. Immediately east of the parcel is a narrow strip of disturbed land between Wilder Road and the freeway on-ramp.

Methods

On May 25, 2018, the Project Area was traversed on foot by a WRA biologist to determine (1) plant communities present within the Project Area, (2) if existing conditions provided suitable habitat for any special-status plant or wildlife species, and (3) if sensitive habitats are present. Plant and wildlife species encountered were recorded, and a list of wildlife species observed onsite are included with the attached table.

Database searches for known occurrences of special-status species were also conducted and focused on the USGS 7.5-minute maps for the Oakland East and Briones Valley quadrangles within two miles of the Project Area. These searches were conducted to determine if any new special-status species have been documented in the vicinity of the Project Area or if there have been any changes to the listing status of any species already documented near the Project Area in the time since the first supplement to the original report was prepared. The following sources

were reviewed to determine which special-status plant and wildlife species have been documented from the referenced quadrangles:

- California Natural Diversity Database (CNDDB) records (CDFW 2018)
- California Native Plant Society (CNPS) Inventory records (CNPS 2018)
- U.S. Fish and Wildlife Service (USFWS) Information for Planning and Consultation (IPaC) (USFWS 2018)

Results and Discussion

According to the database searches described above, one new special-status plant species should be included for analysis of this site. This species, the San Bruno elfin (*Callophrys mossii bayensis)*, is highly restricted in its range. All known populations occur in coastal San Mateo County on significant elevations in rocky outcrops that support their host plant, *Sedum spathufolium.* These habitat requirements do not exist at the worksite or in adjacent areas, so no further actions are recommended to protect this species at the Project Site.

Based on the other database searches, no other new species occurred within two miles of the Project Area or should be included for analysis. Additional sightings of plants already known to occur within 2 miles of the project area (*Arctostaphylos pallida* and *Dirca occidentalis*) were documented since the first update in 2014 (Appendix 1). Three changes in rankings to CNPS rated special status plants analyzed in 2010 have occurred: two species were downgraded from CNPS 1B to “Considered but rejected” and one was downgraded from CNPS 1 to CNPS 4.2.

No additional special-status wildlife species were documented to occur within two miles of the Project Area since the 2010 and 2014 reports and no changes to the listing status of previously identified special-status wildlife species were found.

The May 25, 2018 site visit found no significant changes to the biological communities within the Project Area as documented in the 2010 BRA or 2014 update report. The Project Area continues to be composed of ruderal grassland with a few shrubs, surrounded by paved roads (Tables 1 and 2). Several trees are located along the edge of the parcel; however, this thin margin does not support habitat for special-status species. No special-status wildlife or plant species were observed during this site visit. Additionally, wildlife movement corridor potential remains the same as the analysis conducted in 2010 and 2014 since the Project Area is largely bound by a highway, roads, and is in close proximity to a housing development. Furthermore, the Project Area does not connect two or more significant habitat areas and therefore does not represent a significant wildlife movement corridor.

Conclusion

Habitat conditions remain largely unchanged from the 2010 and 2014 evaluations. No sensitive plant communities or potentially jurisdictional wetlands and waters were identified during the site visit. No special-status plant or wildlife species are likely to occur within the Project Area, and it is not located within a Critical Habitat unit. The site does not function as an important wildlife movement corridor

Consistent with the previous finding in the 2010 BRA and 2014 update, this second update determined that special-status bird species are unlikely to occur in the Project Area; however,

some common bird species may occasionally nest in the Project Area. Most California common bird species are protected by the Migratory Bird Treaty Act and California Department of Wildlife Fish and Game Codes; therefore, activities that result in the destruction or abandonment of an active nest could result in a significant impact. In order to avoid the destruction, abandonment or other direct impacts to active nests, a breeding bird survey by a qualified biologist is recommended if vegetation removal and/or ground disturbance is to occur within the breeding bird season between February 1 and August 31. In the event an active nest is found, which contains eggs, chicks, or young, a no disturbance buffer shall be established around the nest by the biologist until the young have fledged or the nest is no longer active. The size of the buffer, as determined by the biologists, will be informed by the nest location, species, and any existing visual or auditory barriers.

Please do not hesitate to contact me if you have any questions or if you require any additional information.

Sincerely,

Dan Chase
Wildlife Biologist

References

California Department of Fish and Wildlife (CDFW). 2018. California Natural Diversity Database. Wildlife and Habitat Data Analysis Branch, Sacramento, CA.

California Native Plant Society (CNPS). 2018. Inventory of Rare and Endangered Plants of California. California Native Plant Society, Sacramento, California. Online at: http://www.rareplants.cnps.org; most recently accessed: May 2018.

United States Fish and Wildlife Service (USFWS). 2018. Information for Planning and Consultation (IPaC) powered by the Environmental Conservation Online System (ECOS). Online at https://ecos.fws.gov/ipac/: Accessed May 2018.

WRA, Inc. (WRA). 2010. Biological Resources Assessment – 101 Upton Road, Orinda California. APN 273-160-009. Prepared for: Ms. Holly Moore. July 2010

WRA, Inc. (WRA). 2014. Biological Resources Assessment – 101 Upton Road, Orinda California. APN 273-160-009. Prepared for: Ms. Dana Turrey. May 30, 2014.

Table 1. Plant species observed during the May 25, 2018 site visit.

Scientific Name	**Common Name**
Avena barbata	Slim oat grass
Baccharis pilularis	Coyote brush
Bellardia trixago	Mediterranean lineseed
Briza minor	Little rattle snake grass
Bromus hordeaceus	Soft chess
Bromus madritensis	Foxtail chess
Carduus pycnocephalus	Italian thistle
Cotoneaster pannosus	Silverleaf cotoneaster
Erodium botrys	Big heron bill
Festuca perennis	Italian rye
Heteromeles arbutifolia	Toyon
Hirschfeldia incana	Mustard
Linum bienne	Flax
Picris echioides	Bristly oxtongue
Plantago lanceolata	Long leaf plantain
Pyracantha sp.	Firethorn
Toxicodendron diversilobum	Poison Oak
Quercus sp.	Oak
Scabiosa atropurpurea	Pincushions
Sonchus sp.	Sow thistle
Stipa pulchra	Purple needle grass
Tragopogon porrifolius	Salsify

Table 2. Animal species observed during the May 25, 2018 site visit.

Scientific Name	**Common name**
Aphelocema californica	Scrub jay (perched)
Buteo jamaicensis	Red tail hawk (calling from across Wilder Road)
Diabrotica undecimpunctata	Spotted cucumber beetle
Rodentia	Unidentified rodent (scat)

Attachment 1. Special-status Wildlife and Plant Species Habitat Suitability in the Project Area Update. The list below was compiled using May 2018 searches of the California Department of Fish and Wildlife (CDFW) Natural Diversity Database for a 2-mile buffer around the project side in Oakland East and Briones Valley USGS 7.5' quadrangles. Additionally, the United States Fish and Wildlife Service (USFWS) Information for Planning and Consultation (IPaC) database was reviewed in 2018 for changes. In the original Biological Resource Assessment from 2010, 101 special status wildlife and plant species were analyzed for habitat suitability within the project area. Of those Special Status species, 70 were determined to not be present at the site and 31 were considered unlikely to be at the site. The updated database searches indicated one additional species should be considered for analysis: *Callophyrus mossii bayensis*. Its habitat suitability is reviewed in Attachment 2. Based on 2018 site conditions, the potential of the 101 species originally analyzed to occur at the site has not changed since the 2010 analysis; however, some of these species have had conservation status changes or taxon changes since 2010. The list below includes species which have experienced taxonomic changes or conservation status changes since 2010.

2014 Scientific Name	Updated name (if applicable)	Previously analyzed	Habitat suitability of Project Area**	Status Change since 2010	Conservation Status 2018*
INVERTEBRATES					
Callophrys mossii bayensis		No	Not Present	No	FE
AMPHIBIANS AND REPTILES					
Ambystoma californiense		Yes	Not Present	Yes	FT, ST
Rana draytonii		Yes	Not Present	Yes	FT, SSC
BIRDS					
Haliaeetus leucocephalus		Yes	Not Present	Yes	DL, CE
Falco mexicanus		Yes	Not Present	Yes	CWL, BCC
Falco peregrinus	*Falco peregrinus anatum*	Yes	Not Present	Yes	CFP, BCC
Athene cunicularia hypogea	*Athene cunicularia*	Yes	Not Present	No	SSC, BCC
Contopus cooperi		Yes	Not Present	Yes	SCC, BCC
Lanius ludovicianus		Yes	Unlikely	Yes	SSC, BCC
Agelaius tricolor		Yes	Not Present	Yes	SSC. BCC, SCE
Dendroica petechia brewsteri	*Setophaga petechia*	Yes	Not Present	No	SCC, BCC
Caduelis lawrencei	*Spinus lawrencei*	Yes	Not Present	No	BCC
MAMMALS					
Lasiurus blossevillii		Yes	Unlikely	No	SSC, WBWG:H
Myotis evotis		Yes	Unlikely	Yes	WBWG:M
Lasionycteris noctivagans		Yes	Unlikely	Yes	WBWG:M

Eumops perotis	*Eumops perotis californicus*	Yes	Unlikely	No	SSC, WBWG:H
PLANTS					
Anomobryum julaceum		Yes	Not Present	Yes	4.2
California macrophylla		Yes	Unlikely	Yes	CBR
Cordylanthus maritimus ssp. *palustris*	*Chloropyron maritimum* ssp. *palustre*	Yes	Not Present	No	1B.2
Monardella villosa ssp *globosa*		Yes	Unlikely	Yes	CBR
Potomegton filiformis	*Stuckenia filiformis* ssp. *alpina*	Yes	Not Present	No	2B.2
Trifolium depauperatum	*Trifolium hydrophilum*	Yes	Not Present	No	1B.2

*** Key to status codes:**
FE Federal Endangered
FT Federal Threatened
FC Federal Candidate
DL Federally delisted
BCC USFWS Birds of Conservation Concern
RP Sensitive species included in a USFWS Recovery Plan or Draft Recovery Plan
CBR Considered for listing but rejected
CWL CDFG Watch List
SE State Endangered
ST State Threatened
CSE State Candidate for Endangered
SSC CDFG Species of Special Concern
CFP CDFG Fully Protected Animal
SSI CDFG Special Status Invertebrates
WBWG Western Bat Working Group Priority species (Medium and High)
List 1A CNPS List 1A: Plants presumed extinct in California
List 1B CNPS List 1B: Plants rare, threatened or endangered in California and elsewhere
List 2 CNPS List 2: Plants rare, threatened, or endangered in California, but more common elsewhere

**** Key to habitat potential:**

Not Present: Habitat on and adjacent to the site is clearly unsuitable for the species requirements (foraging, breeding, cover, substrate, elevation, hydrology, plant community, site history, disturbance regime).
Unlikely: Few of the habitat components meeting the species requirements are present, and/or the majority of habitat on and adjacent to the site is unsuitable or of very poor quality. The species is not likely to be found on the site.

Attachment 2. Analysis of Special-status Wildlife and Plant Species Habitat Suitability in the Project Area. The list below is meant to augment the list of 101 Special Status species included in the 2010 Biological Resources Assessment. In 2018, an IPaC (USFWS Information for Planning and Consultation) search indicated that one species not previously analyzed should be included in analysis.

2018 Scientific Name	Status	Habitat Requirements	Habitat suitability of Project Area	Recommendations
INVERTEBRATES				
Callophrys mossii bayensis	FE	Restricted to rocky outcrops that support *Sedum spathufolium.*	Not Present. There are no known occurrences of this species within 2 miles of the project site and no suitable habitat or host plants.	No further recommendations for this species.

*** Key to status codes:**
FE Federal Endangered

Top: View of project area from the northeastern corner looking southwest. Area dominated by ruderals such as *Bellardia trixago* and *Melilotus indica.*

Bottom: View of project area from the south west side looking east. Area dominated by *Avena* sp. and *Helminthotheca echioides*.

Photographs taken: May 25, 2018

wra
ENVIRONMENTAL CONSULTANTS

APPENDIX D: Synchro Output

Intersection	
Int Delay, s/veh	1.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	5	54	0	0	14	41	5	2	16	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	Free	-	-	Free	-	-	None
Storage Length	-	-	-	-	-	225	-	-	0	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	5	59	0	0	15	45	5	2	17	0	0	0

Major/Minor	Major1			Major2			Minor1		
Conflicting Flow All	15	0	0	59	0	0	85	85	-
Stage 1	-	-	-	-	-	-	70	70	-
Stage 2	-	-	-	-	-	-	15	15	-
Critical Hdwy	4.12	-	-	4.12	-	-	6.42	6.52	-
Critical Hdwy Stg 1	-	-	-	-	-	-	5.42	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	5.42	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	-
Pot Cap-1 Maneuver	1603	-	-	1545	-	0	916	805	0
Stage 1	-	-	-	-	-	0	953	837	0
Stage 2	-	-	-	-	-	0	1008	883	0
Platoon blocked, %		-	-		-				
Mov Cap-1 Maneuver	1603	-	-	1545	-	-	913	0	-
Mov Cap-2 Maneuver	-	-	-	-	-	-	913	0	-
Stage 1	-	-	-	-	-	-	950	0	-
Stage 2	-	-	-	-	-	-	1008	0	-

Approach	EB	WB	NB
HCM Control Delay, s	0.6	0	9
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT
Capacity (veh/h)	913	-	1603	-	-	1545	-
HCM Lane V/C Ratio	0.008	-	0.003	-	-	-	-
HCM Control Delay (s)	9	0	7.3	0	-	0	-
HCM Lane LOS	A	A	A	A	-	A	-
HCM 95th %tile Q(veh)	0	-	0	-	-	0	-

Intersection	
Int Delay, s/veh	2.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	4	88	0	0	46	99	5	38	43	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	Free	-	-	Free	-	-	None
Storage Length	-	-	-	-	-	225	-	-	0	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	4	96	0	0	50	108	5	41	47	0	0	0

Major/Minor	Major1			Major2			Minor1		
Conflicting Flow All	50	0	0	96	0	0	154	154	-
Stage 1	-	-	-	-	-	-	104	104	-
Stage 2	-	-	-	-	-	-	50	50	-
Critical Hdwy	4.12	-	-	4.12	-	-	6.42	6.52	-
Critical Hdwy Stg 1	-	-	-	-	-	-	5.42	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	5.42	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	-
Pot Cap-1 Maneuver	1557	-	-	1498	-	0	838	738	0
Stage 1	-	-	-	-	-	0	920	809	0
Stage 2	-	-	-	-	-	0	972	853	0
Platoon blocked, %		-	-		-				
Mov Cap-1 Maneuver	1557	-	-	1498	-	-	835	0	-
Mov Cap-2 Maneuver	-	-	-	-	-	-	835	0	-
Stage 1	-	-	-	-	-	-	917	0	-
Stage 2	-	-	-	-	-	-	972	0	-

Approach	EB	WB	NB
HCM Control Delay, s	0.3	0	9.6
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT
Capacity (veh/h)	835	-	1557	-	-	1498	-
HCM Lane V/C Ratio	0.056	-	0.003	-	-	-	-
HCM Control Delay (s)	9.6	0	7.3	0	-	0	-
HCM Lane LOS	A	A	A	A	-	A	-
HCM 95th %tile Q(veh)	0.2	-	0	-	-	0	-

Intersection	
Int Delay, s/veh	1.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	5	60	0	0	15	45	5	2	19	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	Free	-	-	Free	-	-	None
Storage Length	-	-	-	-	-	225	-	-	0	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	5	65	0	0	16	49	5	2	21	0	0	0

Major/Minor	Major1			Major2			Minor1		
Conflicting Flow All	16	0	0	65	0	0	92	92	-
Stage 1	-	-	-	-	-	-	76	76	-
Stage 2	-	-	-	-	-	-	16	16	-
Critical Hdwy	4.12	-	-	4.12	-	-	6.42	6.52	-
Critical Hdwy Stg 1	-	-	-	-	-	-	5.42	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	5.42	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	-
Pot Cap-1 Maneuver	1602	-	-	1537	-	0	908	798	0
Stage 1	-	-	-	-	-	0	947	832	0
Stage 2	-	-	-	-	-	0	1007	882	0
Platoon blocked, %		-	-		-				
Mov Cap-1 Maneuver	1602	-	-	1537	-	-	905	0	-
Mov Cap-2 Maneuver	-	-	-	-	-	-	905	0	-
Stage 1	-	-	-	-	-	-	944	0	-
Stage 2	-	-	-	-	-	-	1007	0	-

Approach	EB	WB	NB
HCM Control Delay, s	0.6	0	9
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT
Capacity (veh/h)	905	-	1602	-	-	1537	-
HCM Lane V/C Ratio	0.008	-	0.003	-	-	-	-
HCM Control Delay (s)	9	0	7.3	0	-	0	-
HCM Lane LOS	A	A	A	A	-	A	-
HCM 95th %tile Q(veh)	0	-	0	-	-	0	-

Intersection	
Int Delay, s/veh	0.8

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Vol, veh/h	0	5	9	70	55	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	5	10	76	60	0

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	156	60	60	0	-	0
Stage 1	60	-	-	-	-	-
Stage 2	96	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	835	1005	1544	-	-	-
Stage 1	963	-	-	-	-	-
Stage 2	928	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	829	1005	1544	-	-	-
Mov Cap-2 Maneuver	829	-	-	-	-	-
Stage 1	963	-	-	-	-	-
Stage 2	922	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	8.6	0.8	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1544	-	1005	-	-
HCM Lane V/C Ratio	0.006	-	0.005	-	-
HCM Control Delay (s)	7.3	0	8.6	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	0	-	-

Intersection	
Int Delay, s/veh	2.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	4	94	0	0	50	107	5	38	45	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	Free	-	-	Free	-	-	None
Storage Length	-	-	-	-	-	225	-	-	0	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	4	102	0	0	54	116	5	41	49	0	0	0

Major/Minor	Major1			Major2			Minor1		
Conflicting Flow All	54	0	0	102	0	0	165	165	-
Stage 1	-	-	-	-	-	-	111	111	-
Stage 2	-	-	-	-	-	-	54	54	-
Critical Hdwy	4.12	-	-	4.12	-	-	6.42	6.52	-
Critical Hdwy Stg 1	-	-	-	-	-	-	5.42	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	5.42	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	-
Pot Cap-1 Maneuver	1551	-	-	1490	-	0	826	728	0
Stage 1	-	-	-	-	-	0	914	804	0
Stage 2	-	-	-	-	-	0	969	850	0
Platoon blocked, %		-	-		-				
Mov Cap-1 Maneuver	1551	-	-	1490	-	-	824	0	-
Mov Cap-2 Maneuver	-	-	-	-	-	-	824	0	-
Stage 1	-	-	-	-	-	-	911	0	-
Stage 2	-	-	-	-	-	-	969	0	-

Approach	EB	WB	NB
HCM Control Delay, s	0.3	0	9.6
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT
Capacity (veh/h)	824	-	1551	-	-	1490	-
HCM Lane V/C Ratio	0.057	-	0.003	-	-	-	-
HCM Control Delay (s)	9.6	0	7.3	0	-	0	-
HCM Lane LOS	A	A	A	A	-	A	-
HCM 95th %tile Q(veh)	0.2	-	0	-	-	0	-

Intersection	
Int Delay, s/veh	0.6

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Vol, veh/h	0	12	8	131	145	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	13	9	142	158	0

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	318	158	158	0	-	0
Stage 1	158	-	-	-	-	-
Stage 2	160	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	675	887	1422	-	-	-
Stage 1	871	-	-	-	-	-
Stage 2	869	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	670	887	1422	-	-	-
Mov Cap-2 Maneuver	670	-	-	-	-	-
Stage 1	871	-	-	-	-	-
Stage 2	863	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	9.1	0.4	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1422	-	887	-	-
HCM Lane V/C Ratio	0.006	-	0.015	-	-
HCM Control Delay (s)	7.5	0	9.1	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	0	-	-

Intersection	
Int Delay, s/veh	0.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	5	87	0	0	55	137	5	2	30	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	Free	-	-	Free	-	-	None
Storage Length	-	-	-	-	-	225	-	-	0	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	5	95	0	0	60	149	5	2	33	0	0	0

Major/Minor	Major1			Major2			Minor1		
Conflicting Flow All	60	0	0	95	0	0	165	165	-
Stage 1	-	-	-	-	-	-	105	105	-
Stage 2	-	-	-	-	-	-	60	60	-
Critical Hdwy	4.12	-	-	4.12	-	-	6.42	6.52	-
Critical Hdwy Stg 1	-	-	-	-	-	-	5.42	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	5.42	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	-
Pot Cap-1 Maneuver	1544	-	-	1499	-	0	826	728	0
Stage 1	-	-	-	-	-	0	919	808	0
Stage 2	-	-	-	-	-	0	963	845	0
Platoon blocked, %		-	-		-				
Mov Cap-1 Maneuver	1544	-	-	1499	-	-	824	0	-
Mov Cap-2 Maneuver	-	-	-	-	-	-	824	0	-
Stage 1	-	-	-	-	-	-	916	0	-
Stage 2	-	-	-	-	-	-	963	0	-

Approach	EB	WB	NB
HCM Control Delay, s	0.4	0	9.4
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT
Capacity (veh/h)	824	-	1544	-	-	1499	-
HCM Lane V/C Ratio	0.009	-	0.004	-	-	-	-
HCM Control Delay (s)	9.4	0	7.3	0	-	0	-
HCM Lane LOS	A	A	A	A	-	A	-
HCM 95th %tile Q(veh)	0	-	0	-	-	0	-

Intersection	
Int Delay, s/veh	1.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	4	197	0	0	74	164	5	39	90	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	Free	-	-	Free	-	-	None
Storage Length	-	-	-	-	-	225	-	-	0	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	4	214	0	0	80	178	5	42	98	0	0	0

Major/Minor	Major1			Major2			Minor1		
Conflicting Flow All	80	0	0	214	0	0	303	303	-
Stage 1	-	-	-	-	-	-	223	223	-
Stage 2	-	-	-	-	-	-	80	80	-
Critical Hdwy	4.12	-	-	4.12	-	-	6.42	6.52	-
Critical Hdwy Stg 1	-	-	-	-	-	-	5.42	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	5.42	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	-
Pot Cap-1 Maneuver	1518	-	-	1356	-	0	689	610	0
Stage 1	-	-	-	-	-	0	814	719	0
Stage 2	-	-	-	-	-	0	943	828	0
Platoon blocked, %		-	-		-				
Mov Cap-1 Maneuver	1518	-	-	1356	-	-	687	0	-
Mov Cap-2 Maneuver	-	-	-	-	-	-	687	0	-
Stage 1	-	-	-	-	-	-	812	0	-
Stage 2	-	-	-	-	-	-	943	0	-

Approach	EB	WB	NB
HCM Control Delay, s	0.1	0	10.6
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT
Capacity (veh/h)	687	-	1518	-	-	1356	-
HCM Lane V/C Ratio	0.07	-	0.003	-	-	-	-
HCM Control Delay (s)	10.6	0	7.4	0	-	0	-
HCM Lane LOS	B	A	A	A	-	A	-
HCM 95th %tile Q(veh)	0.2	-	0	-	-	0	-

Intersection	
Int Delay, s/veh	0.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	5	93	0	0	56	141	5	2	33	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	Free	-	-	Free	-	-	None
Storage Length	-	-	-	-	-	225	-	-	0	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	5	101	0	0	61	153	5	2	36	0	0	0

Major/Minor	Major1			Major2			Minor1		
Conflicting Flow All	61	0	0	101	0	0	173	173	-
Stage 1	-	-	-	-	-	-	112	112	-
Stage 2	-	-	-	-	-	-	61	61	-
Critical Hdwy	4.12	-	-	4.12	-	-	6.42	6.52	-
Critical Hdwy Stg 1	-	-	-	-	-	-	5.42	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	5.42	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	-
Pot Cap-1 Maneuver	1542	-	-	1491	-	0	817	720	0
Stage 1	-	-	-	-	-	0	913	803	0
Stage 2	-	-	-	-	-	0	962	844	0
Platoon blocked, %		-	-		-				
Mov Cap-1 Maneuver	1542	-	-	1491	-	-	815	0	-
Mov Cap-2 Maneuver	-	-	-	-	-	-	815	0	-
Stage 1	-	-	-	-	-	-	910	0	-
Stage 2	-	-	-	-	-	-	962	0	-

Approach	EB	WB	NB
HCM Control Delay, s	0.4	0	9.5
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT
Capacity (veh/h)	815	-	1542	-	-	1491	-
HCM Lane V/C Ratio	0.009	-	0.004	-	-	-	-
HCM Control Delay (s)	9.5	0	7.3	0	-	0	-
HCM Lane LOS	A	A	A	A	-	A	-
HCM 95th %tile Q(veh)	0	-	0	-	-	0	-

Intersection	
Int Delay, s/veh	0.3

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Vol, veh/h	0	5	9	117	192	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	5	10	127	209	0

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	356	209	209	0	-	0
Stage 1	209	-	-	-	-	-
Stage 2	147	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	642	831	1362	-	-	-
Stage 1	826	-	-	-	-	-
Stage 2	880	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	637	831	1362	-	-	-
Mov Cap-2 Maneuver	637	-	-	-	-	-
Stage 1	826	-	-	-	-	-
Stage 2	873	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	9.4	0.5	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1362	-	831	-	-
HCM Lane V/C Ratio	0.007	-	0.007	-	-
HCM Control Delay (s)	7.7	0	9.4	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	0	-	-

Intersection	
Int Delay, s/veh	1.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	4	203	0	0	78	172	5	39	92	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	Free	-	-	Free	-	-	None
Storage Length	-	-	-	-	-	225	-	-	0	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	4	221	0	0	85	187	5	42	100	0	0	0

Major/Minor	Major1			Major2			Minor1		
Conflicting Flow All	85	0	0	221	0	0	314	314	-
Stage 1	-	-	-	-	-	-	229	229	-
Stage 2	-	-	-	-	-	-	85	85	-
Critical Hdwy	4.12	-	-	4.12	-	-	6.42	6.52	-
Critical Hdwy Stg 1	-	-	-	-	-	-	5.42	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	5.42	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	-
Pot Cap-1 Maneuver	1512	-	-	1348	-	0	679	601	0
Stage 1	-	-	-	-	-	0	809	715	0
Stage 2	-	-	-	-	-	0	938	824	0
Platoon blocked, %		-	-		-				
Mov Cap-1 Maneuver	1512	-	-	1348	-	-	677	0	-
Mov Cap-2 Maneuver	-	-	-	-	-	-	677	0	-
Stage 1	-	-	-	-	-	-	807	0	-
Stage 2	-	-	-	-	-	-	938	0	-

Approach	EB	WB	NB
HCM Control Delay, s	0.1	0	10.7
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT
Capacity (veh/h)	677	-	1512	-	-	1348	-
HCM Lane V/C Ratio	0.071	-	0.003	-	-	-	-
HCM Control Delay (s)	10.7	0	7.4	0	-	0	-
HCM Lane LOS	B	A	A	A	-	A	-
HCM 95th %tile Q(veh)	0.2	-	0	-	-	0	-

Intersection	
Int Delay, s/veh	0.3

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Vol, veh/h	0	12	8	287	238	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	13	9	312	259	0

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	588	259	259	0	-	0
Stage 1	259	-	-	-	-	-
Stage 2	329	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	471	780	1306	-	-	-
Stage 1	784	-	-	-	-	-
Stage 2	729	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	467	780	1306	-	-	-
Mov Cap-2 Maneuver	467	-	-	-	-	-
Stage 1	784	-	-	-	-	-
Stage 2	723	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	9.7	0.2	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1306	-	780	-	-
HCM Lane V/C Ratio	0.007	-	0.017	-	-
HCM Control Delay (s)	7.8	0	9.7	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	0.1	-	-

Intersection	
Int Delay, s/veh	0.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	6	96	0	0	61	151	6	2	33	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	Free	-	-	Free	-	-	None
Storage Length	-	-	-	-	-	225	-	-	0	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	7	104	0	0	66	164	7	2	36	0	0	0

Major/Minor	Major1			Major2			Minor1		
Conflicting Flow All	66	0	0	104	0	0	183	183	-
Stage 1	-	-	-	-	-	-	117	117	-
Stage 2	-	-	-	-	-	-	66	66	-
Critical Hdwy	4.12	-	-	4.12	-	-	6.42	6.52	-
Critical Hdwy Stg 1	-	-	-	-	-	-	5.42	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	5.42	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	-
Pot Cap-1 Maneuver	1536	-	-	1488	-	0	806	711	0
Stage 1	-	-	-	-	-	0	908	799	0
Stage 2	-	-	-	-	-	0	957	840	0
Platoon blocked, %		-	-		-				
Mov Cap-1 Maneuver	1536	-	-	1488	-	-	802	0	-
Mov Cap-2 Maneuver	-	-	-	-	-	-	802	0	-
Stage 1	-	-	-	-	-	-	903	0	-
Stage 2	-	-	-	-	-	-	957	0	-

Approach	EB	WB	NB
HCM Control Delay, s	0.4	0	9.5
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT
Capacity (veh/h)	802	-	1536	-	-	1488	-
HCM Lane V/C Ratio	0.011	-	0.004	-	-	-	-
HCM Control Delay (s)	9.5	0	7.4	0	-	0	-
HCM Lane LOS	A	A	A	A	-	A	-
HCM 95th %tile Q(veh)	0	-	0	-	-	0	-

Intersection	
Int Delay, s/veh	1.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	4	218	0	0	82	181	6	43	99	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	Free	-	-	Free	-	-	None
Storage Length	-	-	-	-	-	225	-	-	0	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	4	237	0	0	89	197	7	47	108	0	0	0

Major/Minor	Major1			Major2			Minor1		
Conflicting Flow All	89	0	0	237	0	0	335	335	-
Stage 1	-	-	-	-	-	-	246	246	-
Stage 2	-	-	-	-	-	-	89	89	-
Critical Hdwy	4.12	-	-	4.12	-	-	6.42	6.52	-
Critical Hdwy Stg 1	-	-	-	-	-	-	5.42	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	5.42	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	-
Pot Cap-1 Maneuver	1506	-	-	1330	-	0	660	585	0
Stage 1	-	-	-	-	-	0	795	703	0
Stage 2	-	-	-	-	-	0	934	821	0
Platoon blocked, %		-	-		-				
Mov Cap-1 Maneuver	1506	-	-	1330	-	-	658	0	-
Mov Cap-2 Maneuver	-	-	-	-	-	-	658	0	-
Stage 1	-	-	-	-	-	-	793	0	-
Stage 2	-	-	-	-	-	-	934	0	-

Approach	EB	WB	NB
HCM Control Delay, s	0.1	0	11
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT
Capacity (veh/h)	658	-	1506	-	-	1330	-
HCM Lane V/C Ratio	0.081	-	0.003	-	-	-	-
HCM Control Delay (s)	11	0	7.4	0	-	0	-
HCM Lane LOS	B	A	A	A	-	A	-
HCM 95th %tile Q(veh)	0.3	-	0	-	-	0	-

Intersection	
Int Delay, s/veh	0.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	6	102	0	0	62	155	6	2	36	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	Free	-	-	Free	-	-	None
Storage Length	-	-	-	-	-	225	-	-	0	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	7	111	0	0	67	168	7	2	39	0	0	0

Major/Minor	Major1			Major2			Minor1		
Conflicting Flow All	67	0	0	111	0	0	191	191	-
Stage 1	-	-	-	-	-	-	124	124	-
Stage 2	-	-	-	-	-	-	67	67	-
Critical Hdwy	4.12	-	-	4.12	-	-	6.42	6.52	-
Critical Hdwy Stg 1	-	-	-	-	-	-	5.42	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	5.42	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	-
Pot Cap-1 Maneuver	1535	-	-	1479	-	0	798	704	0
Stage 1	-	-	-	-	-	0	902	793	0
Stage 2	-	-	-	-	-	0	956	839	0
Platoon blocked, %		-	-		-				
Mov Cap-1 Maneuver	1535	-	-	1479	-	-	794	0	-
Mov Cap-2 Maneuver	-	-	-	-	-	-	794	0	-
Stage 1	-	-	-	-	-	-	897	0	-
Stage 2	-	-	-	-	-	-	956	0	-

Approach	EB	WB	NB
HCM Control Delay, s	0.4	0	9.6
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT
Capacity (veh/h)	794	-	1535	-	-	1479	-
HCM Lane V/C Ratio	0.011	-	0.004	-	-	-	-
HCM Control Delay (s)	9.6	0	7.4	0	-	0	-
HCM Lane LOS	A	A	A	A	-	A	-
HCM 95th %tile Q(veh)	0	-	0	-	-	0	-

Intersection	
Int Delay, s/veh	0.3

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Vol, veh/h	0	5	9	129	212	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	5	10	140	230	0

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	390	230	230	0	-	0
Stage 1	230	-	-	-	-	-
Stage 2	160	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	614	809	1338	-	-	-
Stage 1	808	-	-	-	-	-
Stage 2	869	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	609	809	1338	-	-	-
Mov Cap-2 Maneuver	609	-	-	-	-	-
Stage 1	808	-	-	-	-	-
Stage 2	862	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	9.5	0.5	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1338	-	809	-	-
HCM Lane V/C Ratio	0.007	-	0.007	-	-
HCM Control Delay (s)	7.7	0	9.5	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	0	-	-

Intersection	
Int Delay, s/veh	1.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	4	224	0	0	86	189	6	43	101	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	Free	-	-	Free	-	-	None
Storage Length	-	-	-	-	-	225	-	-	0	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	4	243	0	0	93	205	7	47	110	0	0	0

Major/Minor	Major1			Major2			Minor1		
Conflicting Flow All	93	0	0	243	0	0	345	345	-
Stage 1	-	-	-	-	-	-	252	252	-
Stage 2	-	-	-	-	-	-	93	93	-
Critical Hdwy	4.12	-	-	4.12	-	-	6.42	6.52	-
Critical Hdwy Stg 1	-	-	-	-	-	-	5.42	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	5.42	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	-
Pot Cap-1 Maneuver	1501	-	-	1323	-	0	652	578	0
Stage 1	-	-	-	-	-	0	790	698	0
Stage 2	-	-	-	-	-	0	931	818	0
Platoon blocked, %		-	-		-				
Mov Cap-1 Maneuver	1501	-	-	1323	-	-	650	0	-
Mov Cap-2 Maneuver	-	-	-	-	-	-	650	0	-
Stage 1	-	-	-	-	-	-	788	0	-
Stage 2	-	-	-	-	-	-	931	0	-

Approach	EB	WB	NB
HCM Control Delay, s	0.1	0	11
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT
Capacity (veh/h)	650	-	1501	-	-	1323	-
HCM Lane V/C Ratio	0.082	-	0.003	-	-	-	-
HCM Control Delay (s)	11	0	7.4	0	-	0	-
HCM Lane LOS	B	A	A	A	-	A	-
HCM 95th %tile Q(veh)	0.3	-	0	-	-	0	-

Intersection	
Int Delay, s/veh	0.3

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Vol, veh/h	0	12	8	317	263	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	13	9	345	286	0

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	648	286	286	0	-	0
Stage 1	286	-	-	-	-	-
Stage 2	362	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	435	753	1276	-	-	-
Stage 1	763	-	-	-	-	-
Stage 2	704	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	431	753	1276	-	-	-
Mov Cap-2 Maneuver	431	-	-	-	-	-
Stage 1	763	-	-	-	-	-
Stage 2	698	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	9.9	0.2	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1276	-	753	-	-
HCM Lane V/C Ratio	0.007	-	0.017	-	-
HCM Control Delay (s)	7.8	0	9.9	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	0.1	-	-

APPENDIX E: Cultural Records Search

May 16, 2018

Carla Violet
Urban Planning Partners, Inc.
388 17th Street #230
Oakland, CA 95403

RE: Archival Research Results for the Country House Memory Care Project, Orinda, Contra Costa County, California.

Dear Ms. Violet:

At your request, we completed a record search for the Country House Memory Care Project, Orinda, Contra Costa County, California. Research was conducted at the Northwest Information Center (NWIC File No. 17-2608) of the California Historical Information System (CHRIS) and encompassed lands within a quarter-mile of the study area. In addition, we reviewed documents and maps pertinent to this project that are on file at our offices.

Archival research included an examination of historical maps to gain insight into the nature and extent of historical development in the general vicinity, and especially within the study area. Maps ranged from hand-drawn maps of the 1800s (e.g., GLO plats) to topographic maps issued by the United States Geological Survey (USGS) and the Army Corps of Engineers (USACE) from the early to the middle 20th century.

Environmental Setting

The study area is located near Orinda, a census-designated place unincorporated area in Contra Costa County. Geology within the study area is consists of the Siesta Formation (Graymer 2000). This geologic formation dates to the Late Miocene Epoch (11.6 million years ago to 5.3 million years ago).

Soils within the study area consist of the Cut and fill land and the Diablo soil series (Welch 1977: Sheet 39). Cut and fill land is the result of mechanical manipulation of upland areas for urban use. It is well drained or somewhat excessively drained. Cut and fill land is used mainly for urban development (Welch 1977:18-20). The Diablo series consists of well-drained soils underlain by calcareous, soft, fine-grained sandstone and shale. These soils are on uplands. Vegetation is annual grasses, forbs, and a few scattered oaks. Diablo soils are used for range, dryland small grain, volunteer hay, and for some homesites. (Welch 1977:20-21).

There nearest water source to the study area is an unnamed seasonal stream, which is approximately 500 meters northwest of the study area.

Ethnographic Research

Archaeological evidence indicates that human occupation of California began at least 11,000 years ago (Erlandson *et al.* 2007). Early occupants appear to have had an economy based largely on hunting, with limited exchange, and social structures based on the extended family unit. Later, milling technology and an inferred acorn economy were introduced. This diversification of economy appears to be coeval with the development of sedentism and population growth and expansion. Sociopolitical complexity and status distinctions based on wealth are also observable in the archaeological record, as evidenced by an increased range and distribution of trade goods (e.g., shell beads, obsidian tool stone), which are possible indicators of both status and increasingly complex exchange systems.

At the time of European settlement, the study area was included in the territory controlled by the Ohlone, who are also referred to as Costanoans (Levy 1978:485-495). The Ohlone were hunter-gatherers who lived in rich environments that allowed for dense populations with complex social structures (Levy 1978:485-495; Kroeber 1925:462-473). They settled in large, permanent villages about which were distributed seasonal camps and task-specific sites. Primary village sites were occupied throughout the year and other sites were visited in order to procure particular resources that were especially abundant or available only during certain seasons. Sites often were situated near fresh water sources and in ecotones where plant life and animal life were diverse and abundant.

There are no reported ethnographic villages or camps within a one-mile radius of the project location (Levy 1978).

Native American Contact

On April 30, 2018, a request was sent to the State of California's Native American Heritage Commission (NAHC) seeking information from the sacred lands files and the names of Native American individuals and groups that would be appropriate to contact regarding this project. Letters were also send to the following groups:

Amah Mutsun Tribal Band
Indian Canyon Mutsun Band of Costanoan
Muwekma Ohlone Tribe of the San Francisco Bay Area
The Ohlone Tribe
Trina Marine Ruano Family

In addition, a letter was sent to the following individual:

Jakki Kehl

No response has been received as of the date of this report.

Historical Review

The 1897 and the 1915 Concord 15' U.S. Geological Survey topographic map and the 1899 county map show a building in close proximity to the study location. Based on the topography of the area, the building was likely located just outside the study location, under Highway 24 (USGS 1897, 1915; Wagner 1899). The building was located on John Olive's land, though his house is shown east of this building's location (General Land Office 1883a, 1883b, 1897; Wagner 1899).

No other historical maps show buildings or structures within the study location after 1915 (USACE 1943; USGS 1947, 1949; 1959a, 1959b, 1968,1973, 1980, 1997).

Archival Review

Archival research found that there have been three studies conducted within the study area (Losee 2001a, 2001b, 2002). Additionally, an archival review was done for the property in 2014 (Barrow 2014). There have been two additional studies conducted within a quarter-mile of the study area (Holman 1989; Holson and Hager 1987).

There are two recorded resources within a quarter-mile of the study area (Powel 1992; Venno 2012). These resources are an abandoned volcanic rock quarry with poured concrete support for rock crusher and a reinforced concrete retaining wall (Powel 1992), and the Sibley Volcanic Regional Preserve (Venno 2012). The closest resource, the Sibley Volcanic Regional Preserve, is over 2,000 feet away from the study area and does not have the potential to extend into the current study area.

Cultural Resources Sensitivity

This record search included review and analysis of various environmental and cultural factors (Byrd *et al.* 2017), including soil surveys, geological data, property history, and the locations of known archaeological sites. The study area is located on relatively level land, lacks nearby freshwater sources, and the geology of the study area consists of Miocene Epoch deposits and Cut and fill land. Incorporating recent research on the analysis of an area's sensitivity for buried sites (King 2004; Meyer and Kaijankoski 2017), there is a low probability of indentifying a buried prehistoric archaeological site within the project area.

Recommendations

Based on the results of previous studies (Losee 2001a, 2001b, 2002) and environmental factors, it is not recommended that a cultural resources study be conducted.

Please contact us if we can be of further assistance or if you have questions.

Sincerely,

Taylor Alshuth

Taylor Alshuth
Associate

MATERIALS CONSULTED

Barrett, S.
1908 *The Ethno-Geography of the Pomo and Neighboring Indians.* University of California Publications in American Archaeology and Ethnology Vol. 6, No. 1. University of California Press, Berkeley.

Barrow, E.
2014 Letter report for Archival Search Results for the Astoria at Wilder Road Project, Orinda, Contra Costa County. Document on file at the offices of Tom Origer & Associates, Santa Rosa.

Bean, L.
1978 *The Ohlone Past and Present.* Ballena Press Anthropological Papers No. 40. Ballena Press, Menlo Park.

Byrd, B., A. Whitaker, P. Mikkelsen, and J. Rosenthal
2017 *San Francisco Bay-Delta Regional Context and Research Design for Native American Archaeological Resources, Caltrans District 4.* On file at the Caltrans District 04 Office of Cultural Resource Studies, Oakland, California.

Emanuels, G.
1986 *California's Contra Costa County, An Illustrated History.* Panorama West Books, Fresno, California.

General Land Office
1883a Survey Plat for T1S/R3W, MDBM. Department of the Interior, Washington, D.C.

1883b Survey Plat for T1S/R3W, MDBM. Department of the Interior, Washington, D.C.

1897 Survey Plat for T1S/R3W, MDBM. Department of the Interior, Washington, D.C.

Holman, M.
1989 Letter Report for an Archaeological Inspection of additional properties of the Gateway Valley Specific Plan and Gateway Blvd. Extension Project, Orinda, Contra Costa County, California. Document S-10803 on file at the Northwest Information Center, Sonoma State University, Rohnert Park.

Holson, J. and L. Hager
1987 *A Cultural Resources Study for the Vaca-Dixon-Moraga 230 kV Transmission Line Reconductoring Project, Contra Costa, Napa, and Solano Counties, California.* Document S-9124 on file at the Northwest Information Center, Sonoma State University, Rohnert Park.

Hoover, M., H. Rensch, E. Rensch, W. Abeloe
1966 *Historic Spots in California.* 3rd edition. Stanford University Press. Stanford.

Hoover, M., H. Rensch, E. Rensch, W. Abeloe, and D. Kyle
1990 *Historic Spots in California.* 4th edition, Stanford University Press. Stanford.

2002 *Historic Spots in California.* 5th edition, Stanford University Press. Stanford.

Hulaniski, F.
1917 *The History of Contra Costa County, California.* The Elms Publishing Co., Inc. Berkeley, California.

King, J.
2004 Surface and Subsurface Archaeological Sensitivity. In: *Landscape Evolution and the Archaeological Record: A Geoarchaeological Study of the Southern Santa Clara Valley and Surrounding Region* (pp 81-94). J. Rosenthal and J. Meyer, Authors. Center for Archaeological Research at Davis, University of California.

Kroeber, A.
1925 *Handbook of the Indians of California.* Bureau of American Ethnology, Bulletin 78, Smithsonian Institution, Washington, D.C.

Levy, R.
1978 Coastanoan. In *California*, edited by R. Heizer, pp. 485-495. Handbook of North American Indians, Vol. 8, W. Sturtevant, general editor. Smithsonian Institution, Washington, D.C.

Losee, C.
2001a Letter Report for a Record Search for Sprint Spectrum's Personal Communication Services (PCS) Wireless "Gateway" Site (Ref#SF55XC600A): No Further Recommendations. Document S-23882 on file at the Northwest Information Center, Sonoma State University, Rohnert Park.

2001b Letter Report for an Archaeological Survey for Sprint Spectrum's Personal Communication Services Wireless "Gateway" Site (Ref#SF55XC600A): Negative Results. Document S-24567 on file at the Northwest Information Center, Sonoma State University, Rohnert Park.

2002 Revised Letter Report for an Archaeological Survey for Sprint Spectrum's Personal Communication Services Wireless "Gateway" Site (Ref#SF55XC600A): Negative Results. Revised Figures. Document S-26057 on file at the Northwest Information Center, Sonoma State University, Rohnert Park.

Meyer, J. and P. Kaijankoski
2017 Discovering Sites: Geoarchaeological Approaches to Site Sensitivity and Predictive Modeling. In, *San Francisco Bay-Delta Regional Context and Research Design for Native American Archaeological Resources, Caltrans District 4*. B. Byrd, A. Whitaker, P. Mikkelsen, and J. Rosenthal. Pp 4-1 through 4-13. On file at the Caltrans District 04 Office of Cultural Resource Studies, Oakland, California.

Meyer, J., and J. Rosenthal
2007 *Geoarchaeological Overview of the Nine Bay Area Counties in Caltrans District 4*. Document S-33600 on file at the Northwest Information Center, Sonoma State University, Rohnert Park.

Milliken, R.
1995 *A Time of Little Choice.* Ballena Press Anthropological Papers No. 43. Ballena Press, Menlo Park.

Office of Historic Preservation (OHP)
1995 *Instructions for Recording Historic Resources*. Office of Historic Preservation, Sacramento.

Powell, C.
1992 Archaeological Site Record for P-7-000406. Document on file at the Northwest Information Center, Sonoma State University, Rohnert Park.

Rosenthal, J., and J. Meyer
2004 *Landscape Evolution and the Archaeological Record: A Geoarchaeological Study of the Southern Santa Clara Valley and Surrounding Region.* Center for Archaeological Research at Davis, University of California.

United States Army Corps of Engineers
1943 Concord 15' Tactical map. War Department, Portland, O.R.

United States Geological Survey
1897 Concord 15' map. Geologic Survey, Washington, D.C.

1915 Concord 15' map. Geologic Survey, Washington, D.C.

1947 Oakland East 7.5' map. Geologic Survey, Washington, D.C.

1949 Oakland East 7.5' map. Geologic Survey, Washington, D.C.

1959a Concord 15' map. Geologic Survey, Washington, D.C.

1959b Oakland East 7.5' map. Geologic Survey, Washington, D.C.

1968 Oakland East 7.5' map. Geologic Survey, Washington, D.C.

1973 Oakland East 7.5' map. Geologic Survey, Washington, D.C.

1980 Oakland East 7.5' map. Geologic Survey, Washington, D.C.

1997 Oakland East 7.5' map. Geologic Survey, Washington, D.C.

Venno, M.
2012 Primary Record for P-7-004486. Document on file at the Northwest Information Center, Sonoma State University, Rohnert Park.

Wagner, T.
1899 *Map showing portions of Alameda and Contra Costa counties, city and county of San Francisco California, carefully compiled from official and private maps, surveys, and data.* Britton & Rey, San Francisco.

Welch, L
1977 *Soil Survey of Contra Costa County, California*. U.S. Department of Agriculture in cooperation with the University of California Agricultural Experimental Station.

Appendix A

NAHC Correspondence

Sacred Lands File & Native American Contacts List Request

NATIVE AMERICAN HERITAGE COMMISSION
915 Capitol Mall, RM 364
Sacramento, CA 95814
(916) 373-3710
(916) 373-5471 – Fax
nahc@pacbell.net

Information Below is Required for a Sacred Lands File Search

Project: Country House Memory Care Facility

County: Contra Costa

USGS Quadrangles
Name: Oakland East
Township T1S Range R3W Section(s) 4

Date: April 30, 2018
Company/Firm/Agency: Tom Origer & Associates
Contact Person: Rachel Hennessy

Street Address: P.O. Box 1531
City: Rohnert Park Zip: 94927
Phone: (707) 584-8200 Fax: (707) 584-8300
Email: rachel@origer.com

Project Description: The project proponent is proposing to build a care facility on 1.1 acres of land adjacent to Highway 24 near Orinda, California.

Tom Origer & Associates
Archaeology / Historical Research

April 30, 2018

Valentin Lopez
Amah Mutsun Tribal Band
P.O. Box 5272
Galt California 95632

Re: Country House Memory Care Facility at Wilder Road, Orinda, Contra Costa County, California

Dear Mr. Lopez:

I write to notify you of a proposed project within Contra Costa County, for which our firm is conducting an historical resources study. The project proponent proposes to develop a care facility adjacent to Highway 24 near Orinda. The City of Orinda is reviewing this study for California Environmental Quality Act (CEQA) compliance. This letter does not constitute formal consultation under SB18 and AB52.

Enclosed are portions of the Briones Valley and Oakland East, Calif. 7.5' USGS topographic quadrangles showing the study area.

Sincerely,

Rachel Hennessy
Associate

P.O. Box 1531, Rohnert Park, California 94927 ♦ www.origer.com Phone (707) 584-8200

Tom Origer & Associates
Archaeology / Historical Research

April 30, 2018

Ann Marie Sayers
Indian Canyon Mutsun Band of Costanoan
P.O. Box 28
Hollister, California 95024

Re: Country House Memory Care Facility at Wilder Road, Orinda, Contra Costa County, California

Dear Ms. Sayers:

I write to notify you of a proposed project within Contra Costa County, for which our firm is conducting an historical resources study. The project proponent proposes to develop a care facility adjacent to Highway 24 near Orinda. The City of Orinda is reviewing this study for California Environmental Quality Act (CEQA) compliance. This letter does not constitute formal consultation under SB18 and AB52.

Enclosed are portions of the Briones Valley and Oakland East, Calif. 7.5' USGS topographic quadrangles showing the study area.

Sincerely,

Rachel Hennessy
Associate

P.O. Box 1531, Rohnert Park, California 94927 ♦ www.origer.com Phone (707) 584-8200

Tom Origer & Associates
Archaeology / Historical Research

April 30, 2018

Rosemary Cambra
Muwekma Ohlone Tribe of the San Francisco Bay Area
PO Box 360791
Milpitas, CA 95036

Re: Country House Memory Care Facility at Wilder Road, Orinda, Contra Costa County, California

Dear Ms. Cambra:

I write to notify you of a proposed project within Contra Costa County, for which our firm is conducting an historical resources study. The project proponent proposes to develop a care facility adjacent to Highway 24 near Orinda. The City of Orinda is reviewing this study for California Environmental Quality Act (CEQA) compliance. This letter does not constitute formal consultation under SB18 and AB52.

Enclosed are portions of the Briones Valley and Oakland East, Calif. 7.5' USGS topographic quadrangles showing the study area.

Sincerely,

Rachel Hennessy
Associate

P.O. Box 1531, Rohnert Park, California 94927 ♦ www.origer.com Phone (707) 584-8200

Tom Origer & Associates
Archaeology / Historical Research

April 30, 2018

Andrew Galvan
The Ohlone Tribe
P.O. Box 3152
Fremont, California 94539

Re: Country House Memory Care Facility at Wilder Road, Orinda, Contra Costa County, California

Dear Mr. Galvan:

I write to notify you of a proposed project within Contra Costa County, for which our firm is conducting an historical resources study. The project proponent proposes to develop a care facility adjacent to Highway 24 near Orinda. The City of Orinda is reviewing this study for California Environmental Quality Act (CEQA) compliance. This letter does not constitute formal consultation under SB18 and AB52.

Enclosed are portions of the Briones Valley and Oakland East, Calif. 7.5' USGS topographic quadrangles showing the study area.

Sincerely,

Rachel Hennessy
Associate

P.O. Box 1531, Rohnert Park, California 94927 ♦ www.origer.com Phone (707) 584-8200

Tom Origer & Associates
Archaeology / Historical Research

April 30, 2018

Ramona Garibay
Trina Marine Ruano Family
37128 Cedar Blvd.
Newark, California 94560

Re: Country House Memory Care Facility at Wilder Road, Orinda, Contra Costa County, California

Dear Ms. Garibay:

I write to notify you of a proposed project within Contra Costa County, for which our firm is conducting an historical resources study. The project proponent proposes to develop a care facility adjacent to Highway 24 near Orinda. The City of Orinda is reviewing this study for California Environmental Quality Act (CEQA) compliance. This letter does not constitute formal consultation under SB18 and AB52.

Enclosed are portions of the Briones Valley and Oakland East, Calif. 7.5' USGS topographic quadrangles showing the study area.

Sincerely,

Rachel Hennessy
Associate

P.O. Box 1531, Rohnert Park, California 94927 ♦ www.origer.com Phone (707) 584-8200

Tom Origer & Associates
Archaeology / Historical Research

April 30, 2018

Jakki Kehl
720 North 2nd Street
Patterson, California 95363

Re: Country House Memory Care Facility at Wilder Road, Orinda, Contra Costa County, California

Dear Mr. Kehl:

I write to notify you of a proposed project within Contra Costa County, for which our firm is conducting an historical resources study. The project proponent proposes to develop a care facility adjacent to Highway 24 near Orinda. The City of Orinda is reviewing this study for California Environmental Quality Act (CEQA) compliance. This letter does not constitute formal consultation under SB18 and AB52.

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