



Los Amigos Cottages Builder's Remedy Project

Initial Study – Mitigated Negative Declaration

prepared by

Town of Windsor

Community Development Department

9291 Old Redwood Highway #400

Windsor, California 95492

Contact: Kimberly Jordan, (707) 838-1000

prepared with the assistance of

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List of Acronyms and Abbreviations

Abbreviation	Term/Phrase/Name
AB	Assembly Bill
ADT	Average daily traffic
ADWF	Average dry weather flow
AEP	Association of Environmental Professionals
AF	Acre feet
AMSL	Above mean sea level
APN	Assessor's Parcel Number
ARS	Archaeological Resource Service
BAAQMD	Bay Area Air Quality Management District
BMPs	Best Management Practices
CAA	Clean Air Acts
CAAQS	California Ambient Air Quality Standards
CalEEMod	California Emissions Estimator Model
CalEPA	California Environmental Protection Agency
CALFIRE	California Department of Forestry and Fire Protection
CALgreen	California's Green Building Standards Code
CalRecycle	California Department of Resources Recycling and Recovery
Caltrans	California Department of Transportation
CARB	California Air Resources Board
CC	Community Commercial
CBC	California Building Code
CDFW	California Department of Fish and Wildlife
CEC	California Energy Commission
CEQA	California Environmental Quality Act
CESA	California Endangered Species Act
CFGC	California Fish and Game Code
CGS	California Geological Survey
CHRIS	California Historical Resources Information System
CIP	Capital Improvement Project
CNDDB	California Natural Diversity Database
CNEL	Community noise equivalent level
CNPS	California Native Plant Society

Abbreviation	Term/Phrase/Name
CO2	Carbon Dioxide
CO2e	Carbon Dioxide Equivalent
CRHR	California Register of Historical Resources
CRPR	California Rare Plant Ranks
CSDG	Complete Street Design Guidelines
dB	decibels
dbh	Diameter at breast height
DOC	California Department of Conservation
DOF	California Department of Finance
DTSC	Department of Toxic Substances Control
FEMA	Federal Emergency Management Agency
FESA	Federal Endangered Species Act
FHSZ	Fire Hazard Severity Zone
FHWA	Federal highway administration
FTA	Federal Transit Administration
FY	Fiscal year
GHG	Greenhouse gas
GSP	Groundwater Sustainability Plan
GWh	Gigawatt hours
GWP	Global Warming Potential
HCP	Habitat conservation plan
IPaC	Information for Planning and Consultation
IPCC	Intergovernmental Panel on Climate Change
ISA	International Society of Arboriculture
LID	Low Impact Design
LRA	Local Responsibility Area
LSA	Lake and Streambed Alteration Agreement
MBTA	Migratory Bird Treaty Act
MDR	Medium Density Residential
MGD	Million gallons per day
MLD	Most Likely Descendant
MT	Metric Tons
NAAQS	National Ambient Air Quality Standards
NAHC	Native American Heritage Commission

Abbreviation	Term/Phrase/Name
NCCP	Natural Community Conservation Plan
NCRWQCB	North Coast Regional Water Quality Control Board
NOX	Nitrogen Oxides
NPDES	National Pollutant Discharge Elimination System
NWIC	Northwest Information Center
OEHHA	Office of Environmental Health Hazard Assessment
PG&E	Pacific Gas & Electric
PM2.5	Particulate matter with diameters of 2.5 microns or less
PM10	Particulate matter with diameters of ten microns or less
PPV	Peak particle velocity
PRC	Public resources code
RCNM	Roadway Construction Noise Model
RHNA	Regional Housing Needs Allocation
ROG	Reactive Organic Gases
SCTA	Sonoma County Transportation Authority
SCWA	Sonoma County Water Agency
SFBAAB	San Francisco Bay Area Air Basin
SLF	Sacred Lands File
SRA	State Responsibility Area
SRPCS	Santa Rosa Plain Conservation Strategy
SWPPP	Stormwater Pollution Prevention Plan
SWRCB	State Water Resources Control Board
TIS	Transportation Impact Study
USDA	United States Department of Agriculture
USEPA	United States Environmental Protection Agency
USFWS	United States Fish and Wildlife Service
UWMP	Urban Water Management Plan
VMT	Vehicle Miles Travelled
VOC	Volatile Organic Compounds
WMC	Windsor Municipal Code
WWD	Windsor Water District
WWTRDF	Windsor Wastewater Treatment Reclamation and Disposal Facility

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Initial Study

1. Project Title

Los Amigos Cottages Builder's Remedy Project

2. Lead Agency Name and Address

Town of Windsor
9291 Old Redwood Highway
Windsor, California 95492

3. Contact Person and Phone Number

Kimberly Jordan, Planner III
Town of Windsor, Planning Division
(707) 838-1000

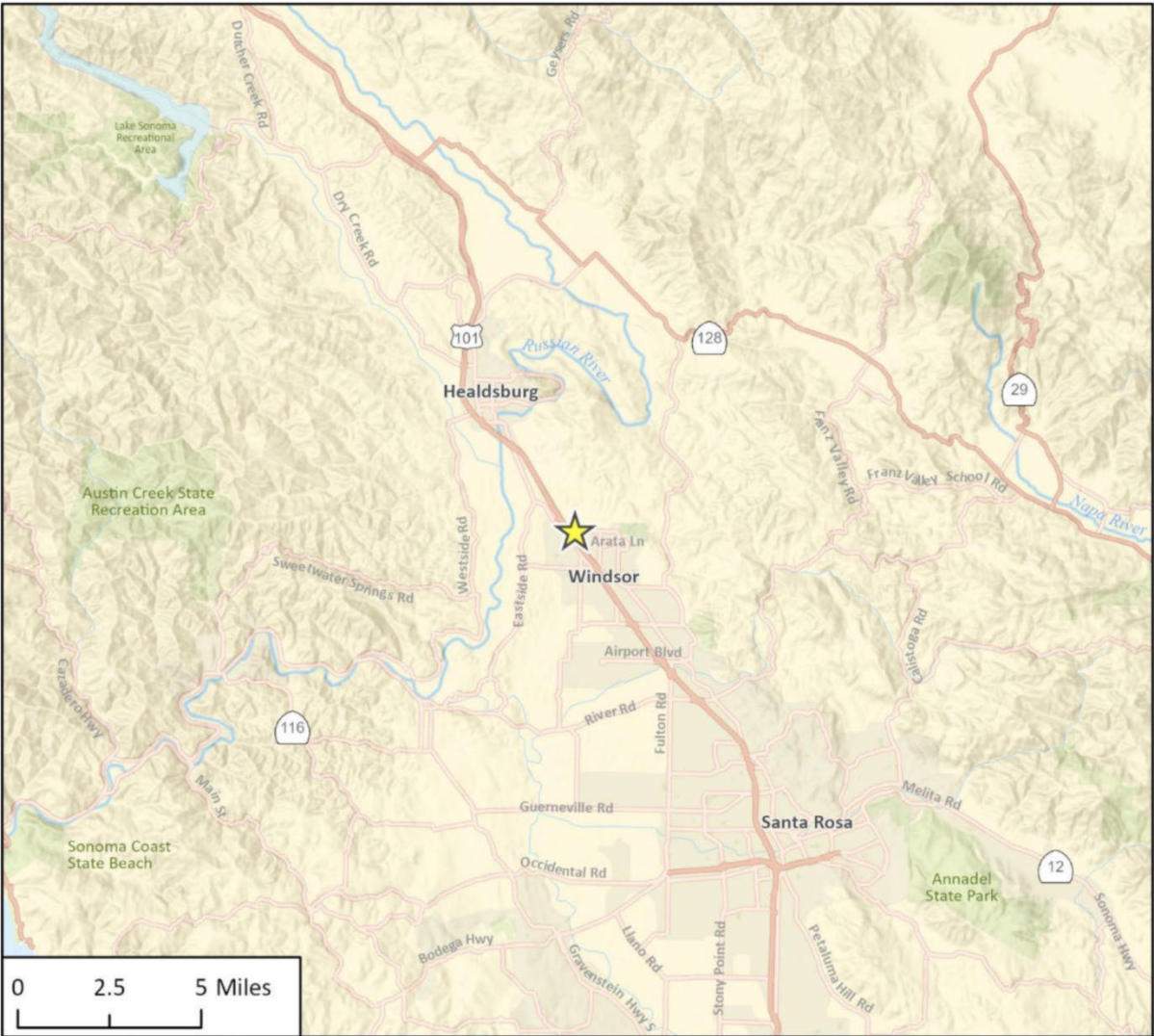
4. Project Sponsor's Name and Address

Arata Properties, LLC.
1400 Magnolia Drive | P.O. Box 2357
Healdsburg, California 95448

5. Project Location

The 2.71-acre Project site is located at 263 Arata Lane (Assessor's Parcel Number [APN] 161-020-049) in the Town of Windsor in Sonoma County. The Project site is bound by Arata Lane to the south, a surface parking lot and religious facility (Newsong Church) to the west, rural residential and undeveloped land to the north and northeast, and a single-family residence to the west. Across Arata Lane to the south are single-family residences. The area east and north of the Project site is planned for single-family residential development (the Quail Acres residential development project). Figure 1 shows the regional location of the Project site, and Figure 2 shows the Project site location along with surrounding land uses.

Figure 1 Regional Location



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★ Project Location

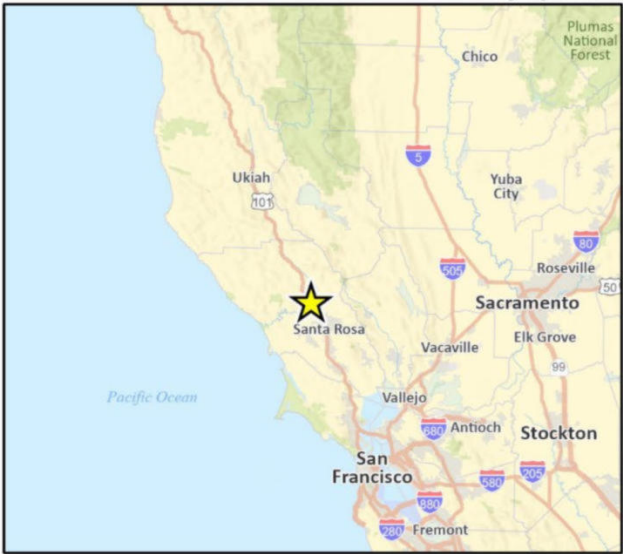


Figure 2 Project Site Location



6. General Plan Designation

The Project site has a general plan land use designation of "General Business." The "General Business" designation provides for a range of uses including office, retail, and service activities, with a focus on professional office (Town of Windsor 2018a). According to the 2040 General Plan, the Project site is within the North of Arata Lane Community Place which is characterized by rural residential uses, undeveloped, and agricultural lands. The North of Arata Lane area is envisioned in the General Plan to develop as a traditional neighborhood which includes a variety of residential densities organized around a neighborhood center, school, parks, and interconnected streets (Town of Windsor 2018a).

7. Zoning

The Project site is zoned Community Commercial (CC). According to Section 17.12.020 of the Windsor Municipal Code (WMC), the CC zone is applied to areas suitable for restaurants, shops, personal and business services. Single-unit residential is not a listed use in the CC zone. The current Zoning Code went into effect December 2024. The Project application was complete in May 2024. Since the application was complete prior to the effective date of the new Zoning Code, the Project is subject to the previous Zoning Code. The previous Zoning Code in effect in May 2024 did not include an allowable residential density requirement for the CC Zone.

8. Surrounding Land Uses and Existing Setting

The Project site is located in the northern portion of the Town of Windsor and within the approximately 116 acres north of Arata Lane annexed into the Town in May 2019. The Project site is in an area primarily characterized by rural residences, undeveloped land, and single-family residences. A religious facility, Newsong Church, is adjacent to the Project site to the west, with residential uses bordering the site to the east and the south across Arata Lane. The area surrounding the northern boundary of the site is planned for a future residential development (Quail Acres residential development project). The Project site is located approximately 0.15 miles east of Highway 101.

The Project site is triangularly shaped and is generally flat with gentle slopes south towards Arata Lane. The Project site is undeveloped and was previously used as agricultural land. Overhead utility lines border the southern boundary of the Project site. The Project site is covered with ruderal grasses and trees are dispersed throughout the property. According to the arborist's report prepared for the Project by Horticultural Associates in October 2024, there are 39 trees on the Project site including 29 Valley Oak (*Quercus Lobata*), five Blue Oak (*Quercus Douglasi*), one Black Walnut (*Juglans Nigra*), three Coast Live Oak (*Quercus Agrifolia*) and one Cork Oak (*Quercus Suber*). The Valley Oak, Blue Oak, and Coast Live Oak trees on site are considered protected trees under the Town's Tree Preservation and Protection Ordinance. Figure 3 shows photos of the Project site.

Figure 3 Photographs of the Project Site – Images 1 and 2



Image 1: View of Project site from western site boundary looking southeast towards Arata Lane.



Image 2: View of Project site looking north from Arata Lane.

Figure 4 Photographs of the Project Site – Images 3 and 4



Image 3: View of Project site from western site boundary looking east.



Image 4: View of the Project site from western site boundary looking northeast.

9. Description of Project

The proposed Project would involve the subdivision of the Project site into 32 residential lots and construction of 32 residences including 26 detached single-family residences and 6 attached single-family “duet” style residences all of which would be two-stories in height. Five of the attached single-family homes would be available to low-income households. Lot sizes would range from 1,896 square feet to 4,860 square feet for the detached single-family residences and 1,664 square feet to 2,932 square feet for the “duet” style residences. Figure 5 shows the Project site plan.

Architectural Style

Farmhouse, Traditional, and Bungalow styles would be used in the design of residences in the Project. The Farmhouse style includes main roofs that are often gabled, facing the sides, with a high-pitched gable facing the front; walls are primarily covered with board and batten accented with white-painted window trims and wood-like vents at gable ends. The Traditional style includes main roofs that are gabled or hipped with an intermediately-pitched gable facing the front; beaded horizontal siding makes up most of the exterior walls. The Bungalow includes roofs that are comprised of low-pitched front-facing gables and hips.

Site Access and Parking

The Project would be accessed via two driveways and an internal private road that would traverse the Project site and would connect from Arata Lane to the newly constructed portion of Los Amigos Road along the eastern side of the Project site. The Arata Lane driveway would be located on the southern boundary of the site and the Los Amigos Road driveway would be located on the northeastern boundary of the Project site.

Parking for the Project would be provided in covered garages, driveways, on-site spaces, and on-street parking along the portion of Los Amigos Road that would be constructed as part of the Project. Specifically, the detached single-family homes would have two-car garages and four of the detached homes would have two additional uncovered off-street parking spaces in a driveway outside of the garage. The lots with driveways proposed are lots 1, 14, 29, and 32. Each of the six attached homes would include one covered parking space and one uncovered parking space in the driveway. Additionally, 16 common parking spaces would be provided on the internal private street and 17 on-street parking spaces would be provided along Los Amigos Road.

Los Amigos Road Extension

A realignment and extension of Los Amigos Road is planned adjacent to the Project site. The Town of Windsor’s Capital Improvement Program (CIP) Adopted Budget has identified this transportation improvement project as T-17 the “Arata Lane Interchange Phase 2B for Los Amigos Road Realignment” as a Town project necessary for the completion of the future Arata Lane Interchange at Highway 101. This CIP in the current budget is for design and environmental work only. The realigned Los Amigos Road would connect to the section of Los Amigos Road that runs parallel to Highway 101 from Windsor to Healdsburg. The Town of Windsor currently owns the right-of-way for this roadway realignment. Most of the Los Amigos Road realignment would occur as part of the neighboring approved Quail Acres residential development project.

However, the Project would involve construction of a portion of this planned Los Amigos Road extension, as shown in Figure 5 and Figure 6, from its intersection with Arata Lane to the Project site's northern entry. The portion of Los Amigos Road that would be constructed as part of the Project would include two lanes (one in each direction), on street parking, and a buffered bike lane on the west side of the street.

Arata Lane Right-of-Way Dedication and Los Amigos Road Roundabout

The Town of Windsor is considering conversion of the planned Arata Lane/Los Amigos Road intersection to a single-lane roundabout in the future. The Town has developed a planning-level footprint of the potential future roundabout, including its peripheral bicycle and pedestrian facilities, and has provided the concept to potential developers including the Los Amigos Cottages applicant for site planning purposes. To accommodate the Town's need for a future roundabout at the intersection of Arata Lane and Los Amigos Road, the Project would provide a six-foot right-of-way dedication along the Project's Arata Lane frontage. Additionally, proposed Lot Number 14 would be designed to accommodate future acquisition of additional right-of-way along Arata Lane by the Town of Windsor should the Town decide to proceed with construction of the roundabout.

Landscaping and Open Space

Each residential unit would include a front porch. Additionally, lot numbers 4 through 18, 20-23, and 25-28 would have private side yard easements allowing for exclusive use of the combined side yard area by one of the adjoining units. These side yards range from seven to eight feet in width.

The Project would require the removal of 37 of the 39 trees on site. Two Valley Oak trees on the southwest corner of the Project site would remain on site. The Project would involve the planting of 18 Red Maples (*Acer Rubrum*) trees as street trees along Los Amigos Road and eight (8) Red Maple trees as street trees along Arata Lane. Landscaping of the front yards within the site and the bioretention area would be comprised of 53 Heritage Birch trees (*Betula Nigra* 'Cully'), four Crepe Myrtle trees (*Lagerstroemia*), and three flowering cherry trees (*Cerasus serrulate*). The Project would also involve planting 4 valley oak trees (*Quercus Lobata*) within Parcel A, which includes the bioretention area and shared parking area on the Project site with one existing oak tree along the southwestern edge of the property to be saved.

Utilities

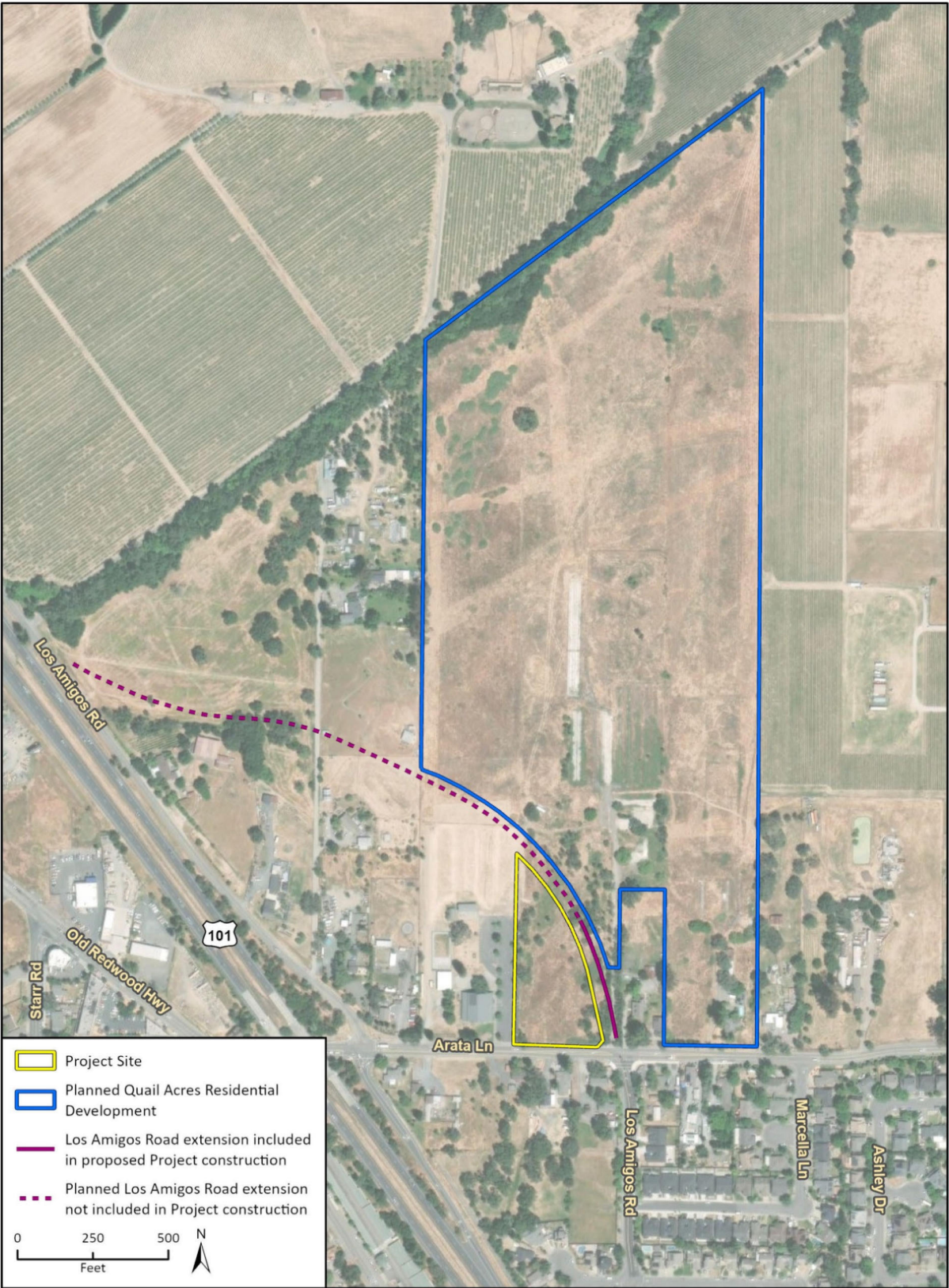
The Project site would be served by the Town's public water and sewer systems through existing utility infrastructure along Arata Lane. The site would also be served by Pacific Gas & Electric (PG&E) for electric services and would be all-electric. Therefore, it would not involve the installation of natural gas infrastructure. The Project would include a common waste collection facility which would serve part of the Project. The remainder of the Project would have individual waste collection service.

Figure 5 Project Site Plan



Source: Civil Design Consultants Inc., April 2025

Figure 6 Planned Los Amigos Road Extension



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Stormwater Management

The Project site slopes from the north to south to a drainage ditch on the north side of Arata Lane. The Project would include construction of storm drain facilities. Additionally, the Project would connect to planned storm drain improvements proposed for the neighboring Quail Acres residential development Project along Los Amigos Road and Arata Lane. If these improvements are not constructed as part of the Quail Acres Project prior to construction of the proposed Project, the proposed Project would include public stormwater improvements along the Los Amigos Road extension included as part of the proposed Project and along the Arata Lane frontage of the Project site. The Project would also include low impact design (LID) facilities such as interceptor trees and a bioretention area located within the common space in the center of the Project site. There would also be bioretention curb openings installed along the west side of Los Amigos Road and the north side of Arata Lane.

Green Building Features

The Project would include installation of energy STAR appliances, low-flow water fixtures, electric vehicle charging outlets in garages, cool roof material, exterior cladding that does not ignite when exposed to flame, and water efficient landscaping. Additionally, each home would include photovoltaic solar panels on the roof, LED lighting, and low VOC paint.

Project Construction

The infrastructure and circulation elements of the Project would be constructed in a single phase. Project construction would take approximately 30 months to complete. Earthwork on the site would be balanced and no soil import or export would be required as part of construction.

10. Necessary Approvals

Builder's Remedy

The Housing Accountability Act (Government Code Section 65589.5) requires that cities and counties make one of five findings to deny, or to apply conditions that make infeasible, a housing development project “for very low, low- or moderate-income households” or an emergency shelter. A housing development project with 13 percent of the total units available to lower income households or with all of the units available for moderate- or middle-income households may qualify as housing “for very low, low- or moderate-income households”. These five findings are described below:

1. The city or county has met or exceeded its Regional Housing Needs Allocation (RHNA) for the proposed income categories in the development.
2. The housing development or emergency shelter would have a specific adverse impact on public health and safety, and there is no way to mitigate or avoid the impact without making the development unaffordable. The impact must be based on objective, written public health or safety standards in place when the application was deemed complete.
3. The denial or condition is required to meet state or federal law, and there is no feasible method to comply without making the development unaffordable.

4. The project is proposed on land zoned for agriculture or resource preservation that is surrounded on at least two sides by land being used for agriculture or resource preservation or there are not adequate water or sewage facilities to serve the project.
5. The project is inconsistent with both the zoning ordinance and the land use designation as specified in any general plan element. However, a city or county cannot make this finding if it has not adopted a housing element in substantial compliance with state law.

If a locality has not adopted a Housing Element in substantial compliance with state law, developers may propose eligible housing development projects that do not comply with either the zoning or the general plan. The term "Builder's Remedy" is used to describe the situation where a local agency may be required to approve an eligible housing development project because it cannot make one of the other four findings.

The applicant submitted a preliminary application for this Project under SB 330 prior to the time that the Town of Windsor's adopted Housing Element was certified by the state Department of Housing and Community Development as being compliant with the Housing Accountability Act. Given that the Project qualifies as a housing development project "for very low, low-, or moderate-income households," the Project would qualify as a Builder's Remedy project under Government Code section 65589.5 and would be a permitted use in this location notwithstanding the Town's General Plan and zoning land use designations for the Project site. As such, the analysis included in this IS-MND evaluates the Project's consistency with the General Plan and Zoning designations that are appropriate for the Project which in this case is the Medium Density Residential (MDR) General Plan land use designation and Medium Density Residential (MDR) zoning designation. Both of these designations allow for up to 16 dwelling units per acre.

Town Approvals

The Town of Windsor is the lead agency with responsibility for approving the Project. Approval from other public agencies is not required. The Project would require the following discretionary approvals from the Town of Windsor:

- Tentative Subdivision Map approval
- Density Bonus waivers approval

11. Have California Native American Tribes Traditionally and Culturally Affiliated with the Project Area Requested Consultation Pursuant to Public Resources Code Section 21080.3.1?

On November 12, 2024, the Town of Windsor sent Assembly Bill (AB) 52 notification letters via certified mail to Native American tribes who requested notification under AB 52. Under AB 52, Native American tribes have 30 days to respond and request further project information and request formal consultation. The Town did not receive a request for formal consultation under AB 52. Copies of AB 52 correspondence for this Project are included in Appendix G.

Environmental Factors Potentially Affected

This Project would potentially affect the environmental factors checked below, involving at least one impact that is “Potentially Significant” or “Less than Significant with Mitigation Incorporated” as indicated by the checklist on the following pages.

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

Determination

Based on this initial evaluation:

- ☐ I find that the proposed Project COULD NOT have a significant effect on the environment, and a NEGATIVE DECLARATION will be prepared.
- ☒ I find that although the proposed Project could have a significant effect on the environment, there will not be a significant effect in this case because revisions to the Project have been made by or agreed to by the Project proponent. A MITIGATED NEGATIVE DECLARATION will be prepared.
- ☐ I find that the proposed Project MAY have a significant effect on the environment, and an ENVIRONMENTAL IMPACT REPORT is required.
- ☐ I find that the proposed Project MAY have a “potentially significant impact” or “less than significant with mitigation incorporated” impact on the environment, but at least one effect (1) has been adequately analyzed in an earlier document pursuant to applicable legal standards, and (2) has been addressed by mitigation measures based on the earlier analysis as described on attached sheets. An ENVIRONMENTAL IMPACT REPORT is required, but it must analyze only the effects that remain to be addressed.

Los Amigos Cottages Builder's Remedy Project

- ☐ I find that although the proposed Project could have a significant effect on the environment, because all potential significant effects (a) have been analyzed adequately in an earlier EIR or NEGATIVE DECLARATION pursuant to applicable standards, and (b) have been avoided or mitigated pursuant to that earlier EIR or NEGATIVE DECLARATION, including revisions or mitigation measures that are imposed upon the proposed Project, nothing further is required.


Signature


Date


Printed Name


Title

Applicant Mitigation Measures Agreement

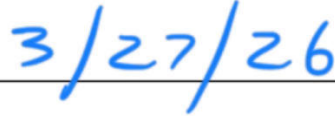
We, the undersigned, hereby attest that we have reviewed the mitigation measures included in the Initial Study-Mitigated Negative Declaration for the Los Amigos Cottages Builder's Remedy Project and agree to implement all the mitigation measures contained therein.



Signature (Applicant)



Printed Name (Applicant)



Date

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Environmental Checklist

1 Aesthetics

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

Setting

The Project site is located in the northern portion of the Town with views of the surrounding hills and ridgelines. The Project site is undeveloped and contains a mix of grasses, shrubs, and trees. The Project site is not on a State Designated Scenic Highway nor does it contain any designated scenic vista points (California Department of Transportation [Caltrans] 2018). Town of Windsor General Plan Figure ER-1 (Scenic Corridors) identifies the roadways within and outside of the Town identified as scenic corridors. The Project site is not adjacent to a scenic corridor. The closest scenic corridors are Highway 101, Los Amigos Road, where it runs parallel to Highway 101, and Arata Lane east of the Project site from approximately Hillview Road to Hembree Lane (Town of Windsor 2018a). Additionally, the Town's General Plan designates the foothills surrounding the town as well as agricultural lands, community separators, creeks, and woodlands as scenic resources within the Town. The Project site is surrounded by rural residential structures, Arata Lane, and a religious facility which contribute to the developed visual character present around the Project site. There are distant views of rolling hills to the north of the Project site.

There are no existing sources of light and glare on the Project site; however, the neighboring, development and roadways around the site are sources of light and glare in the area.

Impact Analysis

a. Would the project have a substantial adverse effect on a scenic vista?

As described above, the Town of Windsor designates the foothills surrounding the town as well as agricultural lands, community separators, creeks, and woodlands as scenic resources within the Town (Town of Windsor 2018a). There are existing distant views of rolling hillsides to the north of the Project site that may be visible from Arrata Lane; however, views are largely blocked by existing development and mature trees. Development on the Project site would involve single-family residences up to two stories in height. While this would be greater than the height of surrounding residences, existing trees on and adjacent to the Project site exceed this height, and the proposed buildings up to 35 feet in height within the Project site would not be tall enough to significantly obstruct views of the surrounding hills and ridgelines and would not substantially effect a scenic vista. Therefore, the Project would have less than significant impacts on scenic vistas.

LESS-THAN-SIGNIFICANT IMPACT

b. Would the project substantially damage scenic resources, including but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?

As described above, the Project site is not on or near a State Designated Scenic Highway (Caltrans 2019). The nearest designated State Scenic Highway is Highway 116 which is approximately 7 miles southwest of the Project site and the nearest eligible State Scenic Highway is Highway 128 which is approximately 6.5 miles from the Project site. The Project site is not visible from either of these highways due to distance and intervening landscape and development. The Project site is near locally designated scenic routes including Los Amigos Road which is approximately 0.1 miles to the west of the Project site and a portion of Arata Lane which is approximately 0.2 miles east of the Project site. Due to the relatively low height of the proposed development (2 stories) and intervening landforms, development, and landscaping such as trees and shrubs, the Project site would not be visible from these locally designated scenic routes. As such, impacts would be less than significant.

LESS-THAN-SIGNIFICANT IMPACT

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

The Project site is in a non-urbanized area¹. Public views of the Project site are available to motorists, pedestrians, and bicyclists along Arata Lane and currently consists of the undeveloped land which includes grasses, shrubs, and several mature trees. The Project would result in the construction of 32 two story, single-family residences on the Project site which would change the

¹ According to CEQA Guidelines Section 21071, an "urbanized area" is defined as an incorporated town if the town has a population of at least 100,000 persons or if the town has a population of less than 100,000 persons and if the population of that town, and not more than w contiguous incorporated towns combined equals at least 100,000 persons. The Town of Windsor has a population of 25,394 persons (DOF 2024), and does not share a border with another incorporated city or town.

existing views of the Project site; however, the development would be consistent with neighboring residential developments across Arata Lane to the south, and Newsong Church to the immediate west of the Project site. Additionally, the Project would include the use of neutral color schemes, and design elements such as front porches for all unit which would introduce pedestrian-scale elements to encourage walkability near the Project site. Further, the Project would include landscaping such as the planting of trees, including street trees along Arata Lane and the proposed extension of Los Amigos Road. Overall, the Project's design would be consistent with surrounding land uses and would not substantially degrade existing visual character or public views of the site and surrounding areas.

LESS-THAN-SIGNIFICANT IMPACT

- d. *Would the project create a new source of substantial light or glare that would adversely affect daytime or nighttime views in the area?*

Existing sources of light and glare near the Project site include the Newsong church which is adjacent to the site to the west, headlights and glare from cars traveling along Arata Lane south of the Project site, and residential development to the north, east, and south of the Project site. The Project would generate new sources of light from internal residential light sources, external light sources, and headlights from the addition of cars on the Project site. The Project would introduce new sources of glare such as windows in the residential buildings, photovoltaic panels on the roof of each home, and cars parked around the Project site and along the proposed extension of Los Amigos Road. However, due to the small size of the Project and the consistency of the Project with nearby residential development, the Project would not significantly increase light and glare in the area. Furthermore, the Project would be required to comply with Zoning Code Section 27.20.030 (which was in effect at the time the Project application was submitted and therefore applies to the Project) which includes general performance standards to limit light and glare. Therefore, impacts related to light and glare would be less than significant.

LESS-THAN-SIGNIFICANT IMPACT

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2 Agriculture and Forestry Resources

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less-than - Significant Impact	No Impact
Would the project:				
a. Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?	☐	☐	☐	☒
b. Conflict with existing zoning for agricultural use or a Williamson Act contract?	☐	☐	☐	☒
c. Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code Section 12220(g)); timberland (as defined by Public Resources Code Section 4526); or timberland zoned Timberland Production (as defined by Government Code Section 51104(g))?	☐	☐	☐	☒
d. Result in the loss of forest land or conversion of forest land to non-forest use?	☐	☐	☐	☒
e. Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland to non-agricultural use or conversion of forest land to non-forest use?	☐	☐	☐	☒

Setting

The Project site is located on vacant or disturbed land as designated by the California Department of Conservation (DOC) (DOC 2022). There are no forest lands within the Town of Windsor (Town of Windsor 2018a).

Impact Analysis

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

The Project site does not contain Prime Farmland, Unique Farmland, or Farmland of Statewide Importance, nor is it adjacent to any such lands. There are areas designated as Farmland of Local

Importance to the north and northwest of the Project site; however, the Project would not include any construction on these lands, nor would it convert these lands to non-agricultural use. Therefore, the Project would have no impact on Prime Farmland, Unique Farmland, or Farmland of Statewide Importance.

NO IMPACT

- b. Would the project conflict with existing zoning for agricultural use or a Williamson Act contract?*

The Project site is zoned as Community Commercial (CC). There are no Williamson Act contract lands located in the town and the Project site and proposed area for the realigned Los Amigos Road is not located under a Williamson Act contract (County of Sonoma 2019). Therefore, development of the Project would not conflict with any existing zoning for agricultural use or a Williamson Act contract.

NO IMPACT

- c. Would the project conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code Section 12220(g)); timberland (as defined by Public Resources Code Section 4526); or timberland zoned Timberland Production (as defined by Government Code Section 51104(g))?*
- d. Would the project result in the loss of forest land or conversion of forest land to non-forest use?*

As discussed in impact b, above, the Project site is zoned as Community Commercial (CC). The Project would not convert forest land to non-forest use nor would it conflict with existing zoning of forest land.

NO IMPACT

- e. Would the project involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland to non-agricultural use or conversion of forest land to non-forest use?*

As discussed in impact a and d, above there is no agricultural land or forest land on the Project site. While there is Farmland of Local Importance adjacent to the site, Project construction and operation activities would not be located on this land, nor would it conflict with or convert this land to non-agricultural use. Similarly, the Project would not convert forest land to non-forest use.

NO IMPACT

3 Air Quality

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

Setting

Overview of Air Pollution

The federal and State Clean Air Acts (CAA) mandate the control and reduction of certain air pollutants. Under these laws, the United States Environmental Protection Agency (USEPA) and the California Air Resources Board (CARB) have established the National Ambient Air Quality Standards (NAAQS) and the California Ambient Air Quality Standards (CAAQS) for “criteria pollutants” and other pollutants. Some pollutants are emitted directly from a source (e.g., vehicle tailpipe, an exhaust stack of a factory, etc.) into the atmosphere, including carbon monoxide, volatile organic compounds (VOC)/reactive organic gases (ROG),² nitrogen oxides (NO_x), particulate matter with diameters of ten microns or less (PM₁₀) and 2.5 microns or less (PM_{2.5}), sulfur dioxide, and lead. Other pollutants are created indirectly through chemical reactions in the atmosphere, such as ozone, which is created by atmospheric chemical and photochemical reactions primarily between ROG and NO_x. Air pollutants can also be generated by the natural environment, such as when high winds suspend fine dust particles. Secondary pollutants include oxidants, ozone, and sulfate and nitrate particulates (smog).

² CARB defines VOC and ROG similarly as, “any compound of carbon excluding carbon monoxide, carbon dioxide, carbonic acid, metallic carbides or carbonates, and ammonium carbonate,” with the exception that VOC are compounds that participate in atmospheric photochemical reactions. For the purposes of this analysis, ROG and VOC are considered comparable in terms of mass emissions, and the term ROG is used in this IS-MND.

Air pollutant emissions are generated primarily by stationary and mobile sources. Stationary sources can be divided into two major subcategories:

- Point sources occur at a specific location and are often identified by an exhaust vent or stack. Examples include boilers or combustion equipment that produce electricity or generate heat.
- Area sources are widely distributed and include such sources as residential and commercial water heaters, painting operations, lawn mowers, agricultural fields, landfills, and some consumer products.

Mobile sources refer to emissions from motor vehicles, including tailpipe and evaporative emissions, and can also be divided into two major subcategories:

- On-road sources that may be legally operated on roadways and highways.
- Off-road sources include aircraft, ships, trains, and self-propelled construction equipment.

Air Quality Standards and Attainment

The Project site is located in the San Francisco Bay Area Air Basin (SFBAAB), which is under the jurisdiction of the Bay Area Air Quality Management District (BAAQMD). BAAQMD has jurisdiction over much of the nine-county Bay Area, including some parts of Sonoma County. Sonoma County is served by two air quality districts, Northern Sonoma County Air Pollution Control District and BAAQMD, but the Town of Windsor is under the jurisdiction of BAAQMD. As the local air quality management agency, the BAAQMD is required to monitor air pollutant levels to ensure that the NAAQS and CAAQS are met and, if they are not met, to develop strategies to meet the standards. Depending on whether the standards are met or exceeded, SFBAAB is classified as being in “attainment” or “nonattainment.” In areas designated as non-attainment for one or more air pollutants, a cumulative air quality impact exists for those air pollutants, and the human health impacts associated with these criteria pollutants, presented in Table 1, are already occurring in that area as part of the environmental baseline condition. Under state law, air districts are required to prepare a plan for air quality improvement for pollutants for which the district is in non-compliance. SFBAAB is designated a nonattainment area for the federal 8-hour ozone standard, federal PM_{2.5} 24-hour standard, state 8-hour and 1-hour ozone standards, state PM₁₀ annual and 24-hour standards, and the state PM_{2.5} 24-hour standard. (CARB 2023; USEPA 2024a). This nonattainment status is a result of several factors, such as mobile sources, wood burning, industrial combustion, and dust, in SFBAAB.

Table 1 Health Effects Associated with Non-Attainment Criteria Pollutants

Pollutant	Adverse Effects
Ozone	(1) Short-term exposures: (a) pulmonary function decrements and localized lung edema in humans and animals and (b) risk to public health implied by alterations in pulmonary morphology and host defense in animals; (2) long-term exposures: risk to public health implied by altered connective tissue metabolism and altered pulmonary morphology in animals after long-term exposures and pulmonary function decrements in chronically exposed humans; (3) vegetation damage; and (4) property damage.
Suspended particulate matter (PM ₁₀ and PM _{2.5})	(1) Excess deaths from short- and long-term exposures; (2) excess seasonal declines in pulmonary function, especially in children; (3) asthma exacerbation and possibly induction; (4) adverse birth outcomes, including low birth weight; (5) increased infant mortality; (6) increased respiratory symptoms in children such as cough and bronchitis; and (7) increased hospitalization for both cardiovascular and respiratory disease, including asthma).

Source: USEPA 2024b

Air Quality Management

BAAQMD is responsible for adopting and enforcing rules and regulations concerning air pollutant sources, issuing permits for stationary sources of air pollutants, inspecting stationary sources of air pollutants, responding to citizen complaints, monitoring ambient air quality and meteorological conditions, awarding grants to reduce motor vehicle emissions, conducting public education campaigns, as well as many other activities. Due to SFBAAB exceeding federal standards for ozone and PM_{2.5}, as well as state standards for ozone, PM₁₀, and PM_{2.5}, BAAQMD must implement strategies to reduce pollutant levels and achieve compliance with both NAAQS and CAAQS.

BAAQMD adopted the 2017 Clean Air Plan (2017 Plan) as an update to the 2010 Clean Air Plan in April 2017. The 2017 Plan provides a regional strategy to protect public health and the climate. To fulfill state ozone planning requirements, the 2017 control strategy includes all feasible measures to reduce emissions of ozone precursors—ROG and NO_x—and reduce transport of ozone and its precursors to neighboring air basins. The 2017 Plan builds upon and enhances the BAAQMD's efforts to reduce emissions of fine particulate matter TACs (BAAQMD 2017a).

Air Emission Thresholds

REGIONAL SIGNIFICANCE THRESHOLDS

BAAQMD developed screening criteria to provide a conservative indication of whether a project could result in potentially significant air quality impacts. If all the screening criteria are met by a project, the lead agency or applicant does not need to perform a detailed air quality assessment of the project's air pollutant emissions, and air quality impacts would be considered less than significant. BAAQMD's screening criteria for single-family residential development are 421 dwelling units for operational criteria pollutants and 254 dwelling units for construction-related emissions (BAAQMD 2023a). For construction-related emissions to be considered less than significant, projects must meet the following criteria in addition to being below the applicable screening level (BAAQMD 2023a):

1. All best management practices (see Table 5-2 in Chapter 5, "Project-Level Air Quality Impacts") are included in the project design and implemented during construction.
2. Construction-related activities would not overlap with operational activities.
3. Construction-related activities would not include any of the following:
 - Demolition
 - Simultaneous occurrence of more than two construction phases (e.g., paving and building construction would not occur simultaneously)
 - Extensive site preparation ((e.g., grading, cut and fill, or earth movement)
 - Extensive material transport (e.g., soil import and export requiring a considerable amount of haul truck activity)
 - Stationary sources (e.g., backup generators) subject to Air District rules and regulations.

In addition, for operational-related emissions to be considered less than significant, projects must meet the following criteria in addition to being below the applicable screening level (BAAQMD 2023a):

1. Operational activities would not include stationary engines (e.g., backup generators) and industrial sources subject to Air District rules and regulations.
2. Operational activities would not overlap with construction-related activities.

CARBON MONOXIDE

BAAQMD provides a preliminary screening methodology to conservatively determine whether a proposed Project would exceed carbon monoxide thresholds. If the following criteria are met, a project would result in a less than significant impact related to local carbon monoxide concentrations:

- The project is consistent with an applicable congestion management program established by the county congestion management agency for designated roads or highways, regional transportation plan, 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).

ODOR SOURCES

BAAQMD provides minimum distances for siting of new odor sources as shown in Table 2. A significant impact would occur if the project would result in other emissions (such as odors) affecting substantial numbers of people or would site a new odor source within the specified distances of existing receptors.

Table 2 BAAQMD Odor Source Thresholds

Odor Source	Minimum Distance for Less than Significant Odor Impacts (in miles)
Wastewater treatment plant	2
Wastewater pumping facilities	1
Sanitary Landfill	2
Transfer Station	1
Composting Facility	1
Petroleum Refinery	2
Asphalt Batch Plant	2
Chemical Manufacturing	2
Fiberglass Manufacturing	1
Painting/Coating Operations	1
Rendering Plant	2
Coffee Roaster	1
Food Processing Facility	1
Confined Animal facility/feed lot/diary	1
Green Waste and Recycling Operations	1
Metal Smelting Plants	2

Methodology

The Project would generate criteria air pollutant emissions during both construction and operational phases. Construction activities would primarily produce temporary emissions from on-site equipment operation and construction worker vehicle trips. Operational emissions would arise from mobile sources, energy use, and area sources. The Project includes the construction of 32 residential lots, comprising 26 detached single-family homes and six attached 'duet' single-family homes. The Project meets the criteria for using the construction and operational screening size for criteria pollutant emissions. Therefore, this analysis employs the screening size process to evaluate the significance of the Project's construction and operational criteria pollutant emissions. Thus, the construction and operational impacts of the Project are discussed qualitatively.

Impact Analysis

a. Would the project conflict with or obstruct implementation of the applicable air quality plan?

The California CAA requires that air districts create a Clean Air Plan that describes how the jurisdiction will meet air quality standards. The most recently adopted air quality plan is the BAAQMD 2017 Plan. The 2017 Plan updates the most recent Bay Area plan, the 2010 Clean Air Plan, pursuant to air quality planning requirements defined in the California Health and Safety Code. To fulfill state ozone planning requirements, the 2017 Plan control strategy includes all feasible measures to reduce emissions of ozone precursors—ROG and NO_x—and reduce transport of ozone and its precursors to neighboring air basins. The Clean Air Plan builds upon and enhances the BAAQMD's efforts to reduce emissions of fine particulate matter and TACs. The 2017 Plan does not include control measures that apply directly to individual development projects. Instead, the control strategy includes control measures related to stationary sources, transportation, energy, buildings, agriculture, natural and working lands, waste management, water, and super-GHG pollutants.

The 2017 Plan focuses on two paramount goals, both consistent with the mission of BAAQMD:

- Protect air quality and health at the regional and local scale by attaining all national and state air quality standards and eliminating disparities among Bay Area communities in cancer health risk from TACs.
- Protect the climate by reducing Bay Area GHG emissions to 40 percent below 1990 levels by 2030, and 80 percent below 1990 levels by 2050.

Under BAAQMD's methodology, a determination of consistency with the 2017 Plan should demonstrate that a project:

- Supports the primary goals of the air quality plan.
- Includes applicable control measures from the air quality plan.
- Does not disrupt or hinder implementation of any air quality plan control measures.

A project that fails to support the goals of the 2017 Plan would be considered inconsistent with it. On an individual project basis, consistency with BAAQMD quantitative thresholds is interpreted as demonstrating support for the Clean Air Plan's goals. As discussed under checklist question 'b' below, the Project's building characteristics and activity would meet BAAQMD's construction and operations screening criteria for single-family residential. Because the Project would meet the screening criteria, the Project's construction and operations emissions are unlikely to exceed BAAQMD's significance thresholds for air pollution emissions. Therefore, because the Project would

not generate significant emissions, the Project would not conflict with the 2017 Plan's goal to attain air quality standards. The 2017 Plan includes goals and measures to increase the use of electric vehicles and encourage energy and water efficiency. The Project aligns with these goals by incorporating features such as energy and water-efficient appliances that meet the 2022 Title 24 Standards. Additionally, the Project would be constructed with all-electric appliances and electric vehicle infrastructure, consistent with CALGreen Tier 2 standards for single-family residential units. Therefore, the Project would not conflict with or obstruct the implementation of an applicable air quality plan, and the Project would have a less than significant impact.

LESS-THAN-SIGNIFICANT IMPACT

- b. Would the project 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?*

Construction Emissions

BAAQMD construction screening level size for single-family residences is 254 dwelling units. The screening table was developed using conservative assumptions to ensure emissions remain below levels that would cause significant air quality impacts. Construction-related fugitive dust was not included in the screening table because these emissions are controlled through best management practices, as discussed in Chapter 5, Project-Level Air Quality Impacts (BAAQMD 2023b). The Project includes 32 dwelling units, does not involve demolition activities, and is consistent with the remaining construction screening criteria. Therefore, the Project's construction activity meets BAAQMD's construction screening criteria, indicating that the construction emissions are unlikely to exceed significant thresholds, eliminating the need for a detailed assessment. Therefore, pursuant to BAAQMD guidance, a detailed air quality assessment of the Project's construction criteria air pollutant emissions is not necessary, and Project construction would not 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.

Operational Emissions

BAAQMD operational screening level size for single-family residences is 421 dwelling units. The screening table was developed using default assumptions and does not account for project-specific design features or local requirements that could further reduce emissions. The Project includes 32 dwelling units, does not involve stationary engines or industrial sources, and operational activities would not overlap with construction-related activities. Therefore, the Project's operational activities meet the operational screening criteria, which indicate that the operational emissions are unlikely to exceed significant thresholds, eliminating the need for a detailed assessment. The operational screening criteria are designed to ensure that emissions remain below levels that would cause significant air quality impacts. Therefore, pursuant to BAAQMD guidance, a detailed air quality assessment of the Project's operational criteria air pollutant emissions is not necessary, and Project operation would not 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.

NO IMPACT

c. *Would the project expose sensitive receptors to substantial pollutant concentrations?*

CARB and the Office of Environmental Health Hazard Assessment (OEHHA) have identified the following groups of individuals as the most likely to be affected by air pollution: the elderly over 65, children under 14, infants (including in utero in the third trimester of pregnancy), and persons with cardiovascular and chronic respiratory diseases such as asthma, emphysema, and bronchitis (CARB 2005; OEHHA 2015). The nearest sensitive receptors to the Project site are single-family homes approximately 45 feet to the east (247, 267, and 283 Arata Lane). Additional residential sensitive receptors are located approximately 60 feet south of the Project site (186, 210, and 250 Arata Lane). Localized air quality impacts to sensitive receptors typically result from CO hotspots and TACs, which are discussed in the following subsections.

Carbon Monoxide Hotspots

A CO hotspot is a localized concentration of CO that is above a CO ambient air quality standard. Localized CO hotspots can occur at areas with high vehicle density, such as intersections with heavy peak hour traffic. A project's localized air quality impact is considered significant if CO concentrations exceed BAAQMD's one-hour standard of 20.0 parts per million (ppm) and eight-hour standard of 9.0 ppm (BAAQMD 2023c).

BAAQMD recommends comparing a project's attributes with the following screening criteria as a first step to evaluating whether the project would result in the generation of CO concentrations that would substantially contribute to an exceedance of the *Thresholds of Significance* (BAAQMD 2023c). The Project would result in a less than significant impact to localized CO concentrations if:

1. The project is consistent with an applicable congestion management program for designated roads or highways, regional transportation plan, and local congestion management agency plans.
2. The project would not increase traffic volumes at affected intersections to more than 44, 000 vehicles per hour.
3. The project traffic would not increase traffic volumes at the affected intersections to more than 24,000 vehicles per hour where vertical and/or horizontal mixing is substantially limited (e.g., tunnel, parking garage).

The Project would include 32 residential lots, comprised of 26 detached single-family homes and six "duet" single-family attached homes. According to the Transportation Impact Study (TIS) prepared for the Project (Appendix A), the Project is expected to generate an average of 288 trips per day, with 21 trips occurring during the AM peak hour and 27 trips during the PM peak hour. The Project trip generation would be far below the screening thresholds listed above, and the Project would not conflict with the Sonoma County Congestion Management Plan. Therefore, impacts of localized CO emissions would not be significant.

Toxic Air Contaminants

Construction

Construction-related activities would result in short-term, Project-generated emissions of DPM exhaust emissions from off-road, heavy-duty diesel equipment for site preparation grading, building construction, and other construction activities. DPM was identified as a TAC by CARB in 1998. The

potential cancer risk from the inhalation of DPM (discussed in the following paragraphs) outweighs the potential non-cancer health impacts (CARB 2024).

Generation of DPM from construction projects typically occurs in a single area for a short period. The dose to which the receptors are exposed is the primary factor used to determine health risk. Dose is a function of the concentration of a substance or substances in the environment and the extent of exposure that a person has with the substance. Dose is positively correlated with time, meaning that a longer exposure period would result in a higher exposure level for the Maximally Exposed Individual. The risks estimated for a Maximally Exposed Individual are higher if a fixed exposure occurs over a longer period of time. According to the OEHHA, health risk assessments, which determine the exposure of sensitive receptors to toxic emissions, should be based on a 30-year exposure period (assumed to be the approximate time that a person spends in a household). OEHHA recommends this risk be bracketed with 9-year and 70-year exposure periods. Health risk assessments should be limited to the period/duration of activities associated with the Project.

The maximum PM_{2.5} emissions, which is used to represent DPM emissions for this analysis, would occur during site preparation and grading activities. As described in checklist question 'b' above, the Project's building characteristics and activity would meet BAAQMD's construction screening criteria for single-family residential units; therefore, construction emissions would not exceed significant thresholds. Thus, site preparation and grading emissions would be minimal over the course of a 9-year, 30-year, and 70-year health risk calculation period. PM_{2.5} emissions would decrease for the remaining construction period because construction activities such as building construction, architectural coating, and paving would require less construction equipment. Therefore, DPM generated by Project construction is not expected to create conditions where the probability that the Maximally Exposed Individual would contract cancer is greater than 10 in one million. This impact would be less than significant.

Operation

CARB's *Air Quality and Land Use Handbook: A Community Health Perspective* (2005) provides recommendations regarding the siting of new sensitive land uses near potential sources of air toxic emissions (e.g., freeways, distribution centers, rail yards, ports, refineries, chrome plating facilities, dry cleaners, and gasoline dispensing facilities). CARB guidelines provide the recommended siting distances both for the development of sensitive land uses in proximity to TAC sources and for the addition of new TAC sources in proximity to existing sensitive land uses. The Project site is approximately 560 feet from the southeast boundary to U.S. 101. According to CARB guidelines, it is recommended to avoid placing sensitive receptors within 500 feet of a freeway, urban roads with 100,000 vehicles/day, or rural roads with 50,000 vehicles/day. Therefore, as the Project is located more than 500 feet from a freeway, the operational TAC emissions are expected to have a negligible impact on the future sensitive receptors on the Project site. The Project's residential land use does not generate significant TAC emissions according to CARB's guidelines on air toxic sources. Therefore, the expected hazardous TACs generated on site (e.g., cleaning solvents, paints, landscape pesticides, etc.) for the proposed land uses would be below thresholds warranting further study under the California Accidental Release Program. The Project would not expose off-site sensitive receptors to significant amounts of carcinogenic or TACs. Operational impacts would be less than significant.

LESS-THAN-SIGNIFICANT IMPACT

- d. *Would the project result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?*

During construction activities, heavy equipment and vehicles would emit odors associated with vehicle and engine exhaust and during idling. However, these odors would be intermittent and temporary and would cease upon completion, and odors disperse with distance. Overall, Project construction would not result in other emissions (such as those leading to odors) adversely affecting a substantial number of people and impacts would be less than significant.

Table 5-4 in the BAAQMD 2022 *CEQA Air Quality Guidelines* provides screening distances for land uses that have the potential to generate substantial odor complaints. The uses in the table include wastewater treatment plants, landfills or transfer stations, refineries, composting facilities, confined animal facilities, food manufacturing, smelting plants, and chemical plants (BAAQMD 2023b). Residential development is not included in this list. Vehicles approaching, idling, and leaving the site may release odorous exhaust emissions. Odors of this nature disperse rapidly with distance and do not typically result in odor impacts. In addition, solid waste generated by the proposed on-site uses would be properly stored in lidded dumpsters and/or trash cans and collected by a contracted waste hauler, ensuring that on-site waste would be managed and collected in a manner to prevent the proliferation of odors. Therefore, operational odor impacts would be less than significant.

LESS-THAN-SIGNIFICANT IMPACT

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4 Biological Resources

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

Setting

The 2.71-acre Project site is currently undeveloped. It consists of annual grassland with clusters of oak trees around the periphery of the site. The site is located in the Russian River Valley, approximately two miles east of the Russian River, at elevations ranging from approximately 135 feet above mean sea level (AMSL) to 160 feet AMSL.

In February 2025, Rincon reviewed available Project reports and documentation to determine the potential presence of sensitive biological resources, including special-status plant and wildlife species, sensitive vegetation communities, potentially jurisdictional wetlands or waters of the U.S. and state, and nesting habitat for native birds. The following documents were reviewed and are included in Appendix B:

- Special-Status Plant Report for the ±62-Acre Arata Lane Study Area, Town of Windsor, Sonoma County, California (prepared by Salix Consulting Inc. in June 2018; Salix 2018)
- Aquatic Resources Delineation for the ±62-Acre Arata Lane Study Area, Town of Windsor, Sonoma County, California (prepared by Salix Consulting Inc. in June 2021; Salix 2021)
- Biological Resources Addendum, 62-acre Arata Lane Parcel, Town of Windsor, Sonoma County, California (prepared by Salix Consulting Inc. in March 2022; Salix 2022a)
- Biological Resources Addendum, Los Amigos Connector Corridor, Town of Windsor, Sonoma County, California (prepared by Salix Consulting Inc. in June 2022; Salix 2022b)
- Aquatic Resource Permitting [Letter] for the Quail Acres Project, Town of Windsor, Sonoma County, California (prepared by Salix Consulting Inc. in February 2024)
- Arborist Report, Los Amigos Cottages, Windsor, California (prepared by Horticultural Associates in March 2024; updated October 2024, Horticultural Associates 2024))

In addition, Rincon conducted a search of the following databases to fill in gaps in information not included in the above reports, or to update searches that may be outdated from the above reports:

- USFWS Information for Planning and Consultation (IPaC) Trust Resource Report (USFWS 2025a)
- California Department of Fish and Wildlife (CDFW) California Natural Diversity Database (CNDDDB) (CDFW 2025a)
- California Native Plant Society (CNPS) Online Inventory of Rare and Endangered Vascular Plants (CNPS 2025a)
- USFWS Critical Habitat Portal (USFWS 2025b)

The CNDDDB and CNPS database searches included the 7.5-minute USGS *Healdsburg* quadrangle and surrounding eight quadrangles (referred to as a “nine-quad search”). The IPaC search included the Project site and a two-mile buffer surrounding the Project site. Following a review of these resources, Rincon also reviewed relevant life history information on those species documented as occurring in the region, including habitat type, soils, and elevation preferences.

The potential for presence of wildlife movement corridors was evaluated based on the California Essential Habitat Connectivity Project commissioned by the California Department of Transportation and CDFW (Spencer et al. 2010).

For the purposes of this analysis, special-status species include:

- Species listed as threatened or endangered under the Federal Endangered Species Act (FESA), including proposed and candidate species
- Species listed as candidate, threatened, or endangered under the California Endangered Species Act (CESA)
- Species designated as Fully Protected by the California Fish and Game Code (CFGF), and Species of Special Concern by CDFW
- California Native Plant Society (CNPS) California Rare Plant Ranks (CRPR) 1A, 1B, 2A and 2B
- Species listed as plants of concern under the Santa Rosa Plain Conservation Strategy (SRPCS)

Impact Analysis

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

The proposed Project would involve site clearing and grading and construction of a residential project. The proposed Project could directly affect sensitive species through construction activities or habitat removal or could indirectly affect wildlife or wildlife habitat through water, noise, dust or light pollution.

The Biological Resources Addendums (Salix 2022a, Salix 2022b) note that no special-status plant or wildlife species were observed in the Project site during surveys in 2018, 2021, and 2022. A rare plant survey was performed in the Project area in June 2018 for species listed as plants of concern under the Santa Rosa Plain Conservation Strategy (SRPCS), as well as 35 plant species returned in a 5-quadrant CNDDDB and CNPS database search (Salix 2018) and no rare plants were detected. The Biological Resources Addendum (Salix 2022a) states that two special-status wildlife species were found to have some potential to occur on the site, including burrowing owl (*Athene cunicularia*) and white-tailed kite (*Elanus leucurus*). The remaining species returned in the 5-quadrant CNDDDB database search were found to have no potential to occur on the Project site due to a lack of suitable habitat on the site (Salix 2022a).

Rincon Consultants, Inc. conducted an updated 9-quadrant search of the CNDDDB and CNPS databases, centered on the Project site, as well as a current USFWS Information for Planning and Consultation (IPaC) Trust Resource Report that included a 2-mile buffer around the site to determine if state or federally listed species or federally designated critical habitat may occur in or adjacent to the Project site. An additional 35 special-status plant species and six special-status wildlife species were returned in the updated searches. Four of the six additional special-status wildlife species have a moderate or greater potential to occur on the site. These and the additional special-status plant species are discussed in more detail below and also listed in Appendix B.

Special-Status Wildlife

As stated above, two special-status wildlife species were found to have some potential to occur on the site according to the Biological Resources Addendum prepared by Salix in 2022 (Salix 2022a): burrowing owl and white-tailed kite. However, the Biological Resources Addendum did not state that suitable burrows were present on the site that would support burrowing owl, and the Project site is only mowed twice per year; therefore, the annual grasses are allowed to grow unmanaged for

most of the year. Since burrowing owls typically avoid habitat where visibility is compromised and/or predation risk is high (e.g. unmanaged vegetation, treed areas), the site does not provide suitable habitat for burrowing owl. The presence of trees and shrubs on the site that support raptors and other predators of burrowing owls, such as coyotes (*Canis latrans*), likely preclude burrowing owl from occurring. Rincon identified four special-status wildlife species in addition to white-tailed kite that have a moderate or greater potential to occur on the site, including monarch butterfly, pallid bat (*Antrozous pallidus*), Townsend's big eared bat (*Corynorhinus townsendii*), and western red bat. These 5 special-status wildlife species are discussed in more detail below.

White-tailed kite and other native nesting birds are protected under the federal Migratory Bird Treaty Act (MBTA) and CFGC Section 3503.5, which specifically protects raptors. Therefore, the proposed Project has the potential to impact native birds in the form of mortality of adults, chicks, or eggs, or destruction or abandonment of nests caused by construction activities. This impact is potentially significant and Mitigation Measure BIO-1 is required.

The Biological Resources Addendum (Salix 2022a, Salix 2022b) concludes that there is no roosting habitat for two special-status bat species returned in the 5-quad database search results, including Townsend's big-eared bat and pallid bat. However, Townsend's big-eared bats are known to roost in buildings, bridges, hollow trees, and other cave-like structures, and pallid bats are known to roost in trees, bridges, porches, and buildings (human occupied or vacant). Because there are numerous trees on the site (all of which except one would be removed), as well as culverts and buildings adjacent to the site, and there is suitable foraging habitat for both species on the site, there is potential for these species to occur on the site. In addition, western red bat was included in the updated database searches performed by Rincon. Western red bat is a tree (foliage) roosting species and also has potential to occur on the site. Therefore, the proposed Project has the potential to impact roosting and foraging bats in the form of removal of roosting habitat through the removal of all trees but one on site or mortality of individual bats or maternity. Therefore, this impact is potentially significant and Mitigation Measure BIO-2 is required.

Monarch butterfly was included in the IPaC search results. Monarch adults make massive, multi-generation migrations from spring to fall, flying thousands of miles from overwintering sites in Mexico and on the California coast, through Central Mexico and California. They stop to feed on flower nectar and to roost together at night. Most mating happens before they journey north in the spring, when females lay single eggs along the way under host plant leaves (milkweed; *Asclepias* sp.), then the caterpillars eat milkweed flowers and leaves. Monarch was recently proposed for listing under FESA. If milkweed plants are present on the site, the proposed Project would result in impacts to this species in the form of mortality of adults, caterpillars, or eggs, loss of foraging and breeding habitat, and crushing or removal of milkweed plants that may support eggs and caterpillars. Therefore, impacts to monarch butterfly are potentially significant and Mitigation Measure BIO-3 is required.

Special-Status Plants

Should special-status plants be present on the Project site, the Project would result in impacts in the form of trampling or removal during construction. Rincon conducted an updated database search and identified four special-status plant species that have a moderate or greater potential to occur on the Project site due to the presence of suitable habitat and nearby documented occurrences in the CNDDDB. These four species are discussed in more detail below.

Pappose tarplant (*Centromadia parryi* ssp. *parryi*; CRPR 1B.2) is an annual herb found in chaparral, coastal prairie, marshes and swamps, meadows and seeps, and valley and foothill grassland (often on alkaline soils) at elevations between 0-1,380 feet AMSL. It blooms from May to November. Suitable habitat for this species is present within and adjacent to the Project site and the nearest documented occurrence is 3.35 miles south of the Project site.

Fragrant fritillary (*Fritillaria liliacea*; CRPR 1B.2) is a perennial bulbiferous herb found in cismontane woodland, coastal prairie, coastal scrub, and valley and foothill grassland (often on serpentine or clay soils) at elevations between 10-1,345 feet AMSL. It blooms from February to April. Suitable habitat for this species is present within and adjacent to the Project site, and the nearest documented occurrence is 4.53 miles northwest of the Project site.

Congested-headed hayfield tarplant (*Hemizonia congesta* ssp. *congesta*; CRPR 1B.2) is an annual herb found in valley and foothill grassland in grassy valleys and hills (often in fallow fields, sometimes along roadsides) at elevations between 65-1,835 feet AMSL. It blooms from April to November. Suitable habitat for this species is present within and adjacent to the Project site, and the nearest documented occurrence is 0.3 mile west of the Project site.

Marsh microseris (*Microseris paludosa*; CRPR 1B.2) is a perennial herb found in cismontane woodland, closed-cone coniferous forest, coastal scrub, and valley and foothill grassland at elevations between 15-1,165 feet AMSL. It blooms from April to July. Suitable habitat for this species is present within and adjacent to the Project site, and the nearest documented occurrence is 0.37 miles west of the Project site (although it is from 1981).

Because the previous rare plant survey is more than 5 years old and additional species were returned in the updated database search, there is potential for special-status plants to be present on the Project site. Impacts to special-status plants are potentially significant and Mitigation Measure BIO-4 is required.

Mitigation Measures

The following mitigation measures are required:

BIO-1 Preconstruction Nesting Bird Survey

A preconstruction nesting bird survey shall be performed by a qualified biologist no earlier than one week prior to any construction during the nesting season (March 1 – August 31) to determine if any native birds are nesting on or near the Project site (including a 250-foot buffer for raptors, where accessible). If any active nests are observed during surveys, a suitable avoidance buffer from the nests shall be determined by the qualified biologist based on species, location, and extent and type of planned construction activity. These nests shall be avoided until the chicks have fledged and/or the nests are no longer active, as determined by the qualified biologist. Any suitable nesting habitat (i.e., trees and vegetation) shall be removed outside of the breeding bird season where possible to avoid impacts to nesting birds. If construction begins outside of the nesting season, a preconstruction nesting bird survey shall not be necessary. If a lapse of 7 days or longer occurs during the nesting season, or construction stops during the non-nesting season and is expected to start again during the nesting season, a subsequent nesting bird survey shall be completed within 7 days prior to re-initiation of construction.

BIO-2 Special-Status Bats

To avoid impacts to foraging special-status bats, construction activities shall be limited to daylight hours (one hour after sunrise to one hour before sunset). Because it is not possible to detect bats that may be roosting in trees without using acoustic monitoring, a qualified biologist shall inspect any trees slated for removal or trimming at least 180 days prior to removal or trimming (or as soon as possible after CEQA approval), to determine if they contain appropriate roosting habitat (e.g., cavities, crevices, cracks, peeling bark, foliage, etc.). If suitable roosting habitat is detected during these inspections, the Project proponent shall consult with CDFW to determine an appropriate plan to avoid impacts to roosting bats, which may include preparation of a phased tree removal plan. If any bats are observed during construction activities, work shall be halted and postponed until a qualified biologist and/or CDFW is contacted to determine a proper strategy to address bats in the Project site.

BIO-3 Monarch Butterfly

If monarch butterfly is listed under the federal ESA prior to construction, all milkweed plants within the disturbance footprint shall be mapped by a qualified botanist with a mobile data collection device and flagged in the field. These plants shall be protected with high visibility fencing and avoided during construction with a 15-foot buffer wherever possible. Milkweed plants that cannot be avoided during construction shall be searched by a qualified biologist for monarch eggs or caterpillars. Any milkweed plants that have monarch eggs or caterpillars shall be avoided until the caterpillars have metamorphosed into adults. If avoidance is not possible, the Project proponent shall consult with USFWS to determine a strategy to avoid impacts to monarchs.

For plants absent of eggs or caterpillars, the plants shall be counted and recorded and the Project proponent shall mitigate for the loss of milkweed plants by planting native milkweed species within areas of the Project that would support establishment of milkweed. If establishment within the Project footprint is not feasible due to a lack of appropriate habitat or space, the Project proponent shall consult with USFWS to determine a strategy to mitigate for impacts to monarchs, which may include establishment of milkweed offsite. For each plant directly impacted by the Project (e.g., removed by grading), at least one native milkweed plant shall be planted and established from seed or container stock. Seeds or plants shall be sourced from genetic materials acquired as close to the Project site as possible (either collected directly from impacted plants or sourced from a commercial supplier from the County or as near to the County as available). Any milkweed container plants used shall be certified to have been produced without pesticides including but not limited to neonicotinoid insecticides. Milkweed plants shall be monitored for survival for no less than three years, and replanted if plants die.

BIO-4 Special-Status Plants

During the season prior to the onset of construction and within the blooming period for special-status plants that may occur on the Project site, a qualified botanist shall perform a rare plant survey within the Project site to determine if any special-status plants are evident and identifiable. The botanical field survey shall be floristic in nature, meaning that every plant taxon that occurs in the Project site is identified to the taxonomic level necessary to determine rarity and listing status. Visits to reference sites may also be warranted to determine whether the target species are identifiable at the times of year the botanical field survey takes place, and to obtain a visual image of the special-status plant, associated habitat, and associated natural communities. Should any special-status plant species be encountered during surveys, consultation with CDFW shall be

initiated to determine the best way to avoid or mitigate impacts to the species, likely either by avoidance of individuals, harvesting and broadcasting seeds, or relocation of individual plants.

Significance After Mitigation

With implementation of mitigation measures BIO-1 through BIO-4 above there would be no substantial adverse effects to these species and impacts would be less than significant.

LESS THAN SIGNIFICANT WITH MITIGATION INCORPORATED

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

The Project site is dominated by non-native annual grasses and some clusters of oak trees along the eastern and western sides of the Project area. No riparian habitat or sensitive natural communities were observed during the field survey performed by Salix Consulting, Inc. in 2018 or 2021. The nearest USFWS designated critical habitat is located approximately 2.6 miles south of the Project site for California tiger salamander (*Ambystoma californiense*). The Project would not result in any impacts to riparian habitat or sensitive natural communities; therefore, there would be no impact.

NO IMPACT

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

A wetland delineation was performed throughout the Project site by Salix Consulting Inc., on May 6, 2021. A drainage ditch that flows parallel to Arata Lane was mapped along a portion of the southern boundary of the site. This ditch is approximately 0.008 acre and has a rocky bottom with sparse vegetation containing curly dock and Italian ryegrass, and a portion of it contains Himalayan blackberry (*Rubus armeniacus*). It carries water from Arata Lane and the local residential area and flows through a culvert under Arata Lane to the south.

The drainage ditch does not meet the definition of “waters of the U.S.”, which are defined as “those relatively permanent, standing or continuously flowing bodies of water forming geographic[al] features that are described in ordinary parlance as streams, oceans, rivers, and lakes.” as confirmed by USACE in December 2025.

The drainage ditch would, however, could be considered “waters of the state” under the Porter-Cologne Water Quality Control Act of California. In Sonoma County, the State agency that regulates the discharge of fill into waters of the state is the North Coast Regional Water Quality Control Board.

Further, although the drainage ditch did not exhibit a bed and bank at the time of the delineation, the drainage ditch may also fall under jurisdiction of CDFW pursuant to Section 1600 et seq. of the California Fish and Game Code. Should the ditch be subject to CDFW jurisdiction, impacts to the drainage could require a Lake and Streambed Alteration Agreement (LSA) from the CDFW for any grading or fill activity within the drainage. As such, the Project proponent should consult with CDFW prior to implementation of the Project to determine jurisdiction and apply for an LSA, if required by CDFW.

Impacts to the drainage in the form of grading or filling could be considered significant under CEQA. Therefore, this impact is potentially significant and Mitigation Measure BIO-5 is required.

Mitigation Measure

The following mitigation measure is required:

BIO-5 Jurisdictional Waters of the State

To ensure compliance with the Porter-Cologne Water Quality Act for waters of the state, including non-federal waters, if avoidance of the drainage ditch in the southern portion of the Project area is not feasible, an application for Waste Discharge Requirements shall be submitted to the Regional Water Quality Control Board (RWQCB). In addition, should the drainage ditch be subject to California Department of Fish and Wildlife (CDFW) jurisdiction, an application for a Lake and Streambed Alteration Agreement would need to be submitted to CDFW for review and approval. As part of the permitting process, the applicant will be required to provide compensatory mitigation to mitigate impacts to the drainage ditch, typically at ratio of 1:1. This could include the use of mitigation credits or an in-lieu fee program, or a permittee responsible program. The exact details of the compensatory mitigation strategy shall be finalized during consultation with the agencies during the permitting process.

Significance After Mitigation

With implementation of Mitigation Measure BIO-5, this impact would be less than significant.

LESS THAN SIGNIFICANT WITH MITIGATION INCORPORATED

- d. *Would the project 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?*

Wildlife movement corridors, or habitat linkages, are generally defined as connections between habitat patches that allow for physical and genetic exchange between otherwise isolated animal populations. The Project site is bound by Arata Lane to the south, a surface parking lot and religious facility (Newsong Church) to the west, rural residential and undeveloped land to the north and northwest, and a single-family residence to the east. The area east of the Project site is planned for single-family residential development (the Quail Acres Project). In addition, substantial development south of the Project site in the larger area of Windsor creates a barrier to movement along the State Route 101 corridor in general. The Project site is in proximity to development and was previously used for agricultural purposes. As such, wildlife species that do use the site are limited to those resident species adapted to life in proximity to human development, such as American crow (*Corvus brachyrhynchos*), coyote (*Canis latrans*), and black-tailed jackrabbit (*Lepus californicus*), or common avian species that use the site seasonally for foraging, breeding, and/or cover (Salix 2022). Temporary effects due to noise and increased human activity during Project construction would not substantially interfere with wildlife movement patterns over time or affect the ability of these species to forage or reproduce after the Project is constructed. Species that move through the site to access food and cover resources adjacent to the site would retain the opportunity to find these resources via the Arata Lane corridor and rural residential areas to the east.

The Project site is not considered a native wildlife nursery site or established native resident or migratory wildlife corridor by CDFW or any other agency or jurisdiction, and is not considered an essential connectivity area under the California Essential Habitat Connectivity Project (Spencer et al. 2010). Similarly, the Project site is mapped as having "connections with implementation flexibility"

by the California Essential Habitat Connectivity Project. Therefore, impacts to wildlife movement and wildlife nursery sites would be less than significant.

LESS-THAN-SIGNIFICANT IMPACT

- e. *Would the project conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?*

The Environmental Resource Elements of the Windsor 2040 General Plan includes several policies for the protection of biological resources including the following:

Policy ER-6.1 Protection of Biological and Ecological Resources. The Town shall protect significant biological and ecological resources in Windsor, including:

- a. Wetlands, in particular, high value wetlands
- b. Rare, threatened, or endangered species
- c. Vulnerable habitats
- d. Vernal pools
- e. Oak groves and woodlands
- f. Riparian woodlands
- g. Heritage trees

Policy ER-6.4 Compliance with State and Federal Wetland Regulations. The Town shall ensure that development projects that would fill wetlands or vernal pools conform with applicable State and Federal regulations regarding the protection of these resources.

Policy ER-6.7 Preservation of Oak Woodlands. The Town shall encourage the preservation of oak woodlands and significant stands of oaks and heritage trees. Development plans should indicate preservation of these resources to the fullest extent feasible and restrict pavement and other encroachments within the root zones of oak trees to ensure their longterm survival. Should removal be necessary, the project applicant shall be required to plant replacement trees or removal can be done through the payment of an in-lieu fee.

Policy ER-6.8 Tree Protection During Construction. The Town shall require proper measures be implemented to ensure the long-term survival of trees designated in the Tree Preservation and Protection Ordinance during construction activities. Fencing around individual trees or groups of trees shall be required to protect them from compaction and mechanical injury.

A potentially jurisdictional drainage ditch and oak tree clusters occur on the site, and sensitive plant and wildlife species may occur on the site. As discussed above under checklist questions (a) and (c), the Project has the potential to impact special-status species and a drainage ditch and therefore has the potential to conflict with Policy ER-6.1 which calls for the protection of rare, threatened, or endangered species and Policy ER-6.4 which calls for the protection of wetlands. However, implementation of Mitigation Measures BIO-1 through BIO-5 listed above would reduce impacts to jurisdictional waters and sensitive plant and wildlife species to less than significant. Therefore, with implementation of mitigation, the Project would not conflict with applicable General Plan policies adopted for the protection of biological resources.

In addition, the Town of Windsor has adopted a Tree Preservation and Protection Ordinance, which regulates protection, preservation, maintenance, and removal of protected trees. Pursuant to Chapter 27.36 of the Town Zoning Ordinance, "protected trees" are defined as certain native oak tree species with a diameter at breast height (dbh) of six inches or greater, California bay with a dbh of 12 inches or greater, and California buckeye with a dbh of six inches or greater. Multiple trunk trees must possess at least one trunk with the above dbh (based on species) to be considered protected. The Town of Windsor Tree Technical Manual (2003) outlines requirements for preservation and removal of protected trees.

A total of 37 trees would be removed under the Project, 35 of which would be considered "protected" based on the definition above (Horticultural Associates 2024). Therefore, because the Project would potentially conflict with the Town's tree protection ordinance and Policy ER- 6.7 and ER-6.8, this impact is potentially significant and Mitigation Measure BIO-6 is required.

Mitigation Measure

The following mitigation measure is required:

BIO-6 Protected Trees

The Project proponent shall acquire a tree removal permit from the Town of Windsor prior to removal of any protected trees on the site. A Tree Protection and Preservation Plan shall be prepared by the Project arborist or other arborist certified through the program of the International Society of Arboriculture (ISA). The Plan shall include the contents outlined in Section 2.2 of the Town of Windsor Tree Technical Manual (2003) and be submitted to the Town for review and approval. Trees that will not be removed but may be impacted by grading, soil compaction, or damage to roots shall be included in the Plan. Removal of protected trees shall require replacement, either on or off site. If on site replacement is not possible, the value of the tree shall be determined using the Tree Preservation and Protection Ordinance and paid to the Town to replace trees elsewhere in the Town.

Significance After Mitigation

Implementation of Mitigation Measure BIO-6 would reduce the level of impacts to protected trees to less than significant. In addition, implementation of mitigation measures BIO-1 through BIO-5 would reduce impacts related to consistency with the Town's adopted General Plan policies for the protection of biological resources. Therefore, overall potential conflict with local policies or ordinances protecting biological resources would be less than significant with implementation of mitigation.

LESS THAN SIGNIFICANT WITH MITIGATION INCORPORATED

- f. Would the project conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?*

The Project site is not included in any Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan areas. As of 2024, the County of Sonoma "Permit Sonoma", in collaboration with other interested local governments and agencies, has initiated the process of planning and developing a county-wide habitat conservation plan (HCP) under Section 10 of the ESA and a Natural Community Conservation Plan (NCCP) under

California Fish & Game Code Section 2835 (NCCP Act); however, this plan has not yet been drafted or adopted. Therefore, the Project would not conflict with the provisions of any such plans and no impact would occur.

NO IMPACT

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5 Cultural Resources

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

Setting

The California Environmental Quality Act (CEQA) requires a lead agency to determine whether a project may have a significant effect on historical resources (Public Resources Code [PRC] Section 21084.1). A historical resource is (1) a resource listed in, or determined to be eligible for listing in, the California Register of Historical Resources (CRHR); (2) a resource included in a local register of historical resources; and/or (3) any object, building, structure, site, area, place, record, or manuscript that a lead agency determines to be historically significant (CEQA Guidelines Section 15064.5[a][1-3]). Historical resources may include eligible built environment resources and archaeological resources from any time period.

Pursuant to CEQA Guidelines Section 15064.5(a)(3), a resource is considered historically significant if it:

1. Is associated with events that have made a significant contribution to the broad patterns of California's history and cultural heritage;
2. Is associated with the lives of persons important in our past;
3. Embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of an important creative individual, or possesses high artistic values; and/or
4. Has yielded, or may be likely to yield, information important in prehistory or history.

CEQA Guidelines Section 15064.5(c) provides further guidance on the consideration of archaeological resources. If an archaeological resource does not qualify as a historical resource, it may meet the definition of a "unique archaeological resource" as identified in PRC Section 21083.2. If it can be demonstrated that a project would cause damage to a unique archaeological resource, the lead agency may require reasonable efforts be made to permit any or all of these resources to be preserved in place or left in an undisturbed state. To the extent that resources cannot be left undisturbed, mitigation measures are required (PRC Section 21083.2[a-b]).

PRC Section 21083.2(g) defines a unique archaeological resource as an archaeological artifact, object, or site about which it can be clearly demonstrated that, without merely adding to the current body of knowledge, there is a high probability that it:

1. Contains information needed to answer important scientific research questions and there is a demonstrable public interest in that information;
2. Has a special and particular quality such as being the oldest of its type or the best available example of its type; and/or
3. Is directly associated with a scientifically recognized important prehistoric or historic event or person.

CEQA Guidelines Section 15064.5 also provides guidance for addressing the potential presence of human remains, including those discovered during implementation of a project.

The impact analysis included herein is organized based on the cultural resources checklist questions included in CEQA Guidelines Appendix G: Environmental Checklist Form. Checklist question 'a' broadly refers to historical resources. To more clearly differentiate between archaeological and built environment resources, analysis under checklist question 'a' is limited to built environment resources. Archaeological resources, including those that may be considered historical resources pursuant to CEQA Guidelines Section 15064.5 and those that may be considered unique archaeological resources pursuant to PRC Section 21083.2, are considered under checklist question 'b'.

This section analyzes the Project's potential impacts related to cultural resources, including historical and archaeological resources as well as human remains. The analysis in this section is based on the Archaeological Resource Management Report prepared for the Project by Archaeological Resource Service (ARS) in January 2024 (Appendix C). The investigation consisted of a California Historical Resources Information System (CHRIS) records search at the Northwest Information Center (NWIC) of the Project site as well as a 0.5-mile radius around the Project site, a search of the Sacred Lands File (SLF) with the Native American Heritage Commission (NAHC), and a pedestrian survey of the Project site.

The NWIC records search identified 50 previously recorded cultural resources within a 0.5-mile radius of the Project site, including 49 historic-period built environment cultural resources and one precontact archaeological isolate. Of the resources recorded in the search radius, none are within or adjacent the current Project site. The results of the NAHC SLF search indicated the Project vicinity is positive of listed Sacred Lands. ARS contacted each tribal representative listed in the NAHC results on January 9, 2024 with no response. Sacred Lands File searches are based on township, range, and section and the positive result could be from anywhere within the section on which the Project falls.

No cultural resources were identified within the Project site during the pedestrian survey. Soils observed during the survey did not provide any indication of subsurface deposits (such as discoloration, the presence of mounds or depressions, etc.), nor was any evidence of prehistoric human occupation or of historic deposits or features observed.

Impact Analysis

- a. *Would the project cause a substantial adverse change in the significance of a historical resource pursuant to §15064.5?*

As detailed above, no cultural resources were observed within the Project site as a result of the cultural resources assessment. As such, no historical resources would be materially impaired and the Project would result in no impact to historical resources as defined in CEQA Guidelines Section 15064.5(b).

NO IMPACT

- b. *Would the project cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5?*

The Cultural Resources Assessment conducted for the Project did not identify archaeological resources or archaeological deposits within the Project site. While no archaeological resources have been identified within the Project site as a result of the cultural resources assessment, there remains a possibility that subsurface resources may be encountered during Project construction. Therefore, the Project has the potential to result in significant impacts to archaeological resources. The following mitigation measure is required to ensure potential impacts to archaeological resources are reduced to less than significant levels.

Mitigation Measures

The following mitigation measure is required:

CUL-1 Unanticipated Discovery of Cultural Resources

In the event archaeological resources are unexpectedly encountered during ground-disturbing activities, work within 50 feet of the find shall halt and an archaeologist meeting or exceeding the Secretary of the Interior's Professional Qualifications Standards for Archeology (National Park Service 1983) shall be contacted immediately to evaluate the resource. If the resource is determined by the qualified archaeologist to be prehistoric, a Native American representative shall also be contacted to participate in the evaluation of the resource. If the qualified archaeologist and/or Native American representative determines it to be appropriate, archaeological testing for CRHR eligibility shall be completed. If the resource is determined to be eligible for the CRHR and significant impacts to the resource cannot be avoided via project redesign, the qualified archaeologist shall prepare a data recovery plan tailored to the physical nature and characteristics of the resource, per the requirements of CCR Guidelines Section 15126.4(b)(3)(C). The data recovery plan shall identify data recovery excavation methods, measurable objectives, and data thresholds to reduce any potential significant impacts to the resource. The data recovery plan shall identify data recovery excavation methods, measurable objectives, and data thresholds to reduce any significant impacts to cultural resources related to the resource. Pursuant to the data recovery plan, the qualified archaeologist and Native American representative, as appropriate, shall recover and document the scientifically consequential information that justifies the resource's significance. The Town shall review and approve the treatment plan and archaeological testing, as appropriate, and the resulting documentation shall be submitted to the regional repository of the CHRIS, per CCR Guidelines Section 15126.4(b)(3)(C).

Significance After Mitigation

Implementation of Mitigation Measure CUL-1 would reduce potential impacts to less than significant by ensuring any subsurface archaeological resources are identified and evaluated. Should any identified resources be identified as eligible for the CRHR, those resources would be avoided or appropriate measures, such as data recovery, would be identified on a case by case basis.

LESS THAN SIGNIFICANT WITH MITIGATION INCORPORATED

- c. *Would the project disturb any human remains, including those interred outside of formal cemeteries?*

No human remains are known to be present within the Project site. However, the discovery of human remains is always a possibility during ground-disturbing activities. If human remains are discovered during ground-disturbing activities, the State of California Health and Safety Code Section 7050.5 states no further disturbance shall occur until the County Coroner has made a determination of origin and disposition pursuant to PRC Section 5097.98. In the event of an unanticipated discovery of human remains, the County Coroner must be notified immediately. If the human remains are determined to be of Native American origin, the Coroner must notify the NAHC, which would determine and notify a Most Likely Descendent (MLD). The MLD has 48 hours from being granted site access to make recommendations for the disposition of the remains. If the MLD does not make recommendations within 48 hours, the Town shall reinter the remains in an area of the property secure from subsequent disturbance. With adherence to existing regulations, potential impacts to human remains would be less than significant.

LESS-THAN-SIGNIFICANT IMPACT

6 Energy

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

Setting

As of 2022, California is one of the lowest per capita energy users in the United States, ranked 49th in the nation, due to its energy efficiency programs and mild climate (United States Energy Information Administration 2025). Electricity is primarily consumed by the built environment for lighting, appliances, heating and cooling systems, fireplaces, and other uses such as alternative fuel vehicles. Most of California's electricity is generated in state with approximately 23 percent imported from the Northwest and Southwest in 2023; however, the state relies on out-of-state natural gas imports for nearly 90 percent of its supply (California Energy Commission [CEC] 2025a and 2025b). In addition, approximately 57.9 percent of California's electricity supply in 2023 came from renewable energy sources, such as wind, solar photovoltaic, geothermal, and biomass (CEC 2025a). In 2022, Senate Bill 1020 established clean electricity targets for eligible renewable energy resources and zero-carbon resources to supply 90 percent of retail sale electricity by 2035, 95 percent by 2040, 100 percent by 2045, and 100 percent of electricity procured to serve all state agencies by 2035. Electricity would be provided to the Project by Pacific Gas and Electric (PG&E). Table 3 summarizes the electricity consumption for Sonoma County, in which the Project site is located, and for PG&E, as compared to statewide consumption. Natural gas would not be consumed at the Project site; therefore, it is excluded from the analysis.

Table 3 2022 Electricity Consumption

Energy Type	Somona County	PG&E	California	PG&E Consumption Relative to Statewide	County Consumption Relative to Statewide ¹
Electricity (GWh)	2,880	77,887	287,826	27%	1%

GWh = gigawatt-hours; Pacific Gas and Electric

¹ For reference, the population of Somona County (478,152 persons) is approximately 1.2 percent of the population of California (39,128,162 persons) (California Department of Finance 2024).

Source: CEC 2025c

Petroleum fuels are primarily consumed by on-road and off-road equipment in addition to some industrial processes, with California being the seventh largest petroleum-producing state in the nation in 2023 (United States Energy Information Administration 2024). Gasoline, which is used by light-duty cars, pickup trucks, and sport utility vehicles, is the most used transportation fuel in California with 13,576 million gallons sold in 2023 (CEC 2024). Diesel, which is used primarily by heavy duty-trucks, delivery vehicles, buses, trains, ships, boats and barges, farm equipment, and heavy-duty construction and military vehicles, is the second most used fuel in California with 2,316 million gallons sold in 2023 (CEC 2024). Table 4 summarizes the petroleum fuel consumption for Somona County, in which the Project site is located, as compared to statewide consumption.

Table 4 2023 Annual Gasoline and Diesel Consumption

Fuel Type	Somona County (million gallons)	California (million gallons)	County Proportion of Statewide Consumption ¹
Gasoline	184	13,576	1%
Diesel	32	2,316	1%

¹ For reference, the population of Somona County (478,152 persons) is approximately 1.2 percent of the population of California (39,128,162 persons) (California Department of Finance 2024).
Source: CEC 2024

Energy consumption is directly related to environmental quality in that the consumption of nonrenewable energy resources releases criteria air pollutant and greenhouse gas (GHG) emissions into the atmosphere. The environmental impacts of air pollutant and GHG emissions associated with the Project's energy consumption are discussed in detail in Section 3, *Air Quality*, and Section 8, *Greenhouse Gas Emissions*, respectively.

Impact Analysis

- a. *Would the project result in a potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation?*

Construction

Construction activities associated with the proposed Project would require energy resources primarily in the form of fuel consumption to operate heavy equipment, light-duty vehicles, machinery, and generators. Construction contractors would be required to comply with the provisions of California Code of Regulations Title 13 Sections 2449 and 2485, which prohibit diesel-fueled commercial motor vehicles and off-road diesel vehicles from idling for more than five minutes, which would minimize unnecessary fuel consumption. Furthermore, per applicable regulatory requirements such as 2022 CALGreen, Project construction would comply with construction waste management practices to divert a minimum of 65 percent of construction debris. These practices would result in efficient use of the energy necessary to construct the proposed Project. Additionally, in the interest of cost-efficiency, construction contractors also would not utilize fuel in a manner that is wasteful or unnecessary. Overall, the construction activities would be temporary and typical of those associated with development throughout the region. Therefore, the proposed Project would not involve the inefficient, wasteful, and unnecessary use of energy during construction, and the construction impact related to energy consumption would be less than significant.

Operational

Operation of the Project would contribute to regional energy demand by consuming electricity, gasoline and diesel fuels. Electricity would be used for heating and cooling systems, lighting, appliances, and water and wastewater conveyance, among other purposes. Gasoline and diesel consumption would be associated with vehicle trips generated by residents. Table 5 summarizes estimated operational energy consumption for the Project. As shown therein, Project operation would require approximately 36,248 gallons of gasoline and 9,862 gallons of diesel for transportation fuels, and 0.59 GWh of electricity. Vehicle trips associated with future residents would represent the greatest operational use of energy associated with the Project.

Table 5 Estimated Project Annual Operational Energy Consumption

Source	Energy Consumption ¹	
Transportation Fuels		
Gasoline	36,248 gallons	3,980 MMBtu
Diesel	9,862 gallons	1,257 MMBtu
Electricity	0.59 GWh	2,013 MMBtu

MMBtu = million metric British thermal units; GWh = gigawatt-hours

¹ Energy consumption is converted to MMBtu for each source, see Appendix D for energy calculation sheets for CalEEMod output results for electricity usage.

The Project would be served by PG&E, which supplied approximately 77,887 GWh of electricity in 2022. The Project's total electricity demand would be less than 0.001 percent of PG&E's projected low demand supply of 92,994 GWh in 2025 (CEC 2022). In addition, the Project would also comply with all standards set in California Building Code (CBC) Title 24, which would minimize the wasteful, inefficient, or unnecessary consumption of energy resources during operation. California's Green Building Standards Code (CALGreen; California Code of Regulations, Title 24, Part 11) requires implementation of energy efficient light fixtures and building materials into the design of new construction projects. The 2022 Building Energy Efficiency Standards (CBC Title 24, Part 6) are the standards currently required for new construction. These standards require newly constructed buildings to meet energy performance standards set by the Energy Commission. As the name implies, these standards are specifically crafted for new buildings to result in energy efficient performance so that the buildings do not result in wasteful, inefficient, or unnecessary consumption of energy. The Town currently requires CalGreen Tier 1. The Project would construct all-electric buildings and does not include natural gas appliances or plumbing. Additionally, the Project would comply with the latest CALGreen Tier 2 electric vehicles standards for single family land uses. Therefore, Project operation would not result in potentially significant environmental effects due to the wasteful, inefficient, or unnecessary consumption of energy and impacts would be less than significant.

LESS-THAN-SIGNIFICANT IMPACT

- b. Would the project conflict with or obstruct a state or local plan for renewable energy or energy efficiency?*

The Town of Windsor 2040 General Plan contains policies such as Policy ER-5.14, Policy ER-15, and Policy H-8.1 intended to increase energy efficiency for new construction buildings in Windsor. The Project would install all-electric appliances and energy efficient appliances, consistent with the provisions of the Title 24 Building Energy Efficiency Standards.

Los Amigos Cottages Builder's Remedy Project

With regard to transportation related energy usage, the Project would not conflict with the goals of Plan Bay Area 2050 which includes strategies to create healthy and safe streets. The Project would enhance connectivity with nearby residential neighborhoods, potentially encouraging walking and biking, thereby reducing reliance on motor vehicles. Furthermore, as detailed in the TIS prepared for the Project (Appendix A), the Project would generate a daily VMT below the Town's impact threshold, set at 15 percent below the existing average VMT per resident. Therefore, the Project would be consistent with plan Bay Area 2050, and CALGreen and Building Energy Efficiency Standards for appliances and electric charging provisions. Therefore, the Project would not conflict with or obstruct a state or local plan for renewable energy or energy efficiency and no impact would occur.

NO IMPACT

7 Geology and Soils

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

Setting

Active faults are defined by the State of California to be a fault that has surface displacement within the Holocene time (approximately the last 10,000 years). Potentially active faults as defined by the State of California to be a fault that has shown evidence of surface displacement during the Quaternary (last 1.6 million years). Any fault that is sufficiently active describes a fault that has some evidence of Holocene displacement on one or more of its segments or branches. Associated issues with earthquakes include liquefaction, which is the rapid transformation of sediment to a fluid-like state. It occurs when water-saturated, loose to medium dense, relatively clay-free sands and silts are subjected to earthquake ground motion.

The Bay Area contains both active and potentially active faults. Major active faults near the Project site are Rodgers Creek Fault, Maacama Fault, and the San Andreas Fault. There are no faults that run through the Project site (DOC 2025).

The Project site is not within a state-designated liquefaction hazard zone and soils encountered on the Project site indicated they are potentially liquefiable (DOC 2025). The Town of Windsor has mapped the area as having moderate liquefaction susceptibility (Town of Windsor 2018a).

Expansive soils are soils that swell in density and volume as they absorb water and contract as they lose water. Associated problems include cracking and deterioration of roadway surface, as they expand and contract during seasonal wet and dry cycles. According to the Natural Resources Conservation Service, the soils on the Project site are Huichica Loam which have a 3.9 percent linear extensibility. This level of linear extensibility indicates the soils on site have a moderate shrink-swell potential (United States Department of Agriculture [USDA] 2007).

Impact Analysis

a.1. Would the project directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault?

Alquist-Priolo earthquake fault zones are regulatory zones surrounding the surface traces of active faults in California. According to the California Department of Conservation the Project site is not within an active fault zone. The nearest active fault to the Project site is the Rodgers Creek Fault, which is approximately 1.8 miles east of the Project site (DOC 2025). Accordingly, because the site is not underlain by an active fault delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map, there would not be a risk of loss, injury, or death involving fault rupture. The Project would have no impact.

LESS-THAN-SIGNIFICANT IMPACT

a.2. Would the project directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving strong seismic ground shaking?

As discussed in the prior impact analysis, a.1., the Project is less than two miles from the Rodgers Creek Fault. Additionally, the Project is within the San Francisco Bay Area which is known for having earthquake hazards present. Therefore, the Project site would be susceptible to strong seismic ground shaking. The Project would be required to comply with the 2022CBC), as adopted in Sections 7-2-100 and 7-2-101 of the WMC. The California Building Code includes seismic safety requirements for residential development, such as the seismic standards found in Title 24, Part 10 of

the California Building Code. Compliance with the California Building Code would reduce the risk of loss, injury, or death involving strong seismic ground shaking. Accordingly, the Project would not have potential to directly or indirectly cause adverse effects related to strong seismic ground shaking. This impact would be less than significant.

LESS-THAN-SIGNIFICANT IMPACT

a.3. Would the project directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving seismic-related ground failure, including liquefaction?

According to the U.S. Geological Survey, liquefaction takes place when loosely packed, water-logged sediments at or near the ground surface lose their strength in response to strong ground shaking. Liquefaction occurring beneath buildings and other structures can cause major damage during earthquakes (Town of Windsor 2018a). The Project site is in an area mapped as having moderate liquefaction susceptibility (Town of Windsor 2018a). Compliance with the CBC, which includes seismic safety requirements, would reduce the impacts associated with seismic-related ground failure such as liquefaction. Therefore, impacts related to liquefaction would be less than significant.

LESS-THAN-SIGNIFICANT IMPACT

a.4. Would the project directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving landslides?

The Project site is flat and does not contain any steep grades or hillsides. The Project is not within an area mapped as having high potential for seismically induced landslides (DOC 2025). The Project would have no impact related to landslides.

NO IMPACT

b. Would the project result in substantial soil erosion or the loss of topsoil?

Construction of the Project would involve removing existing vegetation cover on the Project site and ground disturbance, such as grading and utility excavation. The removal of vegetation cover combined with the loosening and exposure of soils from ground disturbance would increase the potential for erosion or loss of topsoil. Because construction of the Project would disturb more than one acre of land, the Project applicant and its contractors must comply with the National Pollutant Discharge Elimination System (NPDES) Construction General Permit. Pursuant to the Construction General Permit, a Stormwater Pollution Prevention Plan must be prepared and implemented. The Stormwater Pollution Prevention Plan must include appropriate erosion-control and water-quality-control measures, sometimes called construction best management practices, such as silt fences and water bars. Implementation of these best management practices would reduce erosion potential and prevent the loss of topsoil during Project construction. Additionally, WMC Section 9-4-304 includes regulations for projects that would disturb more than one acre of land, including requiring the preparation of an erosion and sediment control plan.

During Project operation the potential for on-site erosion would be negligible because the Project site would be developed with impervious surfaces such as residential buildings, sidewalk, and asphalt roadway and parking areas. Areas that are not impervious would be landscaped or otherwise have vegetation cover. Soil and vegetation on the Project site would break the impact of falling precipitation and have roots and provide groundcover to prevent erosion. Because implementation of the Stormwater Pollution Prevention Plan would minimize erosion during

construction and erosion during operation would be negligible, impacts would be less than significant.

LESS-THAN-SIGNIFICANT IMPACT

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

As discussed previously, the Project would involve grading and excavation, which would involve moving soils. These construction activities would potentially cause unstable soils; however, the Project site is not within an area of high liquefaction or landslide susceptibility (Town of Windsor 2018a, DOC 2025). Therefore, there is low risk of landslide, lateral spreading, subsidence, liquefaction, or collapse on the Project site. Impacts would be less than significant.

LESS-THAN-SIGNIFICANT IMPACT

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

According to the Natural Resources Conservation Service, the soils on the Project site are Huichica Loam which have a 3.9 percent linear extensibility. This level of linear extensibility indicates the soils on site have a moderate shrink-swell potential (USDA 2007). The USDA indicates that soils with a linear extensibility rating above three percent can result in shrinking and swelling that can cause damage to buildings, roads, and other structures (USDA n.d.). The Project would be required to comply with the CBC, as adopted in the WMC, which would ensure that expansive soils are remediated or that foundations and structures are engineered to withstand the forces of expansive soil. In cases where soil remediation is not feasible, the CBC requires structural reinforcement of foundations to resist the forces of expansive soils. Compliance with these regulations would reduce impacts associated with expansive soils on the Project site to be less than significant.

LESS-THAN-SIGNIFICANT IMPACT

- e. *Would the project have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater?*

The Project would not include septic tanks or alternative wastewater disposal systems. The Project would be connected to Town utilities for wastewater disposal. Therefore, no impact related to septic tanks or alternative wastewater disposal systems would occur as a result of the Project.

NO IMPACT

- f. *Would the project directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?*

According to Figure 10, Paleontological Sensitivity of Geologic Units within the 2040 General Plan Area, of the 2040 General Plan EIR, the Project site is located in an area identified as having Low Paleontological Sensitivity. Additionally, the maximum Project excavation would be 1.5 feet over majority of the Project site and 5 feet for the bioretention bed. While there are no known paleontological resources on the Project site, the following mitigation measure would be required to reduce impacts associated with any unanticipated discovery of paleontological resources or unique geologic features on the Project site:

Mitigation Measures

The following mitigation measure is required:

GEO-1 Unanticipated Discovery of Paleontological Resources

The Project applicant shall include a standard inadvertent discovery clause in every construction contract to inform contractors of this requirement. If a potential fossil is discovered during Project construction, construction activity within 50 feet of the find shall cease until the discovery is examined by a Qualified Professional Paleontologist. If the find is determined to be significant, the Qualified Professional Paleontologist shall direct all mitigation efforts related to paleontological resources consistent with the Society of Vertebrate Paleontology (2010) standards, which may include, but are not limited to: paleontological monitoring; fossil salvage, preparation, and curation; and reporting to summarize the paleontological mitigation efforts.

Significance After Mitigation

Implementation of Mitigation Measure GEO-1 would reduce potential impacts to less than significant by ensuring any potential fossil discovered during Project construction would be examined by Qualified Professional Paleontologist. Should any fossils be identified, the Qualified Professional Paleontologist would direct mitigation efforts would be implemented on a case-by-case basis to reduce impacts to the fossil.

LESS THAN SIGNIFICANT WITH MITIGATION INCORPORATED

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8 Greenhouse Gas Emissions

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

Setting

Overview of Climate Change and Greenhouse Gases

Climate change is the observed increase in the average temperature of the Earth's atmosphere and oceans along with other substantial changes in climate (such as wind patterns, precipitation, and storms) over an extended period of time. Climate change is the result of numerous, cumulative sources of GHG emissions contributing to the "greenhouse effect," a natural occurrence which takes place in Earth's atmosphere and helps regulate the temperature of the planet. The majority of radiation from the sun hits Earth's surface and warms it. The surface, in turn, radiates heat back towards the atmosphere in the form of infrared radiation. Gases and clouds in the atmosphere trap and prevent some of this heat from escaping into space and re-radiate it in all directions.

GHG emissions occur both naturally and from human activities, such as fossil fuel burning, decomposition of landfill wastes, raising livestock, deforestation, and some agricultural practices. GHGs produced by human activities include carbon dioxide (CO₂), methane, nitrous oxide, hydrofluorocarbons, perfluorocarbons, and sulfur hexafluoride. Different types of GHGs have varying global warming potentials (GWP). The GWP of a GHG is the potential of a gas or aerosol to trap heat in the atmosphere over a specified timescale (generally, 100 years). Because GHGs absorb different amounts of heat, a common reference gas (CO₂) is used to relate the amount of heat absorbed to the amount of the gas emitted, referred to as "carbon dioxide equivalent" (CO₂e), which is the amount of a specific GHG emitted multiplied by its GWP. Carbon dioxide has a 100-year GWP of one. By contrast, methane has a GWP of 30, meaning its global warming effect is 30 times greater than CO₂ on a molecule per molecule basis (Intergovernmental Panel on Climate Change [IPCC] 2021).

The United Nations IPCC expressed that the rise and continued growth of atmospheric CO₂ concentrations is unequivocally due to human activities in the IPCC's Sixth Assessment Report (2021). Human influence has warmed the atmosphere, ocean, and land, which has led the climate to warm at an unprecedented rate in the last 2,000 years. It is estimated that between the period of 1850 through 2019, a total of 2,390 gigatons of anthropogenic CO₂ was emitted. It is likely that

anthropogenic activities have increased the global surface temperature by approximately 1.07 degrees Celsius between the years 2010 through 2019 (IPCC 2021). Emissions resulting from human activities are thereby contributing to an average increase in Earth's temperature. Potential climate change impacts in California may include loss of snowpack, sea level rise, more extreme heat days per year, more high ozone days, more large forest fires, and more drought years (California Natural Resource Agency 2019).

Significance Threshold

The majority of individual projects do not generate sufficient GHG emissions to directly influence climate change. However, physical changes caused by a project can contribute incrementally to cumulative effects that are significant, even if individual changes resulting from a project are limited. The issue of climate change typically involves an analysis of whether a project's contribution towards an impact would be cumulatively considerable. "Cumulatively considerable" means that the incremental effects of an individual project are significant when viewed in connection with the effects of past projects, other current projects, and probable future projects (*CEQA guidelines*, Section 15064[h][1]).

According to the CEQA Guidelines, projects can tier from a qualified GHG reduction plan, which allows for project-level evaluation of GHG emissions through the comparison of the proposed Project's consistency with the GHG reduction policies included in a qualified GHG reduction plan. This approach is considered by the Association of Environmental Professionals (2016) in its white paper, *Beyond Newhall and 2020*, to be the most defensible approach presently available under CEQA to determine the significance of a project's GHG emissions.

BAAQMD, California Office of Planning and Research, CARB, CAPCOA, other state or applicable regional agencies do not have adopted numerical significance thresholds for assessing GHG emissions that would be applicable to the proposed Project. BAAQMD has adopted qualitative CEQA thresholds for GHG emissions in their 2022 *California Environmental Quality Act Air Quality Guidelines* manual. Based on BAAQMD's thresholds, land use projects must include either A or B below to be determined to have less than significant impacts with respect to GHG emissions (BAAQMD 2023d).

- A. Projects must include, at a minimum, the following project design elements:
 - 1. Buildings
 - a. The project will not include natural gas appliances or natural gas plumbing (in both residential and nonresidential development).
 - b. The project will not result in any wasteful, inefficient, or unnecessary energy usage as determined by the analysis required under CEQA Section 21100(b)(3) and Section 15126.2(b) of the State CEQA Guidelines.
 - 2. Transportation
 - a. Achieve a reduction in project-generated vehicle miles traveled (VMT) below the regional average consistent with the current version of the California Climate Change Scoping Plan (currently 15 percent) or meet a locally adopted Senate Bill 743 VMT target, reflecting the recommendations provided in the Governor's Office of Planning and Research's Technical Advisory on Evaluating Transportation Impacts in CEQA:
 - i. Residential projects: 15 percent below the existing VMT per capita

- ii. Office projects: 15 percent below the existing VMT per employee
 - iii. Retail projects: no net increase in existing VMT
 - b. Achieve compliance with off-street electric vehicle requirements in the most recently adopted version of CALGreen Tier 2.
- B. Projects must be consistent with a local GHG reduction strategy that meets the criteria under State CEQA Guidelines Section 15183.5(b).

In accordance with CEQA Guidelines Section 15064[h] and part A of the BAAQMD guidance, consistency with the BAAQMD's CEQA thresholds for GHG emissions is used to determine the significance of this Project.

The Town of Windsor does not currently have a qualified climate action plan. However, the Town of Windsor 2040 General Plan does establish GHG emission reduction targets for projects through 2050. To determine compliance with the General Plan, the Town has developed a GHG Checklist, described in more detail below. The GHG Checklist is designed to implement General Plan Policy ER-5.3, Greenhouse Gas Target, Policy ER-5.10, Energy Performance Standards, and Implementation Measure ER-5. Projects that are consistent with the GHG Checklist are consistent with the Town's GHG reduction strategies and will be found to have a less than significant impact to GHG emissions. Projects that are not consistent with the GHG Checklist are deemed to have a potentially significant impact to GHG emissions and would require further environmental review.

Impact Analysis

- a. *Would the project generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment?*

BAAQMD's 2022 CEQA Guidelines recommend using the approach endorsed by the California Supreme Court in *Center for Biological Diversity v. Department of Fish & Wildlife* (2015) (62 Cal.4th 204), which evaluates a project based on its effect on California's efforts to meet the State's long-term climate goals. If a project contributes its 'fair share' of what is required to achieve those long-term climate goals, a reviewing agency can determine that the impact will not be significant, as the project will help address global climate change. BAAQMD recommends that land use projects contribute their 'fair share' by reducing GHG emissions through measures such as energy-efficient building designs, the use of renewable energy sources, and sustainable transportation options. The analysis evaluates its 'fair share' through part A of the BAAQMD guidance.

The Project would be consistent with BAAQMD criteria for buildings since it would include all-electric buildings that do not include natural gas appliances or plumbing. The Project would comply with the CARB In-Use Off-Road Diesel-Fueled Fleets Regulation during construction, which imposes limits on idling and restricts the use of older vehicles; this would reduce fuel consumption and lead to the use of fuel-efficient vehicles on the construction site. Construction equipment would also be maintained to applicable standards, and construction activity and associated fuel consumption and energy use would be temporary and typical for construction sites. In addition, as detailed in Section 6, *Energy*, the total electricity demand during Project operations would be less than 0.001 percent of PG&E's energy supply. Therefore, the Project would not result in wasteful or unnecessary energy consumption during construction and operation or conflict with existing energy standards and regulations and would be consistent with the BAAQMD building thresholds.

As discussed in the TIS prepared for the Project (Appendix A), the Project would generate a daily VMT rate of 12.66 VMT per capita, which is below the Town's impact threshold of 14.11 daily VMT, set at 15 percent below the existing average VMT per resident. In addition, the Project would comply with the latest CALGreen Tier 2 electric vehicle requirements for single-family land uses. Therefore, the Project would be consistent with the BAAQMD transportation GHG thresholds. The Project would not conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases and impacts would be less than significant.

LESS-THAN-SIGNIFICANT IMPACT

- b. Would the project conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gases?*

To analyze whether the Project conflicts with an applicable plan, policy, or regulation adopted for the purpose of reducing GHG emissions, the analysis considers the Project's consistency with the Town of Windsor's 2040 General Plan. The Town of Windsor's 2040 General Plan includes a GHG Checklist to determine a project's consistency with the General Plan's GHG emission reduction targets, which align with California's Assembly Bill 32 and Senate Bill 32. Statewide GHG emissions are to return to 1990 levels by 2020 and achieve a 40 percent reduction below 1990 levels by 2030. To evaluate consistency with these targets at the project level, the GHG Checklist uses the following steps.

First, the GHG Checklist asks whether the project is consistent with the approved General Plan land use designation for the project site. The GHG Checklist then divides projects into two categories. Category A projects are those that are consistent with the General Plan land use designation for the project site, while Category B projects are those that are inconsistent with the General Plan land use designation for the project site.

The Project is not consistent with the General Plan land use designation and is, therefore, a Category B project under the GHG Checklist. For Category B projects, the applicant must first complete the Town of Windsor General Plan GHG Policy Consistency Checklist and submit the Checklist for Town staff review and approval. The Project applicant has completed and submitted the Checklist to Town staff and Town staff have reviewed and approved the Checklist as demonstrating that the Project is consistent with Town policies for the reduction of GHG emissions (Appendix E). The second step for Category B projects is to demonstrate consistency with BAAQMD GHG design elements. As set forth above, the Project would meet both BAAQMD's requirements for buildings and for transportation.

Therefore, the Project has demonstrated consistency with the Town's GHG Checklist and would result in a less than significant impact.

LESS-THAN-SIGNIFICANT IMPACT

9 Hazards and Hazardous Materials

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less-than - Significant Impact	No Impact
Would the project:				
a. Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	☐	☐	☒	☐
b. Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?	☐	☐	☒	☐
c. Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within 0.25 mile of an existing or proposed school?	☐	☐	☒	☐
d. Be located on a site that is included on a list of hazardous material sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?	☐	☐	☐	☒
e. For a project located in an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard or excessive noise for people residing or working in the project area?	☐	☐	☐	☒
f. Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	☐	☒	☐	☐
g. Expose people or structures, either directly or indirectly, to a significant risk of loss, injury, or death involving wildland fires?	☐	☒	☐	☐

Setting

The following resources were reviewed to determine if hazardous materials may be present at the Project site:

- Department of Toxic Substances Control (DTSC) Envirostor Database (DTSC 2025)
- California State Water Resources Control Board (SWRCB) GeoTracker (SWRCB 2025)
- List of "active Cease and Deists Orders and Cleanup and Abatement Orders from the Water Board (CalEPA 2025).
- California Department of Resources Recycling and Recovery (CalRecycle) Solid Waste Information System (CalRecycle 2016)

A search of the above listed government databases and environmental records compiled pursuant to Government Code Section 65962.5 did not reveal known hazardous materials sites on or adjacent to the Project site. Additionally, there are no hazardous sites listed per Section 65962.5(a) that are within 1000 feet of the Project site.

There are no schools within 0.25 mile of the Project site; however, the neighboring Quail Acres residential development project could include a 12-acre school site if the site is acquired by Windsor Unified School District.

Impact Analysis

- a. *Would the project create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?*
- b. *Would the project create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?*

Construction

Project construction would include the temporary transport, storage, use, or disposal of potentially hazardous materials including fuels, lubricating fluids, cleaners, or solvents. Construction of the Project would be temporary and therefore Project construction would not be routine or require the routine transport, use, or disposal of hazardous materials. Nonetheless, if spilled, these substances could pose a risk to the environment and to human health. However, the transport, storage, use, or disposal of hazardous materials is subject to various federal, state, and local regulations designed to reduce risks associated with hazardous materials, including potential risks associated with upset or accident conditions. Hazardous materials would be required to be transported under U.S.

Department of Transportation regulations (U.S. Department of Transportation Hazardous Materials Transport Act, 49 Code of Federal Regulations), which stipulate the types of containers, labeling, and other restrictions to be used in the movement of such material on interstate highways. In addition, the use, storage, and disposal of hazardous materials are regulated through the Resources Conservation and Recovery Act. The DTSC is responsible for implementing the Resources Conservation and Recovery Act program, as well as California's own hazardous waste laws. DTSC regulates hazardous waste, cleans up existing contamination, and looks for ways to control and reduce the hazardous waste produced in California. It does this primarily under the authority of Resources Conservation and Recovery Act and in accordance with the California Hazardous Waste Control Law (California Health and Safety Code Division 20, Chapter 6.5) and the Hazardous Waste

Control Regulations (Title 22, California Code of Regulations, Divisions 4 and 4.5). DTSC also oversees permitting, inspection, compliance, and corrective action programs to ensure that hazardous waste managers follow federal and state requirements and other laws that affect hazardous waste specific to handling, storage, transportation, disposal, treatment, reduction, cleanup, and emergency planning.

Since the Project would disturb more than one acre of land, the applicant would be required to obtain coverage under the General Permit for Discharges of Storm Water Associated with Construction Activity (Construction General Permit Order 2022-0057-DWQ) to comply with Clean Water Act National Pollutant Discharge Elimination System requirements. Compliance with these requirements would include preparation of a Storm Water Pollution Prevention Plan, which would specify Best Management Practices (BMPs) for rapid containment and cleanup of accidental hazardous materials spills or leaks, such as minor spills when refueling Project construction equipment on-site. Compliance with existing regulations would reduce the risk of potential release of hazardous materials from spills and transport during Project construction.

Operation

The Project would involve the development of 32 residential units. Residential uses do not involve the routine transport, use, or disposal of large quantities of hazardous materials. Accordingly, operation of the Project would also not require the routine transport, use, or disposal of large quantities of hazardous materials. The proposed dwelling units would contain hazardous materials typical of residential uses in household quantities. Most hazardous materials, such as paint and household cleaning products, would be stored and used inside, where accidental spill would not expose the public or environment. For example, residents may store paint in their garage for touching up interior walls, but household paint is typically stored in the magnitude of a gallon or several gallons, which would not create a significant hazard to the public or the environment. Additionally, household chemicals, such as paint or cleaning products, would generally be used in the interior of the dwelling units and would not expose the public or environment. Hazardous materials used outdoors, such as gasoline for lawnmowers would also be used in quantities of a gallon or several gallons. Accidental upset of this quantity of hazardous materials would not create a significant hazard to the public or environment.

Therefore, the Project would not create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials or related to hazards from accidental spill or release of hazardous materials. Impacts would be less than significant.

LESS-THAN-SIGNIFICANT IMPACT

- c. *Would the project emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within 0.25 mile of an existing or proposed school?*

There are no schools within 0.25 mile of the Project site; however, the neighboring Quail Acres residential development project could include a 12-acre school site if the site is acquired by Windsor Unified School District. As described in the analysis for checklist question 'd' later in this section, the Project site is not known to contain hazardous contamination such that it appears on a list of hazardous material sites compiled pursuant to Government Code Section 65962.5. The site is vacant and not previously developed, reducing the potential for hazardous contamination to be present. Accordingly, Project construction would have no impact related to emitting hazardous substances within 0.25 miles of a school.

Project operation would not involve the use or storage of hazardous materials other than minor household chemicals in household quantities. Though potentially hazardous materials such as fuels, lubricants, solvents, and oils could be used during Project construction, the transport, use and storage of hazardous materials would be conducted in accordance with applicable State and federal laws, such as the Hazardous Materials Transportation Act, Resource Conservation and Recovery Act, the California Hazardous Material Management Act, and the CCR, Title 22. Accordingly, Project operation would have less than significant impacts related to emitting hazardous substances within 0.25 miles of a school.

LESS-THAN-SIGNIFICANT IMPACT

- d. Would the project be located on a site that is included on a list of hazardous material sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?*

Rincon Consultants queried the following State of California and federal databases to determine if the Project site appears on a list of hazardous material sites compiled pursuant to Government Code Section 65962.5. The query was conducted on February 3, 2025.

- Department of Toxic Substances Control Envirostor Database (DTSC 2025)
- California State Water Resources Control Board (SWRCB) GeoTracker (SWRCB 2025)
- List of "active Cease and Deists Orders and Cleanup and Abatement Orders from the Water Board (CalEPA 2025).
- California Department of Resources Recycling and Recovery (CalRecycle) Solid Waste Information System (CalRecycle 2016)

A search of the above listed government databases and environmental records compiled pursuant to Government Code Section 65962.5 did not reveal known hazardous materials sites on or adjacent to the Project site. Additionally, there are no hazardous sites listed per Section 65962.5(a) that are within 1000 feet of the Project site. Accordingly, the Project would have no impact related to creating hazards from working on a site appearing on a list compiled pursuant to Government Code Section 65962.5.

NO IMPACT

- e. For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard or excessive noise for people residing or working in the project area?*

There are no airports within two miles of the Project site. The nearest airport to the Project site is Charles M. Schultz- Sonoma County Airport which is approximately 4.8 miles southwest of the Project site. The Project site is not within an airport land use study area for the Sonoma County Airport (Sonoma County Airport Land Use Commission 2016). Therefore, the Project would not result in a safety hazard or excessive noise due to proximity to an airport. The Project would have no impact.

NO IMPACT

- f. Would the project impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?*

Construction of the Project would involve a portion of the extension and realignment of Los Amigos Road, as shown in Figure 6, and creation of an internal roadway network to serve the proposed residential development. As discussed in Section 20, *Wildfire*, the proposed Project would have two ingress and egress points, but only the ingress /egress point on Arata Lane would be considered an emergency access point because the ingress/egress point on Los Amigos Road returns to Arata Lane. This means the proposed Project would not comply with the Town's Fire Code requirement for two access points for single-family development with more than 30 units. With Fire Marshal approval of one emergency access point for the proposed Project, impacts would be less than significant. However, considering Fire Marshal approval may not be secured, impacts related to emergency evacuation could be potentially significant. Mitigation Measure WILD-1, listed in Section 20, *Wildfire*, would ensure that no more than 30 residential units would be constructed at the Project site without Fire Marshal approval of a single emergency access point. With implementation of Mitigation Measure WILD-1, impacts would be less than significant.

LESS THAN SIGNIFICANT WITH MITIGATION INCORPORATED

- g. Would the project expose people or structures, either directly or indirectly, to a significant risk of loss, injury, or death involving wildland fires?*

As discussed in Section 20, *Wildfire*, the site is mapped within a Moderate Fire Hazard Severity Zone (FHSZ). The Project site is not near a mapped Very High FHSZ (CALFIRE 2024). The Project would be required to comply with the California Fire Code (adopted into the WMC under Title VI, Fire Prevention and Protection, Chapter 1, Article 2), and Project design would include building materials such as ignition-resistant siding, which is exterior wall cladding designed to withstand ignition from flames or radiant heat during a wildfire. Siding would be made from materials —such as fiber-cement, stucco, or brick. These products are tested to meet fire-resistance standards, helping protect structures in wildfire-prone areas. This would further reduce the risk of wildland fire on the Project site.

Additionally, areas surrounding the Project site consist of rural single-family homes and undeveloped land to the north and northeast, a church to the west, and single-family homes to the south, across Arata Lane, with more dense residential development further south and southeast of the Project site. Urban lands with denser development (exceeding 16 dwelling units per acre) have reduced vegetative fuel load as compared to the hillsides in the vicinity of the Project site. Urban street networks, including the Town's evacuation routes as illustrated in the 2040 General Plan PHS Element Figure PHS-3, provide sufficient emergency response access. In addition, as detailed in section 20, *Wildfire*, with implementation of Mitigation Measure WILD-1, the proposed Project would provide adequate emergency access and emergency evacuation egress. Furthermore, Arata Lane at the southern Project site boundary and the anticipated realigned portion of Los Amigos Road at the northeast portion of the site could all serve as fire breaks. Overall, impacts would be less than significant with implementation of Mitigation Measure WILD-1.

LESS THAN SIGNIFICANT WITH MITIGATION INCORPORATED

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10 Hydrology and Water Quality

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less-than - Significant Impact	No Impact
Would the project:				
a. Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality?	☐	☐	☒	☐
b. Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin?	☐	☐	☒	☐
c. Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would:				
(i) Result in substantial erosion or siltation on- or off-site;	☐	☐	☒	☐
(ii) Substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site;	☐	☐	☒	☐
(iii) 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; or	☐	☐	☒	☐
(iv) Impede or redirect flood flows?	☐	☐	☒	☐
d. In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation?	☐	☐	☐	☒
e. Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?	☐	☐	☒	☐

Setting

The Project site is in the Russian River Watershed and overlays the Santa Rosa Plain Basin of the Santa Rosa Valley Groundwater Basin. There are no waterways present on the Project site or immediate vicinity. The nearest waterbody is Sotoyome Creek which is approximately 1,500 feet northeast of the Project site.

The Project site is not within a 100-year floodplain mapped by the Federal Emergency Management Agency as part of its Flood Insurance Rate Map program (Federal Emergency Management Agency [FEMA] 2008).

Impact Analysis

- a. Would the project violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality?*

Construction

Construction of the Project would involve grading, excavating, and other activities which could impact water quality and cause erosion. If not managed properly, disturbed soils would be susceptible to high rates of erosion from wind and rain, resulting in sediment transport via storm water runoff from the construction sites. Because the Project would disturb more than 1 acre of land the Project would be required to comply with regulations established under the NPDES program as part of Section 402 of the Clean Water Act to control construction stormwater discharges (Order No. 2012-0006-DWQ). In Sonoma County, the North Coast Regional Water Quality Control Board administers the NPDES permitting program and is responsible for developing permitting requirements. Under the conditions of the permitting program, the applicant would be required to develop and implement a SWPPP for construction activities and perform inspections of the storm water pollution prevention measures and control practices to ensure conformance with the site SWPPP. The SWPPP must include BMPs specific to Project construction and is subject to inspections by a Qualified Stormwater Professional. BMPs aim to control degradation of surface water by preventing soil erosion or pollution discharge from the Project site. Additionally, the Windsor Public Works Director or designee has the authority to inspect facilities when a reasonable belief exists that there may be a violation of stormwater or other pollutant discharge conditions. The Public Works Director or designee is authorized to issue a notice of violation, cease and desist order, stop work order, and/or compliance order for a violation of the Town's storm water and pollutant discharge requirements. Violations of the Town's discharge prohibitions may be enforced by civil action brought by the Town. These requirements would ensure that construction stormwater runoff does not degrade surface or groundwater quality in the vicinity of the site.

Operation

The Project would involve converting the Project site from undeveloped to developed. Because the Project would result in a net increase of impervious surfaces at the site, the Project would be required to adhere to Provision C.3, which applies to any projects that create and/or replace at least 10,000 square feet of impervious surfaces. The C.3 requirements are separate from, and in addition to, requirements for erosion and sediment control and for pollution prevention measures during construction. Adherence to the C.3 requirements minimizes water quality impacts from new development to maintain regional compliance with the Municipal Regional Permit.

As described in the Project Description and the Project specific Stormwater Plan (Appendix F) the Project would implement low impact development BMPs to minimize water pollutants, including implementation of interceptor trees and a bioretention area located within the common space in the center of the Project site. There would also be bioretention curb openings installed along the west side of Los Amigos Road and the north side of Arata Lane. The bioretention beds and curb openings would stop suspended solids and hydrocarbons in runoff from moving to downstream receiving waters. Fine particle pollutants would be collected within vegetated buffers strips of the bioretention beds. Accordingly, the Project's BMPs would minimize water pollution during operation. Therefore, operational impacts would be less than significant.

Overall, compliance with the NPDES permit, C.3. requirements, and implementation of low impact development BMPs would reduce impacts to be less than significant.

LESS-THAN-SIGNIFICANT IMPACT

- b. Would the project substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin?*

The Project site overlays the Santa Rosa Plain Subbasin of the Santa Rosa Valley Groundwater Basin. Santa Rosa Plain Subbasin is 125 square miles of surface area and is bounded on the northwest by the Russian River plain and the Healdsburg subbasin; on the west by the Mendocino Range; on the south by a drainage divide that separates the Santa Rosa Valley from the Petaluma Valley basin; and on the east by the Sonoma Mountains, the Mayacamas Mountains, and a groundwater divide that separates the Rincon Valley subbasin (Department of Water Resources 2004). A groundwater sustainability plan (GSP) was approved by the California Department of Water Resources for the Santa Rosa Valley – Santa Rosa Plan Subbasin in January 2023.

The Project site does not contain any existing groundwater wells and would not involve installation of new groundwater wells. Therefore, the Project would not involve groundwater extraction.

Groundwater recharge would be implemented site-wide with stormwater BMPs including implementation of interceptor trees and a bioretention area located within the common space in the center of the Project site. With implementation of these BMPs, impacts would be less than significant.

LESS-THAN-SIGNIFICANT IMPACT

- c.(i) Would the project substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would result in substantial erosion or siltation on- or off-site?*
- c.(ii) Would the project substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site?*

- c.(iii) Would the project substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner that would 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?*

The Project would not alter the course of a river or stream because river and streams do not occur within the Project site. As described above in the analysis for checklist question 'a', construction of the Project would involve grading and excavation, which would substantially alter surface drainage patterns and loosen or expose soils, increasing the potential for erosion. However, because construction of the Project would disturb more than one acre of land, the Project would be required to comply with the NPDES Construction General Permit. Pursuant to the Construction General Permit, a Stormwater Pollution Prevention Plan (SWPPP) must be prepared and implemented. The SWPPP must include appropriate erosion-control and water-quality-control measures. These measures would prevent substantial erosion or siltation during Project construction.

While the Project would alter the existing drainage pattern of the site by increasing impervious surfaces, it would include construction of storm drain facilities on the Project site. Additionally, the Project would connect to planned storm drain improvements proposed for the neighboring Quail Acres residential development project along Los Amigos Road and Arata Lane.

Precipitation falling on the impervious surfaces of the Project, such as the proposed residential buildings, would be unable to infiltrate the ground surface and instead flow overland. However, this surface flow would not result in substantial erosion because during Project operation the runoff would flow over areas where soils are not exposed, such as paved driveways or landscaped lawns. Runoff would be directed to interceptor trees and bioretention areas where the minimal amounts of soil that is mobilized in runoff would settle out of the runoff. Accordingly, although the Project would add impervious surfaces to the Project site, covering soils with Project components (e.g., residential units, driveways, sidewalks, surface parking, circulation road, etc.) would prevent runoff from impervious surfaces from causing substantial erosion or siltation. Additionally, the interceptor trees and bioretention areas are intentionally designed to direct runoff into retention and infiltration of the ground surface into either groundwater aquifers or shallow subsurface flows that contribute to downstream surface flows. Therefore, the additional impervious surfaces added from the Project would not substantially alter the volume of surface water, create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems, or result in flooding. Impacts would be less than significant.

LESS-THAN-SIGNIFICANT IMPACT

- c.(iv) Would the project substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would impede or redirect flood flows?*

The Project site is not within a 100-year floodplain mapped by the Federal Emergency Management Agency as part of its Flood Insurance Rate Map program (FEMA 2025). The Project would not alter land beyond the Project site boundaries. Therefore, the Project would not directly affect a floodplain or flood flows.

The Project would increase the amount of impervious surface area on the Project site compared to existing conditions. The increased impervious surface area would have a corresponding increase in stormwater runoff. However, the Project includes on-site stormwater management facilities, such

as interceptor trees and bioretention areas. These types of stormwater management facilities are intentionally designed to promote the infiltration of runoff into the ground. Because the Project includes facilities that collect runoff and allow it to infiltrate the ground rather than becoming runoff in storm drains and nearby streams, the Project would not substantially redirect flood flows. Consequently, impacts of the Project related to impeding or redirecting flood flows would be less than significant.

LESS-THAN-SIGNIFICANT IMPACT

- d. *In flood hazard, tsunami, or seiche zones, would the project risk release of pollutants due to project inundation?*

The Project site is not within a 100-year floodplain mapped by the Federal Emergency Management Agency as part of its Flood Insurance Rate Map program (FEMA 2008). The Project site would not be inundated by flood waters because it is not within a flood plain.

Tsunamis are sea waves that are generated in response to large-magnitude earthquakes. When these waves reach shorelines, they sometimes produce coastal flooding. The Project site is not within tsunami zones (California Geological Survey [CGS] 2025). Accordingly, the Project would not be inundated by a tsunami.

Seiches are the oscillation of large bodies of standing water, such as lakes, that can occur in response to ground shaking. The Project site is not adjacent to large bodies of water and does not contain water bodies. The Project would not be inundated by a seiche.

The Project is not susceptible to inundation for the reasons described above. Additionally, because the Project is residential, it would not involve the use and storage of large quantities of pollutants on-site. For example, households may keep up to a few gallons of paint to touch up walls, baseboards and so forth, or household cleaning products, which typically come in containers of less than a gallon. Therefore, even if the site were to be inundated, there would be a low risk associated with release of pollutants from the proposed residential units which have substantial effects on the environment. No impact related to the release of pollutants from inundation of the Project would occur.

NO IMPACT

- e. *Would the project conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?*

Water quality in the Town is governed by the North Coast Regional Water Quality Control Board (NCRWQCB), which sets water quality standards in the Water Quality Control Plan for the North Coast Region (Basin Plan). As discussed under checklist question 'a', the Project would be required to comply with NPDES requirements, and the Code of the Town of Windsor which requires an erosion and sediment control plan for construction sites that is equivalent to the required SWPPP. Additionally, adherence to state and local policies would further maintain water quality.

As discussed under *criteria a* and *b* above, the Project site is within the GSP for the Santa Rosa Plain Subbasin. The Project would not prevent groundwater recharge, violate water quality standards, or degrade water quality during construction or operation. Therefore, the Project would not obstruct implementation of a water quality control plan. Impacts would be less than significant.

LESS-THAN-SIGNIFICANT IMPACT

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11 Land Use and Planning

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

Setting

As stated in the Project Description, the Project site has a General Plan land use designation of “General Business”. The “General Business” designation provides for a range of uses including office, retail, and service activities, with a focus on professional office (Town of Windsor 2018a). The Project site is within the North of Arata Lane Community Place which is characterized by rural residential uses, agricultural, and undeveloped land. The North of Arata Lane area is envisioned in the General Plan to develop as a traditional neighborhood which includes a variety of residential densities organized around a neighborhood center, school parks and interconnected streets (Town of Windsor 2018a).

The Project site is zoned as Community Commercial (CC). According to WMC Section 17.12.020, the CC zone is applied to areas suitable for restaurants, shops, personal and business services. Single-unit residential is not a listed use in the CC zone.

Impact Analysis

a. *Would the project physically divide an established community?*

The Project would be limited to the Project site except for the extension of Los Amigos Road which would serve to connect the proposed Project with Arata Lane. The proposed Project would not include features that could impede access between or within neighborhoods. Accordingly, the Project would not divide an established community. No impact would occur.

NO IMPACT

b. *Would the project cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect?*

The Project site is designated as “General Business” under the Windsor General Plan and is zoned as Community Commercial (CC). However, the Project is proposed under the provisions of California Government Code Section 65589.5(D)(5), which is commonly referred to as “Builder’s Remedy” and is a “housing development project” under the Housing Crisis Act (SB 330) and Housing Accountability Act. Under these provisions, the Town may not disapprove the Project because of

inconsistency with the Town's Zoning Ordinance or General Plan. As such, the analysis included in this IS-MND evaluates the Project's consistency with the General Plan and Zoning designations that are appropriate for the Project which in this case is the Medium Density Residential (MDR) General Plan land use designation and Medium Density Residential zoning designation. Both of these designations allow for residential uses up to 16 dwelling units per acre and allow small lot single family units. The proposed Project would include involve residential uses with a density of 11.8 units per acre and single-family homes on small lots; therefore, the Project would be consistent with the allowed uses and density of the MDR designation. The Project does not involve rezoning or changing the General Plan land use designation of the Project site.

The Project as proposed is also entitled under California State Density Bonus Law, California Government Code Section 65915, to a density bonus, incentives or concessions, waivers or reductions of development standards, and parking ratios because it provides 13 percent of the units as affordable to lower income households. The Project is eligible under for an applicable density bonus, two incentives or concessions, unlimited waivers of development standards, and specified parking ratios and requirements³. The Project is requesting the following waivers under the California State Density Bonus Law (SDBL): lot size, lot width and depth, building envelope depth, lot coverage, building setbacks (front, side, street side, and rear), street facing facades and entries, and a reduction in the depth of uncovered parking spaces that is consistent with the size required in the updated Zoning Code adopted in November 2024. The Project is also requesting the application of SDBL parking standards for the duet units to allow tandem and uncovered parking.

Furthermore, the Project is within the North of Arata Lane Community Place area. General Plan Policy LU-14.2 calls for development in this area to have an efficient development pattern with smaller single-family parcels under 7,000 square feet and attached townhomes. The Project would contribute to the vision for Policy LU-14.2 as it would include single-family "duet style" attached homes and detached homes that would have lot sizes under 7,000 square feet.

The Project would not conflict with any federal or state policies or regulations as discussed throughout this checklist. Relevant goals and policies adopted for the purpose of avoiding or mitigating an environmental effect in the Town of Windsor General Plan that are applicable to the Project are discussed in each issue area throughout this Initial Study. As described throughout this Initial Study, the Project would be consistent with policies adopted for the purposes of mitigating an environmental effect including the Clean Air Plan (see Section 3, *Air Quality*), Plan Bay Area 2050 (see Section 5, *Energy*), and General Plan policies. Mitigation measures identified for impacts to jurisdictional waters, sensitive plant and wildlife species, and protected trees as discussed in Section 4, *Biological Resources*, would ensure that the Project would not conflict with General Plan policies related to biological resources. Mitigation identified for potential cultural resources and tribal cultural resources impacts would ensure that the Project would not conflict with the General Plan policies related to cultural resources. As such, the Project would not conflict with applicable land use plans, policies, or regulations adopted for the purpose of avoiding or mitigating an environmental effect, and impacts would be less than significant.

LESS-THAN-SIGNIFICANT IMPACT

³ This is based on parking requirements for single-family development as included in the Town's Zoning Code.

12 Mineral Resources

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

Setting

According to the Town of Windsor General Plan, there are no mineral resources within the Town (Town of Windsor 2018a). The Project site is not zoned or designated for mining uses and no active mining operations are in the Project site or vicinity.

Impact Analysis

- Would the project result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?*
- Would the project result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan, or other land use plan?*

As discussed above, according to the Town of Windsor General Plan, there are no mineral resources within the Town (Town of Windsor 2018a). Furthermore, the Project site is not zoned or designated for mining uses and no active mining operations are in the Project site or vicinity. The Project would not result in the loss of availability of a known mineral resource that would be of value to the residents of the state and the region, nor would it result in the loss of a locally important mineral resource recovery site. The Project does not involve developing currently undeveloped land with the potential to contain valuable mineral resources. Therefore, the Project would have no impact on mineral resources.

NO IMPACT

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13 Noise

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less-than - Significant Impact	No Impact
Would the project result in:				
a. Generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?	☐	☐	☒	☐
b. Generation of excessive groundborne vibration or groundborne noise levels?	☐	☐	☒	☐
c. For a project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?	☐	☐	☒	☐

Overview of Noise and Vibration

Noise

Sound is a vibratory disturbance created by a moving or vibrating source, which is capable of being detected by the hearing organs. Noise is defined as sound that is loud, unpleasant, unexpected, or undesired and may therefore be classified as a more specific group of sounds. The effects of noise on people can include general annoyance, interference with speech communication, sleep disturbance, and, in the extreme, hearing impairment (Caltrans 2013).

HUMAN PERCEPTION OF SOUND

Noise levels are commonly measured in decibels (dB) using the A-weighted sound pressure level (dBA). The A-weighting scale is an adjustment to the actual sound pressure levels so that they are consistent with the human hearing response. Decibels are measured on a logarithmic scale that quantifies sound intensity in a manner similar to the Richter scale used to measure earthquake magnitudes. A doubling of the energy of a noise source, such as doubling of traffic volume, would increase the noise level by 3 dB; dividing the energy in half would result in a 3 dB decrease (Caltrans 2013).

SOUND PROPAGATION AND SHIELDING

Sound changes in both level and frequency spectrum as it travels from the source to the receiver. The most obvious change is the decrease in the noise level as the distance from the source

increases. The manner by which noise reduces with distance depends on factors such as the type of sources (e.g., point or line), the path the sound will travel, site conditions, and obstructions. Noise levels from a point source (e.g., construction, industrial machinery, air conditioning units) typically attenuate, or drop off, at a rate of 6 dBA per doubling of distance. Noise from a line source (e.g., roadway, pipeline, railroad) typically attenuates at about 3 dBA per doubling of distance (Caltrans 2013). Noise levels may also be reduced by intervening structures; the amount of attenuation provided by this “shielding” depends on the size of the object and the frequencies of the noise levels. Natural terrain features, such as hills and dense woods, and man-made features, such as buildings and walls, can significantly alter noise levels.

DESCRIPTORS

The impact of noise is not a function of loudness alone. The time of day when noise occurs and the duration of the noise are also important factors of project noise impact. Most noise that lasts for more than a few seconds is variable in its intensity. Consequently, a variety of noise descriptors have been developed. The noise descriptors used for this analysis are the equivalent noise level (L_{eq}) and the community noise equivalent level (CNEL).

The L_{eq} is one of the most frequently used noise metrics; it considers both duration and sound power level. The L_{eq} is defined as the single steady-state A-weighted sound level equal to the average sound energy over a time period. When no time period is specified, a 1-hour period is assumed. The L_{max} is the highest noise level within the sampling period, and the L_{min} is the lowest noise level within the measuring period. Normal conversational levels are in the 60 to 65-dBA L_{eq} range; ambient noise levels greater than 65 dBA L_{eq} can interrupt conversations (Federal Transit Administration [FTA] 2018).

Noise that occurs at night tends to be more disturbing than that occurring during the day. Community noise is usually measured using CNEL, which is the 24-hour average noise level with a +5 dBA penalty for noise occurring from 7:00 p.m. to 10:00 p.m. and a +10 dBA penalty for noise occurring from 10:00 p.m. to 7:00 a.m. (Caltrans 2013).

Groundborne Vibration

Groundborne vibration of concern in environmental analysis consists of the oscillatory waves that move from a source through the ground to adjacent buildings or structures and vibration energy may propagate through the buildings or structures. Vibration may be felt, may manifest as an audible low-frequency rumbling noise (referred to as groundborne noise), and may cause windows, items on shelves, and pictures on walls to rattle. Although groundborne vibration is sometimes noticeable in outdoor environments, it is almost never annoying to people who are outdoors. The primary concern from vibration is that it can be intrusive and annoying to building occupants at vibration-sensitive land uses and may cause structural damage.

Typically, ground-borne vibration generated by manmade activities attenuates rapidly as distance from the source of the vibration increases. Vibration amplitudes are usually expressed in peak particle velocity (PPV). The PPV is normally described in inches per second (in/sec). PPV is defined as the maximum instantaneous positive or negative peak of a vibration signal. PPV is often used as it corresponds to the stresses that are experienced by buildings (Caltrans 2020).

High levels of groundborne vibration may cause damage to nearby building or structures; at lower levels, groundborne vibration may cause minor cosmetic (i.e., non-structural damage) such as cracks. These vibration levels are nearly exclusively associated with high impact activities such as

blasting, pile-driving, vibratory compaction, demolition, drilling, or excavation. Vibration limits used in this analysis to determine a potential impact to local land uses from construction activities, such as, vibratory compaction or excavation, are based on information contained in the FTA *Transit Noise and Vibration Impact Assessment Manual* (FTA 2018). Groundborne vibration levels that could induce potential architectural damage to buildings are identified in Table 6. Based on FTA recommendations, limiting vibration levels to below 0.2 in/sec PPV at non-engineered timber and masonry buildings (which would apply to the nearby buildings) would prevent architectural damage.

Table 6 Groundborne Vibration Architectural Damage Criteria

Building Category	PPV (in/sec)
I. Reinforced concrete, steel, or timber (no plaster)	0.5
II. Engineered concrete and masonry (no plaster)	0.3
III. Nonengineered timber and masonry buildings	0.2
IV. Buildings extremely susceptible to vibration damage	0.12
in/sec = inches per second; PPV = peak particle velocity	
Source: FTA 2018	

Sensitive Receptors

Noise exposure goals for various types of land uses reflect the varying noise sensitivities associated with those uses. The Town of Windsor 2040 General Plan (Town of Windsor 2023) defines noise-sensitive land uses as residential neighborhoods, schools, houses of worship, hospitals, and convalescent homes. Sensitive land uses generally should not be subjected to noise levels that would be considered intrusive in character. The closest noise-sensitive receptors nearest to the Project site are the Newsong Church adjacent to the Project boundary to the west, and a single-family residence 20 feet to the east of the eastern Project boundary at 267 Arata Lane.

Existing Noise Setting

The predominant source of noise in the Town of Windsor, as in most communities, is motor vehicles moving along roadways. Noise-generating roadways nearest to the Project site include Highway 101, Old Redwood Highway and Arata Lane, among others.

Town of Windsor Noise Standards

Town of Windsor 2040 General Plan

The following goals and policies applicable to the Project in the Noise Section of the Public Health and Safety Element are as follows:

Goal PHS-8: Minimize, control, and abate noise interference from indoor and outdoor noise sources and activities that exceed desirable sound levels.

Policy PHS-8.1: Ambient Sound Levels for New Development. The Town shall encourage new development to maintain the current ambient sound environment as much as possible. All noise sources that cause the ambient sound levels to rise by more than 5 dBA should be required to incorporate conditions or design modifications to reduce the potential increase in the noise environment

Policy PHS-8.2: Exterior Noise Standards for New Development. The Town shall require new development to meet exterior noise level standards as established in the noise and land use compatibility guidelines contained in Table 7. For residential areas, these exterior noise guidelines apply to the primary usable outdoor area

Policy PHS-8.3: Interior Noise Threshold for New Residential. The Town shall require new residential projects to provide for an interior CNEL of 45 dB or less due to exterior noise sources. To accomplish this, all residential and other noise sensitive land uses within the 60 dB contours or greater as defined in (Figure PHS-10) should be reviewed to ensure that adequate noise attenuation has been incorporated into the design of the project

Policy PHS-8.4: Residential Compatibility with the Airport. The Town shall not permit residential development within the 2030 projected 60 dB noise contour of the Sonoma County Airport (Figure PHS-12⁴)

Policy PHS-8.5: Noise Attenuation Techniques. The Town shall encourage new development to identify alternatives to the use of sound walls to attenuate noise impacts. Other techniques that would be viewed more favorably by the Town include:

- a. Modifications to site planning such as incorporating setbacks; and
- b. Revisions to the architectural layout such as changing building orientation, providing noise attenuation for portions of outdoor yards, and construction modification (e.g., noise attenuating windows).

In the event that sound walls are the only practicable alternative, such walls shall be subject to development review to ensure that they are designed to be as aesthetically pleasing as possible, incorporating landscaping, variations in color and patterns, and/or changes in texture or building materials.

Policy PHS-8.10: Construction Site Noise Restrictions. The Town shall restrict construction working hours as designated in the Municipal Code, Title VII Building and Housing Section, to allow efficient construction mobilization and activities, while also protecting the noise environment of noise sensitive land uses.

⁴ Note that the reference to PHS-10 is a typo in the General Plan. The correct figure that should be referenced in this policy is Figure PHS-12: 2040 Noise Contours.

Table 7 Maximum Noise Level by Receiving Land Use

Type of Land Use	Time Interval	Exterior Noise dBA
Single- or multi-family residential	7 a.m. to 10 p.m.	55
	10 p.m. to 7 p.m.	50
Commercial	7 a.m. to 10 p.m.	65
	10 p.m. to 7 a.m.	55
Industrial or manufacturing	7 a.m. to 10 p.m.	60
	10 p.m. to 7 a.m.	55
Light Industrial/Industrial Park Zones	Anytime	70
Public parks, public open space, and Civic Center	7 a.m. to 10 p.m.	55
	10 p.m. to 7 a.m.	50

Source: Town of Windsor General Plan Table PHS-1

Notes: In addition, Section 7-1-190 of the Town of Windsor Municipal Code restricts the timing of construction activities authorized by a Town permit to the hours of 7 a.m. to 7 p.m. Monday through Friday and 8 a.m. to 7 p.m. on Saturday

Table 8 Acceptable Exposure Levels for Community Noise Environments

Land Use Category	Normally Acceptable	Conditionally Acceptable	Normally Unacceptable	Clearly Unacceptable
Residential-Low Density Single family, Duplex, Mobile Home	50-55	55-70	70-75	75-85
Residential- Multi-family	50-60	60-70	70-75	75-85
Transient Lodging - Motel, Hotel	50-60	60-70	70-80	80-85
Schools, Libraries, Churches, Hospital, Nursing Home	50-65	60-70	70-80	80-85
Auditoriums, Concert Halls, Amphitheaters	NA	50-65	NA	65-85
Sports Arena, Outdoor Spectator Sports	NA	50-70	NA	70-85
Playgrounds, Neighborhood Parks	50-70	NA	70-80	80-85
Golf Course, Riding Stable, Water Recreation, Cemetery	50-70	NA	70-85	NA
Office Buildings, Business Commercial and Professional	50-65	65-75	75-85	NA
Industrial, Manufacturing Utilities, Agriculture	50-70	70-75	75-85	NA

Source: Town of Windsor General Plan Figure PHS-2

Town of Windsor Municipal Code

The Town of Windsor Municipal Code Section 7-1-1015 states that “construction, alteration or repair activities which are authorized by a valid Town permit may be conducted between the hours of 7:00 a.m. and 7:00 p.m. Monday through Friday and between the hours of 8:00 a.m. and 7:00 p.m. on Saturday. No construction, alteration or repair activities shall be permitted on Sunday unless expressly authorized by the Building Official; but in no event shall such construction activity be permitted on Sunday before 9:00 a.m. or after 5:00 p.m.”

Impact Analysis

- a. *Would the project result in generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?*

Construction

Construction noise was estimated using the Federal Highway Administration (FHWA) Roadway Construction Noise Model (RCNM) (FHWA 2006). RCNM predicts construction noise levels for a variety of construction operations based on empirical data and the application of acoustical propagation formulas. Using RCNM, construction noise levels were estimated at noise sensitive receivers near the Project site. RCNM provides reference noise levels for standard construction equipment, with an attenuation rate of 6 dBA per doubling of distance for stationary equipment.

Variation in power from construction equipment imposes additional complexity in characterizing the noise source level. Power variation is accounted for by describing the noise at a reference distance from the equipment operating at full power and adjusting it based on the duty cycle of the activity to determine the L_{eq} of the operation. Each phase of construction has a specific equipment mix, depending on the work to be accomplished during that phase. Each phase also has its own noise characteristics; some will have higher continuous noise levels than others, and some have high-impact noise levels.

Construction activity would result in temporary noise in the Project site vicinity, exposing surrounding nearby receivers to increased noise levels, but only during certain times of day. Construction noise would typically be higher during the heavier periods of initial construction (i.e., demolition, site preparation and grading) and would be lower during the later construction phases (i.e., building construction, paving and architectural coating). Noise levels are based on the CalEEMod default construction equipment mix by phase from Section 3, *Air Quality*. It is assumed that diesel engines would power all construction equipment. However, construction equipment would not all operate at the same time or location. In addition, construction equipment would not be in constant use during the 8-hour operating day.

Because the Town does not have a quantitative construction noise threshold, for purposes of analyzing impacts from this Project, the FTA *Transit Noise and Vibration Impact Assessment Manual* (FTA 2018) criteria were used. The FTA provides reasonable criteria for assessing construction noise impacts based on the potential for adverse community reaction. For residential uses, the daytime noise threshold is 80 dBA L_{eq} for an 8-hour period (FTA 2018).

While construction activities would be located as close as 20 feet to the closest sensitive receptors, construction equipment is typically dispersed in various areas of the site, with only a limited amount of equipment operating near a given location at a particular time. Therefore, because equipment moves around the site throughout the workday it is industry standard practice to analyze average construction noise from the center of the site which is the approximate center of where noise is being generated. The FTA 2018 *Transit Noise and Vibration Impact Assessment* document recommends this approach on page 177, stating that for the distance variable in its construction noise calculation "assumes that all equipment operates at the center of the Project." In accordance with FTA recommendations, construction noise from demolition, site preparation, grading, building construction and architectural coating were analyzed from the center of the site, as construction equipment for these phases would be moving throughout the site. Construction noise from paving

was analyzed based upon the center of the proposed paving area to the sensitive receptors, as paving is proposed at different locations throughout the Project site.

The estimated noise levels of each construction phase, as well as distances to the nearest sensitive receptors, are shown in Table 9. As shown in Table 9, for the closest sensitive receptor to the Project site, which is approximately 130 feet from the center of the Project site, demolition and site preparation activity would generate a noise level of up to 76 dBA $L_{eq(8-hour)}$. In addition, as shown on Table 9, the shortest distance between the center of paving activity for the Los Amigos Road extension and sensitive receptors is approximately 45 feet to the single-family residence to the east. At a distance of 40 feet, paving would generate a noise level of up to 80 dBA $L_{eq(8-hour)}$ (RCNM calculations are included in Appendix G). Therefore, construction noise levels would not exceed the FTA noise threshold of 80 dBA $L_{eq(8-hour)}$ for the noise-sensitive receptors nearest to the Project site.

Table 9 Estimated Construction Noise Levels at Nearest Sensitive Receptors

Construction Phase	$L_{eq(8-hour)}$ dBA			
	RCNM Reference Noise Level at	Newsong Church to the West	Residence to the East	Residences to the South
Distance (feet)¹	50	130	210	215
Demolition	84	76	72	71
Site Preparation	84	76	72	71
Grading	83	75	71	70
Building Construction	75	67	63	62
Architectural Coating	74	66	62	61
Distance (feet)²	50	130	40	65
Paving	78	70	80	76

Source: Roadway Construction Noise Model. See Appendix G for modeling outputs.

¹ Distance measured from the center of the Project site to the noise-sensitive receptor

² Distance measured from the center of the proposed paving area to the noise-sensitive receptors

In addition, the Project would be built in compliance with the standard construction hours detailed in the Town of Windsor Municipal Code (WMC 2024) Section 7-1-1018, which allows for construction activities Monday through Friday between 7:00 a.m. to 7:00 p.m. and Saturday between 8:00 a.m. to 7:00 p.m. and no work on Sundays. Project construction activities would only occur during these allowed days and times. If construction is necessary outside of these allowable days and times, authorization would need to be granted by the Building Official. Therefore, impacts would be less than significant.

Operational Noise

Operational noise sources would include heating ventilation, and air conditioning [HVAC] units and traffic noise associated with the realigned Los Amigos Road and Project-generated traffic on area roadways.

On-Site Stationary Operational Noise

The primary on-site operational noise sources from the Project would be from one ground-mounted HVAC equipment per housing unit. Based on review of various manufacturer specifications for residential applications, a representative noise level of 65 dBA L_{max} at 3 feet for a 2.5-ton Carrier

24ABA4030 was selected for the analysis. HVAC units would be located as close as 20 feet from the eastern property line of the Newsong Church to the west on Arata Lane, and HVAC unit noise would attenuate to 49 dBA L_{max} at this distance. In addition, HVAC units would be located as close as 80 feet from the western property line of the single-family residence (267 Arata Lane) to the east of the Project; HVAC unit noise would attenuate to 36 dBA L_{max} at this distance. This would be below the Town's nighttime noise level threshold of 50 dBA L_{max} .

In addition to mechanical equipment, the Project would generate noise from conversations. Typically, a conversation between two people using a normal voice (not raised) at a distance of three feet is 60 dBA (Engineering ToolBox 2005). No amplified sound is proposed, and speech from conversations would quickly dissipate and would not interfere with surrounding outdoor activities and noise-sensitive uses. Furthermore, per Assembly Bill 1307 (2023), the effect of noise generated by residential Project occupants and their guests is not a significant effect on the environment.

Off-site Traffic Noise

EXISTING ROADWAY NOISE

The Project would generate new vehicle trips that would use existing area roadways. Pursuant to General Plan Policy PHS-8.1, stated above, the Project would have a significant traffic noise impact if ambient noise levels increased by more than 5 dBA.

Using information provided by W-Trans Traffic Engineers (W-Trans 2025), the proposed Project would generate up to 288 new daily peak vehicle trips that would increase noise levels on nearby existing roadways. The Project's increase in traffic noise was estimated by adding the Project daily trip generation to the existing average daily traffic (ADT) volume on the surrounding roadways according to Replica's modeled data about activity in the built environment (Replica 2023).

Traffic noise increases along other area roadways caused by Project traffic were estimated using the traffic data provided by W-Trans and the following formula: $10 \times \text{LOG}(2040 + \text{Project traffic volume} / \text{baseline } 2040 \text{ No Project traffic volume})$. As shown in Table 10, the existing ADT on Los Amigos Road, south of Arata Lane, is 2,083. This addition of 288 daily vehicle trips would result in an increase in traffic noise that would be approximately 0.6 dBA CNEL, which would be less than the allowable 5 dBA increase. Other roadways would have noise increases below 0.6 dBA CNEL. Therefore, impacts would be less than significant.

Table 10 Off-site Project Traffic Noise Increases at Existing Roadways (dBA L_{eq})

Roadway/Segment	Existing ADT ¹	Existing + Project ADT	Increase ² (dBA L_{eq})
Arata Lane - West of Los Amigos Road	9,149	9,437	0.1
Arata Lane - East of Los Amigos Road	7,372	7,660	0.2
Los Amigos Road - South of Arata	2,083	2,371	0.6

ADT = average daily trips

¹ Based on data provided by Replica.

² Based on the formula $10 \times \text{LOG}(\text{future traffic volume} / \text{existing traffic volume})$

³ Based on information provided by W-Trans (W-Trans 2025)

NEW ROADWAY NOISE

The Project would involve a new segment of Los Amigos Road along the site's eastern frontage between Arata Lane and the Project's northeastern driveway. Pursuant to General Plan Policy PHS-8.1, the Project would have a significant traffic noise impact if ambient noise levels increased by more than 5 dBA.

The Los Amigos Road realignment would be placed in an area located within a 60 dBA CNEL noise contour (i.e., 60 – 64 dBA CNEL noise exposure) based on Figure PHS-12 in the 2040 General Plan. Therefore, an increase in traffic noise of up to 65 dBA CNEL would be allowed at residences in this area, or 5 dBA above the baseline ambient noise level which is conservatively assumed to be 60 dBA CNEL.

A version of the FHWA RD-77-108 traffic noise prediction model (Appendix G) was used to estimate future noise levels from the Los Amigos Road segment along the Project site's eastern boundary. The analysis is based on the Baseline plus Project traffic volumes scenario provided by W-Trans, which includes traffic from reasonably-foreseeable development projects representing a near term cumulative condition within an approximately three to five-year period (W-Trans 2025; Appendix A). To estimate noise levels at the closest sensitive receptors to the proposed roadway realignment (the residential property 267 Arata Lane), the analysis models noise at 50 feet from the roadway centerline. The results of modeling indicate that traffic noise from the Los Amigos Road extension would be up to 60.7 dBA CNEL at 50 feet from the roadway centerline, which would not exceed the allowed increase of 5 dBA allowed under General Plan Policy PHS-8.1 when compared to the baseline of 60 dBA. Therefore, this impact would be less than significant.

LESS-THAN-SIGNIFICANT IMPACT

- b. Would the project result in generation of excessive groundborne vibration or groundborne noise levels?*

Construction activities known to generate excessive groundborne vibration, such as pile driving, would not be needed for the Project. Based on FTA recommendations, limiting vibration levels to below 0.2 in/sec PPV at nonengineered timber and masonry buildings would prevent architectural damage regardless of building construction type (FTA 2018). The greatest anticipated source of vibration during Project construction would be from a vibratory roller, which would be used during paving activities.

A vibratory roller may be used within 50 feet of the nearest building to the east of the proposed Project. A vibratory roller generates up to approximately 0.074 in/sec PPV at a distance of 50 feet (FTA 2018), which would not exceed the significance threshold of 0.2 in/sec PPV. Furthermore, a large bulldozer may be used within 90 feet of the nearest off-site residential structure to the east of the proposed Project. A large bulldozer generates up to approximately 0.017 in/sec PPV at a distance of 75 feet (FTA 2018), which would not exceed the significance threshold of 0.2 in/sec PPV. Therefore, construction vibration impacts would be less than significant.

The Project does not include substantial vibration sources associated with operation. Therefore, operational vibration impacts would be less than significant.

LESS-THAN-SIGNIFICANT IMPACT

Los Amigos Cottages Builder's Remedy Project

- c. *For a project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?*

The Sonoma County Airport is located approximately three miles to the south. As shown in Figure AT-9, *Projected Noise Contours*, in the Sonoma County General Plan, the Project is located outside of the Sonoma County Airport noise contours (Sonoma 2012). Therefore, the Project would not expose people residing or working in the Project site to excessive aircraft noise. There would be no impact.

NO IMPACT

14 Population and Housing

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less-than - Significant Impact	No Impact
Would the project:				
a. Induce substantial unplanned population growth in an area, either directly (e.g., by proposing new homes and businesses) or indirectly (e.g., through extension of roads or other infrastructure)?	☐	☐	☒	☐
b. Displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere?	☐	☐	☐	☒

Setting

The site is vacant and does not currently include any structures which house or employ people.

Impact Analysis

- a. *Would the project induce substantial unplanned population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?*

The proposed Project would involve the construction of 32 new residences on the Project site. According to the California Department of Finance, the population of Windsor is 25,394 as of the most recent population estimate and the average household size in Windsor is 2.72 persons per household (California Department of Finance [DOF] 2025). Based on this average household size, the 32 dwelling units included in the proposed Project would result in approximately 88 people residing on the Project site (2.72 persons per household * 32 units = 88 persons). This would increase the total town population to 25,482 persons, which is well below the projected 2040 population of 38,028 persons estimated in the 2040 General Plan (Town of Windsor 2018b). Furthermore, the population associated with the proposed Project represents less than one percent of the total projected 2040 population, indicating the population growth is not substantial.

The proposed extension of Los Amigos Road associated with the Project would serve the homes constructed on the Project site and would not result in any indirect population growth as it would not provide access to previously inaccessible areas beyond the Project site.

Therefore, the Project would not directly or indirectly induce substantial unplanned population growth in the town.

LESS-THAN-SIGNIFICANT IMPACT

Los Amigos Cottages Builder's Remedy Project

- b. Would the project displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere?*

The Project site is vacant and does not contain housing or people residing on-site. Accordingly, the proposed development of the Project site would not displace people or housing. The proposed Project would have no impact.

NO IMPACT

15 Public Services

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less-than - Significant Impact	No Impact
a. Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, or the need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:				
1 Fire protection?	☐	☐	☒	☐
2 Police protection?	☐	☐	☒	☐
3 Schools?	☐	☐	☒	☐
4 Parks?	☐	☐	☒	☐
5 Other public facilities?	☐	☐	☒	☐

Setting

Fire protection services for the Town of Windsor are provided by Sonoma County Fire District which is made up of the Bennet Valley, Mountain Volunteer, Rincon Valley, Windsor, Russian River, Forestville, and Bodega Bay Fire Protection Districts (Sonoma County Fire District 2025). The closest station to the Project site is Sonoma County Fire District Station 3, approximately 1.6 miles south of the Project site at 8600 Windsor Road. Station 1, also serving as the Sonoma County Fire District Headquarters, is approximately 2 miles southeast of the Project site at 8200 Old Redwood Highway. The Sonoma County Fire District serves a population of 100,000 full time residents (Sonoma County Fire District 2025).

Police services are provided by Sonoma County Sheriff Department employees through a negotiated contract between the County and the Town of Windsor (Town of Windsor 2025a). The Police Department has 20 full time employees including the chief, two sergeants, 12 deputies, two traffic deputies, one school resource officer, two civilian administrative staff, and one community service officer. In fiscal year 2024-2025, the average response time for the WPD was 6 minutes and 32 seconds and there were a total of 11,116 calls for service (Sonoma County Sheriff's Department 2025).

The town is served by the Windsor Unified School District which includes seven schools. The nearest public school to the Project site is Brooks Elementary which is approximately 0.8 miles southeast of the Project site.

Impact Analysis

- a.1. Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered fire protection facilities, or the need for new or physically altered fire protection facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives?*

Fire protection and medical emergency services in Windsor are provided by the Sonoma County Fire District. The Project site would be served by Sonoma County Fire District Station No. 3 located at 8600 Windsor Road which is approximately 1.6 miles southwest of the Project site. As described in the setting above, the Sonoma County Fire District serves a population of 100,000 full time residents (Sonoma County Fire District 2025).

The Project would develop a vacant site with residential units, which would increase the number of structures and people who need fire protection services. However, as discussed in Section 14, *Population and Housing*, the proposed Project would result in the construction of 32 dwelling units and a population increase of approximately 88 residents. This increase of 88 residents represents less than one percent of the existing population served by the Sonoma County Fire District. Therefore, while the increase in population could increase the demand for fire services it would not increase demand such that additional facilities would be required to service the site. Furthermore, the population increase associated with the Project would be consistent with the General Plan buildout analyzed in the 2040 General Plan Environmental Impact Report, which found that under full buildout conditions impacts to public services including fire protection services would be less than significant with implementation of 2040 General Plan policies.

Additionally, Station 3 already provides fire protection services to existing residential developments in the Project area, such as the existing rural residential development north and east of the Project site and the residential developments south of Arata Lane near the Project site. Therefore, development of the Project site would not require the Sonoma County Fire District to expand its service area. This impact would be less than significant.

LESS-THAN-SIGNIFICANT IMPACT

- a.2. Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered police protection facilities, or the need for new or physically altered police protection facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives?*

The Windsor Police Department currently serves the area and would continue to provide police protection services to the Project site. As discussed in Section 14, *Population and Housing*, the proposed Project would result in the construction of 32 dwelling units and a population increase of approximately 88 residents. As described in the Setting section above, the WPD has 20 full-time staff members and received 11,116 calls in 2025 with an average response time of 6 minutes 32 seconds. Based on the current population of 25,394 residents in Windsor, approximately 2.3 calls for service are made per resident. Using this same ratio, it can be assumed that the proposed project

would result in 202 additional calls for service per year⁵. This represents a 1.8 percent increase in service calls.

While the increased population could increase the demand for police services but would not increase demand such that existing service ratios would be largely changed since the additional population represents less than a one percent increase compared to existing population of the Town. Therefore, additional facilities would not be required to service the site. Furthermore, the population increase associated with the Project would be consistent with the General Plan buildout analyzed in the 2040 General Plan Environmental Impact Report, which found that under full buildout conditions impacts to public services including police protection services would be less than significant with implementation of 2040 General Plan policies.

Additionally, the Project site is in a generally developed area of Windsor where there are already existing residential buildings and other land uses that are already provided with police services. Because the Project is in such an area, the service area of the Windsor Police Department would not expand. Therefore, the Project would not result in the need for new or physically altered police facilities, and this impact would be less than significant.

LESS-THAN-SIGNIFICANT IMPACT

a.3. Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered schools, or the need for new or physically altered schools, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios or other performance objectives?

Windsor Unified School District had 4,678 total students enrolled in the 2023-2024 school year (California Department of Education 2025). The population growth resulting from the Project, estimated at 88 people, would be a mix of adults and school-aged children. The Project would add approximately 15 new students, based on a generation rate of 0.46 students per housing unit (Windsor Unified School District 2016). The Project applicant would be required to pay school impact fees to the Windsor Unified School District pursuant to Section 65995(3)(h) of the California Government Code (Senate Bill 50, chaptered August 27, 1998). Pursuant to California Government Code Section 65996, payment of these fees are “deemed to be full and complete mitigation of the impacts of any legislative or adjudicative act, or both, involving but not limited to, the planning, use, or development of real property, or any change in governmental organization or reorganization.” Payment of school impact fees would reduce Project impacts to less than significant.

LESS-THAN-SIGNIFICANT IMPACT

a.4. Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered parks, or the need for new or physically altered parks, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios or other performance objectives?

The Project does not include new parks or physical alterations to existing parks. Therefore, the Project would not result in direct impacts to the environment resulting from the provision of new parks or alteration of existing parks.

⁵ 88 residents x 2.3 calls per resident = 202 additional calls. (202 additional calls / 11,116 existing service calls) x 100= 1.82 percent increase in calls.

Los Amigos Cottages Builder's Remedy Project

The Project would increase the population of Windsor by approximately 88 residents, and some or all of these people would use existing park facilities. An analysis of increased use of existing park and recreation facilities and the potential for accelerated deterioration of these facilities is provided in Section 16, *Recreation*, of this Initial Study. As discussed therein, the Project would pay in-lieu fees, as required by the WMC and Windsor General Plan, to reduce impacts to recreational facilities. Overall, impacts of the Project would be less than significant.

LESS-THAN-SIGNIFICANT IMPACT

a.5. Would the project result in substantial adverse physical impacts associated with the provision of other new or physically altered public facilities, or the need for other new or physically altered public facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives?

The Project does not include construction of new public facilities, such as libraries. Because the Project would not result in a substantial increase in the Town's population (as described in Section 14, *Population and Housing*), existing public facilities such as libraries would not be physically altered to accommodate increased demand. Impacts would be less than significant.

LESS-THAN-SIGNIFICANT IMPACT

16 Recreation

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less-than - Significant Impact	No Impact
a. Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?	☐	☐	☒	☐
b. Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?	☐	☐	☒	☐

Setting

The Town of Windsor Parks and Recreation Department manages 19 community and neighborhood parks totaling 110 acres. There are also three Sonoma County Regional Parks within the Town which are owned and maintained by Sonoma County (Foothill Regional, Riverfront Regional, and Shiloh Ranch) totaling 1,356 acres (Town of Windsor 2025b). The Town of Windsor maintains a standard of 5 acres per 1,000 residents, as described in Section 16.3.130 of the WMC.

The nearest recreation facility to the Project site is Michael A. Hall Park which is approximately 0.6 miles south of the site. Additionally, the proposed Quail Acres residential development project includes a 3.12-acre community park which would be adjacent to the proposed Project.

Impact Analysis

- a. *Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?*

As discussed in Section 14, *Population and Housing*, the Project would result in a population increase of approximately 88 residents based on the number of dwelling units proposed and average household size. The Project would include open space amenities on site, as described in the Project Description, including side yards and front porches. The population growth associated with the Project would result in a nominal increase in parkland use within the Town and surrounding area. Consistent with Chapter 3, Article 1 of the WMC, which requires dedication of parkland or payment of in-lieu fees for all residential development, the Project would pay in-lieu fees to provide park and recreational services to the community. Compliance with this ordinance would ensure the park service ratios of the Town are maintained and impacts would be less than significant.

LESS-THAN-SIGNIFICANT IMPACT

Los Amigos Cottages Builder's Remedy Project

- b. Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?*

The Project does not include new recreational facilities or the construction or expansion of existing recreational facilities. While the Project would pay in-lieu fees to provide park and recreational services to the community, as discussed above, these funds would not necessarily result in the construction or expansion of recreational facilities and any future recreation facilities constructed within the Town would be required to undergo their own project-specific CEQA analysis. Therefore, because the Project does not include new or expanded recreational facilities, impacts would be less than significant.

LESS-THAN-SIGNIFICANT IMPACT

17 Transportation

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less-than - Significant Impact	No Impact
Would the project:				
a. Conflict with a program, plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities?	☐	☒	☐	☐
b. Conflict or be inconsistent with CEQA Guidelines section 15064.3, subdivision (b)?	☐	☐	☒	☐
c. Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible use (e.g., farm equipment)?	☐	☒	☐	☐
d. Result in inadequate emergency access?	☐	☒	☐	☐

Setting

The following impact analysis is based on the *Transportation Impact Study for Los Amigos Cottages* (TIS) prepared by W-Trans dated July 10, 2025 (Appendix A) and the Addendum to the TIS prepared by W-Trans dated December 10, 2025 (Appendix H).

Impact Analysis

- a. *Would the project conflict with a program, plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities?*

Pedestrian Facilities

Due to the location of the Project site, pedestrian trips are expected to be primarily related to recreation, transit, and schools in surrounding neighborhood including Brooks Elementary School and Windsor Middle School.

The Project includes the construction of new sidewalks along the Project's frontage of the Los Amigos Road extension and along the Project frontage on Arata Lane. Additional sidewalks on the Los Amigos Road extension beyond those to be constructed by the Project would be built by the planned Quail Acres residential development project. An internal private roadway connecting to both Los Amigos Road and Arata Lane would include a sidewalk on one side of the street.

With the proposed pedestrian improvements to be constructed by the Project, effective pedestrian connectivity to the surrounding sidewalk network would be established. The Project would extend existing sidewalks on Arata Lane to the west of the site to the Los Amigos Road extension,

establishing pedestrian connectivity to the west including the nearest Sonoma County Transit bus stop.

To the south of Arata Lane, continuous sidewalks exist on the east side of Los Amigos Road all the way to existing shopping areas on Lakewood Drive. The intersection of Arata Lane and Los Amigos Road is planned to be signalized by the neighboring Quail Acres residential development project in the same timeframe that Los Amigos Cottages would become occupied. The Quail Acres residential development project was approved in May 2025. Once constructed as part of the Quail Acres residential development project, the signal would include crosswalks connecting to the south side of Arata Lane as well as pedestrian phasing, establishing effective pedestrian connectivity to the south. Pedestrian linkages to Brooks Elementary School and Windsor Middle School would also exist. In the event that this intersection is not signalized as part of the neighboring Quail Acres residential development project, the Project could conflict with plans related to pedestrian facilities. This impact is potentially significant and Mitigation Measure TRA-1 would be required.

Bicycle Facilities

The Project would include construction of six-foot bike lanes with a three-foot buffer along the Project frontages of Arata Lane and Los Amigos Road. This configuration is consistent with the Town's existing bicycle plan and would also accommodate the Class IV bike facilities called for on both corridors in the Town's Active Transportation Plan (Appendix A). Construction of these bicycle facilities along with the shared use of minor streets such as those constructed within the Project site, would effectively link the Project to the surrounding bicycle network. The Project would not conflict with a program, plan, ordinance or policy addressing bicycle facilities and this impact would be less than significant.

Transit Facilities

Existing public transit routes and school bus routes are adequate to accommodate Project-generated transit trips (Appendix A). The nearest bus stop served by Sonoma County Transit is located on the north side of Arata Lane near Newsong Church. The bus stop is served by Route 66, which provides local loop service throughout the Town of Windsor in a counterclockwise direction. With the new sidewalk on Arata Lane to be constructed as part of the Project, continuous pedestrian facilities would link the Project site to the existing Sonoma County Transit bus stop.

Upon completion of planned intersection improvements at the intersection of Los Amigos Road and Arata Lane, continuous pedestrian facilities would exist between the Project site and the Windsor Unified School District bus stop at Los Amigos Road and Pollard Court, which is located within 0.5 miles of the Project site.

Overall, transit facilities serving the Project site would be adequate and in compliance with Town policies. The Project would not conflict with a program, plan, ordinance or policy addressing transit and this impact would be less than significant.

Complete Streets Guidelines

The proposed private internal street associated with the Project would be 24 feet wide, consisting of 12-foot-wide travel lanes, as well as a six-foot wide sidewalk on one side. The proposed configuration is consistent with that specified for a narrow residential street in the Town's Complete Street Design Guidelines (CSDG) (Appendix A). The internal roadway would also include areas with perpendicular parking near the center of the site. This configuration is not directly addressed by the

CSDG but would be expected to perform acceptably given the low volumes and is consistent with CSDG language pertaining to the provision of common parking lots when the Narrow Residential Street type is used, as needed to ensure a sufficient parking supply. The configuration of this private onsite roadway has also been reviewed extensively by Town Public Works, Planning, and Public Safety Staff, and adjusted by the developer to achieve an acceptable balance given the constraints of the parcel size and compact development pattern. Given these findings along with the roadway's compliance with Narrow Residential Street width and ADT parameters, the proposed configuration is deemed consistent with the CSDG (Appendix A).

The General Plan designates the Los Amigos Road extension as a two-lane crosstown street. The proposed extension of Los Amigos Road associated with the Project would include a northbound 11-foot-wide northbound travel lane with interim two-foot shoulder, an 11-foot wide southbound travel lane, a six-foot wide bike lane with three-foot buffer, and an eight-foot-wide parking lane. This differs slightly from the CSDG, which was developed prior to common use of buffered and Class IV bike lanes but has been approved by the Town of Windsor for application along the Project's Los Amigos Road frontage. As the neighboring Quail Acres residential development project develops and the Los Amigos Road extension is fully constructed, additional widening would occur on the eastern portion of the street. Both the proposed extension to be constructed by the Project as well as the full extension of the road to be completed by the neighboring Quail Acres residential development project are therefore generally consistent with the 2-Lane Boulevard Crosstown Street type in the CSDG.

The General Plan designates Arata Lane as a Five-Lane Boulevard crosstown street. The Project would improve Arata Lane along its frontage to accommodate a 10-foot-wide center turn lane, an 11-foot-wide westbound travel lane, a six-foot-wide bike lane with three-foot buffer, and an 11-foot-wide sidewalk with planter strip. Future development projects on the south side of the street would also require widening as part of frontage improvements. The proposed configuration is generally consistent with the three-lane crosstown street type in the CSDG, with adjustments to accommodate buffered bike lanes and future Class IV bike lanes. Because the configuration includes only one westbound vehicle travel lane, however, it does not include the full widening necessary to accommodate a five-lane crosstown street. Justification for this modification has been requested based on the results of a traffic analysis which indicated that only a single westbound vehicle travel lane would be necessary to accommodate future traffic along the Los Amigos Cottages frontage. It is understood that while the Project would include construction of frontage improvements with a single westbound travel lane, the applicant would be required by the Town's Public Works Department to dedicate right-of-way along the Arata Lane frontage to accommodate a five-lane crosstown street in the future, allowing roadway widening to occur at a later date should the Town deem it necessary. Given this required dedication and with concurrence by the Town's Public Works Department, the proposed configuration is considered to be generally consistent to accommodate the roadway cross section specified in the CSDG. It is understood that while the Project would include construction of frontage improvements with a single westbound travel lane, the Project would also dedicate right-of-way along the Arata Lane frontage to accommodate a five-lane crosstown street in the future, allowing roadway widening to occur at a later date if and when the Town should deem it necessary. This approach is consistent with General Plan Policy M-3.25. Therefore, the Project is considered to be consistent with both the CSDG and General Plan Policy M-3.25.

Additionally, the Town of Windsor is considering conversion of the Arata Lane/Los Amigos Road intersection to a single-lane roundabout in the future. Implementation of a roundabout would be feasible in the future but may not be achievable in the near-term since it would require right-of-way from parcels on the intersection corners that are outside control of the Town of Windsor or Los Amigos Cottages developer. Appendix A indicates that the proposed Project has provided sufficient right-of-way dedication to accommodate the roundabout. In evaluating roundabout-specific intersection sight distance criteria, however, it was determined that an approximately 30-square foot triangular area on the southeastern corner of the site would need to remain free of fences or tall obstructions to meet upstream sight distance parameters for drivers approaching the roundabout on eastbound Arata Lane. This impact is potentially significant and Mitigation Measure TRA-2 is required.

Mitigation Measure

The following mitigation measures are required:

TRA-1 Pedestrian Circulation Improvements

To ensure that adequate pedestrian circulation would exist in the near-term, if signalization of Arata Lane/ Los Amigos Road has not been implemented prior to occupancy of the Los Amigos Cottages Project, the Los Amigos Cottages Project shall be responsible for installing or funding the installation of a crosswalk with high-visibility signage and markings on the west leg of the Arata Lane/ Los Amigos Road intersection, as well as ensuring that adequate street lighting for the crosswalk is in place. The Town shall verify that the pedestrian improvements are in place prior to issuance of an occupancy permit.

TRA-2 Landscaping to Allow for Adequate Sight Distance

To ensure that adequate sight distance would be provided for drivers approaching the roundabout on eastbound Arata Lane, the Project shall not install any large fencing, or tall obstructions, such as large trees or shrubs, in the 30-foot triangular space on the southeastern corner of the Project site. The Town shall verify that landscaping plans reflect this requirement and shall verify that the southeastern corner of the Project site is free from any large obstructions prior to construction of the roundabout on eastbound Arata Lane.

Significance After Mitigation

Implementation of Mitigation Measure TRA-1 and Mitigation Measure TRA-2 would ensure pedestrian access and connectivity around the Project site is sufficient and that sight distance is adequate, reducing the potential impact to a less-than-significant level.

LESS THAN SIGNIFICANT WITH MITIGATION INCORPORATED

- b. Would the project conflict or be inconsistent with CEQA Guidelines section 15064.3, subdivision (b)?*

The Town of Windsor adopted VMT significance thresholds and screening criteria in April 2023. Residential development projects are assessed using a home-based VMT per capita metric, with VMT significance thresholds set at a level of 15 percent below the existing countywide average. The Sonoma County Transportation Authority (SCTA) operates and maintains the regional travel demand model that produces VMT estimates. The VMT data applied in this analysis were obtained from the

SCTM19 model version released in December 2021, which is the most current version of the model available from SCTA (Appendix A).

Based on output from the SCTA model, the existing residential VMT per capita in the County of Sonoma is 16.60 miles. VMT significance thresholds are set at 15 percent below this level, or 14.11 miles. Therefore, the Project would have a significant impact if residential VMT per capita exceeds 14.11 miles.

As discussed in the Addendum to the TIS provided in Appendix H, the Project would result in an adjusted⁶ VMT per capita of 12.78, which is below the threshold of 14.11. Therefore, this impact would be less than significant.

LESS-THAN-SIGNIFICANT IMPACT

- c. *Would the project substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible use (e.g., farm equipment)?*

As discussed in the Project Description, the Project includes construction of a private internal roadway and an extension of Los Amigos Road. The private internal roadway would connect to the new segment of Los Amigos Road and Arata Lane.

As discussed in Appendix A, sight distance at both of the Project driveways would equal or exceed the minimum (440 feet) in both directions. Additionally, the Project would not significantly impact queuing at any of the nearby intersections studied in the TIS. Furthermore, the proposed roadways included in Project construction would meet Town standards and would not include hazardous geometric design features or allow for incompatible uses.

As discussed in Appendix A, modifications to the striping on Arata Lane would be required to allow for drivers to legally turn into and out of the Project site. Without these improvements, a left hand turn into or out of the Project site from Arata Lane would be illegal and potentially hazardous. Therefore, this impact is potentially significant and Mitigation Measure TRA-3 would be required.

Mitigation Measure

The following mitigation measure is required:

TRA-3 Striping Modifications on Arata Lane

To ensure that drivers could legally turn left into and out of the Project site, the existing striping on Arata Lane at the Project street shall be modified to provide a break in the painted median. The Town shall verify that the striping modifications have occurred on Arata Lane prior to issuance of an occupancy permit.

Significance After Mitigation

Implementation of Mitigation Measure TRA-3 would ensure vehicle turns into and out of the Project site would not create traffic hazards, reducing the potential impact to a less-than-significant level.

LESS THAN SIGNIFICANT WITH MITIGATION INCORPORATED

⁶ Adjustments made due to the residential density of the Project and the inclusion of affordable units in the Project buildout (Appendix H).

d. Would the project result in inadequate emergency access?

As discussed in Section 20, *Wildfire*, the Project site would include two ingress and egress points. However, only the one on Arata Lane would be considered as an emergency access point, as the one on the proposed extension of Los Amigos Road also leads to Arata Lane and therefore does not provide an alternate emergency route. The proposed Project was reviewed by the Town's Fire Marshal to ensure adequate emergency access in accordance with applicable federal, State, and local regulations. The proposed Project would slightly exceed the Fire Marshal's requirements of a 1:30 ratio regarding access points by providing one emergency access point on Arata Lane for the proposed Project's 32 units (Appendix H). With implementation of Mitigation Measure WILD-1, which requires the Project applicant to submit an exemption and receive approval from the Town Fire Marshall indicating the site has adequate emergency access, impacts would be less than significant.

LESS THAN SIGNIFICANT WITH MITIGATION INCORPORATED

18 Tribal Cultural Resources

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less-than - Significant Impact	No Impact
Would the project cause a substantial adverse change in the significance of a tribal cultural resource, defined in a Public Resources Code Section 21074 as either a site, feature, place, or cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is:				
a. Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code Section 5020.1(k)?	☐	☒	☐	☐
b. A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1? In applying the criteria set forth in subdivision (c) of Public Resources Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.	☐	☒	☐	☐

Setting

California Assembly Bill 52 (AB 52) expanded CEQA by defining a new resource category, “tribal cultural resources.” AB 52 establishes 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” (PRC Section 21084.2). It further states the lead agency shall establish measures to avoid impacts that would alter the significant characteristics of a tribal cultural resource, when feasible (PRC Section 21084.3).

PRC Sections 21074(a)(1)(A) and (B) define tribal cultural resources as “sites, features, places, cultural landscapes, sacred places, and objects with cultural value to a California Native American tribe” and are:

1. Listed or eligible for listing in the CRHR, or in a local register of historical resources as defined in PRC Section 5020.1(k), or

2. A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in PRC Section 5024.1(c). In applying these criteria, the lead agency shall consider the significance of the resource to a California Native American tribe.

AB 52 also establishes a formal consultation process for California tribes regarding tribal cultural resources. The consultation process must be completed before a CEQA document can be adopted or certified. Under AB 52, lead agencies are required to begin consultation with California Native American tribes that are "traditionally and culturally affiliated with the geographic area of the proposed Project." Native American tribes to be included in the process are those that have requested notice of projects proposed within the jurisdiction of the lead agency.

The Town of Windsor mailed letters on November 12, 2024, to Native American Tribes who requested notification under AB 52. Under AB 52, tribes have 30 days to respond and request consultation. No tribes responded during the 30-day period to request consultation, which concluded in mid-October. Therefore, the Town assumes there are no tribal cultural resources within the Project site. Copies of AB 52 correspondence for this Project are included in Appendix I.

Impact Analysis

- a. *Would the project cause a substantial adverse change in the significance of a tribal cultural resource as defined in Public Resources Code Section 21074 that is listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code Section 5020.1(k)?*
- b. *Would the project cause a substantial adverse change in the significance of a tribal cultural resource as defined in Public Resources Code 21074 that is a resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1?*

As discussed above, no tribes responded to the Town's AB 52 notification letters and the Town assumes there are no tribal cultural resources within the Project site. Although there are no known tribal cultural resources present within the Project site, it is possible that ground disturbance during Project construction could encounter unknown archaeological resources that may be considered tribal cultural resources by locally affiliated California Native Americans. Therefore, the Project has the potential to significantly impact tribal cultural resources through ground disturbance and mitigation measure TCR-1 is required.

Mitigation Measure

The following mitigation measure is required:

TCR-1 Unanticipated Discovery of Tribal Cultural Resources

In the event that archaeological resources of Native American origin are identified during implementation of the proposed Project, ground-disturbing activities within 50 feet of the find shall be temporarily suspended or redirected until an archaeologist has evaluated the nature and significance of the find as a cultural resource and an appropriate local Native American representative is consulted. If the Town, in consultation with traditionally and culturally affiliated Native American group(s), determines the resource is a tribal cultural resource and thus significant under CEQA, a mitigation plan shall be prepared and implemented in consultation with traditionally

and culturally affiliated Native American group(s). The plan shall include measures to ensure the find is treated in a manner that respectfully retains, to the degree feasible, the qualities that render the resource of significance to the local Native American group(s). Examples of appropriate mitigation for tribal cultural resources include, but are not limited to, avoidance, protecting the cultural character and integrity of the resource, protecting traditional use of the resource, protecting the confidentiality of the resource, or heritage recovery.

Significance After Mitigation

Implementation of Mitigation Measure TCR-1 would protect tribal cultural resources in the event of discovery during ground-disturbing activities during Project construction, reducing the potential impact on such resources to a less-than-significant level.

LESS THAN SIGNIFICANT WITH MITIGATION INCORPORATED

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19 Utilities and Service Systems

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less-than - Significant Impact	No Impact
Would the project:				
a. Require or result in the relocation or construction of new or expanded water, wastewater treatment or storm water drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects?	☐	☐	☒	☐
b. Have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry and multiple dry years?	☐	☐	☒	☐
c. Result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?	☐	☐	☒	☐
d. Generate solid waste in excess of State or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals?	☐	☐	☒	☐
e. Comply with federal, state, and local management and reduction statutes and regulations related to solid waste?	☐	☐	☒	☐

Setting

Water Supply

The Windsor Water District (WWD) oversees the Town's potable water system. Water is provided to the Town primarily from collector wells in the Russian River Well Field. The Town also purchases wholesale water through a connection to the Sonoma Water aqueduct (Town of Windsor 2021).

Wastewater

Water District (WWD) owns, operates, and maintains the wastewater collection system that serves the Town. The Town collects its wastewater and treats it to disinfected tertiary levels at its water reclamation plant, the Windsor Wastewater Treatment Reclamation and Disposal Facility

(WWTRDF). The WWTRDF is designed with a capacity of 2.25 million gallons per day (MGD) average dry weather flow and 7.2 MGD peak weekly wet weather flow (Town of Windsor 2019). The current Average Dry Weather Flow (ADWF) seen at the water reclamation facility is 1.4 MGD (Town of Windsor 2019).

Electricity, Natural Gas, and Telecommunications

Electricity and natural gas service is provided to the Town by Pacific Gas & Electric (PG&E). Several telecommunications providers such as T-Mobile, Verizon, and Xfinity provide services to the Town.

Solid Waste

Sonoma County Resource Recovery provides garbage, recycling, and organic waste services for residential, commercial, and industrial areas, with weekly curbside pickup within the Town. Hazardous waste collection and disposal are provided by the Sonoma County Waste Management Agency, known as Zero Waste Sonoma. Committed waste is transported to the Healdsburg Transfer Station transloaded and disposed of at the Central Landfill.

Impact Analysis

- a. *Would the project require or result in the relocation or construction of new or expanded water, wastewater treatment or storm water drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects?*
- b. *Would the project have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry and multiple dry years?*
- c. *Would the project result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?*

Water

The 2020 Urban Water Management Plan (UWMP) shows that the Town has enough water supply capacity to meet current demands, as well as demands during normal water years through 2040 (Town of Windsor 2021). According to the Town's 2020 UWMP, based on the 2040 population projection, the Town is expected to experience water supply shortfalls in single-dry year scenario conditions by 2030 if local groundwater wells are not developed as potable supply. The 2020 UWMP analysis estimated that if the Town were to develop local groundwater well supplies, the Town would experience water supply shortages in single-dry year conditions by 2035. It is projected that in a multiple dry-year scenario, the Town will experience water supply shortfalls by 2040. The drought risk assessment conducted for the 2020 UWMP found that without additional water supply, a multi-year drought in current conditions would create a water supply shortfall requiring the Town to implement mandatory water use restrictions to reduce water consumption. This was projected to occur in all years of a multi-year drought (Town of Windsor 2021).

Potable water for the Project would be provided by WWD via existing utilities adjacent to the Project site.

The Town's potable water supply is provided from its wells in the Russian River Well Field into the water distribution system. Water is also purchased from the Sonoma County Water Agency's (SCWA) Santa Rosa aqueduct. Windsor's water supply system includes 4,725 acre-feet (AF) from the Russian River Well Field, 900 AF from the SCWA aqueduct with a combined system supply of 5,625 AFY. In addition, Windsor has a storage capacity of 5.4 million gallons (Town of Windsor 2021).

The Project's estimated water demand would be approximately 10,472 gallons per day⁷, or 11.7 AFY. This is 0.21 percent of Windsor's annual water supply⁸. The Project would adhere to the CCR Title 24, Part 11 (CALGreen) that requires a 20 percent reduction in residential indoor water use that would lower potential water demand. The Project would also comply with Section 12-3-820 of the WMC that requires water conservation methods including prohibiting washing hard or paved surfaces, causing excessive water flow when watering landscaping, and operating water features such as decorative fountains. Section 12-3-825 of the WMC that further prohibits non-essential water use. Compliance with existing local regulations would reduce the Project's water demand. Furthermore, the Project would account for a small amount of the Town's annual water supply and would therefore not necessitate new or expanded water facilities.

Wastewater

WWD owns, operates, and maintains the wastewater collection system that serves the Town. The Town collects its wastewater and treats it to disinfected tertiary levels at its water reclamation plant, the Windsor Wastewater Treatment Reclamation and Disposal Facility (WWTRDF). The WWTRDF is designed with a capacity of 2.25 million gallons per day (MGD) average dry weather flow and 7.2 MGD peak weekly wet weather flow (Town of Windsor 2019). The current Average Dry Weather Flow (ADWF) seen at the water reclamation facility is 1.34 MGD (Town of Windsor 2019). Therefore, there is a remaining wastewater capacity of 0.91 MGD.

The Project's estimated wastewater generation would be approximately 6,400 gallons per day, consistent with 200 gallons per day of wastewater flow per equivalent single-family dwelling, used in the Town's Wastewater Capacity Fee Study⁹ (Town of Windsor 2013). The Project would use less than one percent of the available unused capacity of the WWTRDF. Therefore, wastewater capacity would be sufficient to serve the Project and the Project would not require the construction of wastewater infrastructure.

Stormwater

The Project would be designed and engineered with drainage features appropriate to accommodate the needs of the Project and mimic the historical flow patterns. The Project would comply with the Town's Stormwater Low Impact Development (LID) Technical Design Manual, the Town's Flood Control Design Manual, and Flood Design Criteria and Hydraulic Analysis Requirements for Development Projects within the Town of Windsor. The Project includes interceptor trees and bioretention areas including bioretention curb openings to capture and treat stormwater runoff. The Project would adhere to landscape requirements pursuant to Section 12-3 Article 9 of the WMC, which requires landscaping and compacted soil to promote infiltration. As described in the Storm Water Low Impact Development Submittal prepared for the Project (Appendix F), the Project would implement bioretention beds that would be able to capture one inch of rainfall over a 24-

⁷ Based on the 2020 UWMP estimates of 119 gallons per day per capita. The Project would result in a population increase of 88 people. $88 \times 119 = 10,472$.

⁸ Windsor's annual water supply is 5,625 AF (Town of Windsor 2021). $(0.21 \text{ AF}/5,625 \text{ AF}) \times 100 = 0.21$ percent.

⁹ $32 \text{ dwelling units} \times 200 \text{ gallons of wastewater per day} = 6,400 \text{ gallons of wastewater per day}$

hour period. With implementation of these LID measures, the Project would achieve 100 percent capture and treatment of stormwater on site. Furthermore, the Project would connect to planned storm drain improvements proposed for the neighboring Quail Acres residential development project along Los Amigos Road and Arata Lane which would further support the stormwater facilities proposed by the Project. Therefore, the volume of stormwater runoff would not exceed the capacity of the storm drain system serving the site. The Project would not require the construction of new off-site stormwater drainage facilities or expansion of existing facilities.

Electricity, Natural Gas, and Telecommunications

The Project would require connections to existing electricity and telecommunications infrastructure adjacent to the Project site. The Project would not use natural gas and therefore would not include natural gas utility connections. The electricity and telecommunications connections required for the Project would be located entirely on the Project site and the Project would not require any off-site facilities or distribution infrastructure. Additionally, the Project would be required to comply with the CBC and CALGreen requirements, as discussed in Section 6, *Energy*, which would reduce the Project's energy consumption which would further reduce the need for expanded electrical facilities beyond the Project site.

Summary

Overall, the Project would not require or result in the relocation or construction of new or expanded water, wastewater treatment or storm water drainage, electric power, natural gas, or telecommunications facilities beyond connections and facilities on the Project site. Additionally, the Town would have sufficient water and wastewater supplies to serve the Project. Impacts would be less than significant.

LESS-THAN-SIGNIFICANT IMPACT

- d. *Would the project generate solid waste in excess of State or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals?*
- e. *Would the project comply with federal, state, and local management and reduction statutes and regulations related to solid waste?*

The Town, through Sonoma County Resource Recovery, provides garbage, recycling, and organic services for residential, commercial, and industrial areas, with weekly curbside pickup. Hazardous waste collection and disposal are provided by the Sonoma County Waste Management Agency, known as Zero Waste Sonoma. Committed waste is transported to the Healdsburg Transfer Station for transloading and disposed of at the Central Disposal Site Landfill. According to the California Department of Resources Recycling and Recovery (CalRecycle), the maximum permitted solid waste throughput at the Central Landfill is approximately 2,500 tons per day (CalRecycle 2023). CalRecycle states that as of November 2024 the Central Disposal Site Landfill had 8,310,149 cubic yards of remaining available capacity, or approximately 25.4 percent of the facility's maximum permitted capacity of 32,650,000 cubic yards (CalRecycle 2024).

Based on CalRecycle's estimated solid waste generation rates of 9.8 pounds of waste per unit per day, the Project would produce 313.6 pounds¹⁰ of solid waste per day, or 57.2 tons per year (CalRecycle 1996). The amount of solid waste generated by the Project would constitute less than 0.1 percent of the maximum daily throughput of the landfill. Therefore, the Project would not significantly increase the amount of solid waste entering the Central Disposal Site Landfill. Furthermore, the Project would be required to comply with Town and State plans and policies to reduce solid waste generation, including a requirement to divert at least 50 percent of solid waste and recyclables, and 75 percent of organics by 2025, as required by Assembly Bill 939, Senate Bill 1383, and the Town's goal of achieving zero waste by 2030. Overall, the Project's incremental increase in solid waste would not adversely affect solid waste facilities. Therefore, impacts would be less than significant.

LESS-THAN-SIGNIFICANT IMPACT

¹⁰ 32 dwelling units x 9.8 pounds/dwelling unit/day = 313.6 pounds per day.

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20 Wildfire

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less-than - Significant Impact	No Impact
If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would the project:				
a. Substantially impair an adopted emergency response plan or emergency evacuation plan?	☐	☒	☐	☐
b. Due to slope, prevailing winds, and other factors, exacerbate wildfire risks and thereby expose project occupants to pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire?	☐	☐	☒	☐
c. Require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment?	☐	☐	☒	☐
d. Expose people or structures to significant risks, including downslopes or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes?	☐	☐	☒	☐

Setting

The following impact analysis is based on part on the Wildfire Impact Analysis prepared by FCS in June 2025 which is attached as Appendix J to this IS-MND.

Section 7-2-416 of the Town's Municipal Code designates the entire Town as a Moderate FHSZ (Appendix J). According to maps prepared by the California Department of Forestry and Fire Protection (CAL FIRE) and as described in the Wildfire Impact Analysis, the Project site is within a Local Responsibility Area (LRA) and designated as a Moderate FHSZ.

Impact Analysis

- a. *If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would the project substantially impair an adopted emergency response plan or emergency evacuation plan?*

The Project site is located within a Moderate FHSZ within an LRA. According to the CAL FIRE maps adopted by the Town Council in June 2025¹¹ the Project site is not within a State Responsibility Area(SRA), and is outside of a Very High or High FHSZ as designated by CAL FIRE.

The Project is subject to the Sonoma County Multi-Jurisdictional Hazard Mitigation Plan (which includes the Town's Annex) and Emergency Operations Plan. Construction and operational activities related to the proposed Project would not conflict with policies or goals of these plans. These plans are generally applicable and do not identify any specific actions or considerations directly for the Project site. The proposed Project would comply with general guidance provided by these plans, including those for emergency response and general hazard mitigation measures, through conformance with the requirements of the California Building Standards Code (specifically Chapter 7A and the 2040 Town of Windsor General Plan's Public and Safety Element) (Appendix J). The Sonoma County Multi-Jurisdictional Hazard Mitigation Plan includes mitigation goals to reduce impacts from hazards, such as wildfire, within the County. These goals include the protection of people and the minimization of loss of life and property. As discussed in Section 9, *Hazards and Hazardous Materials*, the Project would not result in significant loss of life or property involving wildland fires with implementation of Mitigation Measure WILD-1, discussed below. Additionally, with implementation of Mitigation measure WILD-1, the Project would be consistent with the Emergency Operations Plan by providing adequate emergency access on the Project site.

Additionally, the Public Health and Safety Element of the Town of Windsor General Plan (Town of Windsor2023) designates the following nearby roadways as evacuation routes:

- US 101
- Old Redwood Highway
- Shiloh Road
- Arata Lane
- Windsor Road
- Windsor River Road
- Hembree Lane
- Brookes Road
- Los Amigos Road
- Starr Road

Construction traffic would utilize Highway 101, Old Redwood Highway, and Arata Lane to access the Project site. However, construction activities would result in temporary trips and would not significantly disrupt existing traffic or impair emergency evacuation.

¹¹ As part of Town Council Ordinance No. 2025-395 adopted June 4, 2025, the Town adopted the LRA and SRA maps from CAL FIRE with an amendment to designate all areas within the Town not designated High or Moderate by the State Fire Marshal as Moderate.

As discussed in Appendix J, Evacuation Zone Maps compiled by the Windsor Police Department and The Town of Windsor Climate Resilience Plan split the Town into four Evacuation Zone Areas. The Project site is located in Zone WI-B, Subzone WI-B01. Per the Town's Evacuation Map Lookup Tool, Zone WI-B would use Arata Lane to Los Amigos Road, US-101, and Old Redwood Highway to evacuate to the north; Arata Lane to Hembree Lane to Old Redwood Highway and US-101 to the south; and Arata Lane to Old Redwood Highway to Windsor River Road to the west. It is reasonable to assume that evacuation of the Project site would primarily use Arata Lane to Old Redwood Highway to US-101.

Arata Lane forms the southern boundary of the Project site and US-101 is approximately 840 feet to the west; however, there are no US-101 on-ramps from Arata Lane. Instead, traffic is required to travel west of US-101 to Old Redwood Highway. From the Old Redwood Highway/Arata Lane intersection, a southbound US-101 on-ramp is located approximately 2,100 feet to the north. Access to a northbound US-101 on-ramp requires traffic to turn south from the Old Redwood Highway/Arata Lane intersection and then left on Windsor River Road, a distance of approximately 1.4 miles.

Construction of a US-101 and Arata Lane northbound on-ramp is planned by the Town and is included in the Town's Capital Improvement Program for Fiscal Years (FY) 2023–2028; design of the northbound ramp is expected to occur in FY 2026–2027. Development, such as the proposed Project, contributes to funding these improvements via payment of traffic impact fees. Construction of the Los Amigos Road extension is needed before construction of the on-ramp can begin. Until such construction takes place, the proposed Project would include partial extension of Los Amigos Road from its intersection with Arata Lane to the Project site's northern entry.

The Project would not impact the use of emergency evacuation routes through the direct modification of existing roadways such as through elimination of lanes or reduction in lane width. In addition. As discussed above, the Project would include a partial extension of Los Amigos Road from its intersection with Arata Lane to the Project site's north entry. The approved Quail Acres residential development project includes the construction of the extension and realignment of Los Amigos Road from Arata Lane to the northern Town boundary where it will connect to the existing Los Amigos Road where it runs parallel to Highway 101. Both the extension associated with the Project and the full roadway completion associated with the Quail Acres residential development project would allow additional evacuation access on Arata Lane and ultimately Highway 101 via the extension of Los Amigos Road. Further, the Project would contribute, through traffic impact fees, to the construction of the Los Amigos Road extension and the US-101 and Arata Lane northbound on-ramp, which would benefit local traffic circulation and lead to improved evacuation efficiency by providing closer US-101 access (Appendix J).

The Project would result in an increase in vehicle users and would add traffic to roads identified as evacuation routes. However, as discussed in the Transportation Impact Study included in Appendix A, the additional trips associated with the Project would not result in an adverse impact on traffic operation, as measured by average delays at nearby intersections. Additionally, the Project's vehicular traffic would not significantly delay an emergency evacuation because evacuation notices are typically given with as much notice as possible and prevent, to the extent feasible, evacuation trips from all occurring at once (Appendix J).

All utilities would be installed underground in accordance with 2040 General Plan Policy PHS-4.9, Priority Undergrounding, which would minimize hazards from fallen power lines along evacuation and emergency access routes. In addition, no more than 32 units would be served by the Project's private street as there is no possibility that the proposed private street could be extended to

adjacent properties. Furthermore, the Project would pay applicable fire impact fees in accordance with WMC Section 16-6-300 to ensure sufficient fire protection services. Therefore, the proposed Project would conform to the objectives of 2040 General Plan Goal PHS-1, Emergency Response and Preparedness, specifically 2040 General Plan Policy PHS-1.3, Emergency Vehicle Access, as well as the objectives of 2040 General Plan Goal PHS-4, Fire Hazards (Appendix J).

The Project site would include two ingress and egress points. However, only the one on Arata Lane would be considered as an emergency access point, as the one on the proposed extension of Los Amigos Road also leads to Arata Lane and therefore does not provide an alternate emergency route. The proposed Project was reviewed by the Town's Fire Marshal to ensure adequate emergency access in accordance with applicable federal, State, and local regulations. The Project would slightly exceed the Fire Marshal's requirements of a 1:30 ratio regarding access points by providing one emergency access point on Arata Lane for the proposed Project's 32 units (Appendix &).

Therefore, development of the 31st and 32nd residential units would exceed the emergency access to residential ratio of 1:30 and would have a potentially significant impact. Therefore, Mitigation Measure WILD-1 is required.

Mitigation Measure

The following mitigation measure is required:

WILD-1 Emergency Access

Prior to issuance of the building permit for the 31st residential unit, the applicant shall obtain, and submit to the Town of Windsor, Fire Marshal approval of an exception to the 1:30 emergency access route ratio requirement based on the following factors:

- The Project site can be accessed via Arata Lane from the west, where the proposed private street intersects with Arata Lane at the southern end of the Project site.
- The Project site can be accessed from the east via Arata Lane or from the south via Los Amigos Road where the proposed private street intersects with the Los Amigos Road extension at the north end of the Project site.
- No more than 32 units would be served by the private street as there is no possibility that the proposed private street could be extended to adjacent properties.

Significance After Mitigation

It is within the Fire Marshal's discretion to issue an exception to the required ratio for residences and emergency access points. The Fire Marshal's exception would be based on a conclusion that the proposed Project's two ingress-egress access routes sufficiently serve as emergency access for the 32 units. Mitigation Measure WILD-1 would ensure that no more than 30 residential units would be constructed at the Project site prior to receipt of the Fire Marshal's approval of an exception. Implementation of Mitigation Measure WILD-1 would ensure the Project received approval from the Town Fire Marshal indicating the site has adequate emergency access and evacuation egress is provided on site. This would reduce impacts related to emergency response and emergency evacuation to a less-than-significant level.

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- b. *If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would the project, due to slope, prevailing winds, and other factors, exacerbate wildfire risks and thereby expose project occupants to pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire?*

As discussed in checklist question 'a', above, the Project site is located within a Moderate FHSZ within an LRA according to the CAL FIRE maps adopted by the Town in 2025. The Project site is not located within an SRA or on lands classified as a Very High FHSZ. The Project site is relatively flat. The Project would maintain the existing topography and would not include new or more pronounced slopes. Because of the lack of slopes on and adjacent to the Project site, the Project would not result in wildfire risk due to slopes. Prevailing winds in the vicinity of Windsor are generally from the northwest to the southeast. The Project site is not located within an area or includes features that experience significantly different prevailing winds. The Project would not have the potential to substantially change wind patterns; therefore, the Project would not result in wildfire risk due to prevailing winds (Appendix J).

The Town and Project site are occasionally subject to reduced air quality as a result of wildfire in the surrounding areas. However, the Project would not increase the potential for substantial air pollutant release. In the event of on-site fire, the Project site would not contain any features that would produce substantial quantities or qualities of air pollutants (Appendix J).

The 2019 Kincade Fire resulted in the evacuation of the Town and large parts of the County. The Kincade Fire resulted in spot fires from ember cast on properties within the Town limits on the north and northeastern edges of Town. No spot fires occurred on the Project site from the Kincade fire. The WMC also requires fire sprinklers to be installed in all new residential developments. The Project would comply with existing regulations to reduce fire risk on site.

Construction of the Project would use equipment with combustion engines and other activities which are known to create fires. However, applicable regulations, including the California Public Resources Code, would require that construction equipment use spark arrestors and appropriate fire suppression equipment be maintained on-site. Furthermore, the proposed Project would comply with regulations for development in Moderate FHSZs as outlined by the CBC and adopted by WMC Sections 7-2-400 through 7-2-424, including, but not limited to, ignition-resistant construction materials, roofing, vents, exterior coverings, windows, doors, and decking.

The Project would increase the population on a non-urbanized site approximately 0.5 mile from forested woodland to the north and east, where the risk of wildfire is greater than in urban areas where fuels are less abundant. As demonstrated by recent wildfires in Sonoma County, areas on the outer edges of urban development are often susceptible to wildfires due to their proximity to abundant wildfire fuels. Vegetation on the Project site consists of trees, shrubs, and grasses. The site is surrounded by pastures and vineyards, with hillsides of oak woodland and savanna further north and east. The land to the south of the Project site is developed with single-family residences, and lands west of US-101 are a mix of commercial and residential uses. As a part of Project implementation ground cover in private yards would be non-vegetative, trees and shrubs within 5 feet of any structure would be maintained at a minimum of 5 feet apart, and all new landscaping would incorporate only firewise plants, approved by the Sonoma County Fire District and the California Fire Safe Council. Implementation of these Project features would reduce potential for on-site vegetative fuels and fire spread. Furthermore, the neighboring urban street networks provide emergency response access. Overall, the land uses surrounding the Project site provide opportunities for fuel breaks and firefighting efforts in the form of existing and proposed roadways (Arata Lane and the proposed Los Amigos Road partial extension). The proposed Project would also

be required to comply with California Fire Code Section 701A.3 as adopted by the Town. As such, the proposed Project would be constructed with appropriate materials and methods for the construction of roofing, exterior coverings, venting, decking, porches and sealing of any gaps around doors, windows, eaves, and vents (Appendix J). Also, in accordance with the California Fire Code as adopted and amended by the Town of Windsor, the proposed Project would be required to provide sufficient fire hydrants and demonstrate the availability of sufficient fire hydrant water (fire flow).

In conclusion, the Project site does not contain specific conditions or features that would exacerbate wildfire risks, including exposure to wildfire-related pollutants or uncontrolled spread of a wildfire, nor would the Project introduce such conditions or features during construction or operation. Impacts would be less than significant

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- c. *If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would the project require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment?*

As discussed in checklist question 'a', above, the Project site is not located within an SRA or within lands classified as a Very High FHSZ. Construction activities may temporarily increase fire risk due to equipment use and other construction actions on the Project site that could be ignition sources. However, compliance with applicable construction equipment regulations regarding the use of spark arrestors and fire suppression equipment in accordance with California Public Resources Code Section 4442 and WMC Section 6-2-1003 would reduce construction-related risks. Implementation of regular construction site watering consistent with the Project's SWPPP BMPs would also reduce risks associated with wildfire caused by unintentional equipment sparks during grading. Standard construction BMPs, such as the relocation of flammable materials on burn permit days (Section 4227); the use of fire suppression equipment (Section 42228); the avoidance of gas-powered tools on burn permit days (Section 4331); and the use spark arrestors (Section 4442) would also support the suppression of fire sources and guide appropriate response should fire occur during construction activities.

The Project would include roads, fire hydrants and utilities similar to the adjacent low residential and recent single-family residential development in the area. The installation and maintenance of such would be completed in a typical manner and would not exhibit unusual characteristics that would exacerbate fire risk or create additional temporary or ongoing impacts to the environment. New utilities included as part of the Project would be required to be built underground in accordance with 2040 General Plan Policy PHS-4.9 and the WMC, which prioritizes the undergrounding of utilities. Therefore, the Project would not require the installation of new above-ground powerline infrastructure and therefore would not exacerbate fire risk.

Proposed on-site residences would be constructed to current fire and building codes and safety standards which support reduced fire risk. In addition, pursuant to the WMC Title VII, Chapter 2, Article 10, the Project would be required to abide by California Code of Regulations Title 24, Part 9, Chapter 7A. These regulations include safety measures to minimize the threat of fire, including construction of exterior walls with noncombustible or ignition-resistant material from the surface of the ground to the roof system and sealing any gaps around doors, windows, eaves, and vents to prevent intrusion by flame or embers. Fire sprinklers would be required in residences pursuant to the WMC. The Project would comply with California Code of Regulations Title 14, which sets forth the minimum development standards for fuel modification, setback, signage, and water supply,

which help prevent loss of structures and life by reducing wildfire hazards. Compliance with existing regulations would reduce the risk of wildfire. Therefore, impacts would be less than significant.

LESS-THAN-SIGNIFICANT IMPACT

- d. *If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would the project expose people or structures to significant risks, including downslopes or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes?*

As discussed in checklist question 'a', above, the Project site is not located within an SRA or within lands classified as a Very High FHSZ. During construction and operation, on-site stormwater would be managed in accordance with local, regional, and State regulations to ensure that off-site flow of stormwaters would not increase from current levels. The Project site is generally flat and is not located in close proximity to areas of substantial slope. The Project site is not located in a flood hazard area delineated by FEMA. The Project site's flat grade, distance from hillsides, and adequate drainage would prevent exposure of people or residences to downslope landslides and flooding. Therefore, impacts would be less than significant.

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21 Mandatory Findings of Significance

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less-than - Significant Impact	No Impact
Does the project:				
a. Have the potential to substantially degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, substantially reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?	☐	☒	☐	☐
b. Have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects)?	☐	☒	☐	☐
c. Have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?	☐	☐	☒	☐

- a. *Does the project have the potential to substantially degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, substantially reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?*

The Project is a relatively small, local residential development and would not have the potential to cause regional effects such that the Project would threaten to eliminate a plant or animal community or species, or otherwise substantially reduce habitat. Furthermore, as discussed in Section 4, *Biological Resources*, all potential impacts to plant and wildlife species would be mitigated to less than significant levels with incorporation of mitigation measures BIO-1 through BIO-6.

Additionally, as discussed in Section 5, *Cultural Resources* and Section 18, *Tribal Cultural Resources*, no historical resources or known archaeological or tribal cultural resources are located at the Project site. However, Mitigation Measures CUL-1 and TCR-1 would be required to preserve any unanticipated discoveries of resources on the Project site. With implementation of mitigation measures CUL-1 and TCR-1, the Project would not eliminate important examples of the major periods of California history or prehistory.

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- b. *Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects)?*

As described in Sections 1 through 20, the Project would not result in significant and unmitigable impacts to the environment with respect to all environmental issues. This is largely because Project construction activities would be temporary, and construction and operational activities would not significantly alter the environmental baseline condition.

As defined in *CEQA Guidelines* Section 15335, "cumulative impacts" refer to two or more individual impacts that, when considered together, are substantial or will compound other environmental impacts. Cumulative impacts are the changes in the environment that result from the incremental impact of development of the proposed Project when added to other closely related past, present and reasonably foreseeable probable future nearby projects. If a significant cumulative impact is identified, it must then be determined whether the Project's contribution to that impact would be cumulatively considerable. Cumulative impacts could occur if the construction of other projects occurred recently, at the same time as the proposed Project or is proposed in the near future, and in the same geographic scope, such that the effects of similar impacts of multiple projects combine to create greater levels of impact than would occur at the project-level. For example, if the construction of other projects in the area occurs at the same time as Project activities, combined air quality and noise impacts may be greater than at the project-level.

Five planned development projects are within one mile of the Project site, which are summarized in Table 11. The exact implementation timing of these projects is not known at this time; therefore, it is conservatively assumed that construction of these planned projects could overlap with construction of the proposed Project.

Table 11 Cumulative Development Projects

No.	Project Name	Project Location	Project Components	Status
1	Sherlock Homes	260 Arata Lane, 0.1 miles south of the Project site.	Construction of 7 new single-family residences and frontage improvements along Arata Lane.	Approved
2	Kashia/Burbank Affordable Housing/ Mixed Use Project	10221 Old Redwood Highway, 0.2 miles west of the Project site.	Construction of 54 affordable apartments for Kashia Tribe members and a mixed-use building for Tribal Headquarters offices, with community spaces and a lobby/gallery on the ground floor	Approved
3	Quail Acres	325 and 259 Arata Lane, adjacent to the Project site to the east.	Construction of 301 residential lots, community park, and extension of Los Amigos Road.	Approved
4	Arata North Subdivision	115 Arata Lane, 0.1 miles southeast of the Project site.	Creation of 55 lots on a 10.47 acre parcel and construction of new streets to provide access to the parcels.	Under Review
5	Windsor Hotel	160 Arata Lane, 400 feet west of the Project site.	Construction of a 115 room hotel, a pool and spa, surface level parking, and a new entrance onto Arata Lane.	Under Review

Source: Town of Windsor 2025c

The potential for the Project to contribute to cumulative impacts would be limited to the infrequent periods of Project activities and the following issue areas:

- **Air Quality.** Because the San Francisco Bay Area Air Basin currently exceeds the federal ozone and PM_{2.5} standards and the state ozone, PM₁₀, and PM_{2.5} standards, cumulative air quality impacts currently exist for these pollutants. As discussed in Section 3, *Air Quality*, Project construction and operational activities would not generate emissions of air pollutants exceeding BAAQMD significance thresholds, which are intended to assess whether a project's contribution to existing cumulative air quality impacts is considerable. Therefore, the Project's contribution to cumulative air quality impacts would not be cumulatively considerable.
- **Biological Resources.** Most cumulative impacts to biological resources occur when a disproportionate number of development projects occur at once and regionally impact a local population of a special status species, riparian habitat, sensitive natural communities, wetlands, or other locally protected biological resources. In this case, most cumulative projects would occur within previously developed areas, and would not be anticipated to result in significant impacts to special status plant and wildlife species or sensitive natural communities. For projects that would occur in areas that are not disturbed, project specific measures would be required to reduce impacts to special status plant and animal species on those project sites. Additionally, the proposed Project would be required to implement mitigation measures BIO-1 through BIO-6 to reduce its impacts to biological resources to a less-than-significant level such that project-level impacts would not result in a cumulatively considerable impact to biological resources.
- **Cultural and Tribal Cultural Resources.** Cumulative development in the region would continue to disturb areas with the potential to contain cultural and tribal cultural resources. The cumulative development projects have undergone or would be required to undergo CEQA review, which would determine the extent of potential cultural and tribal cultural resources impacts and mitigate those impacts appropriately. If these cumulative projects would result in impacts to known or unknown cultural or tribal cultural resources, impacts to such resources

would be addressed on a case-by-case basis. Given the uncertainty in the extent of impacts associated with these projects, this analysis conservatively assumes a significant cumulative impact to cultural and tribal cultural resources would occur. Nevertheless, the proposed Project would be required to implement mitigation measures CUL-1 and TCR-1 to reduce its impacts to cultural and tribal cultural resources to a less-than-significant level such that project-level impacts would not result in a cumulatively considerable contribution to this cumulative impact.

- **Greenhouse Gas Emissions.** GHG emissions and climate change are, by definition, cumulative impacts. As discussed in Section 8, *Greenhouse Gas Emissions*, the adverse environmental impacts of cumulative GHG emissions are already occurring. As a result, cumulative impacts related to GHG emissions are significant. Thus, the issue of climate change involves an analysis of whether a project's contribution towards an impact is cumulatively considerable. As discussed in Section 8, *Greenhouse Gas Emissions*, Project emissions would be below the identified threshold of significance and therefore would not be cumulatively considerable.
- **Hazards and Hazardous Materials.** Similar to the proposed Project, cumulative projects would be required to comply with regulations applicable to the use, disposal, and transportation of hazardous materials during construction activities, and compliance with applicable regulations would reduce potential cumulative impacts to less-than-significant levels. With respect to the use and accidental release of hazardous materials in the environment at construction, effects are generally limited to site-specific conditions. As part of project approval for the cumulative projects, the Town would assess the need for fire protection services, which would inform efforts to improve or expand needed facilities. Cumulative development would comply with emergency access requirements as directed by respective Town and fire district regulations. Therefore, cumulative impacts related to hazards and hazardous materials would be less than significant.
- **Noise.** Overlapping construction activities associated with cumulative development projects in conjunction with proposed Project activities could result in cumulative noise impacts related to a temporary increase in ambient noise levels at the same noise-sensitive receivers located throughout the area, especially during construction activities. However, similar to the proposed Project, cumulative development projects would be subject to compliance with the noise level limits established in the Town's municipal code. Although there could be other cumulative projects simultaneously under construction near construction of the proposed Project, significant construction groundborne vibration and noise impacts would typically only occur for sensitive receptors within relatively close distances of construction activities (e.g., within approximately 25 feet for a vibratory roller). While the residence at 267 Arata Lane is within 25 feet of the proposed Project site, it is 70 feet from the Quail Acres Project site. Therefore because no two construction cumulative projects would both be within 25 feet of a given sensitive receptor or structure. Cumulative groundborne vibration and noise impacts would be less than significant.
- **Public Services.** Cumulative developments would be required to comply with the California Fire Code, Part 9 of the CBC and would follow standards for fire safety such as fire flow requirements for buildings, fire hydrant location and distribution criteria, automated sprinkler systems, and fire-resistant building materials. For these reasons, the cumulative projects would not result in the need to construct new or expand existing fire protection or emergency medical services facilities beyond those anticipated for expected population growth. Therefore, the cumulative impacts related to fire protection facilities would be less than significant. Cumulative plans and projects within the service area of the Windsor Police Department would be reviewed for impacts on police protection services, would be required to address any potential impacts with

mitigation, and would need to provide adequate emergency access for police services with proper signage and lighting. Because demand for law enforcement services is highly dependent on a number of factors that vary substantially by project (clientele, hours of operation, crime prevention measures, etc.), it is unlikely that there would be substantial overlap in demand that would result such that new facilities are necessary. The cumulative impact related to police protection facilities would be less than significant. Cumulative projects would be required to pay development impact fees towards school operation which, pursuant to Section 65995(3)(h) of the California Government Code (Senate Bill 50, chaptered August 27, 1998), are “deemed to be full and complete mitigation of the impacts of any legislative or adjudicative act, or both, involving, but not limited to, the planning, use, or development of real property, or any change in governmental organization or reorganization.” Therefore, the cumulative impact related to school facilities would be less than significant.

- **Transportation.** Overlapping construction schedules associated with cumulative development projects in conjunction with proposed Project activities could result in cumulative transportation impacts. Similar to the proposed Project, cumulative projects would be required to be consistent with VMT screening criteria or complete a VMT analysis. The proposed Project would not result in significant impacts related to VMT. Therefore, cumulative transportation impacts would be less than significant.
- **Utilities and Service Systems.** Operation of cumulative development projects in conjunction with proposed Project activities could result in cumulative utilities impacts. Similar to the proposed Project, cumulative projects would be required to undergo individual environmental review for potential impacts to existing utilities that serve the Town. The Project would not result in significant impacts to utilities or service systems and therefore would not contribute to a cumulatively considerable impact.

Based on this information, the proposed Project would not result in a cumulatively considerable contribution to a significant cumulative impact with mitigation incorporated.

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- c. *Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?*

In general, impacts to human beings are associated with air quality, GHG emissions, hazards and hazardous materials, transportation, wildfire, and noise impacts. As detailed in the preceding responses, the Project would not result, either directly or indirectly, in substantial adverse impacts related to these issue areas. Impacts in all these issue areas would be less than significant with the exception of transportation and wildfire which would require mitigation. Mitigation measures TRA-1 through TRA-3 would ensure adequate traffic safety and Mitigation Measure WILD-1 would ensure adequate emergency access on the Project site. Implementation of these mitigation measures would reduce impacts to less than significant levels. Therefore, the Project would not have substantial direct or indirect adverse effects on human beings.

LESS THAN SIGNIFICANT WITH MITIGATION INCORPORATED

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Appendix A

Transportation Impact Study



Transportation Impact Study for the Los Amigos Cottages



Prepared for the Town of Windsor

Submitted by
W-Trans

July 10, 2025



**TRAFFIC ENGINEERING
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- A. Collision Rate Calculations
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- E. Intersection Level of Service Calculations

Executive Summary

The proposed residential development would be located on the northwest corner of the eastern Arata Lane/ Los Amigos Road intersection in the Town of Windsor. The project would include 32 single-family homes consisting of 26 detached and six attached units. A new segment of Los Amigos Road would be constructed along the project's eastern frontage. It would include one travel lane in each direction, on-street parking, and a buffered bike lane on the west side of the street; the roadway would be further widened and extended in the future by other developments as part of the planned Los Amigos Road extension project. Onsite roadways would be private, with connections to both Los Amigos Road and Arata Lane.

Pedestrian, bicycle, and transit facilities along existing and future project frontages and near the project vicinity were reviewed. These facilities providing access to the project site are or will be adequate upon completion of the project. Project improvements include new sidewalks on project frontages and bicycle lanes on the new segment of Los Amigos Road. While the intersection at Arata Lane/Los Amigos Road is expected to be signalized in the near-term, the proposed project should be responsible for installing or funding the installation of a crosswalk with high-visibility signage and markings, as well as street lighting on the west leg of the intersection if signalization has not occurred prior to project occupancy in order to establish effective pedestrian connectivity to the south.

Based on standard trip generation rates, the project is anticipated to generate an average of 288 trips per day, including 21 trips during the a.m. peak hour and 27 during the p.m. peak hour. A review of the collision history indicates that all three study intersections had calculated collision rates below statewide averages, with no reported pedestrian or bicycle collisions occurring during the study period. The proposed plans for the onsite private roadway have been deemed consistent with the Town's *Complete Street Design Guidelines* criteria for a Narrow Residential Street, meeting CSDG parameters for roadway and sidewalk widths as well as daily traffic volumes. Upon completion of the proposed frontage improvements to be constructed by the project, as well as the proposed right-of-way dedication allowing the segment of Arata Lane along the project frontage to be widened to a Five-Lane Boulevard in the future, the project would be consistent with the *Complete Street Design Guidelines* and General Plan Policy M-3.25.

The project does not qualify for VMT screening so a full VMT assessment was performed. Unadjusted project VMT is higher than the threshold allowed by the Town with a VMT of 14.30 miles per capita. The Sonoma County Transportation and Climate Authorities (SCTCA) VMT Reduction Tool was used to adjust the VMT in consideration of the project's density and inclusion of affordable housing. The adjusted project VMT of 12.66 miles per capita is below the threshold and the project impact on VMT is therefore less than significant.

The project's accommodation of a potential future roundabout at the Arata Lane/Los Amigos Road intersection in was assessed. While the Los Amigos Cottages project has provided sufficient right-of-way dedication to accommodate a future roundabout, it was determined that an approximately 30-square foot triangular area on the southeastern corner of the site would need to remain free of fences or tall obstructions to meet upstream sight distance parameters. This condition should be reflected on the project's landscaping plans, and/or an easement to the Town of Windsor established if deemed necessary by the Public Works Department.

Sight distances at the proposed private street connections to Arata Lane and the Los Amigos Road extension would meet or exceed recommended minimums. The need for left-turn lanes was analyzed using project volumes at both private streets. A left-turn lane is not warranted at either street under Existing plus Project or Baseline plus Project Conditions. Restriping of the existing painted median centerline striping on Arata Lane is recommended to allow for legal left turns in and out of the driveway. Town policy requires projects not to cause queues to exceed available stacking lengths. Based on project volumes and calculated 95th percentile queues, the project would not individually cause any queues to exceed storage lengths at study intersections. Without planned improvements at the Arata Lane/Los Amigos Road intersection to be constructed by the proposed Quail Acres project, 95th percentile queues during the baseline a.m. peak hour are projected to exceed storage in the northbound left-turn pocket; the Los Amigos Cottages project would cause these queues to extend three feet, which is not considered to be a significant project-related impact per the Town's guidelines.

The project includes interconnected internal roadways with two access points. The design offers adequate emergency circulation and access from a transportation perspective, but final approval rests with the Town's Fire Marshal.

An analysis of Levels of Service (LOS) at the study intersections indicates that Arata Lane/Los Amigos Road currently has unacceptable LOS F operation on the northbound approach during the a.m. peak hour. Under Existing plus Project Conditions, the proposed Los Amigos Cottages project is expected to increase overall delay at the intersection by 0.2 seconds, which is not considered to be an adverse project effect on traffic operation per the Town's guidelines. Under Baseline Conditions, including traffic and improvements associated with pending developments in the vicinity, the intersection would be signalized, improving operation to an acceptable service level. If planned improvements to be constructed by the proposed Quail Acres development are not made at the intersection, LOS F operation on the northbound approach would continue to further deteriorate; under this condition the Los Amigos Cottages project would increase average delays by 0.6-seconds, which is not considered to be an adverse project effect. LOS at the remaining study intersections is anticipated to remain acceptable under all scenarios both without and with the project.

Introduction

This report presents an analysis of the potential traffic impacts that would be associated with the development of 32 single-family homes at the northwest corner of the eastern Arata Lane/Los Amigos Road intersection in the Town of Windsor. The traffic study was completed in accordance with direction provided by the Town of Windsor and is consistent with standard traffic engineering techniques.

Prelude

The purpose of a traffic impact study is to provide Town staff and policy makers with data that they can use to make an informed decision regarding the potential transportation impacts of a proposed project, and any associated improvements that would be required in order to mitigate these impacts to an acceptable level under CEQA, the *Town of Windsor 2040 General Plan*, or other policies. Impacts relative to access for pedestrians, bicyclists, and to transit are addressed in the context of the CEQA criteria. Consistent with SB 743, the project's transportation impacts were analyzed using VMT. While no longer a part of the CEQA review process, vehicular traffic service levels at key intersections were evaluated for consistency with General Plan policies by determining the number of new trips that the proposed project would be expected to generate, distributing these trips to the surrounding street system based on anticipated travel patterns specific to the proposed project, then analyzing the effect the new traffic would be expected to have on the study intersections.

Applied Standards and Criteria

The report is organized to provide background data that supports the various aspects of the analysis, followed by the assessment of CEQA issues and then evaluation of policy-related issues. The CEQA criteria evaluated are as follows.

Would the project:

- a. Conflict with a program, plan, ordinance, or policy addressing the circulation system, including transit, roadway, bicycle, and pedestrian facilities?
- b. Conflict or be inconsistent with CEQA Guidelines § 15064.3, subdivision (b)?
- c. Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?
- d. Result in inadequate emergency access?

The project was also evaluated against the Town of Windsor's policies, which provide guidance relative to traffic impacts for CEQA issues as well as the effects caused by traffic associated with new development.

Project Profile

The proposed Los Amigos Cottages project would include 32 single-family homes comprised of 26 detached and six attached units, and is located at the northwest corner of the eastern Arata Lane/Los Amigos Road intersection. The project site plan and tentative map dated June 2025 include the following circulation improvements.

- Construction of a new segment of Los Amigos Road along the project's eastern frontage including two 11-foot vehicle travel lanes and a two-foot northbound shoulder, as well as an eight-foot wide on-street parking zone, a six-foot bike lane with three-foot buffer, and an 11-foot sidewalk along the project frontage.
- Improvements on Arata Lane that will result in a cross-section maintaining the current 10-foot wide eastbound through lane, 6-foot wide bike lane, and 10-foot wide center turn lane, as well as widening on

the project frontage to accommodate an 11-foot westbound through lane, six-foot bike lane with three-foot buffer, and 11-foot sidewalk with 4-foot tree wells.

- An onsite private street consisting of two 12-foot wide vehicle travel lanes with a six-foot sidewalk on one side, as well as provision of 16 clustered perpendicular parking spaces on the onsite street near the center of the development.

The Los Amigos Cottages development would not fully widen Los Amigos Road and Arata Lane, nor would it complete the full Los Amigos Road extension. These future improvements are anticipated to be constructed by other developments and the Town as follows.

- The east side of the Los Amigos Road extension near Los Amigos Cottages would be widened by another development project (Quail Acres) in the future to include a buffered bike lane and sidewalks.
- The Quail Acres project would also be responsible for constructing the full Los Amigos Road extension to the northern Town limits.
- The south side of Arata Lane near Los Amigos Cottages, as well as the segment of Arata Lane to the east toward US 101, would be widened in the future to accommodate a five-lane boulevard cross-section. This widening is consistent with that identified in the Town's General Plan and is anticipated to be constructed in tandem with future development activity on fronting parcels.

The location of the Los Amigos Cottages site is shown in Plate 1.

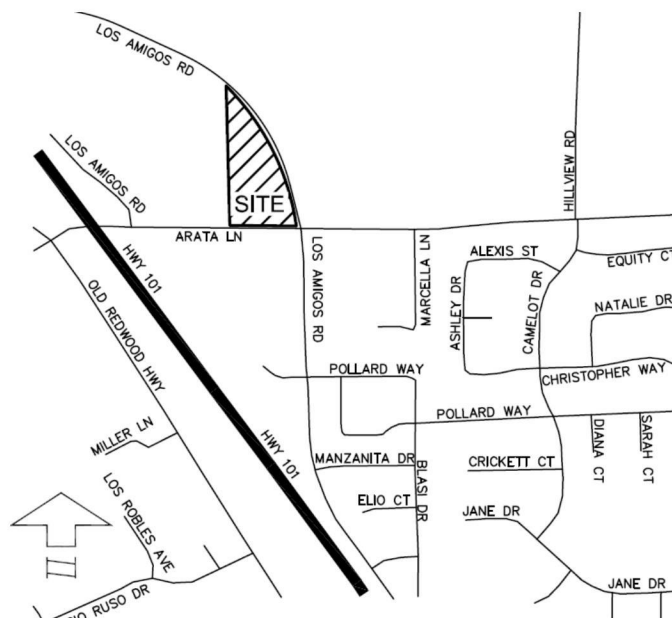


Plate 1 Project Site Context
(source: Civil Design Consultants, 2024)

Transportation Setting

Study Area and Periods

The study area varies depending on the topic. For pedestrian trips it generally consists of all streets within a half mile of the project site that would lie along primary routes of pedestrian travel, or those leading to nearby generators or attractors. For bicycle trips it generally consists of all streets within one mile of the project site that would lie along primary routes of bicycle travel. For the safety and operational analyses, it consists of the project frontage and the following intersections:

1. Old Redwood Highway/Arata Lane
2. Arata Lane/Los Amigos Road-US 101 North Off-Ramp
3. Arata Lane/Los Amigos Road

Operating conditions during the a.m. and p.m. peak periods were evaluated to capture the highest potential impacts for the proposed project as well as the highest volumes on the local transportation network. The morning peak hour occurs between 7:00 and 9:00 a.m. and reflects conditions during the home to work or school commute, while the p.m. peak hour occurs between 4:00 and 6:00 p.m. and typically reflects the highest level of congestion during the homeward bound commute. Counts were obtained for the study intersections in October 2023 while area schools were in session.

Study Intersections

Old Redwood Highway/Arata Lane is a signalized four-legged intersection with protected left-turn phasing on the northbound and southbound approaches of Old Redwood Highway. The eastbound and westbound approaches operate with split phasing, with the western leg being a private street to the Evergreen Mobile Home Park. A right-turn overlap phase exists on the westbound approach. Sidewalks are present on the northeast and southeast intersection corners, and crosswalks are marked on the north and east legs. Bicycle lanes are present on all approaches.

Arata Lane/Los Amigos Road-US 101 North Off-Ramps is a signalized four-legged intersection with split phasing on the US 101 North Off-Ramp and the southbound approach of Los Amigos Road. Sidewalks are present on the west leg of the intersection, and bicycle lanes are present on the east and west approaches. The intersection includes no marked crosswalks.

Arata Lane/Los Amigos Road is an unsignalized tee intersection that is stop-controlled on the northbound approach. Left-turn lanes are provided on the westbound and northbound approaches. There is a two-way left-turn lane on the west leg. Bicycle lanes are present on all approaches. Sidewalks are present only on the south leg and a segment on the east leg of the intersection. The intersection includes a crosswalk on the south leg.

The study intersections and existing lane configurations are shown in Figure 1.

Existing Transportation Facilities

Existing and Planned Pedestrian Facilities

Pedestrian facilities include sidewalks, crosswalks, pedestrian signal phases, curb ramps, curb extensions, and various streetscape amenities such as lighting, benches, etc. Existing pedestrian facilities along the proposed project site frontages as well as within a quarter-mile distance of the project site were reviewed.



Transportation Impact Study for Los Amigos Cottages
Figure 1 – Study Area, Existing Lane Configurations, and Existing Traffic Volumes

There are no existing pedestrian facilities along the project frontage on Arata Lane. Sidewalks are present on both the north and south sides of Arata Lane between the intersections of Old Redwood Highway/Arata Lane and Los Amigos Road-US 101 North Off-Ramp/Arata Lane, and on the north side along the frontage of Newsong Church. Continuous sidewalks exist on the south side of Arata Lane to the east of Los Amigos Road to Hembree Lane, except for an approximately 90-foot gap in front of 300 Arata Lane.

Sidewalks are present on the east and west sides of Los Amigos Road from its intersection with Arata Lane southward to Manzanita Drive, after which sidewalks are present only along the eastern side of the street. There are marked crosswalks on the north and east legs of Old Redwood Highway/Arata Lane and on the south leg of Los Amigos Road/Arata Lane.

As identified in the *Windsor Bicycle and Pedestrian Master Plan*, SCTCA, 2014, additional pedestrian crossings are planned in the future at the intersections of US 101 North Off-Ramp-Los Amigos Rd/Arata Lane. The Town of Windsor is also in the process of updating the 2014 Bicycle and Pedestrian Master Plan, with the new plan referred to the Windsor Active Transportation Plan (ATP). The ATP identifies filling sidewalk gaps in the project area on both the north and south sides of Arata Lane.

It is noted that another development project, Quail Acres, has been conditioned to construct a temporary pedestrian pathway along Los Amigos Cottage's frontage of Arata Lane. If the Quail Acres project completes this temporary path prior to construction of Los Amigos Cottages, the Los Amigos Cottages development would replace it with permanent sidewalks.

Existing and Planned Bicycle Facilities

The *Highway Design Manual*, Caltrans, 2020, classifies bikeways into four categories:

- **Class I Multi-Use Path** – a completely separated right-of-way for the exclusive use of bicycles and pedestrians with cross flows of motorized traffic minimized.
- **Class II Bike Lane** – a striped and signed lane for one-way bike travel on a street or highway.
- **Class III Bike Route** – signing only for shared use with motor vehicles within the same travel lane on a street or highway.
- **Class IV Bikeway** – also known as a separated bikeway, a Class IV Bikeway is for the exclusive use of bicycles and includes a separation between the bikeway and the motor vehicle traffic lane. The separation may include, but is not limited to, grade separation, flexible posts, inflexible physical barriers, or on-street parking.

In the project area Class II bike lanes exist on Old Redwood Highway between the north Town limit and Conde Lane, on Arata Lane between Old Redwood Highway and Foothill Drive, and on Los Amigos Road between Arata Lane and Lakewood Drive. According to the 2014 *Windsor Bicycle and Pedestrian Master Plan*, a bicycle route is planned along Camelot Drive between Arata Lane and Jane Drive. Bicyclists ride in the roadway and/or on sidewalks along all other streets within the project study area.

The Town of Windsor is in the process of updating the 2014 Bicycle and Pedestrian Master Plan, with the new plan referred to the Windsor Active Transportation Plan (ATP). The draft ATP identifies several additional improvements in the vicinity of the project site, including upgrading the current bike lanes on Arata Lane and Los Amigos Road to protected bikeways, as well as providing protected bikeways on the Los Amigos Road extension.

Table 1 summarizes the existing and planned bicycle facilities in the project vicinity, as contained in the *Windsor Bicycle and Pedestrian Master Plan* and Draft Active Transportation Plan.

Table 1 – Bicycle Facilities Summary

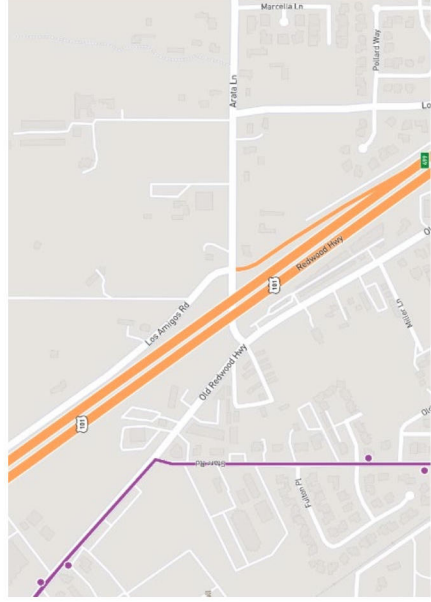
Status	Location	Class	Length (miles)	Begin Point	End Point
Existing	Arata Ln	II	1.57	Old Redwood Hwy	Foothill Dr
	Los Amigos Rd	II	1.30	Arata Ln	Brooks Dr
	Old Redwood Hwy	II	1.95	North Town Limit	Conde Ln
Planned	Camelot Dr	III	0.33	Arata Ln	Jane Dr
Planned (2025 Draft ATP)	Los Amigos Rd	IV	0.50	Town Limits	Arata Ln
	Los Amigos Rd	IV	1.21	Arata Ln	Brooks Rd S
	Arata Ln	IV	0.89	Old Redwood Hwy	Brooks Rd

Source: *Windsor Bicycle and Pedestrian Master Plan, Sonoma County Transportation Authority, 2014; Draft Windsor Active Transportation Plan, March 2025*

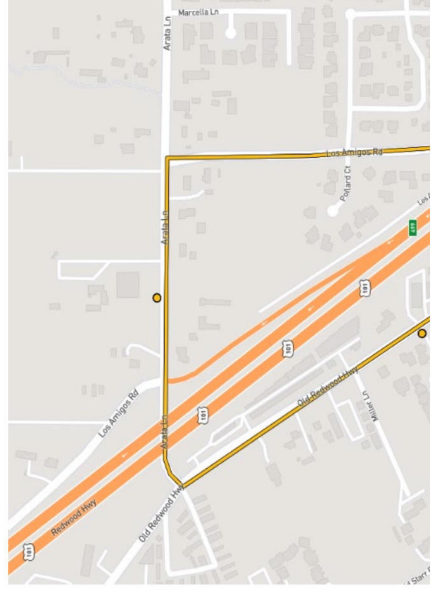
Existing Transit Facilities

Sonoma County Transit (SCT) provides regional fixed route bus service in Sonoma County. Transit stops for Routes 60 and 66 are within a half mile of the project site. Route 60 runs between Cloverdale City Hall and the Santa Rosa Transit Mall, operating from 6:00 a.m. to 9:40 p.m. on weekdays and 6:45 a.m. to 9:40 p.m. on weekends with headways of 35 minutes to two hours. Route 66 runs from the Shiloh Center to the Windsor Transit Depot from 7:45 a.m. to 5:30 p.m. with headways of 45 minutes to one-and-a-half hours Monday through Saturday.

The two SCT routes and stops in the vicinity of the project area are shown in Plate 2.



Route 60



Route 66 (Windsor Shuttle)

Plate 2 Sonoma County Transit Routes Near Project Site

Source: <https://scttransit.com/maps-schedules/>

Two bicycles can be carried on most SCT buses. Bike rack space is on a first-come, first-served basis. Additional bicycles are allowed on SCT buses at the discretion of the driver.

Dial-a-ride, also known as paratransit, or door-to-door service, is available for those who are unable to independently use the transit system due to a physical or mental disability. SCT Paratransit is designed to serve the needs of individuals with disabilities within the Town of Windsor and the greater Sonoma County area.

The Windsor Unified School District operates school bus service throughout the Town. The nearest WUSD bus stop to the project site is approximately one-quarter mile to the south at Los Amigos Road/Pollard Court.

Collision History

The collision history for the study area was reviewed to determine any trends or patterns that may indicate a safety issue. Collision rates were calculated based on records available from the California Highway Patrol as published in their Statewide Integrated Traffic Records System (SWITRS) reports. The most current five-year period available is October 1, 2019, through September 30, 2024.

As presented in Table 2, the calculated collision rates for the study intersections were compared to average collision rates for similar facilities statewide, as indicated in *2022 Crash Data on California State Highways*, California Department of Transportation (Caltrans). These average rates statewide are for intersections in the same environment (urban, suburban, or rural), with the same number of approaches (three or four), and the same controls (all-way stop, two-way stop, or traffic signal). All study intersection had a calculated collision rate below the statewide average, indicating there are no underlying issues with regards to collisions. The collision rate calculations are provided in Appendix A.

Table 2 – Collision Rates for the Study Intersections			
Study Intersection	Number of Collisions (2019-2024)	Calculated Collision Rate (c/mve)	Statewide Average Collision Rate (c/mve)
1. Old Redwood Hwy/Arata Ln	2	0.09	0.33
2. Arata Ln/Los Amigos Rd-US 101N Off-Ramp	6	0.29	0.33
3. Arata Ln/Los Amigos Rd	1	0.07	0.28

Note: c/mve = collisions per million vehicles entering

Pedestrian Safety

The collision history for the study area was reviewed to determine any trends or patterns that may indicate a safety issue for pedestrians. During the five-year study period described above there were no reported collisions involving pedestrians at the study intersections.

Bicyclist Safety

Collision records for the study area were reviewed to determine if there had been any bicyclist-involved crashes. During the same five-year study period there were no reported collisions involving a bicyclist at any of the study intersections.

Project Data

The proposed residential project site is located at the northwest corner of the eastern Arata Lane/Los Amigos Road intersection and would include a total of 32 single-family homes, with 26 detached units and six attached duet units. The project would include the construction of a new segment of Los Amigos Road along its eastern frontage between Arata Lane and the project driveway. The section of Los Amigos Road to be constructed by the project would include one travel lane in each direction as well as on-street parking and a buffered bike lane on the west (project) side of the street. Onsite roadways would be private and include connections to both Los Amigos Road and Arata Lane. The proposed project site plan is shown in Figure 2.

Trip Generation

The anticipated trip generation for the proposed project was estimated using standard rates published by the Institute of Transportation Engineers (ITE) in *Trip Generation Manual*, 11th Edition, 2021 for “Single Family Detached Housing” (ITE LU #210) and “Single Family Attached Housing” (ITE LU #215). The proposed project is expected to generate an average of 288 trips per day, including 21 trips during the a.m. peak hour and 27 during the p.m. peak hour. The expected trip generation potential for the proposed project is indicated in Table 3.

Table 3 – Trip Generation Summary

Land Use	Units	Daily		AM Peak Hour				PM Peak Hour			
		Rate	Trips	Rate	Trips	In	Out	Rate	Trips	In	Out
Detached Housing	26 du	9.43	245	0.70	18	5	13	0.94	24	15	9
Attached Housing	6 du	7.20	43	0.48	3	1	2	0.57	3	2	1
Total			288		21	6	15		27	17	10

Note: du = dwelling unit

Trip Distribution

The pattern used to allocate new project trips to the street network was based on a review of existing turning movements at the study intersections, knowledge of the area and surrounding region, and assessment of a “select zone” model run performed in the SCTCA travel demand model. The applied distribution assumptions and resulting trips are shown in Table 4.

Table 4 – Trip Distribution Assumptions

Route	Percent
US 101 South	42%
US 101 North	12%
Old Redwood Highway (South of Arata Ln)	12%
Arata Ln (East of Los Amigos Rd)	12%
Los Amigos Rd (South of Arata Ln)	10%
Starr Rd	10%
Old Redwood Highway (North of US 101 South Ramps)	2%
TOTAL	100%



Circulation System

This section addresses the first transportation bullet point on the CEQA checklist, which relates to the potential for a project to conflict with a program, plan, ordinance, or policy addressing the circulation system, including transit, roadway, bicycle, and pedestrian facilities.

Relevant General Plan Policies

The *General Plan* contains the following policies that are relevant to assessment of transportation facilities provided by private development projects.

M-1.4 Multimodal System Additions.

The Town shall require all new development that proposes or is required to construct or extend streets to develop a transportation network that complements and contributes to the town's multimodal system, maximizes connections, and minimizes barriers to connectivity.

M-2.1 Complete Streets Design Guidelines.

The Town shall ensure that the concepts and design standards/guidelines in the adopted Complete Street Design Guidelines are considered during review of new development proposals, when constructing new streets, and when modifying existing corridors in order to ensure accessibility for all.

M-2.7 Complete Street Priority Areas.

The Town shall prioritize complete streets improvements (e.g., bicycle, pedestrian, vehicle, and transit facilities) at and along U.S. Highway 101 interchanges, including Shiloh Road, Arata Lane, and Central Windsor.

M-2.8 Review Transportation Facilities for Development Proposals.

The Town shall consider on-site and off-site transportation facility improvements during the review of development proposals to ensure that connected facilities are provided for all modes of transportation.

M-2.10 Bicycle and Pedestrian Connectivity.

The Town shall ensure that commercial and residential development, including affordable housing projects, provides convenient and direct connections to the nearest existing bikeways, pedestrian ways, and public transit facilities.

M-3.2 Private Development Street Connections.

The Town shall encourage private developments (e.g., office parks, single-family subdivisions apartment complexes, retail centers) to provide internal complete streets that connect to the existing public roadway system and provide a transition to existing and planned transportation facilities. Bicycle and pedestrian connectivity from the private street to the nearest public street(s) shall also be provided.

M-3.4 Street Design.

The Town shall encourage streets to be designed or upgraded in ways that support walkable and bikeable environments and to be consistent with the Town's Complete Street Design Guidelines.

M-3.7 Street Connections in New Developments.

The Town shall promote street designs in new developments that provide convenient connections to local destinations and to adjacent neighborhoods. Travel should be dispersed among several streets rather than a few high-volume local streets that divide neighborhoods and discourage walking.

M-3.25 Five-Lane Boulevards.

Full build-out of five-lane boulevards will only occur when necessary to maintain acceptable levels of service along the Town's transportation network. In their interim condition prior to full build-out, the full width necessary to accommodate five-lane boulevards shall be dedicated to the Town; however, the fewest number of lanes necessary to maintain acceptable levels of service will be required and any excess right-of-way may be improved with pedestrian facilities, street parking, bicycle lanes, and parklets.

M-5.1 Transit Oriented Development.

The Town shall encourage higher density mixed land uses within walking distances of existing and future transit stops.

M-5.5 Developer Constructed Transit Facilities.

The Town shall require developers to construct, when appropriate, transit facilities including drop-off and parking facilities for ride-sharing and car-sharing services, bicycle parking, bus turnouts, shelters, and benches.

Pedestrian Facilities

Project Impacts on Pedestrian Facilities

Given the location of the site in northern Windsor adjacent to the urban growth boundary along with a lack of major pedestrian attractors in the vicinity, pedestrian trips are expected to be primarily related to recreation, transit, and schools in the surrounding neighborhood including Brooks Elementary School and Windsor Middle School. Some pedestrian travel to shopping may also occur if neighborhood commercial uses are built in the future on the east side of Los Amigos Road opposite the project site, as envisioned in the Town's *General Plan*.

Based on a review of the site plan, new sidewalks would be constructed along the project's frontage of the Los Amigos Road extension and along the project frontage on Arata Lane. Additional sidewalks on the Los Amigos Road extension beyond those to be constructed by the project would be built by other developments including Quail Acres in the future. An internal private roadway connecting to both Los Amigos Road and Arata Lane would include a sidewalk on one side of the street, establishing a new pedestrian route through the Los Amigos Cottages site.

With the proposed pedestrian improvements to be constructed by the project, effective pedestrian connectivity to the surrounding sidewalk network would be established. The project would build sidewalks on its Arata Lane and Los Amigos Road Extension frontages, connecting to the existing sidewalks on Arata Lane fronting Newsong Church, and establishing pedestrian connectivity to the Sonoma County Transit bus stop in front of the church.

To the south of Arata Lane, continuous sidewalks exist on the east side of Los Amigos Road all the way to existing shopping areas on Lakewood Drive. The intersection of Arata Lane/Los Amigos Road is planned to be signalized by the nearby Quail Acres development project in the same timeframe that Los Amigos Cottages would become occupied, though since Quail Acres has not yet been fully entitled, this timing cannot be assured in the near-term. Once constructed, the signal would include crosswalks connecting to the south side of Arata Lane as well as pedestrian phasing, establishing effective pedestrian connectivity to the south. Pedestrian linkages to Brooks Elementary School and Windsor Middle School would also exist. The surrounding pedestrian network is also anticipated to expand, including filling of gaps, as future development occurs in northern Windsor.

To ensure that adequate pedestrian circulation would exist in the near-term if signalization of Arata Lane/ Los Amigos Road has not been implemented prior to occupancy of the Los Amigos Cottages project, the Los Amigos Cottages project should be responsible for installing or funding the installation of a crosswalk with high-visibility signage and markings on the west leg of the intersection, as well as ensuring that adequate street lighting for the crosswalk is in place.

Finding – The project would have effective linkages to the surrounding pedestrian network including schools, recreation areas, and shopping areas.

Recommendation – The project should be responsible for installing or funding the installation of a crosswalk with high-visibility signage and markings as well as street lighting on the west leg of the Arata Lane/Los Amigos Road intersection if the planned signalization of the intersection has not occurred prior to project occupancy.

Bicycle Facilities

Project Impacts on Bicycle Facilities

Based on the site plan, six-foot bike lanes with a three-foot buffer would be constructed along the project frontages of both Arata Lane and Los Amigos Road. This configuration is consistent with the 2014 *Windsor Bicycle and Pedestrian Master Plan* and would also accommodate the Class IV bike facilities called for on both corridors in the Town's Draft *Active Transportation Plan*.

To access destinations such as the Town Green and the Windsor Sonoma-Marin Rail Transit (SMART) Station from the project site, bicyclists could use existing and planned bicycle facilities along Arata Lane and Old Redwood Highway. These bicycle facilities, including bicycle lanes on Arata Lane, together with shared use of minor streets including those constructed within the development, would effectively link the Los Amigos Cottages project to the surrounding bicycle network.

Finding – Bicycle facilities serving the project site would effectively link to the surrounding bicycle network.

Transit Facilities

Project Impact on Transit Facilities

Existing public transit routes and school bus routes are adequate to accommodate project-generated transit trips. The nearest bus stop served by Sonoma County Transit is located on the north side of Arata Lane near Newsong Church. The bus stop is served by Route 66, which provides local loop service throughout the Town of Windsor in a counterclockwise direction. With the new sidewalk on Arata Lane to be constructed as part of the Los Amigos Cottages project, continuous pedestrian facilities would link the project site to the existing Sonoma County Transit bus stop.

Upon completion of planned intersection improvements at the intersection of Los Amigos Road/Arata Lane, continuous pedestrian facilities would exist between the project site and the Windsor Unified School District bus stop at Los Amigos Road/Pollard Court, which is located within one-half mile of the proposed project's residential units. Note that if the planned improvements at Los Amigos Road/Arata Lane are not completed by the Quail Acres project prior to occupation of Los Amigos Cottages, Los Amigos Cottages will be required to construct an enhanced pedestrian crossing on the west leg of the intersection (see previous recommendation in "Project Impact on Pedestrian Facilities").

Finding – Transit facilities serving the project site are generally adequate and compliant with Town policy.

Complete Streets Design Guidelines

Dimensions for the streets proposed to be constructed by the project were evaluated based on the Town's *Complete Street Design Guidelines* (CSDG), 2013. The private internal street serving the project's units would be 24 feet wide, consisting of 12-foot-wide travel lanes, as well as a six-foot wide sidewalk on one side. The lane and sidewalk widths are consistent with the criteria identified for a Narrow Residential Street in the CSDG. The CSDG indicates that this street type may be used where average daily traffic (ADT) volumes are up to 200 vehicles, which in a single-family detached housing product translates to approximately 20 residences (the Los Amigos Cottages project includes a mix of detached and attached units, generating less daily traffic per unit on average than a fully detached housing development). The proposed internal roadway includes two public street connections, effectively dispersing onsite traffic such that no specific point on the road would be expected to carry all of the site's daily traffic. Los Amigos Cottages is projected to generate an estimated 288 daily trips (see Table 3); the Los Amigos Road extension access is projected to serve about one-third of the ADT with the remaining two-thirds served by the Arata Lane access. On the internal roadway, this translates to approximately 96 ADT at the highest-volume point near Los Amigos Road and 192 ADT at the highest-volume point near Arata Lane. These volumes comply with the guidance for a Narrow Residential Street contained in the CSDG.

The internal roadway would also include areas with perpendicular parking near the center of the site. This configuration is not directly addressed by the CSDG but would be expected to perform acceptably given the low volumes and is consistent with CSDG language pertaining to the provision of common parking lots when the Narrow Residential Street type is used, as needed to ensure a sufficient parking supply. The configuration of this private onsite roadway has also been reviewed extensively by Town Public Works, Planning, and Public Safety Staff, and adjusted by the developer to achieve an acceptable balance given the constraints of the parcel size and compact development pattern. Given these findings along with the roadway's compliance with Narrow Residential Street width and ADT parameters, the proposed configuration is deemed consistent with the CSDG.

The General Plan designates the Los Amigos Road extension as a two-lane crosstown street. The portion of the roadway to be constructed by the project would constitute a portion of the ultimate cross-section and would include a northbound 11-foot-wide northbound travel lane with interim two-foot shoulder, an 11-foot wide southbound travel lane, a six-foot wide bike lane with three-foot buffer, and an eight-foot-wide parking lane. The project would also include construction of an 11-foot-wide sidewalk with a planter strip along its Los Amigos Road frontage. This configuration differs slightly from the CSDG, which was developed prior to common use of buffered and Class IV bike lanes, but has been approved by the Town of Windsor for application along the project's Los Amigos Road frontage, and will allow planned Class IV lanes (identified in the Draft Active Transportation Plan) to be implemented in the future with no additional widening. As the nearby Quail Acres project develops and the Los Amigos Road extension is fully constructed, additional widening would occur on the eastern portion of the street. Both the proposed interim configuration to be constructed by the project as well as the ultimate cross-section are therefore deemed consistent with the 2-Lane Boulevard Crosstown Street type in the CSDG.

The General Plan designates Arata Lane as a Five-Lane Boulevard crosstown street. The project would improve Arata Lane along its frontage to accommodate a 10-foot-wide center turn lane, an 11-foot-wide westbound travel lane, a six-foot-wide bike lane with three-foot buffer, and an 11-foot-wide sidewalk with four-foot tree wells. Future development projects on the south side of the street would also require widening as part of frontage improvements. The proposed configuration along the Los Amigos Cottages project is consistent with the three-lane crosstown street type in the CSDG, with adjustments to accommodate buffered bike lanes and future Class IV bike lanes (which add a raised element in the buffer area). Because the configuration includes only one westbound vehicle travel lane, however, it does not include the full widening necessary to accommodate a five-lane crosstown street. Justification for this modification has been requested based on the results of a traffic analysis, *Evaluation of the Long-Range Configuration for Arata Lane Between US 101 and Los Amigos Road*, W-Trans, 2024, which indicated that only a single westbound vehicle travel lane would be necessary to accommodate future traffic along the Los Amigos Cottages frontage. A copy of the letter is included in Appendix B.

It is understood that while the project would include construction of frontage improvements with a single westbound travel lane, the applicant has been required by the Town's Public Works Department to dedicate right-

of-way along the Arata Lane frontage to accommodate a five-lane crosstown street in the future, allowing roadway widening to occur at a later date if and when the Town should deem it necessary. This approach is consistent with General Plan Policy M-3.25, which states, “Full build-out of five-lane boulevards will only occur when necessary to maintain acceptable levels of service along the Town’s transportation network. In their interim condition prior to full build-out, the full width necessary to accommodate five-lane boulevards shall be dedicated to the Town...”

With the proposed frontage improvements to be constructed by the Los Amigos Cottages project and the proposed dedication of additional right-of-way, the project is considered to be consistent with both the CSDG and General Plan Policy M-3.25.

Finding – The proposed configurations of private onsite roadways and Los Amigos Road frontage improvements to be constructed by the Los Amigos Cottages developer are consistent with the Town’s *Complete Street Design Guidelines*.

Finding – The proposed configuration of the project’s Arata Lane frontage including one westbound vehicle travel lane as well as right-of-way dedication to the Town of Windsor allowing the Five-Lane Boulevard cross-section to be constructed in the future is consistent with the CSDG and General Plan Policy M-3.25.

Compatibility with Potential Future Roundabout

The Town of Windsor is considering conversion of the Arata Lane/Los Amigos Road intersection to a single-lane roundabout in the future. Implementation of a roundabout would be feasible in the future but may not be achievable in the near-term since it would require right-of-way from parcels on the intersection corners that are outside control of the Town of Windsor or Los Amigos Cottages developer. The Town has developed a planning-level footprint of the potential future roundabout, including its peripheral bicycle and pedestrian facilities, and has provided the concept to potential developers including the Los Amigos Cottages applicant for site planning purposes. A diagram depicting how the potential future roundabout would interface with the Los Amigos Cottages site plan is shown in Plate 3.

Review of the project site plan and overlaid conceptual roundabout footprint indicates that the Los Amigos Cottages has provided sufficient right-of-way dedication to accommodate the roundabout. In evaluating roundabout-specific intersection sight distance criteria, however, it was determined that an approximately 30-square foot triangular area on the southeastern corner of the site would need to remain free of fences or tall obstructions to meet upstream sight distance parameters for drivers approaching the roundabout on eastbound Arata Lane. This condition should be reflected on the project’s landscaping plans, and/or an easement to the Town of Windsor established if deemed necessary by the Public Works Department.

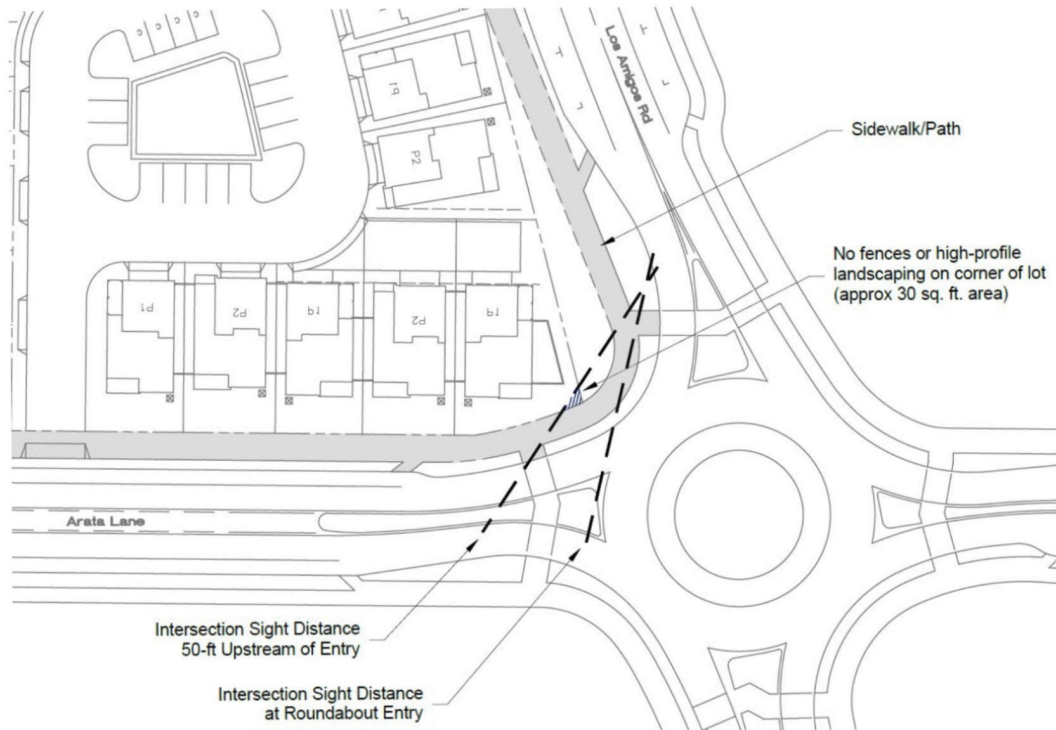


Plate 3 Upstream Sight Distance with Roundabout

Site access and circulation characteristics were also considered with a future roundabout. The need for left-turn lanes at the project's two access points would remain the same regardless of intersection type at Arata Lane/Los Amigos Road, though a roundabout would offer additional ingress and egress options by facilitating U-turn movements.

Finding – The proposed Los Amigos Cottages site layout and frontage improvements would accommodate future construction of a roundabout at the Arata Lane/Los Amigos Road intersection.

Recommendation – Landscaping plans should ensure that an approximately 30-square foot triangular-shaped area on the southeastern corner of the project site near the Arata Lane/Los Amigos Road intersection will remain free of fences or landscaping exceeding two feet in height to maintain acceptable upstream sight distance if a future roundabout is installed at the intersection. Alternatively, an easement to the Town of Windsor could be established for this area if deemed necessary by the Public Works Department.

Vehicle Miles Traveled (VMT)

The potential for the project to conflict or be inconsistent with CEQA Guidelines § 15064.3, subdivision (b) was evaluated based on the project's anticipated Vehicle Miles Traveled (VMT).

Significance Threshold

The Town of Windsor passed a resolution in April 2023 adopting a VMT policy that identifies significance thresholds and screening criteria for CEQA environmental review. Residential development projects are assessed using a home-based VMT per capita metric, with VMT significance thresholds set at a level of 15 percent below the existing countywide average. The Sonoma County Transportation and Climate Authorities (SCTCA) operates and maintains the regional travel demand model that produces VMT estimates. The VMT data applied in this analysis were obtained from the SCTM19 model version released in December 2021, which is the most current version of the model available from SCTCA.

Based on output from the SCTCA model, the existing residential VMT per capita in the County of Sonoma is 16.60 miles. VMT significance thresholds are set at 15 percent below this level, or 14.11 miles. Accordingly, the applied VMT significance threshold applied to the project is as follows.

- The project would have a potentially significant impact on VMT if its projected residential VMT per capita exceeds 14.11 miles.

VMT Screening

The Town's VMT policy includes provisions allowing certain projects to be "screened" from needing to complete VMT analyses. This screening applies to specified land use and transportation projects that the Town has found would result in less-than-significant VMT impacts. Following is an assessment of the project's likelihood of qualifying for one or more of the screening criteria that pertain to residential development projects.

Small Project

The small project screening criteria applies to residential development projects consisting of 23 or fewer units. The proposed project would not qualify for this screening parameter.

Map-Based Screening

Areas identified on the Town's Residential VMT Screening Map are considered to be low-VMT areas that qualify for screening. The project is not located in a designated low-VMT area so would not qualify for this screening parameter.

Transit Screening

Projects that are located within one-half mile of the downtown SMART station and meet certain criteria qualify for VMT screening. The project is located just over a mile from the SMART station, so would not qualify for this screening parameter.

Affordable Residential Development

Residential development that is 100-percent deed-restricted affordable housing qualifies for VMT screening. The project includes some affordable housing but is predominantly market rate, so would not qualify for this screening parameter.

Residential Multiple-Criteria Screening

Residential projects that meet all four of the following criteria may be screened from VMT analysis:

- Within one-half mile of a Neighborhood Center/Mixed Use (NCMU) land use designated property;
- Within one-half mile of an existing or designated school site as confirmed in writing by WUSD;
- Within one-half mile of a park;
- Within one mile of a Sonoma County Transit stop, with a pedestrian connection, running at least six days per week and average service intervals not exceeding 60 minutes.

The project would satisfy three of the four criteria. The criteria pertaining to the project being within one-half mile of an existing or designated school site would not currently apply, since it is understood that WUSD has not formally designated a site for a future school in the project area and cannot provide such confirmation at this time. Accordingly, the project would not qualify for this screening parameter.

VMT Screening Conclusion

The project would not qualify for small project, map-based, transit, or affordable development screening criteria specified by the Town. The project would meet three of the Town's four criteria for residential multiple-criteria screening given its proximity to parks, transit stops, and neighborhood commercial designated land, but would not meet the fourth parameter related to school proximity. As such, the project does not qualify for VMT screening.

Finding – The project would not qualify for any of the VMT screening parameters identified by the Town of Windsor.

Project VMT Assessment

No Project and Unadjusted Project VMT

The SCTCA model includes traffic analysis zones (TAZ) covering geographic areas throughout Sonoma County. The project site is located within TAZ 876, which currently has a baseline “no project” VMT per capita of 16.52 miles. Because the model's TAZ land use assumptions reflect the existing limited rural residential and agricultural uses in the zone, a custom run of the SCTCA model was performed, adding conventional residential uses to the TAZ to provide a refined estimate of the projected per capita VMT that would be generated by residents in this area of Windsor. The resulting projected residential VMT for the TAZ as output by the custom SCTCA model run is 14.30 VMT per capita.

Adjusted Project VMT

Consideration was given to whether adjustments to the baseline per-capita VMT estimates produced by the SCTCA model are warranted to reflect the project's density and inclusion of affordable housing. SCTCA has developed and made available a VMT Reduction Tool to assist in making project-specific VMT adjustments as well as quantify VMT mitigation measures.

Residential Density

The residential density of the proposed Los Amigos Cottages project is 11.8 units per acre. Methodologies contained in the SCTCA VMT Reduction Tool were used to estimate how the project's density would affect VMT rates. These methodologies were developed from research showing an elastic relationship between per capita VMT and residential density, with increased density translating to decreased VMT rates. The SCTCA VMT Reduction Tool indicates that the proposed project's density of 11.8 units per acre corresponds to a reduction in per capita VMT of 6.4 percent.

Provision of Affordable Housing

With respect to affordable housing, the project would designate 7 of the 32 homes as deed-restricted affordable units for low-income households. Affordable housing has been shown to produce lower per capita VMT than market rate housing; the level of reduction is based on the percentage of a project's overall units that are affordable. Based on output from the SCTCA VMT Reduction Tool, the estimated reduction in the project's residential per capita VMT due to provision of affordable units is 5.4 percent.

Project VMT Findings

Combining the "raw" VMT reduction percentages described above, the project's proposed density and provision of on-site affordable housing would reduce its per capita VMT by 11.8 percent. This number is dampened to 11.5 percent to reflect the diminishing effects of multiple VMT reduction measures. Upon applying this deduction, the project is anticipated to generate 12.66 VMT per capita, which is below the applicable significance threshold of 14.11 VMT per capita. Accordingly, the proposed Los Amigos Cottages project would be considered to have a less-than-significant impact on VMT. A summary of the VMT findings is shown in Table 5.

Table 5– Vehicle Miles Traveled Analysis Summary

Countywide VMT per Capita		Project VMT per Capita		
Average	Threshold	Unadjusted	Adjusted	Threshold Met?
16.60	14.11	14.30	12.66	Yes

Notes: VMT is measured in VMT per Capita, or the number of daily miles driven per resident; Threshold is the applicable VMT significance threshold of 15 percent below the existing countywide average; Adjusted values reflect effects of project density and provision of onsite affordable housing

Significance Finding – The project would be expected to result in a less-than-significant VMT impact.

Safety Issues

The potential for the project to impact safety was evaluated in terms of the adequacy of sight distance and need for turn lanes at the project accesses as well as the adequacy of stacking space in dedicated turn lanes at the study intersections to accommodate additional queuing due to adding project-generated trips and need for additional right-of-way controls. This section addresses the third transportation bullet on the CEQA checklist which is whether or not the project would substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment).

Site Access

There are currently no fully-improved access points to the project site. The location where the new segment of Los Amigos Road would be built is currently occupied by an unpaved private driveway. The project site plan includes private roads that would connect to the existing roadway network on Arata Lane west of the intersection of Arata Lane/Los Amigos Road and on the new segment of Los Amigos Road north of the intersection of Arata Lane/Los Amigos Road.

Sight Distance

Sight distances along Arata Lane and Los Amigos Road at the proposed project's access points were evaluated based on sight distance criteria contained in the *Highway Design Manual* published by Caltrans. Recommendations for private streets are based on corner sight distance criteria in consideration of approach travel speeds.

Based on an assumed design speed of 30 mph on the Los Amigos Extension near the project driveway, the recommended minimum corner sight distance is 330 feet. The project access is located opposite a planned intersection serving the Quail Acres development and is located on the inside of a broad sweeping curve. While the Los Amigos Road Extension does not currently exist so sight distance cannot be field measured, measurements obtained using the project site plan and available materials indicates that the available sight distance from the project street to the north would be equivalent to the recommended 330-foot corner sight distance. Los Amigos Extension has a straighter alignment to the south of the project access with sight distance exceeding the recommended 330 feet.

Based on the posted 40 mph speed limit on Arata Lane, the minimum recommended corner sight distance is 440 feet. Arata Lane has a straight alignment in the vicinity of the project access, with available sight distance exceeding the recommended 440 feet in both directions.

Access Analysis

The need for left-turn lanes at the private project street intersections on Los Amigos Road and Arata Lane were evaluated based on criteria contained in the *Intersection Channelization Design Guide*, National Cooperative Highway Research Program (NCHRP) Report No. 279, Transportation Research Board, 1985, as well as an update of the methodology developed by the Washington State Department of Transportation and published in the *Method For Prioritizing Intersection Improvements*, 1997. The NCHRP report references a methodology developed by M. D. Harmelink that includes equations that can be applied to expected or actual traffic volumes to determine the need for a left-turn pocket based on safety issues.

Currently, the portion of Arata Lane at the proposed driveway includes a lateral transition where the roadway widens to the east to accommodate a two-way left-turn lane. The transition area is striped with dual double-yellow lines constituting a painted median that drivers may not legally cross, effectively prohibiting left-turn movements. Arata Lane is planned to be widened in the future consistent with the Town's General Plan as parcels to the west develop or redevelop, including provision of a two-way left-turn lane at the project street, but such widening is not anticipated in the near-term.

Under Existing plus Project volumes, which include traffic associated with current conditions and project generated trips, a left-turn lane is not warranted on Arata Lane at the project street during either of the peak periods evaluated. Similarly, left-turn lane warrants are unmet at this location under Baseline plus Project volumes. In order to accommodate left-turn access to the project site, it is recommended that the current centerline striping be modified to include a break in the painted median, thereby allowing left turns to be legally made by drivers. Copies of the turn lane warrant worksheets are provided in Appendix C.

Finding – Sight distance at both of the project driveways would equal or exceed the recommended minimum in both directions. Left-turn lanes are not warranted at the project street connections on Arata Lane and Los Amigos Road under Existing plus Project and Baseline plus Project volumes during either peak period.

Recommendation – The existing striping on Arata Lane at the project street should be modified to provide a break in the painted median, allowing drivers to legally turn left into and out of the project site.

Queuing

The *Town of Windsor 2040 General Plan* contains the following policy applicable to queuing.

Policy M-3.17 - Queuing. *Intersection queuing shall be evaluated in tandem with LOS. Projected 95th percentile queues in left-turn pockets do not exceed the available stacking length. A queuing impact shall be considered significant if:*

a) The 95th percentile queue length can be contained within the available stacking length without the project, and the project causes the queue to exceed the stacking length; or

b) The queue length exceeds the available stacking length without the project and the project increases the 95th percentile queue by more than 10 feet, or approximately one-half a car-length.

Exceptions to this policy may be granted by the Town Engineer, where there is sufficient block length to accommodate projected queuing or physical constraints that make it infeasible to construct the improvement that would be necessary to achieve adequate stacking length, such as geometrics, a lack of right-of-way, adjacent slopes or hills, and soil conditions.

Queues were determined using Synchro for key left-turn lanes and approaches. Under Existing conditions, the projected 95th percentile queues remain within the available storage. Under Baseline conditions, two separate sets of improvements at the Arata Lane/Los Amigos Road intersection were assessed. The first assumes the current two-way stop-controlled intersection configuration without the planned signalization that would be constructed by the Quail Acres development project. The second includes the planned signal as well as added southbound right-turn pocket that Quail Acres would be responsible for constructing.

Under Baseline conditions without Quail Acres improvements, queues would remain within available storage at all locations except the northbound left-turn pocket at Arata Lane/Los Amigos Road during the a.m. peak hour. Under Baseline conditions with the Quail Acres improvements, queues would remain within available storage at all locations.

Summarized in Table 6 are the predicted 95th percentile queue lengths at the study intersections for all analysis scenarios. Copies of the queuing calculations are contained in Appendix D.

Table 6 – 95th Percentile Queues in Select Lanes

Study Intersection Movement	Storage	95 th Percentile Left-Turn Queues							
		AM Peak Hour				PM Peak Hour			
		E	E+P	B	B+P	E	E+P	B	B+P
1. ORH/Arata Ln									
Northbound ORH Left Turn	135	13	13	14	14	9	9	10	10
Southbound ORH Left Turn	300	232	233	261	262	164	167	207	210
Westbound Arata Left Turn	330	212	214	249	254	99	101	127	128
2. US 101 N Ramps/Arata Ln									
Off-Ramp Approach	1,050	90	90	90	90	80	81	82	82
Eastbound Arata Left Turn	330	200	201	215	216	157	159	185	189
3. Los Amigos Road/Arata Ln									
Without QA Improvements ¹									
NB Los Amigos Left Turn	110	108	110	160	163	25	25	43	45
SB Los Amigos Approach	420	0	1.5	43	45	0	0	20	20
Eastbound Arata Left Turn	150	0	0	3	3	0	0	5	5
Westbound Arata Left Turn	75	0	0	0	0	0	0	0	0
With QA Improvements ²									
NB Los Amigos Left Turn	110	-	-	95	95	-	-	60	61
SB Los Amigos Approach	420	-	-	46	48	-	-	37	39
Eastbound Arata Left Turn	150	-	-	49	50	-	-	91	94
Westbound Arata Left Turn	75	-	-	27	27	-	-	23	23

Notes: ¹ Includes no improvements planned to be constructed by the Quail Acres development but does include the partial section of the Los Amigos Road extension to be built as part of Los Amigos Cottages frontage improvements under plus project conditions; ² Includes signalization of intersection of Arata Lane/Los Amigos Road and added southbound right-turn pocket to be constructed by Quail Acres development; Reported queues are measured in feet; E = existing conditions; E+P = existing plus project conditions; B = baseline conditions; B+P = baseline plus project conditions; NB = Northbound; SB = Southbound

Based on Town policy, the project would have a significant impact if it would cause any queue to exceed existing storage lengths. Left-turn queues would remain within the available storage upon the addition of project volumes under Existing conditions and Baseline conditions, assuming that the planned improvements to be constructed by Quail Acres at the Los Amigos Road/Arata Lane intersection are constructed. Without the improvements made by Quail Acres at Los Amigos Road/Arata Lane, the projected 95th percentile queues in the northbound left-turn lane exceed the available storage during the a.m. peak hour, with the Los Amigos Cottages development expected to increase queue lengths by three feet. This increase in queues is less than the 10 feet considered to be a significant project-related impact per the Town's guidelines.

Finding – 95th percentile queues would remain within the available storage at all intersections, with the exception of the northbound left-turn lane at Arata Lane/Los Amigos Road, which would exceed storage both with and without the Los Amigos Project during the a.m. peak hour if the planned improvements to be made by the proposed Quail Acres development are not constructed. Los Amigos Cottages would increase these 95th percentile queues by three feet, which is not considered to be a significant project-related impact per the Town's guidelines.

Significance Finding – The project would not introduce any hazardous design elements and would therefore have a less-than-significant impact on safety.

Emergency Access

The final transportation bullet on the CEQA checklist requires an evaluation as to whether the project would result in inadequate emergency access.

The site plans for the Los Amigos Cottages project depict an interconnected internal roadway network with no dead-end streets, and two connections to the surrounding roadway network: one on the Los Amigos Road extension and one on Arata Lane. While improvement plans for the project will remain subject to approval by the Town's Fire Marshal, from a transportation perspective the proposed street configuration and connectivity would provide adequate emergency vehicle circulation and access.

The adequacy of emergency evacuation routes was assessed in consideration of potential fire threats approaching from the north, south, east, and west. The primary evacuation route for Windsor leading to designated evacuation centers is US 101; evacuation staging schemes established by emergency responders would in most circumstances focus on moving traffic along arterial streets to the freeway. For the Los Amigos Cottages project, emergency evacuation staging for fire threats from the north would focus on directing drivers to Arata Lane, to which the project has direct access. For fire threats from the east, which may be the most likely scenario (and similar to the Kincade fire), evacuation routes would also focus on directing residents to Arata Lane. While fire threats from the south and west may be less likely than threats from the north and east, evacuation staging would likely direct drivers to Arata Lane or north on Los Amigos Road (either in its current alignment near US 101 or, once realigned and extended, to the Los Amigos Road extension).

It is important to reiterate that the Town's Fire Marshal has final authority over the adequacy of the project's emergency access and compliance with applicable codes and requirements.

Findings – The proposed roadway network, including connectivity to existing and future roads, would provide adequate emergency circulation and access. The proposed project, including all future improvement plans, when submitted will be subject to review and approval by the Town's Fire Marshal; any requirements imposed by the Fire Marshal shall take precedence over the emergency access and circulation findings contained herein.

Significance Finding – Assuming that the project is designed to meet the Town's requirements, it would be expected to have a less-than-significant impact on emergency access and response.

Capacity Analysis

Intersection Level of Service Methodologies

Level of Service (LOS) is used to rank traffic operation on various types of facilities based on traffic volumes and roadway capacity using a series of letter designations ranging from A to F. Generally, Level of Service A represents free flow conditions and Level of Service F represents forced flow or breakdown conditions. A unit of measure that indicates a level of delay generally accompanies the LOS designation.

The study intersections were analyzed using the “Two-Way Stop-Controlled” and “Signalized” intersection capacity methodologies published in the *Highway Capacity Manual* (HCM), 6th Edition, Transportation Research Board, 2016. This source contains methodologies for various types of intersection control, all of which are related to a measurement of delay in average number of seconds per vehicle.

The Levels of Service for the intersection of Arata Lane/Los Amigos Road with existing side-street stop controls was analyzed using the “Two-Way Stop-Controlled” intersection capacity method from the HCM. This methodology determines a level of service for each minor turning movement by estimating the level of average delay in seconds per vehicle. Results are presented for individual movements together with the weighted overall average delay for the intersection.

The study intersections that are currently controlled by a traffic signal, or may be in the future, were evaluated using the signalized methodology from the HCM. This methodology is based on factors including traffic volumes, green time for each movement, phasing, whether the signals are coordinated or not, truck traffic, and pedestrian activity. Average stopped delay per vehicle in seconds is used as the basis for evaluation in this LOS methodology. For purposes of this study, delays were calculated using signal timing obtained from the Town of Windsor and Caltrans.

The ranges of delay associated with the various levels of service are indicated in Table 7.

Table 7 – Intersection Level of Service Criteria

LOS	Two-Way Stop-Controlled	Signalized
A	Delay of 0 to 10 seconds. Gaps in traffic are readily available for drivers exiting the minor street.	Delay of 0 to 10 seconds. Most vehicles arrive during the green phase, so do not stop at all.
B	Delay of 10 to 15 seconds. Gaps in traffic are somewhat less readily available than with LOS A, but no queueing occurs on the minor street.	Delay of 10 to 20 seconds. More vehicles stop than with LOS A, but many drivers still do not have to stop.
C	Delay of 15 to 25 seconds. Acceptable gaps in traffic are less frequent, and drivers may approach while another vehicle is already waiting to exit the side street.	Delay of 20 to 35 seconds. The number of vehicles stopping is significant, although many still pass through without stopping.
D	Delay of 25 to 35 seconds. There are fewer acceptable gaps in traffic, and drivers may enter a queue of one or two vehicles on the side street.	Delay of 35 to 55 seconds. The influence of congestion is noticeable, and most vehicles have to stop.
E	Delay of 35 to 50 seconds. Few acceptable gaps in traffic are available, and longer queues may form on the side street.	Delay of 55 to 80 seconds. Most, if not all, vehicles must stop and drivers consider the delay excessive.
F	Delay of more than 50 seconds. Drivers may wait for long periods before there is an acceptable gap in traffic for exiting the side streets, creating long queues.	Delay of more than 80 seconds. Vehicles may wait through more than one cycle to clear the intersection.

Reference: *Highway Capacity Manual*, 6th Edition, Transportation Research Board, 2018

Traffic Operation Standards

The Town of Windsor has the following adopted policy regarding traffic operation standards.

Policy M-3.16 – Level of Service Application. The Town shall maintain Level of Service standards that define the minimum acceptable operating characteristics for intersections and streets. A Level of Service D (LOS D) is defined as the minimum acceptable level of congestion during the weekday morning and evening peak periods for high-volume facilities such as freeways, crosstown streets, and signalized or all-way stop-controlled intersections. This standard should apply at all these locations except the following intersections, which are regional gateways to the Town's commercial and civic areas, and where a Level of Service E is tolerated by the Town and considered acceptable:

- Old Redwood Highway/U.S. Highway 101 Northbound offramps/Lakewood Drive
- Old Redwood Highway/U.S. Highway 101 Southbound ramps
- Old Redwood Highway/Conde Lane/Windsor River Road

At side-street stop-controlled unsignalized intersections, Levels of Service shall be determined for both controlled movements and for the overall intersection. Controlled movements operating at LOS E or LOS F are allowable if: 1) the intersection is projected to operate at LOS C or better overall, and 2) the projected traffic volume on the controlled movement is 30 vehicles or less per hour on approaches with single lanes, or on multilane approaches, 30 vehicles or less per hour per lane. If an intersection is operating at LOS E or F without project-generated traffic added, the project's impact shall be considered less-than-significant if it does not cause operation to fall from LOS E to LOS F and it increases average delay for the intersection as a whole by 5 seconds or less. Level of Service standards shall not apply to minor intersections comprised of only local streets.

Existing Conditions

The Existing Conditions scenario provides an evaluation of current operation based on existing traffic volumes during the a.m. and p.m. peak periods. This condition does not include project-generated traffic volumes. Volume data was collected in September 2023.

Under Existing Conditions, all study intersections operate at acceptable Levels of Service during both peak hours except for the stop-controlled approach at Los Amigos Road/Arata Lane during the a.m. peak hour. While this intersection is operating acceptably overall at LOS A, because the northbound approach is operating below LOS D during the a.m. peak period and serves more than 30 vehicles per lane, according to the Town's guidelines, this is unacceptable and therefore warrants additional considerations when evaluating project impacts.

The existing traffic volumes are shown in Figure 2. A summary of the intersection Level of Service calculations is contained in Table 8, and copies of the Level of Service calculations are provided in Appendix E.

Table 8 – Existing Peak Hour Intersection Levels of Service

Study Intersection Approach	AM Peak		PM Peak	
	Delay	LOS	Delay	LOS
1. Old Redwood Hwy/Arata Ln	18.7	B	12.1	B
2. Arata Ln/Los Amigos Rd-US 101 N Off-Ramp	8.6	A	8.8	A
3. Arata Ln/Los Amigos Rd	6.2	A	1.9	A
Northbound Los Amigos Rd	61.8	F	19.8	C

Notes: Delay is measured in average seconds per vehicle; LOS = Level of Service; Results for minor approaches to two-way stop-controlled intersections are indicated in *italics*; **Bold** text = deficient operation

Baseline Conditions

Baseline operating conditions include traffic from reasonably-foreseeable development projects in and near the study area, representing a near-term cumulative condition within an approximately three to five-year period.

Baseline Development Projects

Town Staff provided a list of projects and assumptions to include in this scenario, as follows.

- Kashia Mixed Use, 10221 Old Redwood Highway, 54 affordable apartments and a building containing Tribal offices and community spaces
- Windsor Hotel, 160 Arata Lane, 115 hotel rooms
- Arata North Subdivision, 115 Arata Lane, 55 single-family homes
- Sherlock Homes, 260 Arata Lane, seven new single-family homes
- Quail Acres, northeast of Los Amigos Road/Arata Lane intersection, ultimately 301 new residential units; it was assumed that approximately 100 single-family homes would be built within the timeframe included in the Baseline scenario
- Estates at Ross Ranch, 1295 Jensen Lane, 31 single-family homes
- Sonoma County Resource Recovery, 10611 Redwood Court, expansion of existing industrial uses
- Town Well Site, 10011 Los Amigos Road, new wells on Town-owned parcel

Baseline Roadway Assumptions

The Quail Acres development will be responsible for completing several roadway projects, with timing for completion tied to the number of residential units that have been built. With occupation of the 100 residential

units included in the Baseline traffic analysis scenario, the Quail Acres development will have been required by the Town to construct the full Los Amigos Road extension and install a traffic signal at the intersection of Arata Lane/Los Amigos Road. Los Amigos Road along the Los Amigos Cottages project would also be improved to its full width and include a short southbound right-turn pocket at the new Arata Lane signal. For the purposes of this transportation impact study, baseline traffic conditions at the Arata Lane/Los Amigos Road intersection have been evaluated both with and without these planned roadway improvements.

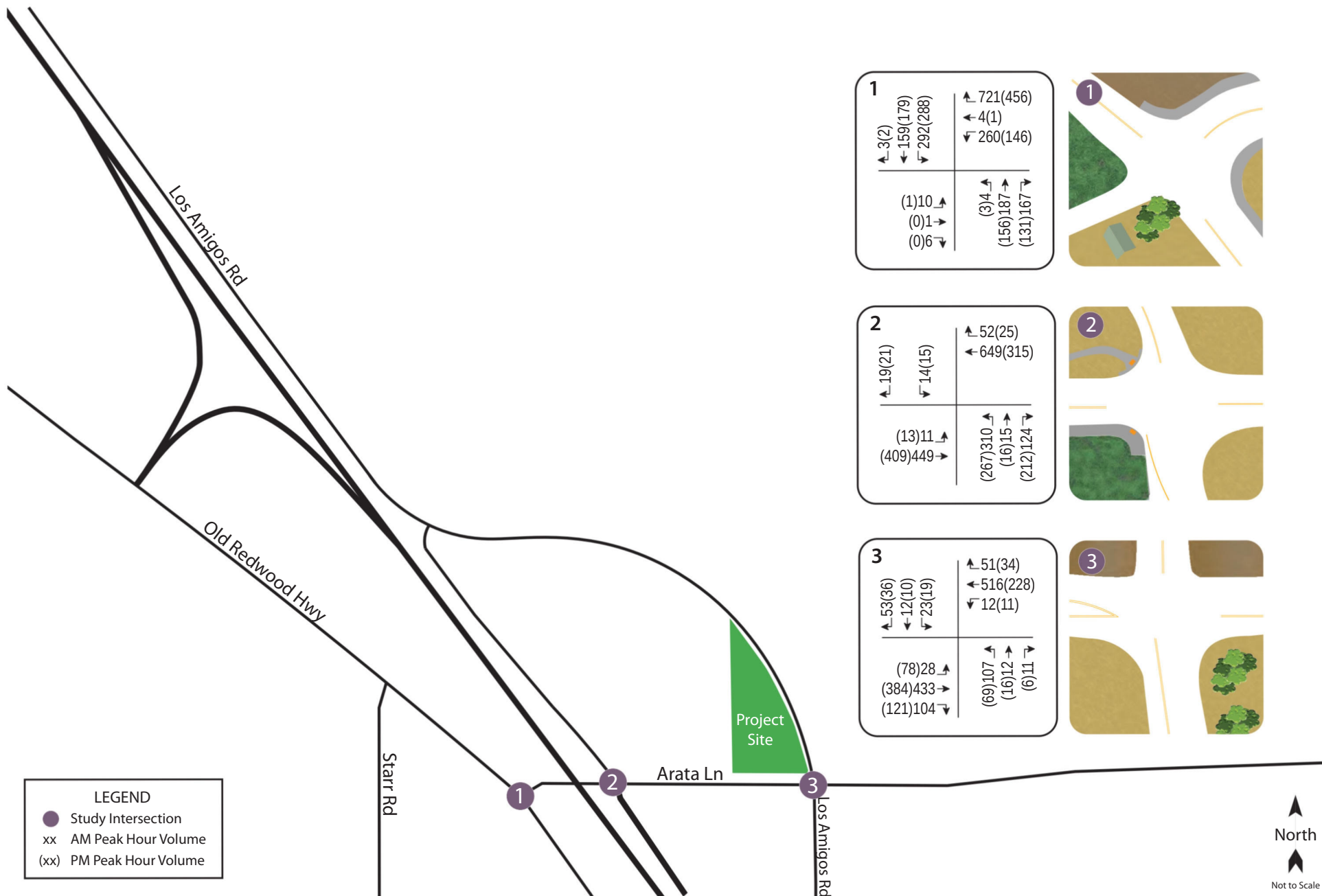
Baseline Intersection Operation

Under Baseline conditions, all three study intersections are projected to operate acceptably. These results are summarized in Table 9. Baseline volumes are shown in Figure 3, and copies of the Level of Service calculations are provided in Appendix E.

Table 9 – Baseline Peak Hour Intersection Levels of Service

Study Intersection	AM Peak		PM Peak	
	Delay	LOS	Delay	LOS
1. Old Redwood Hwy/Arata Ln	21.0	C	13.0	B
2. Arata Ln/Los Amigos Rd-US 101 N Off-Ramp	8.5	A	9.5	A
3. Arata Ln/Los Amigos Rd	13.6	B	4.6	A
<i>Northbound Los Amigos Rd</i>	121.2	<i>F</i>	30.6	<i>D</i>
With Planned Signalization ¹	13.3	B	12.2	B

Notes: Delay is measured in average seconds per vehicle; LOS = Level of Service; Results for minor approaches to two-way stop-controlled intersections are indicated in *italics*; **Bold** text = deficient operation; ¹ intersection is anticipated to be signalized by Quail Acres project under Baseline conditions



Transportation Impact Study for Los Amigos Cottages
Figure 3 – Baseline Traffic Volumes and Lane Configurations

Project Conditions

Existing plus Project Conditions

Upon the addition of project-related traffic to the existing volumes two of the three study intersections are expected to operate acceptably. The northbound approach of the intersection at Arata Lane/Los Amigos Road would continue to operate unacceptably at LOS F, with delays increasing by 0.2 seconds overall upon the addition of Los Amigos Cottages traffic. Since the project would increase delays by less than five seconds, this would not be considered an adverse project-related effect.

The Existing plus Project results are summarized in Table 10. Project traffic volumes are shown in Figure 4, and Existing plus Project volumes are shown in Figure 5. Copies of the Level of Service calculations are provided in Appendix E.

Table 10 – Existing and Existing plus Project Peak Hour Intersection Levels of Service

Study Intersection <i>Approach</i>	Existing Conditions				Existing plus Project			
	AM Peak		PM Peak		AM Peak		PM Peak	
	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS
1. Old Redwood Hwy/Arata Ln	18.7	B	12.1	B	19.0	B	12.1	B
2. Arata Ln/Los Amigos Rd- US 101 N Off-Ramp	8.6	A	8.8	A	8.6	A	8.8	B
3. Arata Ln/Los Amigos Rd <i>Northbound Los Amigos Rd</i>	6.2 61.8	A F	1.9 19.8	A C	6.4 64.3	A F	2.0 20.3	A C

Notes: Delay is measured in average seconds per vehicle; LOS = Level of Service; Results for minor approaches to two-way stop-controlled intersections are indicated in *italics*; **Bold** text = deficient operation

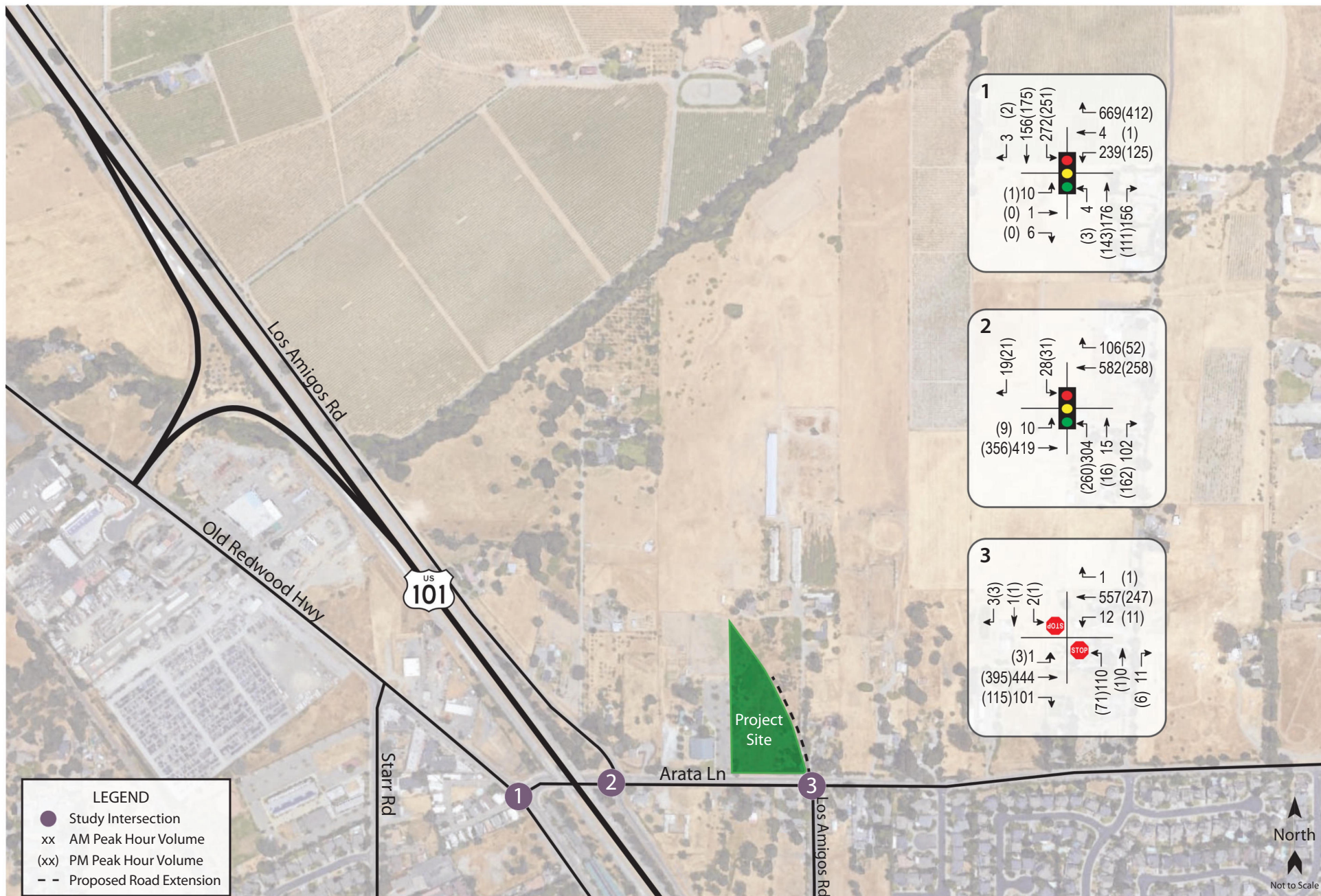
Finding – Under Existing plus Project Conditions two of three study intersections would continue operating acceptably. The Los Amigos Cottages would increase average delays at the intersection of Arata Lane/Los Amigos Road intersection by 0.2 seconds, and would further increase delays on the northbound approach that is already operating at LOS F. Because average delays would increase by less than five seconds, however, this is not considered to be an adverse project effect on traffic operation per the Town’s guidelines.

Baseline plus Project Conditions

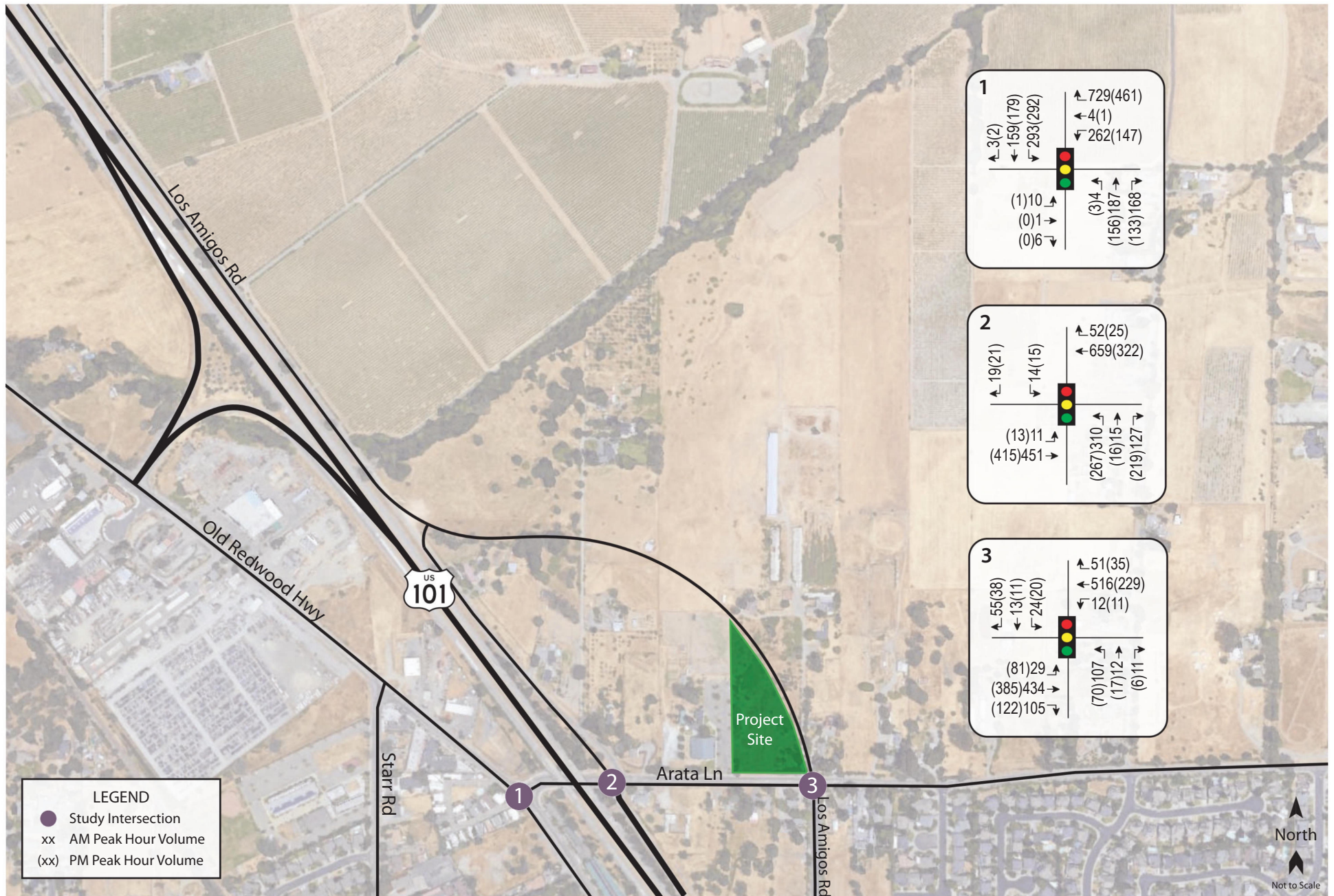
With project-related traffic added to Baseline volumes, two of the three study intersections are expected to operate acceptably. Arata Lane/Los Amigos Road would continue to operate at LOS F on the northbound Los Amigos Road approach if the planned signal is not yet installed, with delays increasing by 0.6 seconds overall upon the addition of Los Amigos Cottages traffic. Since the project would increase delays by less than five seconds under this condition, this would not be considered an adverse project-related effect per General Plan policy M-3.16. With completion of the planned traffic signal to be constructed as part of the Quail Acres project, the intersection would operate acceptably at LOS B or better. These results are summarized in Table 11, and Baseline plus Project volumes are shown in Figure 6. Copies of the Level of Service calculations are provided in Appendix E.



Transportation Impact Study for Los Amigos Cottages
Figure 4 – Project Traffic Volumes



Transportation Impact Study for Los Amigos Cottages
Figure 5 – Existing plus Project Traffic Volumes



Transportation Impact Study for Los Amigos Cottages
Figure 6 – Baseline plus Project Traffic Volumes

Table 11 – Baseline and Baseline plus Project Peak Hour Intersection Levels of Service

Study Intersection	Baseline Conditions				Baseline plus Project			
	AM Peak		PM Peak		AM Peak		PM Peak	
	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS
1. Old Redwood Hwy/Arata Ln	21.0	C	13.0	B	21.2	C	13.1	B
2. Arata Ln/Los Amigos Rd-US 101 N Off-Ramp	8.5	A	9.5	A	8.5	A	10.0	A
3. Arata Ln/Los Amigos Rd ¹	13.6	B	4.6	A	14.2	B	4.9	A
<i>Northbound Los Amigos Rd</i>	121.2	<i>F</i>	<i>30.6</i>	<i>D</i>	126.0	F	<i>32.0</i>	<i>D</i>
With Planned Signalization ¹	13.3	B	12.2	B	13.4	B	12.4	B

Notes: Delay is measured in average seconds per vehicle; LOS = Level of Service; Results for minor approaches to two-way stop-controlled intersections are indicated in *italics*; **Bold** text = deficient operation; ¹ intersection is anticipated to be signalized by Quail Acres project under Baseline conditions

Consideration was given to whether installation of all-way stop-controls at the Arata Lane/Los Amigos Road would be an effective interim strategy to improve operation if the planned signal is not constructed under Baseline conditions. It was determined that all-way stop-controls would operate at LOS F overall during the a.m. peak hour; while operation on the individual northbound Los Amigos Road approach would improve from LOS F to LOS B, conditions would deteriorate substantially from LOS A to LOS F on the eastbound and westbound Arata Lane approaches. This finding reinforces the importance of signalizing the intersection in the coming years, and ensuring that the intersection can be further improved through conversion to a modern roundabout in the future.

Finding – Upon the addition of project-generated traffic to Baseline Conditions and without the planned signal to be constructed by the proposed Quail Acres development project, the northbound approach at Arata Lane/Los Amigos Road would continue to encounter LOS F conditions. The Los Amigos Cottages development would increase overall intersection delays by 0.6-seconds, which is not considered to be an adverse project-related effect per the Town’s guidelines. The intersection would operate acceptably upon completion of the planned signalization included as part of the Quail Acres project.

Conclusions and Recommendations

Conclusions

- An analysis of the collision history indicates no safety concerns at any of the study intersections, and during the five-year study period there were no reported collisions involving pedestrians or bicyclists.
- The proposed project is anticipated to generate an average of 288 trips per day, including 21 trips during the a.m. peak hour and 27 during the p.m. peak hour.
- The project would provide effective linkages to the surrounding pedestrian network, including schools, recreation areas, and shopping areas, and are compliant with Town policy.
- Bicycle facilities serving the project site would effectively link to the surrounding bicycle network. Facilities proposed as part of the project comply with Town policy.
- Transit facilities serving the project site are generally adequate. No changes are proposed as part of the project that would conflict with Town policy.
- The proposed configurations of private onsite roadways and Los Amigos Road frontage improvements to be constructed by the Los Amigos Cottages developer are consistent with the Town's *Complete Street Design Guidelines*.
- The proposed configuration of the project's Arata Lane frontage including one westbound vehicle travel lane as well as right-of-way dedication to the Town of Windsor allowing the Five-Lane Boulevard cross-section to be constructed in the future, is consistent with the CSDG and General Plan Policy M-3.25.
- The proposed Los Amigos Cottages site layout and frontage improvements would accommodate future construction of a roundabout at the Arata Lane/Los Amigos Road intersection, though a small area near the southeast corner of the site would need to remain free of fences or taller landscaping to ensure adequate upstream sight distance with a roundabout.
- The project would not qualify for any of the VMT screening parameters identified by the Town of Windsor.
- After accounting for the proposed density and provision of onsite affordable housing units, the project as proposed would be expected to result in a less-than-significant impact on VMT.
- Sight distances at both of the project street connections would equal or exceed the recommended minimum in both directions. Left-turn lanes are not warranted on Arata Lane and Los Amigos Road at the project streets under Existing plus Project and Baseline plus Project volumes during either peak period.
- 95th percentile queues would remain within the available storage at all intersections, with the exception of the northbound left-turn lane at Arata Lane/Los Amigos Road, which would exceed storage both with and without the Los Amigos Project during the a.m. peak hour if the planned improvements to be made by the proposed Quail Acres development are not constructed. Los Amigos Cottages would increase these 95th percentile queues by three feet, which is not considered to be a significant project-related impact per the Town's guidelines.
- The project would not introduce any hazardous design elements and would therefore have a less-than-significant impact on safety.

- The proposed roadway network, including connectivity to existing and future roads, would provide adequate emergency circulation and access. The project, including all future improvement plans, will be subject to review and approval by the Town's Fire Marshal.
- Under Existing plus Project Conditions, the Los Amigos Cottages would increase average delays at the intersection of Arata Lane/Los Amigos Road intersection by 0.2 seconds, and would further increase delays on the northbound approach that is already operating at LOS F. Because average delays would increase by less than five seconds, however, this is not considered to be an adverse project effect on traffic operation per the Town's guidelines.
- Upon the addition of project-generated traffic to Baseline Conditions and without the planned signal to be constructed by the proposed Quail Acres development project, the northbound approach at Arata Lane/Los Amigos Road would continue to encounter LOS F conditions. The Los Amigos Cottages development would increase overall intersection delays by 0.6-seconds, which is not considered to be an adverse project-related effect per the Town's guidelines. The intersection would operate acceptably upon completion of the planned signalization to be completed by the Quail Acres project.

Recommendations

- The project should be responsible for installing or funding the installation of a crosswalk with high-visibility signage and markings as well as street lighting on the west leg of the Arata Lane/Los Amigos Road intersection if the planned signalization of the intersection has not occurred prior to project occupancy.
- The existing striping on Arata Lane at the project street should be modified to provide a break in the painted median, allowing drivers to legally turn left into and out of the project site.
- Landscaping plans should ensure that an approximately 30-square foot triangular-shaped area on the southeastern corner of the project site near the Arata Lane/Los Amigos Road intersection will remain free of fences or landscaping exceeding two feet in height to maintain acceptable upstream sight distance if a future roundabout is installed at the intersection. Alternatively, an easement to the Town of Windsor could be established for this area if deemed necessary by the Public Works Department.

Summary of Circulation Improvement Responsibilities

The Los Amigos Cottages development should be responsible for the following circulation improvements.

- Construct a new segment of Los Amigos Road along the project's eastern frontage including two 11-foot vehicle travel lanes and a two-foot northbound shoulder, as well as an eight-foot wide on-street parking zone, a six-foot bike lane with three-foot buffer, and an 11-foot sidewalk along the project frontage.
- Construct frontage improvements on Arata Lane that will result in a cross-section maintaining the current 10-foot wide eastbound through lane, 6-foot wide bike lane, and 10-foot wide center turn lane, as well as widening on the project frontage to accommodate an 11-foot westbound through lane, six-foot bike lane with three-foot buffer, and 11-foot sidewalk with 4-foot tree wells.
- Construct or fund the installation of a crosswalk with high-visibility signage and markings as well as street lighting on the west leg of the Arata Lane/Los Amigos Road intersection if the planned signalization of the intersection has not occurred prior to project occupancy.
- Dedicate right-of-way along the site's Arata Lane frontage, allowing the Town to widen Arata Lane to accommodate a Five-Lane Boulevard cross section in the future.
- Modify the existing striping on Arata Lane at the project street to provide a break in the painted median.
- Ensure that an approximately 30-square foot triangular-shaped area on the southeastern corner of the project site near the Arata Lane/Los Amigos Road intersection will remain free of fences or landscaping exceeding two feet in height, or if required by the Town's Public Works Department, establish an easement to the Town in this area.

Other Proposed Developments on Los Amigos Road Extension (including Quail Acres) will be responsible for the following improvements.

- Construct additional widening on the east side of the Los Amigos Road extension near Los Amigos Cottages to include a buffered bike lane and sidewalks.
- Construct the full Los Amigos Road extension to the northern Town limits including auto, pedestrian, and bicycle facilities.
- Install a traffic signal at the Arata Lane/Los Amigos Road intersection. For proposed developments abutting the intersection, continue to ensure that sufficient right-of-way will be dedicated to the Town for future construction of a roundabout.

Other Proposed Developments on Arata Lane and the Town of Windsor will be responsible for the following improvements.

- As part of frontage improvements to be constructed by other future private development projects, construct additional widening on the south side of Arata Lane near Los Amigos Cottages as well as the segment of Arata Lane to the east toward US 101 to include Class IV separated bikeways and sidewalks.
- Private development projects will also be required to dedicate sufficient right-of-way to allow the Town of Windsor to further widen Arata Lane, if and when it is deemed necessary, to the five-lane boulevard cross-section identified in the Town's General Plan between Old Redwood Highway and Los Amigos Road.

Study Participants and References

Study Participants

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Assistant Engineer	Gabriel Ramos, EIT
Graphics	Jessica Bender
Editing/Formatting	Rebecca Mansour, Jessica Bender
Quality Control	Dalene J. Whitlock, PE (Civil, Traffic), PTOE

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Appendix A

Collision Rate Calculations



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Intersection Collision Rate Worksheet

Los Amigos Cottages

Intersection # 1: Old Redwood Hwy & Arata Ln

Date of Count: Wednesday, September 27, 2023

Number of Collisions: 2

Number of Injuries: 0

Number of Fatalities: 0

Average Daily Traffic (ADT): 12100

Start Date: October 1, 2019

End Date: September 30, 2024

Number of Years: 5

Intersection Type: Four-Legged

Control Type: Signals

Area: Urban

$$\text{Collision Rate} = \frac{\text{Number of Collisions} \times 1 \text{ Million}}{\text{ADT} \times \text{Days per Year} \times \text{Number of Years}}$$

$$\text{Collision Rate} = \frac{2}{12,100} \times \frac{1,000,000}{365 \times 5}$$

	Collision Rate	Fatality Rate	Injury Rate
Study Intersection	0.09 c/mve	0.0%	0.0%
Statewide Average*	0.33 c/mve	0.6%	47.7%

Notes

ADT = average daily total vehicles entering intersection

c/mve = collisions per million vehicles entering intersection

* 2022 Collision Data on California State Highways, Caltrans

Intersection # 2: Arata Ln & Los Amigos Rd-US 101 North Off-Ramp

Date of Count: Wednesday, September 27, 2023

Number of Collisions: 6

Number of Injuries: 3

Number of Fatalities: 0

Average Daily Traffic (ADT): 11400

Start Date: October 1, 2019

End Date: September 30, 2024

Number of Years: 5

Intersection Type: Four-Legged

Control Type: Signals

Area: Urban

$$\text{Collision Rate} = \frac{\text{Number of Collisions} \times 1 \text{ Million}}{\text{ADT} \times \text{Days per Year} \times \text{Number of Years}}$$

$$\text{Collision Rate} = \frac{6}{11,400} \times \frac{1,000,000}{365 \times 5}$$

	Collision Rate	Fatality Rate	Injury Rate
Study Intersection	0.29 c/mve	0.0%	50.0%
Statewide Average*	0.33 c/mve	0.6%	47.7%

Notes

ADT = average daily total vehicles entering intersection

c/mve = collisions per million vehicles entering intersection

* 2022 Collision Data on California State Highways, Caltrans

Intersection Collision Rate Worksheet

Los Amigos Cottages

Intersection # 3: Arata Ln & Los Amigos Rd
Date of Count: Sunday, September 27, 2020

Number of Collisions: 1
Number of Injuries: 0
Number of Fatalities: 0
Average Daily Traffic (ADT): 8400
Start Date: October 1, 2019
End Date: September 30, 2024
Number of Years: 5

Intersection Type: Tee
Control Type: Signals
Area: Urban

$$\text{Collision Rate} = \frac{\text{Number of Collisions} \times 1 \text{ Million}}{\text{ADT} \times \text{Days per Year} \times \text{Number of Years}}$$

$$\text{Collision Rate} = \frac{1}{8,400} \times \frac{1,000,000}{365 \times 5}$$

	Collision Rate	Fatality Rate	Injury Rate
Study Intersection	0.07 c/mve	0.0%	0.0%
Statewide Average*	0.28 c/mve	0.9%	49.1%

Notes

ADT = average daily total vehicles entering intersection
c/mve = collisions per million vehicles entering intersection
* 2022 Collision Data on California State Highways, Caltrans

Appendix B

Arata Lane Operational Study Letter Report



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March 18, 2024



Mr. Ben VanZutphen
Willowglen Homes
P.O. Box 2357
Healdsburg, CA 95448

Evaluation of the Long-Range Configuration for Arata Lane Between US 101 and Los Amigos Road

Dear Mr. VanZutphen;

As requested, W-Trans has prepared a focused assessment of the roadway configuration needed to accommodate volumes anticipated in the long-term on Arata Lane between US 101 and Los Amigos Road. This information has been requested by the Town to determine the appropriate ultimate configuration of Arata Lane along the frontage of the proposed Los Amigos Cottages development, including consideration of both signal and roundabout options at the Arata Lane/Los Amigos Road intersection.

Study Parameters

Analysis Scenarios

The analysis scenarios reflect future conditions during the weekday a.m. and p.m. peak hours.

Future Interchange Modifications

Future infrastructure improvements at the Arata Lane/US 101 interchange include a new northbound on-ramp as well as widening of the underpass to accommodate five vehicle travel lanes on Arata Lane, consistent with the Town's General Plan. Lane configurations at the interchange were chosen to best manage traffic flow and queues for the purposes of this analysis.

Future Traffic Projections

Future traffic projections for the study area were developed using the SCTA travel demand model, which has a forecast year of 2040, consistent with the Town of Windsor General Plan. The SCTA model was recently used to establish updated 2040 traffic projections that reflect current development proposals for the proposed Quail Acres project. For the purposes of this analysis, the "Quail Acres 2" project, including a new school, was included in the future projections since this potential development scheme for the Quail Acres site results in higher traffic volumes than other potential development scenarios. The future traffic projections were further refined to include traffic associated with the proposed Los Amigos Cottages development. This site was previously assumed in the General Plan and SCTA modeling to include retail uses but would instead include 32 single family homes if the Los Amigos Cottages project is approved and built. This land use modification results in modest changes to future volumes from those applied in the Quail Acres traffic studies. In addition to Quail Acres and Los Amigos Cottages, the future traffic projections account for anticipated growth throughout Windsor and the County, including potential traffic that could be generated by other nearby projects such as the Arata Lane Hotel and continued residential development in the North of Arata area.

Queuing and Operational Analysis

Study Design

The long-range configuration needed on the Arata Lane study segment is influenced by traffic volumes, the need to maintain acceptable Levels of Service (LOS) at intersections, and the need to provide adequate traffic flow. Understanding traffic flow characteristics involving multiple intersections – particularly with respect to queuing and driver lane choices near freeway interchanges – may be accomplished through simulation of the corridor. Review of simulations, in tandem with the outputs produced by simulation software and accompanying traffic

analysis software, reveals how corridors are likely to be used by drivers. It also helps identify where lane capacity is and is not needed, which is the key question for the subject segment of Arata Lane.

This analysis was performed using Synchro to assess signalized intersection LOS and 95th percentile queues, SIDRA to assess roundabout LOS and 95th percentile queues, and Simtraffic to conduct simulations demonstrating how the network and lanes function as a system. Simtraffic relies on the inputs entered in Synchro and randomly “seeds” vehicle arrivals to capture the typical day-to-day variations in traffic flow, therefore resulting in different results for every iteration of the analysis. The maximum observed queues on the study segment of Arata Lane were calculated by averaging the results of ten Simtraffic runs for each scenario. This includes the eastbound queues created by the signal or roundabout at Arata Lane/Los Amigos Road, as well as the westbound queues created by the signal at the Arata Lane/US 101 North Ramps intersection.

Through testing of the scenarios, it was determined that two slightly different roundabout configurations at Arata Lane/Los Amigos Road needed to be simulated. The first consists of a single-lane roundabout. The second is a single-lane roundabout with an eastbound right-turn “slip” lane. Screenshots of the three Synchro/Simtraffic networks developed for this analysis are enclosed for reference.

Analysis Results

The operational and simulation results indicate that Arata Lane requires a five-lane cross section (generally consisting to two lanes in each direction plus a center median or turn lanes) between Old Redwood Highway and approximately 350-feet east of the US 101 North Ramps intersection, regardless of the traffic control used at Arata Lane/Los Amigos Road. Between approximately 350-feet east of the US 101 North Ramps intersection and Los Amigos Road, Arata Lane would need one lane in each direction plus a center median or turn lanes if the intersection at Arata Lane/Los Amigos Road is signalized. If a roundabout is constructed at Arata Lane/Los Amigos Road, a second lane in the eastbound direction (on the south side of Arata Lane) would be needed. Details of the necessary configuration follow below.

Signal at Arata Lane/Los Amigos Road

The five-lane Arata Lane cross section should extend approximately 350 feet to the east of the US 101 North Ramps intersection, roughly corresponding to the frontage of the proposed Arata Hotel project. At that point, eastbound Arata Lane could merge to a single through lane as it approaches Los Amigos Road, with the center two-way left-turn lane striped as a left-turn pocket at the Los Amigos Road signal. Heading westbound from Los Amigos Road, Arata Lane would require a single lane until just west of the Newsong Church driveway (approximately 350 feet east of the US 101 North Ramps intersection) before widening to two lanes. Arata Lane should include one eastbound through lane, one eastbound left-turn lane, and one westbound lane along the Los Amigos Cottage frontage.

With this signalized configuration, westbound traffic departing the Arata Lane/Los Amigos Road intersection would originate from single through or turn lanes on each of the intersection’s approaches, and Arata Lane would require one westbound lane along the Los Amigos Cottage frontage.

Roundabout at Arata Lane/Los Amigos Road

A single-lane roundabout was tested using the same transition point between a five- and three-lane cross section as described above for the signal (approximately 350 feet east of the US 101 North Ramps intersection). With this configuration, both Simtraffic and SIDRA indicate that the eastbound queue approaching the roundabout would extend approximately 800 to 850 feet during the p.m. peak hour, through the upstream intersection at Arata Lane/US 101 North ramps. To alleviate this queuing condition, the second roundabout configuration including an eastbound right-turn “slip” lane onto southbound Los Amigos Road was developed. With the added slip lane and maintaining two eastbound lanes the entire length of Arata Lane between US 101 and Los Amigos Road, peak hour queues are projected to remain well within the available storage.

With either roundabout configuration, westbound traffic departing the Arata Lane/Los Amigos Road intersection would originate from single lanes on each of the roundabout approaches, and Arata Lane would require one westbound lane along the Los Amigos Cottage frontage.

The positioning of the potential roundabout was evaluated to optimize operation and safety, and to minimize the amount of potential realignment and right-of-way acquisition needed on the approaches. Provision of an eastbound right-turn slip lane at the roundabout would require additional right-of-way on the south side of Arata Lane. The slip lane would not necessitate additional right-of-way acquisition on the Los Amigos Cottages frontage on the north side of the street.

A summary of the future queue lengths on the Arata Lane study segment as projected using simulation are summarized in Table 1.

Table 1 – Future Queue Lengths on Arata Lane between US 101 and Los Amigos Road (Simulation)

Arata Ln Approach	Storage	Control Type at Arata Ln/Los Amigos Rd					
		Traffic Signal		Single-Lane Roundabout		Roundabout with EB Slip Lane	
		AM	PM	AM	PM	AM	PM
Eastbound Queue at Los Amigos Rd <i>Lane and Median Configuration on Los Amigos Cottages Frontage</i>	770	451	509	340	852	330	197
		1 EB Through/Right turn 1 EB Left turn 1 WB Lane		1 EB Lane Raised Median 1 WB Lane		1 EB Through/Left turn 1 EB Right turn Raised Median 1 WB Lane	
Westbound Queue at US 101N Ramps <i>Lane and Median Configuration on Proposed Arata Hotel Frontage</i>	770	501	306	501	306	501	306
		2 EB Lanes Center Turn Lane 2 WB Lanes		2 EB Lanes Center Turn Lane 2 WB Lanes		2 EB Lanes Center Turn Lane 2 WB Lanes	

Notes: Queues measured in feet; Simulation results based on 10 randomly-seeded runs and reflect the average of maximum observed queues; **Bold**=maximum queues exceed available storage; EB=Eastbound; WB=Westbound

For the purposes of comparing simulation results to calculated values and to provide additional information on how queuing and performance at the Arata Lane/Los Amigos Road intersection would vary for different types of traffic control, the calculated 95th percentile queues on all four approaches as well as overall LOS grades were obtained from Synchro and SIDRA. These results are summarized in Table 2.

Table 2 – Future 95th Percentile Queue Lengths and LOS at Arata Lane/Los Amigos Road (Calculated)

Arata Ln Approach	Storage	Control Type at Arata Ln/Los Amigos Rd					
		Traffic Signal		Single-Lane Roundabout		Roundabout with EB Slip Lane	
		AM	PM	AM	PM	AM	PM
Northbound Los Amigos Rd	700	115	96	36	42	35	42
Southbound Los Amigos Rd	420	221	117	316	89	316	89
Eastbound Arata Ln	770	445	592	244	813	244	325
Westbound Arata Ln	500	769	463	475	130	475	131
Overall Intersection LOS	-	D	C	C	B	C	B
Lane and Median Configuration on Los Amigos Cottages Frontage	-	1 EB Through/Right turn 1 EB Left turn 1 WB Lane		1 EB Lane Raised Median 1 WB Lane		1 EB Through/Left turn 1 EB Right turn Raised Median 1 WB Lane	

Notes: Queues are 95th percentile measured in feet; Results based on calculations obtained from Synchro (signalized) and SIDRA (roundabout); **Bold**=95% queues exceed available storage; LOS=Level of Service; EB=Eastbound; WB=Westbound

While not directly relevant to the Arata Lane study segment that is the subject of this analysis, it is noted that with a traffic signal, 95th percentile queues on westbound Arata Lane approaching the Los Amigos Road intersection would extend approximately 769 feet during the a.m. peak hour, exceeding the 500-foot distance to the upstream unsignalized intersection at Marcela Lane. Such queues, if they do develop, are likely to occur primarily during peak school traffic periods in the morning. Marking “KEEP CLEAR” legends at the Marcela Lane intersection could address this issue. These westbound queues are not projected to extend to Marcela Lane with a roundabout.

Finally, with respect to intersection LOS at Arata Lane/Los Amigos Road, operation is expected to comply with the Town’s LOS D standard with a signal or either of the roundabout options. For the Arata Lane study segment, decisions about the roadway cross-section appear to be tied more to corridor operation and queuing than LOS.

Findings

Because the Town is considering implementation of a roundabout at Arata Lane/Los Amigos Road in the future, and because the analysis contained herein indicates that two eastbound lanes on Arata Lane should be provided with a roundabout, it is recommended that the Town continue to condition development projects on the south side of Arata Lane between Old Redwood Highway and Los Amigos Road to accommodate two eastbound lanes. Similarly, future development projects on the north side of Arata Lane should accommodate two westbound lanes between Old Redwood Highway and approximately 350-feet east of the US 101 North Ramps intersection (just west of the Newsong Church driveway). On the remaining segment of Arata Lane between the Newsong Church driveway and Los Amigos Road, including the proposed Los Amigos Cottages project frontage, a single westbound lane would effectively accommodate future traffic volumes.

Comparison to General Plan and the General Plan EIR

Traffic Forecasts

The future traffic projections used in this analysis were obtained using the most recent SCTA travel demand model, as adjusted to reflect the proposed Quail Acres and Los Amigos Cottages developments. The proposed Quail Acres development includes no retail/commercial uses, and future retail/commercial development to the northeast of

the Arata Lane/Los Amigos Road intersection would be limited to what is referred to as the Hindmarsh parcel. The combined Quail Acres and Hindmarsh parcels would have less commercial development than envisioned in the General Plan. Additionally, the Los Amigos Cottages site on the northwest corner of Arata Lane/Los Amigos Road is proposed to be developed with residential uses rather than commercial uses as envisioned in the General Plan. The effects of converting some of the potential commercial uses to residential uses in this area of Windsor result in a modest reduction to future traffic volume forecasts.

The SCTA travel demand model used to develop future volume estimates has also undergone two major updates since being used for the General Plan 2040 EIR. Each model update incorporates numerous factors, including but not limited to calibration to real-world traffic volumes, updates to existing and long-range land use inventory data, refinement of network (road, transit, and bike) configurations to improve accuracy, and updates to align the model with regional and economic growth projections used by ABAG and MTC. With each major model update, future traffic projections have tended to trend downward slightly from the prior model in most areas including northern Windsor.

In comparing the future traffic projections applied in this focused Arata Lane analysis to those applied in the General Plan EIR, the current projections were found to be approximately eight to 10 percent lower, which is remarkably similar considering the time elapsed and influences described above. While the current forecasts are slightly lower, they would still be considered generally equivalent to those used in the General Plan to identify future roadway capacity needs.

Roadway Classification

The General Plan identifies the segment of Arata Lane between Old Redwood Highway and Los Amigos Road as a “5 Lane Crosstown” street, which includes two lanes in each direction plus center median or turn lanes. In determining the appropriate roadway classification during the General Plan update process, projected daily traffic volumes on roadway segments between arterial and/or major collector intersections are typically used. The use of daily projections on longer segments (rather than block-by-block) is commensurate with the high-level nature of a General Plan. Most General Plan circulation elements, including Windsor’s Transportation and Mobility Element, intentionally do not address block- or intersection-level details such as the number and configurations of turn lanes or where lane additions and drops occur since such components are beyond the inherent breadth of a General Plan.

The focused Arata Lane evaluation summarized in this letter constitutes a “micro” level of analysis that provides a far finer-grained level of detail than was performed for the General Plan and General Plan EIR, examining specific details including turn pocket lengths and specific areas where the transitions between one and two through lanes should occur. Based on the results of the analysis, the “5 Lane Crosstown” street designation identified in the General Plan for Arata Lane between Old Redwood Highway and Los Amigos Road remains appropriate, and represents the cross-section needed to accommodate future traffic on the majority of this segment. The entirety of the segment would include two eastbound lanes and a center median or turn lanes, and all but the easternmost portion of the segment would include two westbound lanes. The provision of a single westbound lane just east of Los Amigos Road is a function of the Arata Lane/Los Amigos Road’s configuration with either a signal or roundabout and would not constitute an inconsistency with the 5 Lane Crosstown street designation.

Conclusions

Following are the key findings of the analysis.

- As identified in the Town’s General Plan, Arata Lane should ultimately consist of a five-lane cross-section through and near the US 101 freeway interchange.

- For approximately 350 feet east of the US 101 North ramps intersection, Arata Lane should include two through lanes in each direction plus a center turn lane. This includes the segment along the frontage of the proposed Arata Hotel development.
- Between the eastern boundary of the proposed Arata Hotel development and Los Amigos Road, the necessary roadway cross-section on Arata Lane would vary based on the traffic control implemented at the Arata Lane/Los Amigos Road intersection.
 - With a traffic signal at Los Amigos Road, eastbound Arata Lane could merge to a single through lane approximately 350 feet east of the US 101 North Ramps intersection. The segment would include a center turn lane that becomes an eastbound left-turn lane at Los Amigos Road.
 - With a roundabout at Los Amigos Road, Arata Lane should include two eastbound lanes, with the outer lane becoming a right-turn only "slip" lane at the Los Amigos Road intersection. The segment would include a center turn lane that becomes a raised splitter island (median) near the roundabout.
 - Because the Town is considering implementation of a roundabout at Arata Lane/Los Amigos Road in the future, development projects on the south side of Arata Lane between Old Redwood Highway and Los Amigos Road should continue to be conditioned to accommodate two eastbound lanes.
 - With either a traffic signal or roundabout, westbound Arata Lane would function acceptably with a single lane between Los Amigos Road and just west of the Newsong Church driveway (approximately 350 feet east of the US 101 North Ramps intersection) before widening to two westbound lanes.
- The Arata Lane frontage of the Los Amigos Cottages development would require a single westbound lane with either a signal or roundabout at the Arata Lane/Los Amigos Road intersection. Provision of an eastbound right-turn slip lane at the roundabout as recommended is anticipated to require additional right-of-way on the south side of Arata Lane but would not affect the Los Amigos Cottages frontage.
- Intersection LOS at Arata Lane/Los Amigos Road is projected to be acceptable with a traffic signal, a single-lane roundabout, and a single-lane roundabout with an eastbound slip lane.
- The 5 Lane Crosstown street classification identified for Arata Lane between Old Redwood Highway and Los Amigos Road remains appropriate; the provision of a single westbound lane between Los Amigos Road and just west of the Newsong Church driveway is a function of the Arata Lane/Los Amigos Road's configuration and would not constitute an inconsistency with the 5 Lane Crosstown street designation.

Thank you for giving W-Trans the opportunity to provide these services. Please call if you have any questions.

Sincerely,



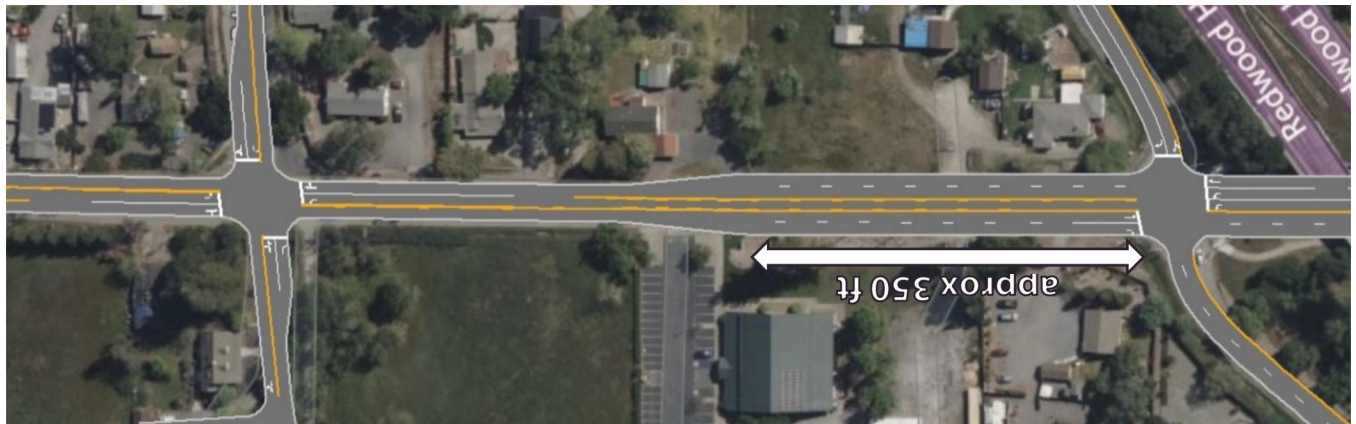
Zachary Matley, AICP
Principal

JZM/WIN168.L1

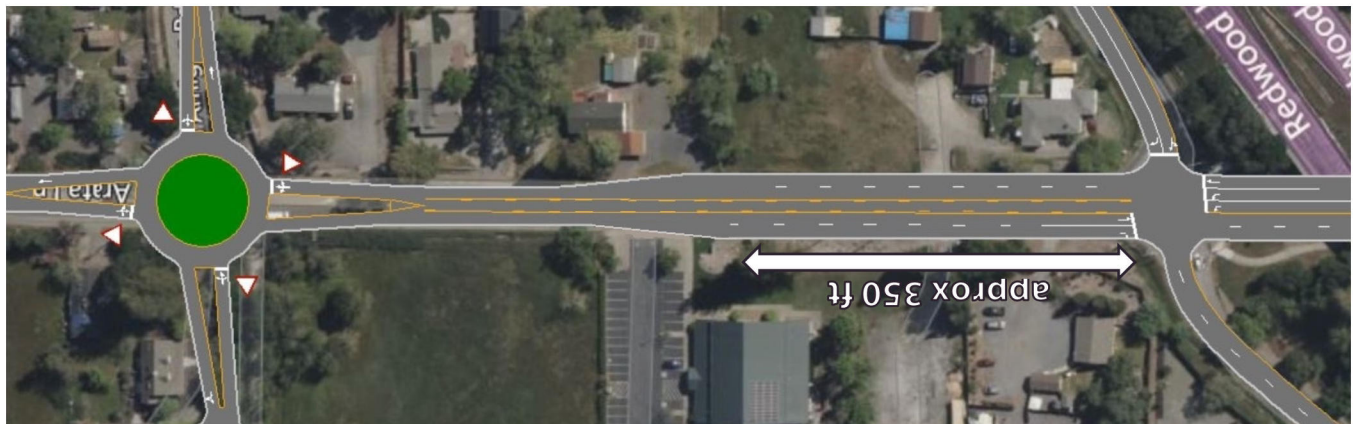
Enclosure: Synchro Network Screenshots

Synchro Network Screenshots

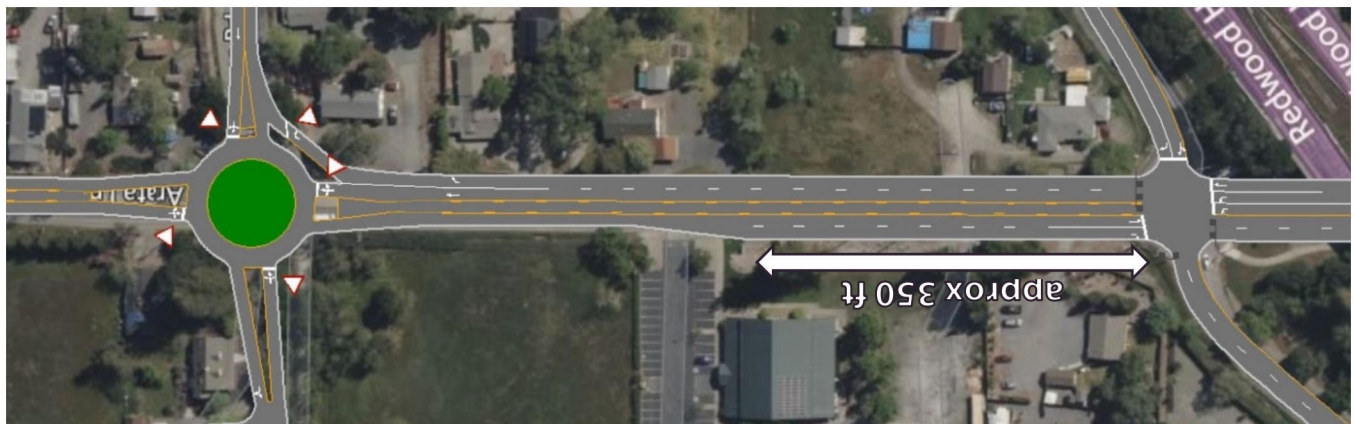
Traffic Signal at Arata Lane/Los Amigos Road



Single-Lane Roundabout at Arata Lane/Los Amigos Road



Roundabout with Eastbound Slip Lane at Arata Lane/Los Amigos Road





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Appendix C

Turn Lane Warrants





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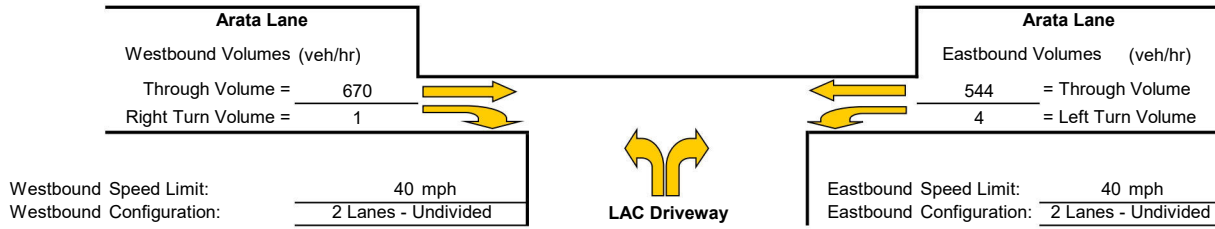
Turn Lane Warrant Analysis - Tee Intersections

Study Intersection: Arata Lane/LAC Driveway

Study Scenario: AM Peak Hour - Existing plus Project

Direction of Analysis Street: East/West

Cross Street Intersects: From the North



Westbound Right Turn Lane Warrants

1. Check for right turn volume criteria

Thresholds not met, continue to next step

2. Check advance volume threshold criteria for turn lane

Advancing Volume Threshold AV = 1042.6
Advancing Volume Va = 671
If AV < Va then warrant is met No

Right Turn Lane Warranted: NO

Westbound Right Turn Taper Warrants

(evaluate if right turn lane is unwarranted)

1. Check taper volume criteria

NOT WARRANTED - Less than 20 vehicles

2. Check advance volume threshold criteria for taper

Advancing Volume Threshold AV = -
Advancing Volume Va = 671
If AV < Va then warrant is met -

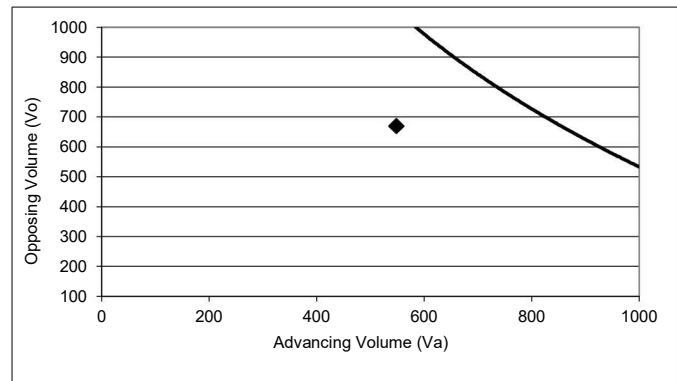
Right Turn Taper Warranted: NO

Eastbound Left Turn Lane Warrants

Percentage Left Turns %lt 0.7 %

Advancing Volume Threshold AV 854 veh/hr

If AV < Va then warrant is met



◆ Study Intersection

Two lane roadway warrant threshold for: 40 mph

Turn lane warranted if point falls to right of warrant threshold line

Left Turn Lane Warranted: NO

Methodology based on Washington State Transportation Center Research Report *Method For Prioritizing Intersection Improvements*, January 1997.

The right turn lane and taper analysis is based on work conducted by Cottrell in 1981.

The left turn lane analysis is based on work conducted by M.D. Harmelink in 1967, and modified by Kikuchi and Chakroborty in 1991.

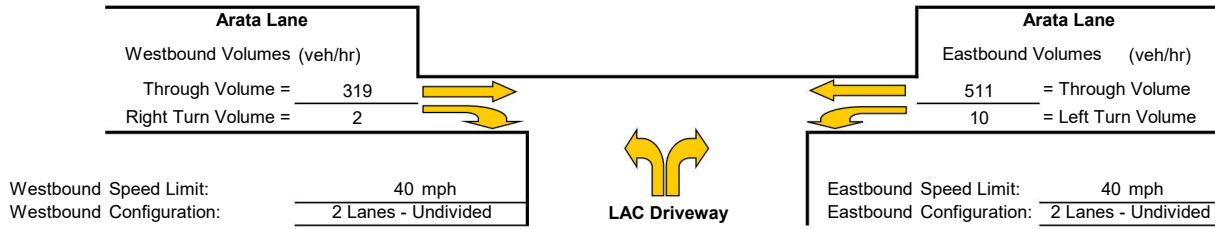
Turn Lane Warrant Analysis - Tee Intersections

Study Intersection: Arata Lane/LAC Driveway

Study Scenario: PM Peak Hour - Existing plus Project

Direction of Analysis Street: East/West

Cross Street Intersects: From the North



Westbound Right Turn Lane Warrants

1. Check for right turn volume criteria

Thresholds not met, continue to next step

2. Check advance volume threshold criteria for turn lane

Advancing Volume Threshold AV = 1035.1
Advancing Volume Va = 321
If AV < Va then warrant is met No

Right Turn Lane Warranted: NO

Westbound Right Turn Taper Warrants

(evaluate if right turn lane is unwarranted)

1. Check taper volume criteria

NOT WARRANTED - Less than 20 vehicles

2. Check advance volume threshold criteria for taper

Advancing Volume Threshold AV = -
Advancing Volume Va = 321
If AV < Va then warrant is met -

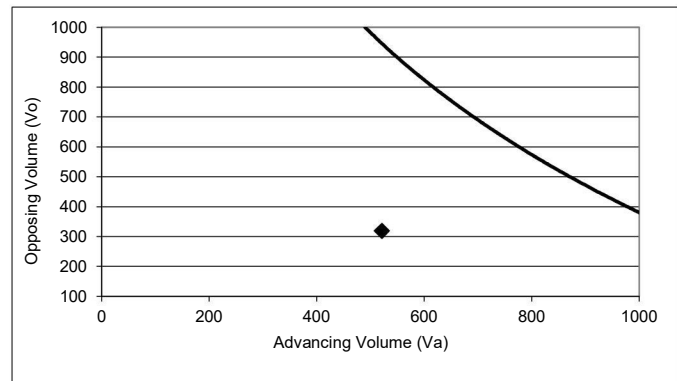
Right Turn Taper Warranted: NO

Eastbound Left Turn Lane Warrants

Percentage Left Turns %lt 1.9 %

Advancing Volume Threshold AV 1072 veh/hr

If AV < Va then warrant is met



◆ Study Intersection

Two lane roadway warrant threshold for: 40 mph

Turn lane warranted if point falls to right of warrant threshold line

Left Turn Lane Warranted: NO

Methodology based on Washington State Transportation Center Research Report *Method For Prioritizing Intersection Improvements*, January 1997.

The right turn lane and taper analysis is based on work conducted by Cottrell in 1981.

The left turn lane analysis is based on work conducted by M.D. Harmelink in 1967, and modified by Kikuchi and Chakroborty in 1991.

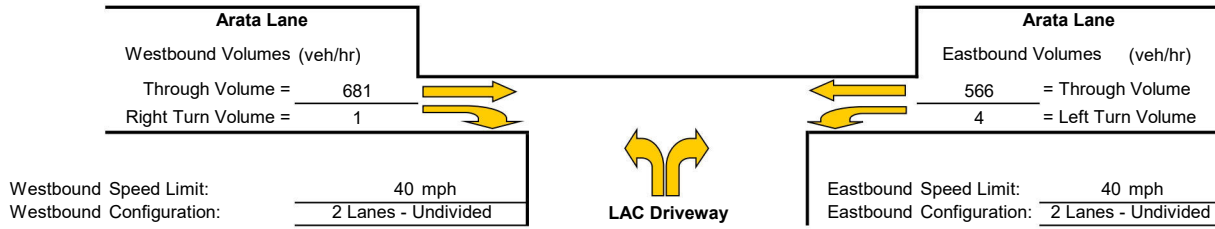
Turn Lane Warrant Analysis - Tee Intersections

Study Intersection: Arata Lane/LAC Driveway

Study Scenario: AM Peak Hour - Baseline plus Project

Direction of Analysis Street: East/West

Cross Street Intersects: From the North



Westbound Right Turn Lane Warrants

1. Check for right turn volume criteria

Thresholds not met, continue to next step

2. Check advance volume threshold criteria for turn lane

Advancing Volume Threshold AV = 1042.6
Advancing Volume Va = 682
If AV < Va then warrant is met No

Right Turn Lane Warranted: NO

Westbound Right Turn Taper Warrants

(evaluate if right turn lane is unwarranted)

1. Check taper volume criteria

NOT WARRANTED - Less than 20 vehicles

2. Check advance volume threshold criteria for taper

Advancing Volume Threshold AV = -
Advancing Volume Va = 682
If AV < Va then warrant is met -

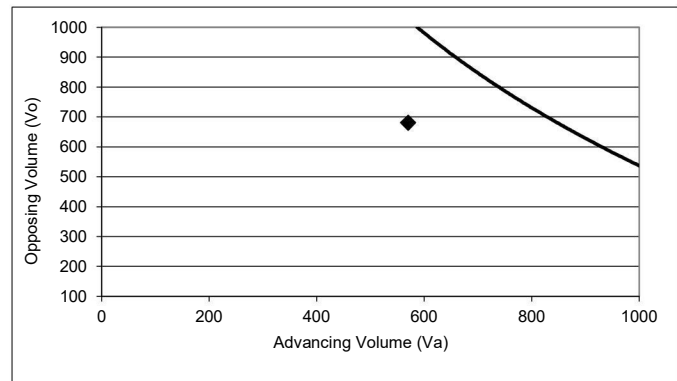
Right Turn Taper Warranted: NO

Eastbound Left Turn Lane Warrants

Percentage Left Turns %lt 0.7 %

Advancing Volume Threshold AV 847 veh/hr

If AV < Va then warrant is met



◆ Study Intersection

Two lane roadway warrant threshold for: 40 mph

Turn lane warranted if point falls to right of warrant threshold line

Left Turn Lane Warranted: NO

Methodology based on Washington State Transportation Center Research Report *Method For Prioritizing Intersection Improvements*, January 1997.

The right turn lane and taper analysis is based on work conducted by Cottrell in 1981.

The left turn lane analysis is based on work conducted by M.D. Harmelink in 1967, and modified by Kikuchi and Chakroborty in 1991.

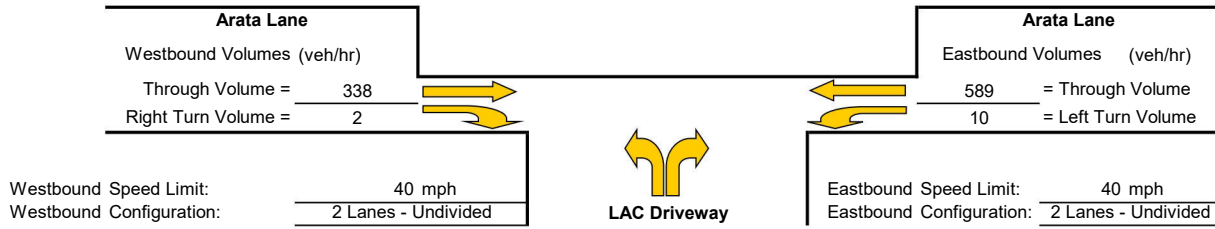
Turn Lane Warrant Analysis - Tee Intersections

Study Intersection: Arata Lane/LAC Driveway

Study Scenario: PM Peak Hour - Baseline plus Project

Direction of Analysis Street: East/West

Cross Street Intersects: From the North



Westbound Right Turn Lane Warrants

1. Check for right turn volume criteria

Thresholds not met, continue to next step

2. Check advance volume threshold criteria for turn lane

Advancing Volume Threshold AV = 1035.1
Advancing Volume Va = 340
If AV < Va then warrant is met No

Right Turn Lane Warranted: NO

Westbound Right Turn Taper Warrants

(evaluate if right turn lane is unwarranted)

1. Check taper volume criteria

NOT WARRANTED - Less than 20 vehicles

2. Check advance volume threshold criteria for taper

Advancing Volume Threshold AV = -
Advancing Volume Va = 340
If AV < Va then warrant is met -

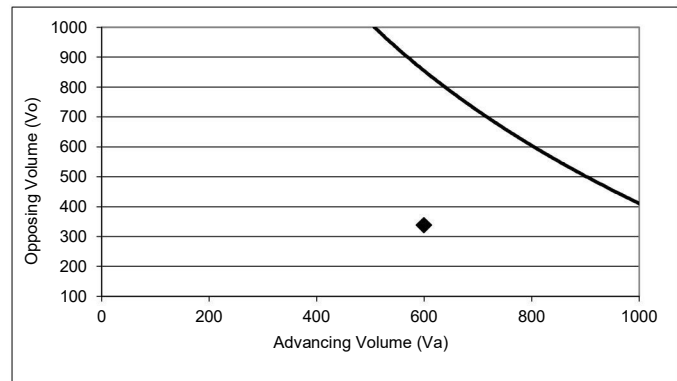
Right Turn Taper Warranted: NO

Eastbound Left Turn Lane Warrants

Percentage Left Turns %lt 1.7 %

Advancing Volume Threshold AV 1087 veh/hr

If AV < Va then warrant is met



◆ Study Intersection

Two lane roadway warrant threshold for: 40 mph

Turn lane warranted if point falls to right of warrant threshold line

Left Turn Lane Warranted: NO

Methodology based on Washington State Transportation Center Research Report *Method For Prioritizing Intersection Improvements*, January 1997.

The right turn lane and taper analysis is based on work conducted by Cottrell in 1981.

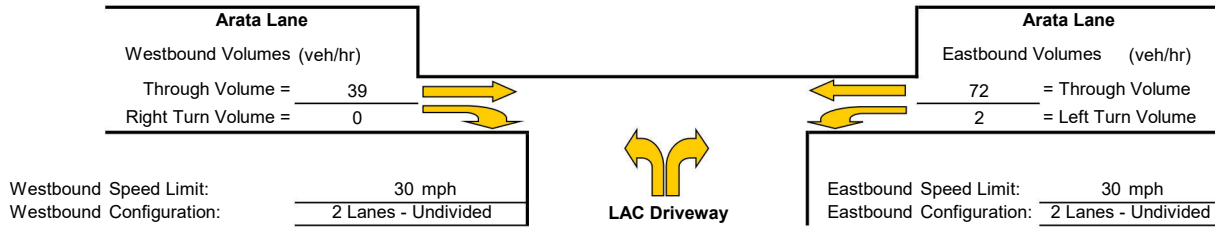
The left turn lane analysis is based on work conducted by M.D. Harmelink in 1967, and modified by Kikuchi and Chakroborty in 1991.

Turn Lane Warrant Analysis - Tee Intersections

Study Intersection: Los Amigos Road/LAC Driveway
Study Scenario: AM Peak Hour - Baseline plus Project

Direction of Analysis Street: East/West

Cross Street Intersects: From the North



Westbound Right Turn Lane Warrants

1. Check for right turn volume criteria

Thresholds not met, continue to next step

2. Check advance volume threshold criteria for turn lane

Advancing Volume Threshold AV = 1050.1

Advancing Volume Va = 39

If $AV < Va$ then warrant is met No

Right Turn Lane Warranted: NO

Westbound Right Turn Taper Warrants

(evaluate if right turn lane is unwarranted)

1. Check taper volume criteria

NOT WARRANTED - Less than 20 vehicles

2. Check advance volume threshold criteria for taper

Advancing Volume Threshold AV = -

Advancing Volume Va = 39

If $AV < Va$ then warrant is met -

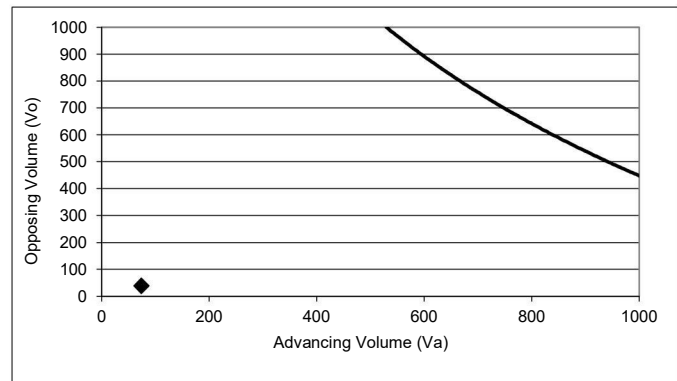
Right Turn Taper Warranted: NO

Eastbound Left Turn Lane Warrants

Percentage Left Turns %lt 2.7 %

Advancing Volume Threshold AV 1601 veh/hr

If $AV < Va$ then warrant is met



Study Intersection

Two lane roadway warrant threshold for: 30 mph

Turn lane warranted if point falls to right of warrant threshold line

Left Turn Lane Warranted: NO

Methodology based on Washington State Transportation Center Research Report *Method For Prioritizing Intersection Improvements*, January 1997.

The right turn lane and taper analysis is based on work conducted by Cottrell in 1981.

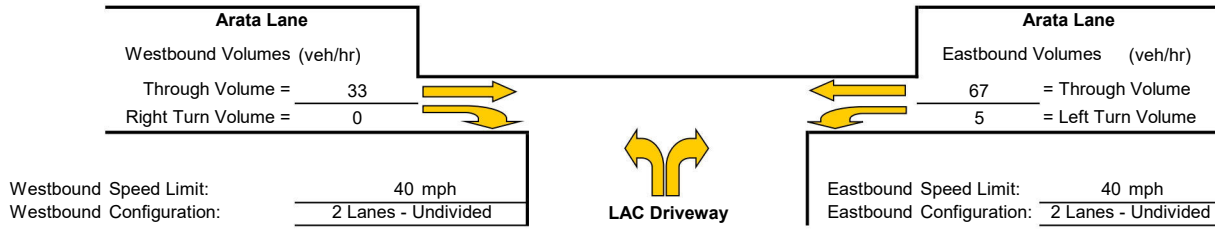
The left turn lane analysis is based on work conducted by M.D. Harmelink in 1967, and modified by Kikuchi and Chakroborty in 1991.

Turn Lane Warrant Analysis - Tee Intersections

Study Intersection: Los Amigos Road/LAC Driveway
Study Scenario: PM Peak Hour - Baseline plus Project

Direction of Analysis Street: East/West

Cross Street Intersects: From the North



Westbound Right Turn Lane Warrants

1. Check for right turn volume criteria

Thresholds not met, continue to next step

2. Check advance volume threshold criteria for turn lane

Advancing Volume Threshold AV = 1050.1

Advancing Volume Va = 33

If $AV < Va$ then warrant is met No

Right Turn Lane Warranted: NO

Westbound Right Turn Taper Warrants

(evaluate if right turn lane is unwarranted)

1. Check taper volume criteria

NOT WARRANTED - Less than 20 vehicles

2. Check advance volume threshold criteria for taper

Advancing Volume Threshold AV = -

Advancing Volume Va = 33

If $AV < Va$ then warrant is met -

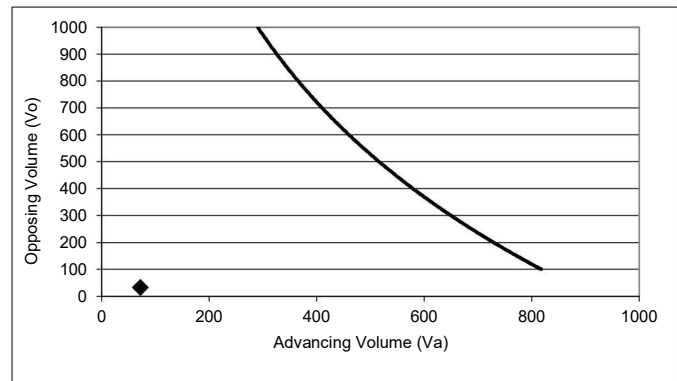
Right Turn Taper Warranted: NO

Eastbound Left Turn Lane Warrants

Percentage Left Turns %lt 6.9 %

Advancing Volume Threshold AV 883 veh/hr

If $AV < Va$ then warrant is met



◆ Study Intersection

Two lane roadway warrant threshold for: 40 mph

Turn lane warranted if point falls to right of warrant threshold line

Left Turn Lane Warranted: NO

Methodology based on Washington State Transportation Center Research Report *Method For Prioritizing Intersection Improvements*, January 1997.

The right turn lane and taper analysis is based on work conducted by Cottrell in 1981.

The left turn lane analysis is based on work conducted by M.D. Harmelink in 1967, and modified by Kikuchi and Chakroborty in 1991.

Appendix D

Queueing Calculations



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Queues

1: Old Redwood Hwy & Arata Ln

W-Trans

01/07/2025

	→	←	↖	↗	↑	↘	↙	↓
Lane Group	EBT	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	19	262	718	4	191	168	295	173
v/c Ratio	0.09	0.59	0.64	0.03	0.50	0.38	0.60	0.18
Control Delay	29.5	28.8	4.9	37.0	30.4	8.2	27.0	10.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	29.5	28.8	4.9	37.0	30.4	8.2	27.0	10.9
Queue Length 50th (ft)	3	69	15	1	51	0	74	21
Queue Length 95th (ft)	29	212	106	13	169	52	232	104
Internal Link Dist (ft)	242	339			419			716
Turn Bay Length (ft)				80		200		265
Base Capacity (vph)	434	885	1434	237	1055	945	1229	1643
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.04	0.30	0.50	0.02	0.18	0.18	0.24	0.11

Intersection Summary

Queues

2: US 101 NB Ramp/Los Amigos Rd & Arata Ln

W-Trans

01/07/2025

	→	←	↖	↑	↘	↓
Lane Group	EBT	WBT	NBL	NBT	NBR	SBT
Lane Group Flow (vph)	464	735	172	174	108	51
v/c Ratio	0.56	0.46	0.41	0.41	0.23	0.17
Control Delay	12.7	9.4	16.7	16.7	5.8	5.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	12.7	9.4	16.7	16.7	5.8	5.8
Queue Length 50th (ft)	47	35	25	26	1	0
Queue Length 95th (ft)	200	130	90	91	29	17
Internal Link Dist (ft)	339	490		421		371
Turn Bay Length (ft)					25	
Base Capacity (vph)	1077	2043	1253	1262	1206	599
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.43	0.36	0.14	0.14	0.09	0.09

Intersection Summary

HCM 6th TWSC
3: Los Amigos Rd & Arata Ln

W-Trans
01/07/2025

Intersection												
Int Delay, s/veh	6.2											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰	↱		↰	↱		↰	↱		↰	↱	
Traffic Vol, veh/h	0	443	100	12	557	1	110	0	11	1	0	0
Future Vol, veh/h	0	443	100	12	557	1	110	0	11	1	0	0
Conflicting Peds, #/hr	1	0	0	0	0	1	0	0	1	1	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	150	-	-	120	-	-	165	-	-	-	-	-
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	0	482	109	13	605	1	120	0	12	1	0	0

Major/Minor	Major1		Major2		Minor1		Minor2			
Conflicting Flow All	607	0	0	591	0	0	1169	1170	538	1224
Stage 1	-	-	-	-	-	-	537	537	-	633
Stage 2	-	-	-	-	-	-	632	633	-	544
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518
Pot Cap-1 Maneuver	971	-	-	985	-	-	170	193	543	168
Stage 1	-	-	-	-	-	-	528	523	-	468
Stage 2	-	-	-	-	-	-	468	473	-	523
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	970	-	-	985	-	-	168	190	543	162
Mov Cap-2 Maneuver	-	-	-	-	-	-	168	190	-	162
Stage 1	-	-	-	-	-	-	528	523	-	468
Stage 2	-	-	-	-	-	-	462	466	-	511

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0.2	61.8	27.4
HCM LOS			F	D

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	168	543	970	-	-	985	-	-	162
HCM Lane V/C Ratio	0.712	0.022	-	-	-	0.013	-	-	0.007
HCM Control Delay (s)	66.8	11.8	0	-	-	8.7	-	-	27.4
HCM Lane LOS	F	B	A	-	-	A	-	-	D
HCM 95th %tile Q(veh)	4.3	0.1	0	-	-	0	-	-	0

Queues
1: Old Redwood Hwy & Arata Ln

W-Trans
01/07/2025

Lane Group	EBT	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	1	136	442	3	155	118	268	192
v/c Ratio	0.00	0.34	0.42	0.01	0.36	0.27	0.50	0.16
Control Delay	24.0	20.9	2.2	25.3	20.6	6.9	18.7	7.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	24.0	20.9	2.2	25.3	20.6	6.9	18.7	7.6
Queue Length 50th (ft)	0	26	0	1	30	0	49	16
Queue Length 95th (ft)	5	99	35	9	109	38	164	91
Internal Link Dist (ft)	242	339			419			716
Turn Bay Length (ft)				80		200	265	
Base Capacity (vph)	634	1181	1517	341	1356	1144	1508	1802
Starvation Cap Reductn	0	0	42	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.00	0.12	0.30	0.01	0.11	0.10	0.18	0.11

Intersection Summary

Queues

2: US 101 NB Ramp/Los Amigos Rd & Arata Ln

W-Trans

01/07/2025

	→	←	↖	↑	↗	↓
Lane Group	EBT	WBT	NBL	NBT	NBR	SBT
Lane Group Flow (vph)	390	328	150	150	168	57
v/c Ratio	0.49	0.22	0.36	0.35	0.32	0.18
Control Delay	11.8	7.6	15.1	15.0	5.2	6.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	11.8	7.6	15.1	15.0	5.2	6.4
Queue Length 50th (ft)	34	11	16	16	0	0
Queue Length 95th (ft)	157	53	80	80	35	20
Internal Link Dist (ft)	339	490		421		371
Turn Bay Length (ft)				25		
Base Capacity (vph)	1187	2227	1339	1350	1295	648
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.33	0.15	0.11	0.11	0.13	0.09

Intersection Summary

HCM 6th TWSC

3: Los Amigos Rd & Arata Ln

W-Trans

01/07/2025

Intersection													
Int Delay, s/veh	1.9												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations	↰	↱		↰	↱		↰	↱		↰	↱	↰	↱
Traffic Vol, veh/h	0	394	114	11	246	0	70	0	6	0	0	1	
Future Vol, veh/h	0	394	114	11	246	0	70	0	6	0	0	1	
Conflicting Peds, #/hr	0	0	0	0	0	0	1	0	0	0	0	1	
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop	
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None	
Storage Length	150	-	-	120	-	-	165	-	-	-	-	-	
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	0	428	124	12	267	0	76	0	7	0	0	1	

Major/Minor	Major1		Major2		Minor1		Minor2			
Conflicting Flow All	267	0	0	552	0	783	781	490	785	268
Stage 1	-	-	-	-	-	490	490	-	291	-
Stage 2	-	-	-	-	-	293	291	-	494	-
Critical Hdwy	4.12	-	-	4.12	-	7.12	6.52	6.22	7.12	6.22
Critical Hdwy Stg 1	-	-	-	-	-	6.12	5.52	-	6.12	5.52
Critical Hdwy Stg 2	-	-	-	-	-	6.12	5.52	-	6.12	5.52
Follow-up Hdwy	2.218	-	-	2.218	-	3.518	4.018	3.318	3.518	4.018
Pot Cap-1 Maneuver	1297	-	-	1018	-	311	326	578	310	771
Stage 1	-	-	-	-	-	560	549	-	717	672
Stage 2	-	-	-	-	-	715	672	-	557	515
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1297	-	-	1018	-	308	322	578	304	770
Mov Cap-2 Maneuver	-	-	-	-	-	308	322	-	304	296
Stage 1	-	-	-	-	-	560	549	-	717	664
Stage 2	-	-	-	-	-	705	664	-	551	515

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0.4	19.8	9.7
HCM LOS			C	A

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	308	578	1297	-	-	1018	-	-	770
HCM Lane V/C Ratio	0.247	0.011	-	-	-	0.012	-	-	0.001
HCM Control Delay (s)	20.5	11.3	0	-	-	8.6	-	-	9.7
HCM Lane LOS	C	B	A	-	-	A	-	-	A
HCM 95th %tile Q(veh)	1	0	0	-	-	0	-	-	0

Queues

1: Old Redwood Hwy & Arata Ln

W-Trans

01/07/2025

	→	←	↖	↗	↑	↘	↙	↓
Lane Group	EBT	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	19	264	727	4	191	170	296	173
v/c Ratio	0.09	0.59	0.65	0.03	0.50	0.38	0.60	0.18
Control Delay	29.6	28.9	5.1	37.2	30.5	8.1	27.1	10.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	29.6	28.9	5.1	37.2	30.5	8.1	27.1	10.9
Queue Length 50th (ft)	3	69	16	1	51	0	74	21
Queue Length 95th (ft)	29	214	112	13	169	53	233	104
Internal Link Dist (ft)	242	339			419			716
Turn Bay Length (ft)				80		200		265
Base Capacity (vph)	432	882	1434	236	1050	943	1226	1641
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.04	0.30	0.51	0.02	0.18	0.18	0.24	0.11

Intersection Summary

Queues

2: US 101 NB Ramp/Los Amigos Rd & Arata Ln

W-Trans

01/07/2025

	→	←	↖	↑	↘	↓
Lane Group	EBT	WBT	NBL	NBT	NBR	SBT
Lane Group Flow (vph)	466	748	172	174	111	51
v/c Ratio	0.56	0.47	0.41	0.41	0.23	0.17
Control Delay	12.7	9.5	16.7	16.7	5.8	5.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	12.7	9.5	16.7	16.7	5.8	5.8
Queue Length 50th (ft)	47	36	25	26	1	0
Queue Length 95th (ft)	201	132	90	91	30	17
Internal Link Dist (ft)	339	490		421		371
Turn Bay Length (ft)					25	
Base Capacity (vph)	1077	2044	1255	1264	1208	599
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.43	0.37	0.14	0.14	0.09	0.09

Intersection Summary

HCM 6th TWSC
3: Los Amigos Rd & Arata Ln

W-Trans
01/07/2025

Intersection												
Int Delay, s/veh	6.4											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰	↰		↰	↰		↰	↰		↰	↰	
Traffic Vol, veh/h	1	444	101	12	557	1	110	0	11	2	1	3
Future Vol, veh/h	1	444	101	12	557	1	110	0	11	2	1	3
Conflicting Peds, #/hr	1	0	0	0	0	1	0	0	1	1	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	150	-	-	120	-	-	165	-	-	-	-	-
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	1	483	110	13	605	1	120	0	12	2	1	3

Major/Minor	Major1		Major2		Minor1		Minor2			
Conflicting Flow All	607	0	0	593	0	0	1174	539	1180	607
Stage 1	-	-	-	-	-	540	540	-	633	633
Stage 2	-	-	-	-	-	634	633	-	547	595
Critical Hdwy	4.12	-	-	4.12	-	7.12	6.52	6.22	7.12	6.52
Critical Hdwy Stg 1	-	-	-	-	-	6.12	5.52	-	6.12	5.52
Critical Hdwy Stg 2	-	-	-	-	-	6.12	5.52	-	6.12	5.52
Follow-up Hdwy	2.218	-	-	2.218	-	3.518	4.018	3.318	3.518	4.018
Pot Cap-1 Maneuver	971	-	-	983	-	169	192	542	167	178
Stage 1	-	-	-	-	-	526	521	-	468	473
Stage 2	-	-	-	-	-	467	473	-	521	492
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	970	-	-	983	-	165	189	542	161	175
Mov Cap-2 Maneuver	-	-	-	-	-	165	189	-	161	175
Stage 1	-	-	-	-	-	525	520	-	467	466
Stage 2	-	-	-	-	-	457	466	-	509	492

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0.2	64.3	19.9
HCM LOS			F	C

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	165	542	970	-	-	983	-	-	248
HCM Lane V/C Ratio	0.725	0.022	0.001	-	-	0.013	-	-	0.026
HCM Control Delay (s)	69.5	11.8	8.7	-	-	8.7	-	-	19.9
HCM Lane LOS	F	B	A	-	-	A	-	-	C
HCM 95th %tile Q(veh)	4.4	0.1	0	-	-	0	-	-	0.1

Queues
1: Old Redwood Hwy & Arata Ln

W-Trans
01/07/2025

Lane Group	EBT	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	1	137	448	3	155	121	273	192
v/c Ratio	0.00	0.35	0.42	0.01	0.36	0.27	0.51	0.16
Control Delay	25.0	21.1	2.1	25.3	20.7	6.9	18.8	7.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	25.0	21.1	2.2	25.3	20.7	6.9	18.8	7.5
Queue Length 50th (ft)	0	27	0	1	30	0	51	16
Queue Length 95th (ft)	5	101	35	9	110	39	167	91
Internal Link Dist (ft)	242	339			419			716
Turn Bay Length (ft)				80		200		265
Base Capacity (vph)	630	1176	1533	339	1350	1140	1503	1800
Starvation Cap Reductn	0	0	44	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.00	0.12	0.30	0.01	0.11	0.11	0.18	0.11

Intersection Summary

Queues

2: US 101 NB Ramp/Los Amigos Rd & Arata Ln

W-Trans

01/07/2025

	→	←	↖	↑	↗	↓
Lane Group	EBT	WBT	NBL	NBT	NBR	SBT
Lane Group Flow (vph)	397	337	150	150	176	57
v/c Ratio	0.50	0.23	0.36	0.36	0.33	0.18
Control Delay	11.9	7.6	15.2	15.1	5.2	6.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	11.9	7.6	15.2	15.1	5.2	6.5
Queue Length 50th (ft)	35	12	16	16	0	0
Queue Length 95th (ft)	159	54	81	81	36	20
Internal Link Dist (ft)	339	490		421		371
Turn Bay Length (ft)					25	
Base Capacity (vph)	1190	2234	1343	1354	1300	649
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.33	0.15	0.11	0.11	0.14	0.09

Intersection Summary

HCM 6th TWSC

3: Los Amigos Rd & Arata Ln

W-Trans

01/07/2025

Intersection													
Int Delay, s/veh	2												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations	↖	↗		↖	↗		↖	↗		↖	↗	↖	
Traffic Vol, veh/h	3	395	115	11	247	1	71	1	6	1	1	3	
Future Vol, veh/h	3	395	115	11	247	1	71	1	6	1	1	3	
Conflicting Peds, #/hr	0	0	0	0	0	0	1	0	0	0	0	1	
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop	
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None	
Storage Length	150	-	-	120	-	-	165	-	-	-	-	-	
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	3	429	125	12	268	1	77	1	7	1	1	3	

Major/Minor	Major1		Major2		Minor1		Minor2			
Conflicting Flow All	269	0	0	554	0	0	794	791	492	795
Stage 1	-	-	-	-	-	-	498	498	-	293
Stage 2	-	-	-	-	-	-	296	293	-	502
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518
Pot Cap-1 Maneuver	1295	-	-	1016	-	-	306	322	577	305
Stage 1	-	-	-	-	-	-	554	544	-	715
Stage 2	-	-	-	-	-	-	712	670	-	552
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1295	-	-	1016	-	-	300	317	577	298
Mov Cap-2 Maneuver	-	-	-	-	-	-	300	317	-	298
Stage 1	-	-	-	-	-	-	553	543	-	714
Stage 2	-	-	-	-	-	-	699	662	-	543

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0.4	20.3	12.8
HCM LOS			C	B

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	300	516	1295	-	-	1016	-	-	468
HCM Lane V/C Ratio	0.257	0.015	0.003	-	-	0.012	-	-	0.012
HCM Control Delay (s)	21.1	12.1	7.8	-	-	8.6	-	-	12.8
HCM Lane LOS	C	B	A	-	-	A	-	-	B
HCM 95th %tile Q(veh)	1	0	0	-	-	0	-	-	0

Queues

1: Old Redwood Hwy & Arata Ln

W-Trans

01/10/2025

	→	←	↖	↗	↑	↘	↙	↓
Lane Group	EBT	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	19	287	784	4	203	182	317	176
v/c Ratio	0.10	0.62	0.70	0.03	0.53	0.39	0.63	0.18
Control Delay	31.6	30.9	6.6	39.8	32.3	8.1	28.9	11.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	31.6	30.9	6.6	39.8	32.3	8.1	28.9	11.0
Queue Length 50th (ft)	4	82	26	1	60	0	88	24
Queue Length 95th (ft)	30	249	179	14	185	54	261	106
Internal Link Dist (ft)	242	339			419			716
Turn Bay Length (ft)				80		200		265
Base Capacity (vph)	405	825	1422	221	983	899	1167	1609
Starvation Cap Reductn	0	0	1	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.05	0.35	0.55	0.02	0.21	0.20	0.27	0.11

Intersection Summary

Queues

2: US 101 NB Ramp/Los Amigos Rd & Arata Ln

W-Trans

01/10/2025

	→	←	↖	↑	↘	↓
Lane Group	EBT	WBT	NBL	NBT	NBR	SBT
Lane Group Flow (vph)	500	762	175	178	135	36
v/c Ratio	0.59	0.46	0.43	0.43	0.28	0.13
Control Delay	13.1	9.4	17.2	17.2	6.0	3.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	13.1	9.4	17.2	17.2	6.0	3.5
Queue Length 50th (ft)	48	34	25	26	1	0
Queue Length 95th (ft)	#215	133	90	91	33	9
Internal Link Dist (ft)	339	490		421		371
Turn Bay Length (ft)					25	
Base Capacity (vph)	1067	2049	1244	1252	1204	586
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.47	0.37	0.14	0.14	0.11	0.06

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Queues
3: Los Amigos Rd & Arata Ln

W-Trans
01/10/2025

								
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	32	584	13	616	116	25	38	61
v/c Ratio	0.10	0.54	0.04	0.60	0.26	0.04	0.11	0.14
Control Delay	33.5	13.5	33.8	16.6	19.9	14.5	27.4	3.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	33.5	13.5	33.8	16.6	19.9	14.5	27.4	3.1
Queue Length 50th (ft)	8	110	3	121	23	2	10	0
Queue Length 95th (ft)	49	386	27	417	95	24	46	13
Internal Link Dist (ft)	235		521		315		357	
Turn Bay Length (ft)	150	120		165		50		
Base Capacity (vph)	332	1497	332	1523	465	1162	795	896
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.10	0.39	0.04	0.40	0.25	0.02	0.05	0.07
Intersection Summary								

Queues
1: Old Redwood Hwy & Arata Ln

W-Trans
01/10/2025

								
Lane Group	EBT	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	1	160	496	3	170	142	313	197
v/c Ratio	0.00	0.43	0.43	0.02	0.43	0.33	0.59	0.19
Control Delay	29.0	24.2	2.0	29.0	23.9	7.4	21.5	7.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	29.0	24.2	2.1	29.0	23.9	7.4	21.5	7.8
Queue Length 50th (ft)	0	35	0	1	37	0	65	18
Queue Length 95th (ft)	5	127	37	10	133	45	207	96
Internal Link Dist (ft)	242	339	419		200		716	
Turn Bay Length (ft)	80		278		1061		1414	
Base Capacity (vph)	517	1037	1515	278	1235	1061	1414	1762
Starvation Cap Reductn	0	0	64	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.00	0.15	0.34	0.01	0.14	0.13	0.22	0.11
Intersection Summary								

Queues

2: US 101 NB Ramp/Los Amigos Rd & Arata Ln

W-Trans

01/10/2025

	→	←	↖	↑	↗	↓
Lane Group	EBT	WBT	NBL	NBT	NBR	SBT
Lane Group Flow (vph)	459	369	154	153	230	39
v/c Ratio	0.59	0.25	0.36	0.36	0.40	0.13
Control Delay	12.8	7.9	15.7	15.6	5.2	3.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	12.8	7.9	15.7	15.6	5.2	3.7
Queue Length 50th (ft)	41	13	17	17	0	0
Queue Length 95th (ft)	185	60	82	81	40	11
Internal Link Dist (ft)	339	490		421		371
Turn Bay Length (ft)				25		
Base Capacity (vph)	1214	2320	1350	1361	1317	653
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.38	0.16	0.11	0.11	0.17	0.06
Intersection Summary						

Queues

3: Los Amigos Rd & Arata Ln

W-Trans

01/10/2025

	↖	→	↗	←	↖	↑	↓	↗
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	89	549	12	285	75	24	32	41
v/c Ratio	0.14	0.44	0.02	0.27	0.18	0.03	0.06	0.06
Control Delay	23.8	11.0	28.2	14.6	15.9	13.4	21.7	0.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	23.8	11.0	28.2	14.6	15.9	13.4	21.7	0.2
Queue Length 50th (ft)	21	89	3	64	13	3	7	0
Queue Length 95th (ft)	91	344	23	179	60	23	37	0
Internal Link Dist (ft)		235		521		315	357	
Turn Bay Length (ft)	150		120		165			50
Base Capacity (vph)	980	1619	588	1456	418	1338	982	1082
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.09	0.34	0.02	0.20	0.18	0.02	0.03	0.04
Intersection Summary								

Queues

1: Old Redwood Hwy & Arata Ln

W-Trans

01/10/2025

	→	←	↖	↗	↑	↘	↙	↓
Lane Group	EBT	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	19	289	792	4	203	183	318	176
v/c Ratio	0.10	0.62	0.71	0.03	0.53	0.40	0.63	0.18
Control Delay	31.8	31.2	6.8	40.2	32.6	8.2	28.8	10.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	31.8	31.2	6.8	40.2	32.6	8.2	28.8	10.9
Queue Length 50th (ft)	4	83	27	1	60	0	89	24
Queue Length 95th (ft)	31	254	187	14	187	55	262	105
Internal Link Dist (ft)	242	339			419			716
Turn Bay Length (ft)				80		200		265
Base Capacity (vph)	402	820	1420	220	977	895	1161	1605
Starvation Cap Reductn	0	0	2	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.05	0.35	0.56	0.02	0.21	0.20	0.27	0.11

Intersection Summary

Queues

2: US 101 NB Ramp/Los Amigos Rd & Arata Ln

W-Trans

01/10/2025

	→	←	↖	↑	↘	↓
Lane Group	EBT	WBT	NBL	NBT	NBR	SBT
Lane Group Flow (vph)	502	773	175	178	138	36
v/c Ratio	0.59	0.47	0.43	0.43	0.29	0.13
Control Delay	13.1	9.4	17.2	17.3	6.0	3.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	13.1	9.4	17.2	17.3	6.0	3.5
Queue Length 50th (ft)	48	35	25	26	1	0
Queue Length 95th (ft)	#216	135	90	91	33	9
Internal Link Dist (ft)	339	490		421		371
Turn Bay Length (ft)					25	
Base Capacity (vph)	1065	2046	1242	1250	1203	585
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.47	0.38	0.14	0.14	0.11	0.06

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Queues
3: Los Amigos Rd & Arata Ln

W-Trans
01/10/2025

	↖	→	↙	←	↘	↑	↓	↗
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	33	586	13	616	116	25	40	63
v/c Ratio	0.10	0.54	0.04	0.60	0.26	0.04	0.12	0.14
Control Delay	33.5	13.6	33.9	16.6	19.9	14.5	27.4	3.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	33.5	13.6	33.9	16.6	19.9	14.5	27.4	3.3
Queue Length 50th (ft)	9	111	3	121	23	2	10	0
Queue Length 95th (ft)	50	387	27	417	95	24	48	15
Internal Link Dist (ft)		235		521		315	357	
Turn Bay Length (ft)	150		120		165			50
Base Capacity (vph)	332	1496	332	1522	465	1161	794	895
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.10	0.39	0.04	0.40	0.25	0.02	0.05	0.07
Intersection Summary								

Queues
1: Old Redwood Hwy & Arata Ln

W-Trans
01/10/2025

	→	←	↖	↙	↑	↗	↘	↓
Lane Group	EBT	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	1	161	501	3	170	145	317	197
v/c Ratio	0.00	0.44	0.44	0.02	0.43	0.33	0.60	0.19
Control Delay	29.0	24.4	2.0	29.3	24.0	7.5	21.6	7.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	29.0	24.4	2.1	29.3	24.0	7.5	21.6	7.8
Queue Length 50th (ft)	0	35	0	1	37	0	66	18
Queue Length 95th (ft)	5	128	37	10	134	45	210	97
Internal Link Dist (ft)	242	339			419			716
Turn Bay Length (ft)				80		200	265	
Base Capacity (vph)	515	1032	1513	277	1230	1058	1408	1760
Starvation Cap Reductn	0	0	65	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.00	0.16	0.35	0.01	0.14	0.14	0.23	0.11
Intersection Summary								

Queues

2: US 101 NB Ramp/Los Amigos Rd & Arata Ln

W-Trans

01/10/2025

	→	←	↖	↑	↗	↓
Lane Group	EBT	WBT	NBL	NBT	NBR	SBT
Lane Group Flow (vph)	465	377	154	153	238	39
v/c Ratio	0.59	0.25	0.37	0.36	0.41	0.13
Control Delay	12.9	7.9	15.8	15.7	5.3	3.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	12.9	7.9	15.8	15.7	5.3	3.7
Queue Length 50th (ft)	41	14	18	17	0	0
Queue Length 95th (ft)	189	61	82	81	41	11
Internal Link Dist (ft)	339	490		421		371
Turn Bay Length (ft)				25		
Base Capacity (vph)	1210	2311	1346	1356	1315	651
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.38	0.16	0.11	0.11	0.18	0.06
Intersection Summary						

Queues

3: Los Amigos Rd & Arata Ln

W-Trans

01/10/2025

	↗	→	↖	←	↗	↑	↓	↖
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	92	551	12	287	76	25	34	43
v/c Ratio	0.16	0.44	0.02	0.34	0.19	0.03	0.06	0.07
Control Delay	24.2	11.0	28.3	15.9	16.5	13.6	21.9	0.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	24.2	11.0	28.3	15.9	16.5	13.6	21.9	0.2
Queue Length 50th (ft)	22	89	3	64	14	3	8	0
Queue Length 95th (ft)	94	344	23	182	61	24	39	0
Internal Link Dist (ft)		235		521		315	357	
Turn Bay Length (ft)	150		120		165			50
Base Capacity (vph)	889	1617	548	1451	390	1338	981	1081
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.10	0.34	0.02	0.20	0.19	0.02	0.03	0.04
Intersection Summary								

HCM 6th TWSC
3: Los Amigos Rd & Arata Ln

W-Trans
03/06/2025

Intersection												
Int Delay, s/veh	13.6											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰	↱		↰	↱		↰	↱		↰	↱	
Traffic Vol, veh/h	29	433	104	12	516	51	107	12	11	23	12	56
Future Vol, veh/h	29	433	104	12	516	51	107	12	11	23	12	56
Conflicting Peds, #/hr	1	0	0	0	0	1	0	0	1	1	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	150	-	-	120	-	-	165	-	-	-	-	-
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	32	471	113	13	561	55	116	13	12	25	13	61

Major/Minor	Major1	Major2	Minor1	Minor2
Conflicting Flow All	617	0	0	584
Stage 1	-	-	-	-
Stage 2	-	-	-	-
Critical Hdwy	4.12	-	-	4.12
Critical Hdwy Stg 1	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-
Follow-up Hdwy	2.218	-	-	2.218
Pot Cap-1 Maneuver	963	-	-	991
Stage 1	-	-	-	-
Stage 2	-	-	-	-
Platoon blocked, %	-	-	-	-
Mov Cap-1 Maneuver	962	-	-	991
Mov Cap-2 Maneuver	-	-	-	-
Stage 1	-	-	-	-
Stage 2	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.5	0.2	121.2	27.1
HCM LOS			F	D

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	120	252	962	-	-	991	-	-	260
HCM Lane V/C Ratio	0.969	0.099	0.033	-	-	0.013	-	-	0.38
HCM Control Delay (s)	142.7	20.9	8.9	-	-	8.7	-	-	27.1
HCM Lane LOS	F	C	A	-	-	A	-	-	D
HCM 95th %tile Q(veh)	6.4	0.3	0.1	-	-	0	-	-	1.7

HCM 6th TWSC
3: Los Amigos Rd & Arata Ln

W-Trans
03/06/2025

Intersection												
Int Delay, s/veh	4.6											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰	↱		↰	↱		↰	↱		↰	↱	
Traffic Vol, veh/h	82	384	121	11	228	34	69	16	6	19	10	38
Future Vol, veh/h	82	384	121	11	228	34	69	16	6	19	10	38
Conflicting Peds, #/hr	0	0	0	0	0	0	1	0	0	0	0	1
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	150	-	-	120	-	-	165	-	-	-	-	-
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	89	417	132	12	248	37	75	17	7	21	11	41

Major/Minor	Major1	Major2	Minor1	Minor2
Conflicting Flow All	285	0	0	549
Stage 1	-	-	-	-
Stage 2	-	-	-	-
Critical Hdwy	4.12	-	-	4.12
Critical Hdwy Stg 1	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-
Follow-up Hdwy	2.218	-	-	2.218
Pot Cap-1 Maneuver	1277	-	-	1021
Stage 1	-	-	-	-
Stage 2	-	-	-	-
Platoon blocked, %	-	-	-	-
Mov Cap-1 Maneuver	1277	-	-	1021
Mov Cap-2 Maneuver	-	-	-	-
Stage 1	-	-	-	-
Stage 2	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	1.1	0.3	30.6	17.7
HCM LOS			D	C

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	196	279	1277	-	-	1021	-	-	357
HCM Lane V/C Ratio	0.383	0.086	0.07	-	-	0.012	-	-	0.204
HCM Control Delay (s)	34.3	19.1	8	-	-	8.6	-	-	17.7
HCM Lane LOS	D	C	A	-	-	A	-	-	C
HCM 95th %tile Q(veh)	1.7	0.3	0.2	-	-	0	-	-	0.8

HCM 6th TWSC
3: Los Amigos Rd & Arata Ln

W-Trans
03/06/2025

Intersection												
Int Delay, s/veh	14.2											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	30	434	105	12	516	51	107	12	11	24	13	58
Future Vol, veh/h	30	434	105	12	516	51	107	12	11	24	13	58
Conflicting Peds, #/hr	1	0	0	0	0	1	0	0	1	1	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	150	-	-	120	-	-	165	-	-	-	-	-
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	33	472	114	13	561	55	116	13	12	26	14	63

Major/Minor	Major1	Major2	Minor1	Minor2								
Conflicting Flow All	617	0	0	586	0	0	1248	1238	530	1225	1268	590
Stage 1	-	-	-	-	-	-	595	595	-	616	616	-
Stage 2	-	-	-	-	-	-	653	643	-	609	652	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	963	-	-	989	-	-	150	176	549	156	168	508
Stage 1	-	-	-	-	-	-	491	492	-	478	482	-
Stage 2	-	-	-	-	-	-	456	468	-	482	464	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	962	-	-	989	-	-	118	168	549	138	160	508
Mov Cap-2 Maneuver	-	-	-	-	-	-	118	168	-	138	160	-
Stage 1	-	-	-	-	-	-	474	475	-	461	475	-
Stage 2	-	-	-	-	-	-	382	461	-	442	448	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.5	0.2	126	28.1
HCM LOS			F	D

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	118	251	962	-	-	989	-	-	257
HCM Lane V/C Ratio	0.986	0.1	0.034	-	-	0.013	-	-	0.402
HCM Control Delay (s)	148.6	20.9	8.9	-	-	8.7	-	-	28.1
HCM Lane LOS	F	C	A	-	-	A	-	-	D
HCM 95th %tile Q(veh)	6.5	0.3	0.1	-	-	0	-	-	1.8

HCM 6th TWSC
3: Los Amigos Rd & Arata Ln

W-Trans
03/06/2025

Intersection												
Int Delay, s/veh	4.9											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	85	385	122	11	229	35	70	17	6	20	11	40
Future Vol, veh/h	85	385	122	11	229	35	70	17	6	20	11	40
Conflicting Peds, #/hr	0	0	0	0	0	0	1	0	0	0	0	1
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	150	-	-	120	-	-	165	-	-	-	-	-
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	92	418	133	12	249	38	76	18	7	22	12	43

Major/Minor	Major1	Major2	Minor1	Minor2								
Conflicting Flow All	287	0	0	551	0	0	990	980	485	973	1027	269
Stage 1	-	-	-	-	-	-	669	669	-	292	292	-
Stage 2	-	-	-	-	-	-	321	311	-	681	735	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1275	-	-	1019	-	-	225	250	582	231	234	770
Stage 1	-	-	-	-	-	-	447	456	-	716	671	-
Stage 2	-	-	-	-	-	-	691	658	-	440	425	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1275	-	-	1019	-	-	190	229	582	201	215	769
Mov Cap-2 Maneuver	-	-	-	-	-	-	190	229	-	201	215	-
Stage 1	-	-	-	-	-	-	415	423	-	664	663	-
Stage 2	-	-	-	-	-	-	632	650	-	386	394	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	1.2	0.3	32	18.2
HCM LOS			D	C

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	190	272	1275	-	-	1019	-	-	350
HCM Lane V/C Ratio	0.4	0.092	0.072	-	-	0.012	-	-	0.22
HCM Control Delay (s)	36.1	19.6	8	-	-	8.6	-	-	18.2
HCM Lane LOS	E	C	A	-	-	A	-	-	C
HCM 95th %tile Q(veh)	1.8	0.3	0.2	-	-	0	-	-	0.8

Appendix E

Intersection Level of Service Calculations



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HCM 6th Signalized Intersection Summary
1: Old Redwood Hwy & Arata Ln

W-Trans
12/26/2024

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔	↔	↔	↔	↔	↔	↔	
Traffic Volume (veh/h)	10	1	6	237	4	661	4	176	155	271	156	3
Future Volume (veh/h)	10	1	6	237	4	661	4	176	155	271	156	3
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	0.97	1.00		0.97	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	11	1	7	258	4	718	4	191	168	295	170	3
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	27	2	17	694	11	923	6	283	233	350	632	11
Arrive On Green	0.03	0.03	0.03	0.40	0.40	0.40	0.00	0.15	0.15	0.20	0.34	0.34
Sat Flow, veh/h	989	90	629	1755	27	1544	1781	1870	1541	1781	1831	32
Grp Volume(v), veh/h	19	0	0	262	0	718	4	191	168	295	0	173
Grp Sat Flow(s), veh/h/ln	1708	0	0	1783	0	1544	1781	1870	1541	1781	0	1864
Q Serve(g_s), s	0.7	0.0	0.0	6.6	0.0	22.4	0.1	6.1	6.6	10.1	0.0	4.2
Cycle Q Clear(g_c), s	0.7	0.0	0.0	6.6	0.0	22.4	0.1	6.1	6.6	10.1	0.0	4.2
Prop In Lane	0.58		0.37	0.98		1.00	1.00		1.00	1.00		0.02
Lane Grp Cap(c), veh/h	46	0	0	705	0	923	6	283	233	350	0	643
V/C Ratio(X)	0.41	0.00	0.00	0.37	0.00	0.78	0.70	0.67	0.72	0.84	0.00	0.27
Avail Cap(c_a), veh/h	351	0	0	733	0	947	197	873	719	1043	0	1754
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	30.3	0.0	0.0	13.5	0.0	9.8	31.5	25.3	25.5	24.4	0.0	15.0
Incr Delay (d2), s/veh	2.2	0.0	0.0	0.1	0.0	3.7	43.9	1.0	1.6	2.1	0.0	0.1
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%), veh/ln	0.3	0.0	0.0	2.4	0.0	6.7	0.1	2.6	2.4	4.2	0.0	1.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	32.5	0.0	0.0	13.7	0.0	13.5	75.4	26.4	27.1	26.6	0.0	15.0
LnGrp LOS	C	A	A	B	A	B	E	C	C	C	A	B
Approach Vol, veh/h		19			980			363			468	
Approach Delay, s/veh		32.5			13.5			27.3			22.3	
Approach LOS		C			B			C			C	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	15.4	14.1		4.7	3.2	26.3		29.0				
Change Period (Y+Rc), s	3.0	4.5		3.0	3.0	4.5		4.0				
Max Green Setting (Gmax), s	37.0	29.5		13.0	7.0	59.5		26.0				
Max Q Clear Time (g_c+1), s	12.1	8.6		2.7	2.1	6.2		24.4				
Green Ext Time (p_c), s	0.4	1.0		0.0	0.0	0.7		0.6				

Intersection Summary												
HCM 6th Ctrl Delay			18.7									
HCM 6th LOS			B									

HCM 6th Signalized Intersection Summary
2: US 101 NB Ramp/Los Amigos Rd & Arata Ln

W-Trans
12/26/2024

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔	↔	↔	↔	↔	↔	↔	
Traffic Volume (veh/h)	10	417	0	0	572	104	304	15	99	28	0	19
Future Volume (veh/h)	10	417	0	0	572	104	304	15	99	28	0	19
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	0.97	1.00		0.97	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1870	1870	0	0	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	11	453	0	0	622	113	341	0	108	30	0	21
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	0	0	2	2	2	2	2	2	2	2
Cap, veh/h	139	664	0	0	1084	196	605	0	269	47	0	33
Arrive On Green	0.36	0.36	0.00	0.00	0.36	0.36	0.17	0.00	0.17	0.05	0.00	0.05
Sat Flow, veh/h	16	1830	0	0	3083	542	3563	0	1585	997	0	698
Grp Volume(v), veh/h	464	0	0	0	369	366	341	0	108	51	0	0
Grp Sat Flow(s), veh/h/ln	1845	0	0	0	1777	1754	1781	0	1585	1695	0	0
Q Serve(g_s), s	0.0	0.0	0.0	0.0	4.6	4.6	2.4	0.0	1.7	0.8	0.0	0.0
Cycle Q Clear(g_c), s	5.8	0.0	0.0	0.0	4.6	4.6	2.4	0.0	1.7	0.8	0.0	0.0
Prop In Lane	0.02		0.00	0.00	0.31	1.00		1.00	0.59			0.41
Lane Grp Cap(c), veh/h	803	0	0	0	644	636	605	0	269	80	0	0
V/C Ratio(X)	0.58	0.00	0.00	0.00	0.57	0.58	0.56	0.00	0.40	0.64	0.00	0.00
Avail Cap(c_a), veh/h	1509	0	0	0	1340	1323	3397	0	1512	694	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	0.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	7.5	0.0	0.0	0.0	7.1	7.1	10.5	0.0	10.2	12.9	0.0	0.0
Incr Delay (d2), s/veh	0.2	0.0	0.0	0.0	0.3	0.3	0.3	0.0	0.4	3.2	0.0	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%), veh/ln	0.0	0.0	0.0	0.0	1.0	1.0	0.7	0.0	0.4	0.3	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	7.7	0.0	0.0	0.0	7.4	7.4	10.8	0.0	10.6	16.1	0.0	0.0
LnGrp LOS	A	A	A	A	A	A	B	A	B	B	A	A
Approach Vol, veh/h		464			735			449			51	
Approach Delay, s/veh		7.7			7.4			10.8			16.1	
Approach LOS		A			A			B			B	
Timer - Assigned Phs	2			4		6		8				
Phs Duration (G+Y+Rc), s	14.2			5.0		14.2		8.4				
Change Period (Y+Rc), s	* 4.2			3.7		* 4.2		3.7				
Max Green Setting (Gmax), s	* 21			11.3		* 21		26.3				
Max Q Clear Time (g_c+1), s	7.8			2.8		6.6		4.4				
Green Ext Time (p_c), s	1.6			0.1		2.7		0.4				

Intersection Summary												
HCM 6th Ctrl Delay				8.6								
HCM 6th LOS				A								

Notes
User approved volume balancing among the lanes for turning movement.
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

HCM 6th TWSC
3: Los Amigos Rd & Arata Ln

W-Trans
12/26/2024

Intersection												
Int Delay, s/veh	6.2											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	443	100	12	557	1	110	0	11	1	0	0
Future Vol, veh/h	0	443	100	12	557	1	110	0	11	1	0	0
Conflicting Peds, #/hr	1	0	0	0	0	1	0	0	1	1	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	150	-	-	120	-	-	165	-	-	-	-	-
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	0	482	109	13	605	1	120	0	12	1	0	0
Major/Minor	Major1	Major2			Minor1			Minor2				
Conflicting Flow All	607	0	0	591	0	0	1169	1170	538	1177	1224	607
Stage 1	-	-	-	-	-	-	537	537	-	633	633	-
Stage 2	-	-	-	-	-	-	632	633	-	544	591	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	971	-	-	985	-	-	170	193	543	168	179	496
Stage 1	-	-	-	-	-	-	528	523	-	468	473	-
Stage 2	-	-	-	-	-	-	468	473	-	523	494	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	970	-	-	985	-	-	168	190	543	162	176	496
Mov Cap-2 Maneuver	-	-	-	-	-	-	168	190	-	162	176	-
Stage 1	-	-	-	-	-	-	528	523	-	468	466	-
Stage 2	-	-	-	-	-	-	462	466	-	511	494	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	0			0.2			61.8			27.4		
HCM LOS							F			D		
Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1			
Capacity (veh/h)	168	543	970	-	-	985	-	-	162			
HCM Lane V/C Ratio	0.712	0.022	-	-	-	0.013	-	-	0.007			
HCM Control Delay (s)	66.8	11.8	0	-	-	8.7	-	-	27.4			
HCM Lane LOS	F	B	A	-	-	A	-	-	D			
HCM 95th %tile Q(veh)	4.3	0.1	0	-	-	0	-	-	0			

HCM 6th Signalized Intersection Summary
1: Old Redwood Hwy & Arata Ln

W-Trans
12/26/2024

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	1	0	0	124	1	407	3	143	109	247	175	2
Future Volume (veh/h)	1	0	0	124	1	407	3	143	109	247	175	2
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Peak-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00	1.00		0.99	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	1	0	0	135	1	442	3	155	118	268	190	2
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	4	0	0	502	4	755	4	295	247	343	642	7
Arrive On Green	0.00	0.00	0.00	0.28	0.28	0.28	0.00	0.16	0.16	0.19	0.35	0.35
Sat Flow, veh/h	1781	0	0	1769	13	1585	1781	1870	1565	1781	1847	19
Grp Volume(v), veh/h	1	0	0	136	0	442	3	155	118	268	0	192
Grp Sat Flow(s),veh/h/ln	1781	0	0	1782	0	1585	1781	1870	1565	1781	0	1867
Q Serve(g_s), s	0.0	0.0	0.0	2.4	0.0	8.1	0.1	3.0	2.7	5.7	0.0	3.0
Cycle Q Clear(g_c), s	0.0	0.0	0.0	2.4	0.0	8.1	0.1	3.0	2.7	5.7	0.0	3.0
Prop In Lane	1.00			0.00	0.99	1.00	1.00		1.00	1.00		0.01
Lane Grp Cap(c), veh/h	4	0	0	506	0	755	4	295	247	343	0	649
V/C Ratio(X)	0.22	0.00	0.00	0.27	0.00	0.59	0.67	0.53	0.48	0.78	0.00	0.30
Avail Cap(c_a), veh/h	582	0	0	1164	0	1340	313	1386	1160	1656	0	2791
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	19.8	0.0	0.0	11.0	0.0	7.6	19.8	15.4	15.3	15.3	0.0	9.4
Incr Delay (d2), s/veh	9.0	0.0	0.0	0.1	0.0	0.3	49.2	0.5	0.5	1.5	0.0	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	0.0	0.0	0.8	0.0	1.8	0.1	1.1	0.9	2.0	0.0	0.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	28.9	0.0	0.0	11.2	0.0	7.8	69.1	15.9	15.8	16.8	0.0	9.5
LnGrp LOS	C	A	A	B	A	A	E	B	B	B	A	A
Approach Vol, veh/h	1			578			276			460		
Approach Delay, s/veh	28.9			8.6			16.5			13.7		
Approach LOS	C			A			B			B		
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	10.7	10.8		3.1	3.1	18.3		15.3				
Change Period (Y+Rc), s	3.0	4.5		3.0	3.0	4.5		4.0				
Max Green Setting (Gmax), s	37.0	29.5		13.0	7.0	59.5		26.0				
Max Q Clear Time (g_c+I1), s	7.7	5.0		2.0	2.1	5.0		10.1				
Green Ext Time (p_c), s	0.4	0.7		0.0	0.0	0.7		1.3				
Intersection Summary												
HCM 6th Ctrl Delay				12.1								
HCM 6th LOS				B								

HCM 6th Signalized Intersection Summary
2: US 101 NB Ramp/Los Amigos Rd & Arata Ln

W-Trans
12/26/2024

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔		↔	↔		↔	↔	↔	↔		
Traffic Volume (veh/h)	9	350	0	0	251	51	260	16	155	31	0	21
Future Volume (veh/h)	9	350	0	0	251	51	260	16	155	31	0	21
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.98	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1870	1870	0	0	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	10	380	0	0	273	55	295	0	168	34	0	23
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	0	0	2	2	2	2	2	2	2	2
Cap, veh/h	142	677	0	0	1082	214	551	0	245	52	0	35
Arrive On Green	0.37	0.37	0.00	0.00	0.37	0.37	0.15	0.00	0.15	0.05	0.00	0.05
Sat Flow, veh/h	17	1841	0	0	3038	583	3563	0	1585	1012	0	685
Grp Volume(v), veh/h	390	0	0	0	163	165	295	0	168	57	0	0
Grp Sat Flow(s),veh/h/ln	1857	0	0	0	1777	1751	1781	0	1585	1697	0	0
Q Serve(g_s), s	0.0	0.0	0.0	0.0	1.7	1.8	2.1	0.0	2.7	0.9	0.0	0.0
Cycle Q Clear(g_c), s	4.5	0.0	0.0	0.0	1.7	1.8	2.1	0.0	2.7	0.9	0.0	0.0
Prop In Lane	0.03		0.00	0.00		0.33	1.00		1.00	0.60		0.40
Lane Grp Cap(c), veh/h	818	0	0	0	653	643	551	0	245	87	0	0
V/C Ratio(X)	0.48	0.00	0.00	0.00	0.25	0.26	0.54	0.00	0.69	0.65	0.00	0.00
Avail Cap(c_a), veh/h	1546	0	0	0	1358	1338	3444	0	1532	705	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	0.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	6.9	0.0	0.0	0.0	6.0	6.0	10.6	0.0	10.9	12.7	0.0	0.0
Incr Delay (d2), s/veh	0.2	0.0	0.0	0.0	0.1	0.1	0.3	0.0	1.3	3.1	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	0.0	0.0	0.0	0.4	0.4	0.6	0.0	0.7	0.3	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	7.0	0.0	0.0	0.0	6.1	6.1	10.9	0.0	12.1	15.7	0.0	0.0
LnGrp LOS	A	A	A	A	A	A	B	A	B	B	A	A
Approach Vol, veh/h	390				328			463			57	
Approach Delay, s/veh	7.0				6.1			11.4			15.7	
Approach LOS	A				A			B			B	
Timer - Assigned Phs	2			4			6				8	
Phs Duration (G+Y+Rc), s	14.2			5.1			14.2				7.9	
Change Period (Y+Rc), s	* 4.2			3.7			* 4.2				3.7	
Max Green Setting (Gmax), s	* 21			11.3			* 21				26.3	
Max Q Clear Time (g_c+1), s	6.5			2.9			3.8				4.1	
Green Ext Time (p_c), s	1.3			0.1			1.1				0.3	

Intersection Summary

HCM 6th Ctrl Delay	8.8
HCM 6th LOS	A

Notes

User approved volume balancing among the lanes for turning movement.

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Los Amigos Cottages TIS
Existing PM Peak

Synchro 11 Report
Page 2

HCM 6th TWSC
3: Los Amigos Rd & Arata Ln

W-Trans
12/26/2024

Intersection												
Int Delay, s/veh	1.9											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔	↔		↔	↔		↔	↔		↔	↔
Traffic Vol, veh/h	0	394	114	11	246	0	70	0	6	0	0	1
Future Vol, veh/h	0	394	114	11	246	0	70	0	6	0	0	1
Conflicting Peds, #/hr	0	0	0	0	0	0	1	0	0	0	0	1
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	150		-	120		-	165		-	-	-	-
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	0	428	124	12	267	0	76	0	7	0	0	1

Major/Minor	Major1		Major2		Minor1		Minor2					
Conflicting Flow All	267	0	552	0	783	781	490	785	843	268		
Stage 1	-	-	-	-	-	490	490	-	291	291	-	
Stage 2	-	-	-	-	-	293	291	-	494	552	-	
Critical Hdwy	4.12	-	4.12	-	7.12	6.52	6.22	7.12	6.52	6.22		
Critical Hdwy Stg 1	-	-	-	-	6.12	5.52	-	6.12	5.52	-		
Critical Hdwy Stg 2	-	-	-	-	6.12	5.52	-	6.12	5.52	-		
Follow-up Hdwy	2.218	-	2.218	-	3.518	4.018	3.318	3.518	4.018	3.318		
Pot Cap-1 Maneuver	1297	-	1018	-	311	326	578	310	300	771		
Stage 1	-	-	-	-	560	549	-	717	672	-		
Stage 2	-	-	-	-	715	672	-	557	515	-		
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-		
Mov Cap-1 Maneuver	1297	-	1018	-	308	322	578	304	296	770		
Mov Cap-2 Maneuver	-	-	-	-	308	322	-	304	296	-		
Stage 1	-	-	-	-	560	549	-	717	664	-		
Stage 2	-	-	-	-	705	664	-	551	515	-		

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0.4	19.8	9.7
HCM LOS			C	A

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	308	578	1297	-	-	1018	-	-	770
HCM Lane V/C Ratio	0.247	0.011	-	-	-	0.012	-	-	0.001
HCM Control Delay (s)	20.5	11.3	0	-	-	8.6	-	-	9.7
HCM Lane LOS	C	B	A	-	-	A	-	-	A
HCM 95th %tile Q(veh)	1	0	0	-	-	0	-	-	0

Los Amigos Cottages TIS
Existing PM Peak

Synchro 11 Report
Page 3

HCM 6th Signalized Intersection Summary
1: Old Redwood Hwy & Arata Ln

W-Trans
01/03/2025

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔	↔	↔	↔	↔	↔	↔	
Traffic Volume (veh/h)	10	1	6	239	4	669	4	176	156	272	156	3
Future Volume (veh/h)	10	1	6	239	4	669	4	176	156	272	156	3
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	0.97	1.00		0.97	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	11	1	7	260	4	727	4	191	170	296	170	3
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	27	2	17	698	11	926	6	285	235	351	633	11
Arrive On Green	0.03	0.03	0.03	0.40	0.40	0.40	0.00	0.15	0.15	0.20	0.35	0.35
Sat Flow, veh/h	989	90	629	1756	27	1544	1781	1870	1541	1781	1831	32
Grp Volume(v), veh/h	19	0	0	264	0	727	4	191	170	296	0	173
Grp Sat Flow(s), veh/h/ln	1708	0	0	1783	0	1544	1781	1870	1541	1781	0	1864
Q Serve(g_s), s	0.7	0.0	0.0	6.7	0.0	23.1	0.1	6.2	6.7	10.2	0.0	4.3
Cycle Q Clear(g_c), s	0.7	0.0	0.0	6.7	0.0	23.1	0.1	6.2	6.7	10.2	0.0	4.3
Prop In Lane	0.58		0.37	0.98		1.00	1.00		1.00	1.00		0.02
Lane Grp Cap(c), veh/h	46	0	0	709	0	926	6	285	235	351	0	645
V/C Ratio(X)	0.41	0.00	0.00	0.37	0.00	0.79	0.70	0.67	0.72	0.84	0.00	0.27
Avail Cap(c_a), veh/h	347	0	0	724	0	939	195	862	710	1029	0	1732
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	30.7	0.0	0.0	13.6	0.0	9.9	31.9	25.6	25.9	24.8	0.0	15.1
Incr Delay (d2), s/veh	2.2	0.0	0.0	0.1	0.0	4.0	44.0	1.0	1.6	2.2	0.0	0.1
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%), veh/ln	0.3	0.0	0.0	2.5	0.0	7.0	0.1	2.7	2.4	4.3	0.0	1.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	32.9	0.0	0.0	13.8	0.0	13.9	75.9	26.7	27.5	26.9	0.0	15.2
LnGrp LOS	C	A	A	B	A	B	E	C	C	C	A	B
Approach Vol, veh/h		19			991			365			469	
Approach Delay, s/veh		32.9			13.9			27.6			22.6	
Approach LOS		C			B			C			C	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	15.6	14.2		4.7	3.2	26.6		29.5				
Change Period (Y+Rc), s	3.0	4.5		3.0	3.0	4.5		4.0				
Max Green Setting (Gmax), s	37.0	29.5		13.0	7.0	59.5		26.0				
Max Q Clear Time (g_c+I1), s	12.2	8.7		2.7	2.1	6.3		25.1				
Green Ext Time (p_c), s	0.4	1.0		0.0	0.0	0.7		0.4				
Intersection Summary												
HCM 6th Ctrl Delay				19.0								
HCM 6th LOS				B								

HCM 6th Signalized Intersection Summary
2: US 101 NB Ramp/Los Amigos Rd & Arata Ln

W-Trans
01/03/2025

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔	↔	↔	↔	↔	↔	↔	
Traffic Volume (veh/h)	10	419	0	0	582	106	304	15	102	28	0	19
Future Volume (veh/h)	10	419	0	0	582	106	304	15	102	28	0	19
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	0.97	1.00		0.97	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1870	1870	0	0	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	11	455	0	0	633	115	341	0	111	30	0	21
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	0	0	2	2	2	2	2	2	2	2
Cap, veh/h	139	663	0	0	1084	197	605	0	269	47	0	33
Arrive On Green	0.36	0.36	0.00	0.00	0.36	0.36	0.17	0.00	0.17	0.05	0.00	0.05
Sat Flow, veh/h	16	1830	0	0	3082	542	3563	0	1585	997	0	698
Grp Volume(v), veh/h	466	0	0	0	376	372	341	0	111	51	0	0
Grp Sat Flow(s), veh/h/ln	1845	0	0	0	1777	1754	1781	0	1585	1695	0	0
Q Serve(g_s), s	0.0	0.0	0.0	0.0	4.7	4.7	2.4	0.0	1.7	0.8	0.0	0.0
Cycle Q Clear(g_c), s	5.8	0.0	0.0	0.0	4.7	4.7	2.4	0.0	1.7	0.8	0.0	0.0
Prop In Lane	0.02		0.00	0.00	0.31	1.00		1.00	0.59			0.41
Lane Grp Cap(c), veh/h	803	0	0	0	644	636	605	0	269	80	0	0
V/C Ratio(X)	0.58	0.00	0.00	0.00	0.58	0.59	0.56	0.00	0.41	0.64	0.00	0.00
Avail Cap(c_a), veh/h	1508	0	0	0	1340	1323	3398	0	1512	694	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	0.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	7.5	0.0	0.0	0.0	7.1	7.1	10.5	0.0	10.2	12.9	0.0	0.0
Incr Delay (d2), s/veh	0.2	0.0	0.0	0.0	0.3	0.3	0.3	0.0	0.4	3.2	0.0	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%), veh/ln	0.3	0.0	0.0	0.0	1.0	1.0	0.7	0.0	0.4	0.3	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	7.7	0.0	0.0	0.0	7.4	7.4	10.8	0.0	10.6	16.1	0.0	0.0
LnGrp LOS	A	A	A	A	A	A	B	A	B	B	A	A
Approach Vol, veh/h		466			748			452			51	
Approach Delay, s/veh		7.7			7.4			10.8			16.1	
Approach LOS		A			A			B			B	
Timer - Assigned Phs		2			4		6		8			
Phs Duration (G+Y+Rc), s		14.2			5.0		14.2		8.4			
Change Period (Y+Rc), s		* 4.2			3.7		* 4.2		3.7			
Max Green Setting (Gmax), s		* 21			11.3		* 21		26.3			
Max Q Clear Time (g_c+I1), s		7.8			2.8		6.7		4.4			
Green Ext Time (p_c), s		1.6			0.1		2.8		0.4			
Intersection Summary												
HCM 6th Ctrl Delay					8.6							
HCM 6th LOS					A							

Notes

User approved volume balancing among the lanes for turning movement.

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

HCM 6th TWSC
3: Los Amigos Rd & Arata Ln

W-Trans
01/03/2025

Intersection												
Int Delay, s/veh	6.4											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰	↱		↰	↱		↰	↱		↰	↱	
Traffic Vol, veh/h	1	444	101	12	557	1	110	0	11	2	1	3
Future Vol, veh/h	1	444	101	12	557	1	110	0	11	2	1	3
Conflicting Peds, #/hr	1	0	0	0	0	1	0	0	1	1	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	150	-	-	120	-	-	165	-	-	-	-	-
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	1	483	110	13	605	1	120	0	12	2	1	3

Major/Minor	Major1		Major2		Minor1		Minor2	
Conflicting Flow All	607	0	0	593	0	0	1174	1173
Stage 1	-	-	-	-	-	540	540	633
Stage 2	-	-	-	-	-	634	633	547
Critical Hdwy	4.12	-	-	4.12	-	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	6.12	5.52	6.12
Critical Hdwy Stg 2	-	-	-	-	-	6.12	5.52	6.12
Follow-up Hdwy	2.218	-	-	2.218	-	3.518	4.018	3.318
Pot Cap-1 Maneuver	971	-	-	983	-	169	192	542
Stage 1	-	-	-	-	-	526	521	468
Stage 2	-	-	-	-	-	467	473	521
Platoon blocked, %	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	970	-	-	983	-	165	189	542
Mov Cap-2 Maneuver	-	-	-	-	-	165	189	161
Stage 1	-	-	-	-	-	525	520	467
Stage 2	-	-	-	-	-	457	466	509

Approach	EB		WB		NB		SB	
HCM Control Delay, s	0		0.2		64.3		19.9	
HCM LOS					F		C	

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	165	542	970	-	-	983	-	-	248
HCM Lane V/C Ratio	0.725	0.022	0.001	-	-	0.013	-	-	0.026
HCM Control Delay (s)	69.5	11.8	8.7	-	-	8.7	-	-	19.9
HCM Lane LOS	F	B	A	-	-	A	-	-	C
HCM 95th %tile Q(veh)	4.4	0.1	0	-	-	0	-	-	0.1

HCM 6th Signalized Intersection Summary
1: Old Redwood Hwy & Arata Ln

W-Trans
01/03/2025

	↰	→	↱	↰	→	↱	↰	→	↱	↰	→	↱
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↰↱			↰↱			↰↱			↰↱	
Traffic Volume (veh/h)	1	0	0	125	1	412	3	143	111	251	175	2
Future Volume (veh/h)	1	0	0	125	1	412	3	143	111	251	175	2
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00	1.00		0.99	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No		No			No
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	1	0	0	136	1	448	3	155	121	273	190	2
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	4	0	0	505	4	762	4	293	245	348	645	7
Arrive On Green	0.00	0.00	0.00	0.29	0.29	0.29	0.00	0.16	0.16	0.20	0.35	0.35
Sat Flow, veh/h	1781	0	0	1769	13	1585	1781	1870	1565	1781	1847	19
Grp Volume(v), veh/h	1	0	0	137	0	448	3	155	121	273	0	192
Grp Sat Flow(s),veh/h/ln	1781	0	0	1782	0	1585	1781	1870	1565	1781	0	1867
Q Serve(g_s), s	0.0	0.0	0.0	2.4	0.0	8.2	0.1	3.1	2.8	5.8	0.0	3.0
Cycle Q Clear(g_c), s	0.0	0.0	0.0	2.4	0.0	8.2	0.1	3.1	2.8	5.8	0.0	3.0
Prop In Lane	1.00			0.00	0.99	1.00	1.00		1.00	1.00		0.01
Lane Grp Cap(c), veh/h	4	0	0	509	0	762	4	293	245	348	0	652
V/C Ratio(X)	0.23	0.00	0.00	0.27	0.00	0.59	0.68	0.53	0.49	0.78	0.00	0.29
Avail Cap(c_a), veh/h	577	0	0	1154	0	1336	310	1374	1149	1641	0	2766
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	20.0	0.0	0.0	11.1	0.0	7.5	20.0	15.6	15.5	15.4	0.0	9.5
Incr Delay (d2), s/veh	9.2	0.0	0.0	0.1	0.0	0.3	50.5	0.6	0.6	1.5	0.0	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	0.0	0.0	0.8	0.0	1.9	0.1	1.1	0.9	2.1	0.0	1.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	29.2	0.0	0.0	11.2	0.0	7.8	70.5	16.1	16.1	16.8	0.0	9.6
LnGrp LOS	C	A	A	B	A	A	E	B	B	B	A	A
Approach Vol, veh/h	1		585				279		465			
Approach Delay, s/veh	29.2		8.6				16.7		13.8			
Approach LOS	C		A				B		B			

Timer - Assigned Phs	1	2	4	5	6	8
Phs Duration (G+Y+Rc), s	10.8	10.8	3.1	3.1	18.5	15.5
Change Period (Y+Rc), s	3.0	4.5	3.0	3.0	4.5	4.0
Max Green Setting (Gmax), s	37.0	29.5	13.0	7.0	59.5	26.0
Max Q Clear Time (g_c+I1), s	7.8	5.1	2.0	2.1	5.0	10.2
Green Ext Time (p_c), s	0.4	0.7	0.0	0.0	0.7	1.3

Intersection Summary	
HCM 6th Ctrl Delay	12.1
HCM 6th LOS	B

HCM 6th Signalized Intersection Summary
2: US 101 NB Ramp/Los Amigos Rd & Arata Ln

W-Trans
01/03/2025

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔		↔	↔		↔	↔	↔	↔	↔	
Traffic Volume (veh/h)	9	356	0	0	258	52	260	16	162	31	0	21
Future Volume (veh/h)	9	356	0	0	258	52	260	16	162	31	0	21
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00	1.00	0.98	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No	No	No	No	No	No	No	No	No	No	No	No
Adj Sat Flow, veh/h/ln	1870	1870	0	0	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	10	387	0	0	280	57	295	0	176	34	0	23
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	0	0	2	2	2	2	2	2	2	2
Cap, veh/h	142	677	0	0	1080	216	551	0	245	52	0	35
Arrive On Green	0.37	0.37	0.00	0.00	0.37	0.37	0.15	0.00	0.15	0.05	0.00	0.05
Sat Flow, veh/h	16	1841	0	0	3032	588	3563	0	1585	1012	0	685
Grp Volume(v), veh/h	397	0	0	0	167	170	295	0	176	57	0	0
Grp Sat Flow(s), veh/h/ln	1857	0	0	0	1777	1750	1781	0	1585	1697	0	0
Q Serve(g_s), s	0.0	0.0	0.0	0.0	1.8	1.8	2.1	0.0	2.9	0.9	0.0	0.0
Cycle Q Clear(g_c), s	4.6	0.0	0.0	0.0	1.8	1.8	2.1	0.0	2.9	0.9	0.0	0.0
Prop In Lane	0.03	0.00	0.00	0.00	0.34	1.00	1.00	1.00	0.60	0.40	0.00	0.00
Lane Grp Cap(c), veh/h	818	0	0	0	653	643	551	0	245	87	0	0
V/C Ratio(X)	0.49	0.00	0.00	0.00	0.26	0.26	0.54	0.00	0.72	0.65	0.00	0.00
Avail Cap(c_a), veh/h	1546	0	0	0	1358	1338	3444	0	1532	705	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	0.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	6.9	0.0	0.0	0.0	6.0	6.0	10.6	0.0	10.9	12.7	0.0	0.0
Incr Delay (d2), s/veh	0.2	0.0	0.0	0.0	0.1	0.1	0.3	0.0	1.5	3.1	0.0	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%), veh/ln	0.0	0.0	0.0	0.0	0.4	0.4	0.6	0.0	0.8	0.3	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	7.1	0.0	0.0	0.0	6.1	6.1	10.9	0.0	12.4	15.7	0.0	0.0
LnGrp LOS	A	A	A	A	A	A	B	A	B	B	A	A
Approach Vol, veh/h	397				337			471			57	
Approach Delay, s/veh	7.1				6.1			11.5			15.7	
Approach LOS	A				A			B			B	
Timer - Assigned Phs	2			4		6		8				
Phs Duration (G+Y+Rc), s	14.2			5.1		14.2		7.9				
Change Period (Y+Rc), s	* 4.2			3.7		* 4.2		3.7				
Max Green Setting (Gmax), s	* 21			11.3		* 21		26.3				
Max Q Clear Time (g_c+I), s	6.6			2.9		3.8		4.1				
Green Ext Time (p_c), s	1.4			0.1		1.2		0.3				

Intersection Summary

HCM 6th Ctrl Delay	8.8
HCM 6th LOS	A

Notes

User approved volume balancing among the lanes for turning movement.

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

HCM 6th TWSC
3: Los Amigos Rd & Arata Ln

W-Trans
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Intersection												
Int Delay, s/veh	2											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↔		↔	↔		↔	↔		↔	↔	
Traffic Vol, veh/h	3	395	115	11	247	1	71	1	6	1	1	3
Future Vol, veh/h	3	395	115	11	247	1	71	1	6	1	1	3
Conflicting Peds, #/hr	0	0	0	0	0	0	1	0	0	0	0	1
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	150	-	-	120	-	-	165	-	-	-	-	-
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	3	429	125	12	268	1	77	1	7	1	1	3

Major/Minor	Major1		Major2		Minor1		Minor2					
Conflicting Flow All	269	0	0	554	0	0	794	791	492	795	853	270
Stage 1	-	-	-	-	-	-	498	498	-	293	293	-
Stage 2	-	-	-	-	-	-	296	293	-	502	560	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1295	-	-	1016	-	-	306	322	577	305	296	769
Stage 1	-	-	-	-	-	-	554	544	-	715	670	-
Stage 2	-	-	-	-	-	-	712	670	-	552	511	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1295	-	-	1016	-	-	300	317	577	298	292	768
Mov Cap-2 Maneuver	-	-	-	-	-	-	300	317	-	298	292	-
Stage 1	-	-	-	-	-	-	553	543	-	714	662	-
Stage 2	-	-	-	-	-	-	699	662	-	543	510	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0.4	20.3	12.8
HCM LOS			C	B

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	300	516	1295	-	-	1016	-	-	468
HCM Lane V/C Ratio	0.257	0.015	0.003	-	-	0.012	-	-	0.012
HCM Control Delay (s)	21.1	12.1	7.8	-	-	8.6	-	-	12.8
HCM Lane LOS	C	B	A	-	-	A	-	-	B
HCM 95th %tile Q(veh)	1	0	0	-	-	0	-	-	0

HCM 6th Signalized Intersection Summary
1: Old Redwood Hwy & Arata Ln

W-Trans
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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔	↔	↔	↔	↔	↔	↔	
Traffic Volume (veh/h)	10	1	6	260	4	721	4	187	167	292	159	3
Future Volume (veh/h)	10	1	6	260	4	721	4	187	167	292	159	3
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00		0.97	1.00		0.97	1.00	0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	11	1	7	283	4	784	4	203	182	317	173	3
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	26	2	17	685	10	931	6	297	245	370	665	12
Arrive On Green	0.03	0.03	0.03	0.39	0.39	0.39	0.00	0.16	0.16	0.21	0.36	0.36
Sat Flow, veh/h	989	90	629	1758	25	1544	1781	1870	1541	1781	1832	32
Grp Volume(v), veh/h	19	0	0	287	0	784	4	203	182	317	0	176
Grp Sat Flow(s), veh/h/ln	1708	0	0	1782	0	1544	1781	1870	1541	1781	0	1864
Q Serve(g_s), s	0.7	0.0	0.0	7.8	0.0	26.0	0.1	6.8	7.5	11.4	0.0	4.4
Cycle Q Clear(g_c), s	0.7	0.0	0.0	7.8	0.0	26.0	0.1	6.8	7.5	11.4	0.0	4.4
Prop In Lane	0.58		0.37	0.99		1.00	1.00		1.00	1.00		0.02
Lane Grp Cap(c), veh/h	46	0	0	695	0	931	6	297	245	370	0	677
V/C Ratio(X)	0.42	0.00	0.00	0.41	0.00	0.84	0.70	0.68	0.74	0.86	0.00	0.26
Avail Cap(c_a), veh/h	333	0	0	695	0	931	187	827	681	988	0	1662
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	32.0	0.0	0.0	14.8	0.0	11.0	33.2	26.5	26.8	25.5	0.0	14.9
Incr Delay (d2), s/veh	2.2	0.0	0.0	0.1	0.0	6.7	44.2	1.0	1.7	2.3	0.0	0.1
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%), veh/ln	0.3	0.0	0.0	2.9	0.0	9.0	0.1	3.0	2.7	4.8	0.0	1.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	34.2	0.0	0.0	15.0	0.0	17.7	77.4	27.5	28.5	27.7	0.0	15.0
LnGrp LOS	C	A	A	B	A	B	E	C	C	C	A	B
Approach Vol, veh/h		19			1071			389			493	
Approach Delay, s/veh		34.2			17.0			28.5			23.2	
Approach LOS		C			B			C			C	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	16.9	15.1		4.8	3.2	28.7		30.0				
Change Period (Y+Rc), s	3.0	4.5		3.0	3.0	4.5		4.0				
Max Green Setting (Gmax), s	37.0	29.5		13.0	7.0	59.5		26.0				
Max Q Clear Time (g_c+I1), s	13.4	9.5		2.7	2.1	6.4		28.0				
Green Ext Time (p_c), s	0.5	1.0		0.0	0.0	0.7		0.0				
Intersection Summary												
HCM 6th Ctrl Delay				21.0								
HCM 6th LOS				C								

HCM 6th Signalized Intersection Summary
2: US 101 NB Ramp/Los Amigos Rd & Arata Ln

W-Trans
01/03/2025

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔	↔	↔	↔	↔	↔	↔	
Traffic Volume (veh/h)	11	449	0	0	649	52	310	15	124	14	0	19
Future Volume (veh/h)	11	449	0	0	649	52	310	15	124	14	0	19
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00		0.97	1.00		1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1870	1870	0	0	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	12	488	0	0	705	57	348	0	135	15	0	21
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	0	0	2	2	2	2	2	2	2	2
Cap, veh/h	141	674	0	0	1224	99	614	0	273	24	0	34
Arrive On Green	0.37	0.37	0.00	0.00	0.37	0.37	0.17	0.00	0.17	0.03	0.00	0.03
Sat Flow, veh/h	16	1828	0	0	3415	268	3563	0	1585	692	0	969
Grp Volume(v), veh/h	500	0	0	0	377	385	348	0	135	36	0	0
Grp Sat Flow(s), veh/h/ln	1844	0	0	0	1777	1813	1781	0	1585	1661	0	0
Q Serve(g_s), s	0.0	0.0	0.0	0.0	4.7	4.7	2.5	0.0	2.1	0.6	0.0	0.0
Cycle Q Clear(g_c), s	6.3	0.0	0.0	0.0	4.7	4.7	2.5	0.0	2.1	0.6	0.0	0.0
Prop In Lane	0.02		0.00	0.00		0.15	1.00		1.00	0.42		0.58
Lane Grp Cap(c), veh/h	814	0	0	0	655	668	614	0	273	58	0	0
V/C Ratio(X)	0.61	0.00	0.00	0.00	0.58	0.58	0.57	0.00	0.49	0.62	0.00	0.00
Avail Cap(c_a), veh/h	1519	0	0	0	1351	1378	3425	0	1524	686	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	0.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	7.4	0.0	0.0	0.0	6.9	6.9	10.4	0.0	10.2	13.0	0.0	0.0
Incr Delay (d2), s/veh	0.3	0.0	0.0	0.0	0.3	0.3	0.3	0.0	0.5	3.9	0.0	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%), veh/ln	1.4	0.0	0.0	0.0	1.0	1.0	0.7	0.0	0.5	0.2	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	7.7	0.0	0.0	0.0	7.2	7.2	10.7	0.0	10.8	17.0	0.0	0.0
LnGrp LOS	A	A	A	A	A	A	B	A	B	B	A	A
Approach Vol, veh/h		500			762		483			36		
Approach Delay, s/veh		7.7			7.2		10.7			17.0		
Approach LOS		A			A		B			B		
Timer - Assigned Phs		2			4		6			8		
Phs Duration (G+Y+Rc), s		14.3			4.7		14.3			8.4		
Change Period (Y+Rc), s		* 4.2			3.7		* 4.2			3.7		
Max Green Setting (Gmax), s		* 21			11.3		* 21			26.3		
Max Q Clear Time (g_c+I1), s		8.3			2.6		6.7			4.5		
Green Ext Time (p_c), s		1.8			0.0		2.8			0.4		
Intersection Summary												
HCM 6th Ctrl Delay					8.5							
HCM 6th LOS					A							

Notes

User approved volume balancing among the lanes for turning movement.

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

HCM 6th Signalized Intersection Summary
3: Los Amigos Rd & Arata Ln

W-Trans
01/03/2025

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰	↱		↰	↱		↰	↱		↰	↱	↰
Traffic Volume (veh/h)	29	433	104	12	516	51	107	12	11	23	12	56
Future Volume (veh/h)	29	433	104	12	516	51	107	12	11	23	12	56
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.97	1.00		0.98	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	32	471	113	13	561	55	116	13	12	25	13	61
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	91	629	151	41	679	67	428	252	233	231	93	197
Arrive On Green	0.05	0.43	0.43	0.02	0.41	0.41	0.07	0.29	0.29	0.12	0.12	0.12
Sat Flow, veh/h	1781	1450	348	1781	1672	164	1781	884	816	827	750	1580
Grp Volume(v), veh/h	32	0	584	13	0	616	116	0	25	38	0	61
Grp Sat Flow(s), veh/h/ln	1781	0	1798	1781	0	1836	1781	0	1701	1577	0	1580
Q Serve(g_s), s	0.8	0.0	12.7	0.3	0.0	14.0	2.5	0.0	0.5	0.0	0.0	1.6
Cycle Q Clear(g_c), s	0.8	0.0	12.7	0.3	0.0	14.0	2.5	0.0	0.5	0.8	0.0	1.6
Prop In Lane	1.00		0.19	1.00		0.09	1.00		0.48	0.66		1.00
Lane Grp Cap(c), veh/h	91	0	780	41	0	746	428	0	485	325	0	197
V/C Ratio(X)	0.35	0.00	0.75	0.31	0.00	0.83	0.27	0.00	0.05	0.12	0.00	0.31
Avail Cap(c_a), veh/h	268	0	1814	268	0	1851	525	0	1241	917	0	814
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	21.4	0.0	11.1	22.4	0.0	12.4	14.4	0.0	12.1	18.2	0.0	18.6
Incr Delay (d2), s/veh	0.9	0.0	0.5	1.6	0.0	0.9	0.1	0.0	0.0	0.1	0.0	0.3
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%), veh/ln	0.3	0.0	3.9	0.1	0.0	4.6	0.9	0.0	0.2	0.3	0.0	0.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	22.2	0.0	11.6	24.0	0.0	13.3	14.5	0.0	12.1	18.3	0.0	18.9
LnGrp LOS	C	A	B	C	A	B	B	A	B	B	A	B
Approach Vol, veh/h	616			629			141			99		
Approach Delay, s/veh	12.2			13.5			14.1			18.7		
Approach LOS	B			B			B			B		
Timer - Assigned Phs	2	3	4	5	6	7	8					
Phs Duration (G+Y+Rc), s	17.3	5.1	24.2	7.5	9.8	6.4	22.9					
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0					
Max Green Setting (Gmax), s	34.0	7.0	47.0	6.0	24.0	7.0	47.0					
Max Q Clear Time (g_c+I1), s	2.5	2.3	14.7	4.5	3.6	2.8	16.0					
Green Ext Time (p_c), s	0.1	0.0	2.8	0.0	0.2	0.0	2.9					
Intersection Summary												
HCM 6th Ctrl Delay		13.3										
HCM 6th LOS		B										

HCM 6th Signalized Intersection Summary
1: Old Redwood Hwy & Arata Ln

W-Trans
01/03/2025

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↰	↱		↰	↱	↰	↱	↰	↰	↱	↰
Traffic Volume (veh/h)	1	0	0	146	1	456	3	156	131	288	179	2
Future Volume (veh/h)	1	0	0	146	1	456	3	156	131	288	179	2
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.99	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	1	0	0	159	1	496	3	170	142	313	195	2
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	4	0	0	528	3	817	4	290	243	387	684	7
Arrive On Green	0.00	0.00	0.00	0.30	0.30	0.30	0.00	0.16	0.16	0.22	0.37	0.37
Sat Flow, veh/h	1781	0	0	1771	11	1585	1781	1870	1565	1781	1848	19
Grp Volume(v), veh/h	1	0	0	160	0	496	3	170	142	313	0	197
Grp Sat Flow(s), veh/h/ln	1781	0	0	1782	0	1585	1781	1870	1565	1781	0	1867
Q Serve(g_s), s	0.0	0.0	0.0	3.1	0.0	9.8	0.1	3.7	3.7	7.4	0.0	3.3
Cycle Q Clear(g_c), s	0.0	0.0	0.0	3.1	0.0	9.8	0.1	3.7	3.7	7.4	0.0	3.3
Prop In Lane	1.00		0.00	0.99		1.00	1.00		1.00	1.00		0.01
Lane Grp Cap(c), veh/h	4	0	0	531	0	817	4	290	243	387	0	691
V/C Ratio(X)	0.25	0.00	0.00	0.30	0.00	0.61	0.69	0.59	0.59	0.81	0.00	0.29
Avail Cap(c_a), veh/h	523	0	0	1047	0	1276	282	1247	1043	1489	0	2510
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	22.1	0.0	0.0	12.0	0.0	7.6	22.1	17.4	17.4	16.4	0.0	9.8
Incr Delay (d2), s/veh	11.5	0.0	0.0	0.1	0.0	0.3	52.6	0.7	0.8	1.5	0.0	0.1
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%), veh/ln	0.0	0.0	0.0	1.0	0.0	2.3	0.1	1.5	1.2	2.7	0.0	1.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	33.5	0.0	0.0	12.1	0.0	7.8	74.7	18.1	18.2	18.0	0.0	9.9
LnGrp LOS	C	A	A	B	A	A	E	B	B	B	A	A
Approach Vol, veh/h	1			656			315			510		
Approach Delay, s/veh	33.5			8.9			18.7			14.9		
Approach LOS	C			A			B			B		
Timer - Assigned Phs	1	2		4	5	6	8					
Phs Duration (G+Y+Rc), s	12.6	11.4		3.1	3.1	20.9	17.2					
Change Period (Y+Rc), s	3.0	4.5		3.0	3.0	4.5	4.0					
Max Green Setting (Gmax), s	37.0	29.5		13.0	7.0	59.5	26.0					
Max Q Clear Time (g_c+I1), s	9.4	5.7		2.0	2.1	5.3	11.8					
Green Ext Time (p_c), s	0.5	0.8		0.0	0.0	0.8	1.4					
Intersection Summary												
HCM 6th Ctrl Delay		13.0										
HCM 6th LOS		B										

HCM 6th Signalized Intersection Summary
2: US 101 NB Ramp/Los Amigos Rd & Arata Ln

W-Trans
01/03/2025

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔		↔	↔	↔		↔	
Traffic Volume (veh/h)	13	409	0	0	315	25	267	16	212	15	0	21
Future Volume (veh/h)	13	409	0	0	315	25	267	16	212	15	0	21
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.98	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1870	1870	0	0	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	14	445	0	0	342	27	302	0	230	16	0	23
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	0	0	2	2	2	2	2	2	2	2
Cap, veh/h	146	682	0	0	1242	97	561	0	249	26	0	37
Arrive On Green	0.37	0.37	0.00	0.00	0.37	0.37	0.16	0.00	0.16	0.04	0.00	0.04
Sat Flow, veh/h	22	1831	0	0	3426	262	3563	0	1585	681	0	979
Grp Volume(v), veh/h	459	0	0	0	181	188	302	0	230	39	0	0
Grp Sat Flow(s), veh/h/ln	1852	0	0	0	1777	1817	1781	0	1585	1660	0	0
Q Serve(g_s), s	0.0	0.0	0.0	0.0	1.9	1.9	2.1	0.0	3.8	0.6	0.0	0.0
Cycle Q Clear(g_c), s	5.5	0.0	0.0	0.0	1.9	1.9	2.1	0.0	3.8	0.6	0.0	0.0
Prop In Lane	0.03		0.00	0.00		0.14		1.00	0.41			0.59
Lane Grp Cap(c), veh/h	829	0	0	0	662	677	561	0	249	62	0	0
V/C Ratio(X)	0.55	0.00	0.00	0.00	0.27	0.28	0.54	0.00	0.92	0.62	0.00	0.00
Avail Cap(c_a), veh/h	1562	0	0	0	1377	1408	3492	0	1554	699	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	0.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	7.0	0.0	0.0	0.0	5.9	5.9	10.4	0.0	11.1	12.7	0.0	0.0
Incr Delay (d2), s/veh	0.2	0.0	0.0	0.0	0.1	0.1	0.3	0.0	5.9	3.8	0.0	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%), veh/ln	1.1	0.0	0.0	0.0	0.4	0.4	0.6	0.0	1.3	0.2	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	7.2	0.0	0.0	0.0	6.0	6.0	10.7	0.0	17.0	16.5	0.0	0.0
LnGrp LOS	A	A	A	A	A	A	B	A	B	B	A	A
Approach Vol, veh/h		459			369			532		39		
Approach Delay, s/veh		7.2			6.0			13.4		16.5		
Approach LOS		A			A			B		B		
Timer - Assigned Phs		2			4			6		8		
Phs Duration (G+Y+Rc), s		14.2			4.7			14.2		7.9		
Change Period (Y+Rc), s		* 4.2			3.7			* 4.2		3.7		
Max Green Setting (Gmax), s		* 21			11.3			* 21		26.3		
Max Q Clear Time (g_c+I1), s		7.5			2.6			3.9		4.1		
Green Ext Time (p_c), s		1.6			0.0			1.3		0.2		

Intersection Summary

HCM 6th Ctrl Delay	9.5
HCM 6th LOS	A

Notes

User approved volume balancing among the lanes for turning movement.

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

HCM 6th Signalized Intersection Summary
3: Los Amigos Rd & Arata Ln

W-Trans
01/03/2025

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↔		↔	↔		↔	↔	↔		↔	↔
Traffic Volume (veh/h)	82	384	121	11	228	34	69	16	6	19	10	38
Future Volume (veh/h)	82	384	121	11	228	34	69	16	6	19	10	38
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.98	1.00		0.98	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	89	417	132	12	248	37	75	17	7	21	11	41
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	198	527	167	39	477	71	429	351	145	249	97	192
Arrive On Green	0.11	0.39	0.39	0.02	0.30	0.30	0.06	0.28	0.28	0.12	0.12	0.12
Sat Flow, veh/h	1781	1353	428	1781	1585	236	1781	1249	514	794	796	1581
Grp Volume(v), veh/h	89	0	549	12	0	285	75	0	24	32	0	41
Grp Sat Flow(s), veh/h/ln	1781	0	1781	1781	0	1821	1781	0	1763	1590	0	1581
Q Serve(g_s), s	1.8	0.0	10.6	0.3	0.0	5.1	1.3	0.0	0.4	0.0	0.0	0.9
Cycle Q Clear(g_c), s	1.8	0.0	10.6	0.3	0.0	5.1	1.3	0.0	0.4	0.6	0.0	0.9
Prop In Lane	1.00		0.24	1.00		0.13	1.00		0.29	0.66		1.00
Lane Grp Cap(c), veh/h	198	0	694	39	0	548	429	0	496	346	0	192
V/C Ratio(X)	0.45	0.00	0.79	0.31	0.00	0.52	0.17	0.00	0.05	0.09	0.00	0.21
Avail Cap(c_a), veh/h	821	0	2189	319	0	1725	510	0	1490	1133	0	1012
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	16.2	0.0	10.5	18.8	0.0	11.3	12.2	0.0	10.2	15.3	0.0	15.5
Incr Delay (d2), s/veh	0.6	0.0	0.8	1.6	0.0	0.3	0.1	0.0	0.0	0.0	0.0	0.2
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%), veh/ln	0.7	0.0	3.1	0.1	0.0	1.6	0.4	0.0	0.1	0.2	0.0	0.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	16.8	0.0	11.3	20.5	0.0	11.6	12.3	0.0	10.3	15.4	0.0	15.7
LnGrp LOS	B	A	B	C	A	B	B	A	B	B	A	B
Approach Vol, veh/h		638			297		99			73		
Approach Delay, s/veh		12.1			12.0		11.8			15.5		
Approach LOS		B			B		B			B		
Timer - Assigned Phs		2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s		15.0	4.9	19.2	6.2	8.7	8.3	15.8				
Change Period (Y+Rc), s		4.0	4.0	4.0	4.0	4.0	4.0	4.0				
Max Green Setting (Gmax), s		33.0	7.0	48.0	4.0	25.0	18.0	37.0				
Max Q Clear Time (g_c+I1), s		2.4	2.3	12.6	3.3	2.9	3.8	7.1				
Green Ext Time (p_c), s		0.1	0.0	2.6	0.0	0.1	0.1	1.1				

Intersection Summary

HCM 6th Ctrl Delay	12.2
HCM 6th LOS	B

HCM 6th Signalized Intersection Summary
1: Old Redwood Hwy & Arata Ln

W-Trans
01/03/2025

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔	↔	↔	↔	↔	↔	↔	
Traffic Volume (veh/h)	10	1	6	262	4	729	4	187	168	293	159	3
Future Volume (veh/h)	10	1	6	262	4	729	4	187	168	293	159	3
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	0.97	1.00		0.97	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	11	1	7	285	4	792	4	203	183	318	173	3
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	26	2	17	684	10	931	6	298	245	371	667	12
Arrive On Green	0.03	0.03	0.03	0.39	0.39	0.39	0.00	0.16	0.16	0.21	0.36	0.36
Sat Flow, veh/h	989	90	629	1758	25	1544	1781	1870	1541	1781	1832	32
Grp Volume(v), veh/h	19	0	0	289	0	792	4	203	183	318	0	176
Grp Sat Flow(s), veh/h/ln	1708	0	0	1782	0	1544	1781	1870	1541	1781	0	1864
Q Serve(g_s), s	0.7	0.0	0.0	7.9	0.0	26.0	0.1	6.8	7.6	11.5	0.0	4.4
Cycle Q Clear(g_c), s	0.7	0.0	0.0	7.9	0.0	26.0	0.1	6.8	7.6	11.5	0.0	4.4
Prop In Lane	0.58		0.37	0.99		1.00	1.00		1.00	1.00		0.02
Lane Grp Cap(c), veh/h	46	0	0	693	0	931	6	298	245	371	0	679
V/C Ratio(X)	0.42	0.00	0.00	0.42	0.00	0.85	0.70	0.68	0.75	0.86	0.00	0.26
Avail Cap(c_a), veh/h	332	0	0	693	0	931	187	825	680	986	0	1659
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	32.0	0.0	0.0	14.9	0.0	11.1	33.3	26.5	26.8	25.5	0.0	14.9
Incr Delay (d2), s/veh	2.2	0.0	0.0	0.1	0.0	7.2	44.2	1.0	1.7	2.3	0.0	0.1
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%), veh/ln	0.3	0.0	0.0	3.0	0.0	9.3	0.1	3.0	2.8	4.8	0.0	1.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	34.3	0.0	0.0	15.0	0.0	18.4	77.5	27.5	28.5	27.8	0.0	15.0
LnGrp LOS	C	A	A	B	A	B	E	C	C	C	A	B
Approach Vol, veh/h		19			1081			390			494	
Approach Delay, s/veh		34.3			17.5			28.5			23.2	
Approach LOS		C			B			C			C	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	16.9	15.1		4.8	3.2	28.8		30.0				
Change Period (Y+Rc), s	3.0	4.5		3.0	3.0	4.5		4.0				
Max Green Setting (Gmax), s	37.0	29.5		13.0	7.0	59.5		26.0				
Max Q Clear Time (g_c+I1), s	13.5	9.6		2.7	2.1	6.4		28.0				
Green Ext Time (p_c), s	0.5	1.0		0.0	0.0	0.7		0.0				
Intersection Summary												
HCM 6th Ctrl Delay				21.2								
HCM 6th LOS				C								

HCM 6th Signalized Intersection Summary
2: US 101 NB Ramp/Los Amigos Rd & Arata Ln

W-Trans
01/03/2025

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔	↔	↔	↔	↔	↔	↔	
Traffic Volume (veh/h)	11	451	0	0	659	52	310	15	127	14	0	19
Future Volume (veh/h)	11	451	0	0	659	52	310	15	127	14	0	19
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	0.97	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1870	1870	0	0	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	12	490	0	0	716	57	348	0	138	15	0	21
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	0	0	2	2	2	2	2	2	2	2
Cap, veh/h	140	675	0	0	1229	98	614	0	273	24	0	34
Arrive On Green	0.37	0.37	0.00	0.00	0.37	0.37	0.17	0.00	0.17	0.03	0.00	0.03
Sat Flow, veh/h	16	1828	0	0	3419	265	3563	0	1585	692	0	969
Grp Volume(v), veh/h	502	0	0	0	382	391	348	0	138	36	0	0
Grp Sat Flow(s), veh/h/ln	1843	0	0	0	1777	1814	1781	0	1585	1661	0	0
Q Serve(g_s), s	0.0	0.0	0.0	0.0	4.7	4.7	2.5	0.0	2.2	0.6	0.0	0.0
Cycle Q Clear(g_c), s	6.3	0.0	0.0	0.0	4.7	4.7	2.5	0.0	2.2	0.6	0.0	0.0
Prop In Lane	0.02		0.00	0.00		0.15	1.00		1.00	0.42		0.58
Lane Grp Cap(c), veh/h	816	0	0	0	656	670	614	0	273	58	0	0
V/C Ratio(X)	0.62	0.00	0.00	0.00	0.58	0.58	0.57	0.00	0.51	0.62	0.00	0.00
Avail Cap(c_a), veh/h	1516	0	0	0	1349	1377	3419	0	1521	685	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	0.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	7.4	0.0	0.0	0.0	6.9	6.9	10.4	0.0	10.3	13.0	0.0	0.0
Incr Delay (d2), s/veh	0.3	0.0	0.0	0.0	0.3	0.3	0.3	0.0	0.5	4.0	0.0	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%), veh/ln	1.4	0.0	0.0	0.0	1.0	1.0	0.7	0.0	0.6	0.2	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	7.7	0.0	0.0	0.0	7.2	7.2	10.7	0.0	10.8	17.0	0.0	0.0
LnGrp LOS	A	A	A	A	A	A	B	A	B	B	A	A
Approach Vol, veh/h		502			773		486			36		
Approach Delay, s/veh		7.7			7.2		10.7			17.0		
Approach LOS		A			A		B			B		
Timer - Assigned Phs		2			4		6			8		
Phs Duration (G+Y+Rc), s		14.3			4.7		14.3			8.4		
Change Period (Y+Rc), s		* 4.2			3.7		* 4.2			3.7		
Max Green Setting (Gmax), s		* 21			11.3		* 21			26.3		
Max Q Clear Time (g_c+I1), s		8.3			2.6		6.7			4.5		
Green Ext Time (p_c), s		1.8			0.0		2.8			0.4		

Intersection Summary

HCM 6th Ctrl Delay	8.5
HCM 6th LOS	A

Notes

User approved volume balancing among the lanes for turning movement.
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

HCM 6th Signalized Intersection Summary
3: Los Amigos Rd & Arata Ln

W-Trans
01/03/2025

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰	↱		↰	↱		↰	↱		↰	↱	
Traffic Volume (veh/h)	30	434	105	12	516	51	107	12	11	24	13	58
Future Volume (veh/h)	30	434	105	12	516	51	107	12	11	24	13	58
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.97	1.00		0.98	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	33	472	114	13	561	55	116	13	12	26	14	63
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	93	630	152	41	679	67	427	253	233	229	96	199
Arrive On Green	0.05	0.43	0.43	0.02	0.41	0.41	0.07	0.29	0.29	0.13	0.13	0.13
Sat Flow, veh/h	1781	1448	350	1781	1672	164	1781	884	816	816	765	1580
Grp Volume(v), veh/h	33	0	586	13	0	616	116	0	25	40	0	63
Grp Sat Flow(s), veh/h/ln	1781	0	1798	1781	0	1836	1781	0	1701	1581	0	1580
Q Serve(g_s), s	0.8	0.0	12.8	0.3	0.0	14.1	2.5	0.0	0.5	0.0	0.0	1.7
Cycle Q Clear(g_c), s	0.8	0.0	12.8	0.3	0.0	14.1	2.5	0.0	0.5	0.9	0.0	1.7
Prop In Lane	1.00		0.19	1.00		0.09	1.00		0.48	0.65		1.00
Lane Grp Cap(c), veh/h	93	0	782	41	0	745	427	0	486	326	0	199
V/C Ratio(X)	0.36	0.00	0.75	0.31	0.00	0.83	0.27	0.00	0.05	0.12	0.00	0.32
Avail Cap(c_a), veh/h	266	0	1803	266	0	1841	523	0	1234	913	0	809
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	21.4	0.0	11.1	22.5	0.0	12.4	14.5	0.0	12.1	18.3	0.0	18.6
Incr Delay (d2), s/veh	0.9	0.0	0.6	1.6	0.0	0.9	0.1	0.0	0.0	0.1	0.0	0.3
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%), veh/ln	0.3	0.0	4.0	0.1	0.0	4.7	0.9	0.0	0.2	0.4	0.0	0.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	22.3	0.0	11.7	24.1	0.0	13.4	14.6	0.0	12.1	18.4	0.0	19.0
LnGrp LOS	C	A	B	C	A	B	B	A	B	B	A	B
Approach Vol, veh/h	619			629			141			103		
Approach Delay, s/veh	12.2			13.6			14.1			18.7		
Approach LOS	B			B			B			B		
Timer - Assigned Phs	2	3	4	5	6	7	8					
Phs Duration (G+Y+Rc), s	17.4	5.1	24.4	7.5	9.9	6.4	23.0					
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0					
Max Green Setting (Gmax), s	34.0	7.0	47.0	6.0	24.0	7.0	47.0					
Max Q Clear Time (g_c+I1), s	2.5	2.3	14.8	4.5	3.7	2.8	16.1					
Green Ext Time (p_c), s	0.1	0.0	2.8	0.0	0.2	0.0	2.9					
Intersection Summary												
HCM 6th Ctrl Delay	13.4											
HCM 6th LOS	B											

HCM 6th Signalized Intersection Summary
1: Old Redwood Hwy & Arata Ln

W-Trans
01/03/2025

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↰↱			↰↱		↰↱	↰↱		↰↱	↰↱	
Traffic Volume (veh/h)	1	0	0	147	1	461	3	156	133	292	179	2
Future Volume (veh/h)	1	0	0	147	1	461	3	156	133	292	179	2
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.99	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	1	0	0	160	1	501	3	170	145	317	195	2
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	4	0	0	530	3	822	4	292	244	391	689	7
Arrive On Green	0.00	0.00	0.00	0.30	0.30	0.30	0.00	0.16	0.16	0.22	0.37	0.37
Sat Flow, veh/h	1781	0	0	1771	11	1585	1781	1870	1565	1781	1848	19
Grp Volume(v), veh/h	1	0	0	161	0	501	3	170	145	317	0	197
Grp Sat Flow(s), veh/h/ln	1781	0	0	1782	0	1585	1781	1870	1565	1781	0	1867
Q Serve(g_s), s	0.0	0.0	0.0	3.1	0.0	10.0	0.1	3.8	3.9	7.6	0.0	3.3
Cycle Q Clear(g_c), s	0.0	0.0	0.0	3.1	0.0	10.0	0.1	3.8	3.9	7.6	0.0	3.3
Prop In Lane	1.00		0.00	0.99		1.00	1.00		1.00	1.00		0.01
Lane Grp Cap(c), veh/h	4	0	0	533	0	822	4	292	244	391	0	697
V/C Ratio(X)	0.25	0.00	0.00	0.30	0.00	0.61	0.69	0.58	0.59	0.81	0.00	0.28
Avail Cap(c_a), veh/h	517	0	0	1034	0	1268	278	1231	1030	1471	0	2479
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	22.3	0.0	0.0	12.1	0.0	7.6	22.3	17.6	17.6	16.6	0.0	9.8
Incr Delay (d2), s/veh	11.8	0.0	0.0	0.1	0.0	0.3	52.7	0.7	0.9	1.6	0.0	0.1
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%), veh/ln	0.0	0.0	0.0	1.0	0.0	2.3	0.1	1.5	1.3	2.8	0.0	1.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	34.1	0.0	0.0	12.2	0.0	7.9	75.0	18.2	18.4	18.2	0.0	9.9
LnGrp LOS	C	A	A	B	A	A	E	B	B	B	A	A
Approach Vol, veh/h	1			662			318			514		
Approach Delay, s/veh	34.1			8.9			18.9			15.0		
Approach LOS	C			A			B			B		
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	12.8	11.5		3.1	3.1	21.2		17.4				
Change Period (Y+Rc), s	3.0	4.5		3.0	3.0	4.5		4.0				
Max Green Setting (Gmax), s	37.0	29.5		13.0	7.0	59.5		26.0				
Max Q Clear Time (g_c+I1), s	9.6	5.9		2.0	2.1	5.3		12.0				
Green Ext Time (p_c), s	0.5	0.8		0.0	0.0	0.8		1.4				
Intersection Summary												
HCM 6th Ctrl Delay	13.1											
HCM 6th LOS	B											

HCM 6th Signalized Intersection Summary
2: US 101 NB Ramp/Los Amigos Rd & Arata Ln

W-Trans
01/03/2025

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔		↔	↔	↔		↔	
Traffic Volume (veh/h)	13	415	0	0	322	25	267	16	219	15	0	21
Future Volume (veh/h)	13	415	0	0	322	25	267	16	219	15	0	21
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.98	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1870	1870	0	0	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	14	451	0	0	350	27	302	0	238	16	0	23
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	0	0	2	2	2	2	2	2	2	2
Cap, veh/h	146	682	0	0	1244	95	560	0	249	26	0	37
Arrive On Green	0.37	0.37	0.00	0.00	0.37	0.37	0.16	0.00	0.16	0.04	0.00	0.04
Sat Flow, veh/h	21	1831	0	0	3432	256	3563	0	1585	681	0	979
Grp Volume(v), veh/h	465	0	0	0	185	192	302	0	238	39	0	0
Grp Sat Flow(s), veh/h/ln	1852	0	0	0	1777	1818	1781	0	1585	1660	0	0
Q Serve(g_s), s	0.0	0.0	0.0	0.0	2.0	2.0	2.1	0.0	4.0	0.6	0.0	0.0
Cycle Q Clear(g_c), s	5.6	0.0	0.0	0.0	2.0	2.0	2.1	0.0	4.0	0.6	0.0	0.0
Prop In Lane	0.03		0.00	0.00		0.14	1.00		1.00	0.41		0.59
Lane Grp Cap(c), veh/h	829	0	0	0	662	678	560	0	249	62	0	0
V/C Ratio(X)	0.56	0.00	0.00	0.00	0.28	0.28	0.54	0.00	0.95	0.62	0.00	0.00
Avail Cap(c_a), veh/h	1562	0	0	0	1378	1409	3492	0	1554	699	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	0.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	7.0	0.0	0.0	0.0	5.9	5.9	10.4	0.0	11.2	12.7	0.0	0.0
Incr Delay (d2), s/veh	0.2	0.0	0.0	0.0	0.1	0.1	0.3	0.0	8.6	3.8	0.0	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%), veh/ln	1.2	0.0	0.0	0.0	0.4	0.4	0.6	0.0	1.5	0.2	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	7.2	0.0	0.0	0.0	6.0	6.0	10.7	0.0	19.8	16.5	0.0	0.0
LnGrp LOS	A	A	A	A	A	A	B	A	B	B	A	A
Approach Vol, veh/h		465			377			540			39	
Approach Delay, s/veh		7.2			6.0			14.7			16.5	
Approach LOS		A			A			B			B	
Timer - Assigned Phs		2			4			6			8	
Phs Duration (G+Y+Rc), s		14.2			4.7			14.2			7.9	
Change Period (Y+Rc), s		* 4.2			3.7			* 4.2			3.7	
Max Green Setting (Gmax), s		* 21			11.3			* 21			26.3	
Max Q Clear Time (g_c+I1), s		7.6			2.6			4.0			4.1	
Green Ext Time (p_c), s		1.6			0.0			1.3			0.2	

Intersection Summary

HCM 6th Ctrl Delay	10.0
HCM 6th LOS	A

Notes

User approved volume balancing among the lanes for turning movement.

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

HCM 6th Signalized Intersection Summary
3: Los Amigos Rd & Arata Ln

W-Trans
01/03/2025

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↔		↔	↔		↔	↔	↔		↔	↔
Traffic Volume (veh/h)	85	385	122	11	229	35	70	17	6	20	11	40
Future Volume (veh/h)	85	385	122	11	229	35	70	17	6	20	11	40
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.98	1.00		0.98	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	92	418	133	12	249	38	76	18	7	22	12	43
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	201	527	168	39	473	72	430	360	140	248	101	197
Arrive On Green	0.11	0.39	0.39	0.02	0.30	0.30	0.06	0.28	0.28	0.12	0.12	0.12
Sat Flow, veh/h	1781	1351	430	1781	1579	241	1781	1273	495	782	811	1581
Grp Volume(v), veh/h	92	0	551	12	0	287	76	0	25	34	0	43
Grp Sat Flow(s), veh/h/ln	1781	0	1781	1781	0	1820	1781	0	1768	1593	0	1581
Q Serve(g_s), s	1.9	0.0	10.8	0.3	0.0	5.2	1.3	0.0	0.4	0.0	0.0	1.0
Cycle Q Clear(g_c), s	1.9	0.0	10.8	0.3	0.0	5.2	1.3	0.0	0.4	0.6	0.0	1.0
Prop In Lane	1.00		0.24	1.00		0.13	1.00		0.28	0.65		1.00
Lane Grp Cap(c), veh/h	201	0	695	39	0	545	430	0	501	349	0	197
V/C Ratio(X)	0.46	0.00	0.79	0.31	0.00	0.53	0.18	0.00	0.05	0.10	0.00	0.22
Avail Cap(c_a), veh/h	814	0	2169	316	0	1709	509	0	1480	1124	0	1003
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	16.4	0.0	10.6	19.0	0.0	11.5	12.2	0.0	10.3	15.4	0.0	15.5
Incr Delay (d2), s/veh	0.6	0.0	0.8	1.6	0.0	0.3	0.1	0.0	0.0	0.0	0.0	0.2
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%), veh/ln	0.7	0.0	3.2	0.1	0.0	1.7	0.4	0.0	0.1	0.2	0.0	0.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	17.0	0.0	11.4	20.6	0.0	11.8	12.3	0.0	10.3	15.4	0.0	15.7
LnGrp LOS	B	A	B	C	A	B	B	A	B	B	A	B
Approach Vol, veh/h		643			299			101			77	
Approach Delay, s/veh		12.2			12.1			11.8			15.6	
Approach LOS		B			B			B			B	
Timer - Assigned Phs		2		3	4		5	6		7		8
Phs Duration (G+Y+Rc), s		15.2		4.9	19.4		6.3	8.9		8.4		15.8
Change Period (Y+Rc), s		4.0		4.0	4.0		4.0	4.0		4.0		4.0
Max Green Setting (Gmax), s		33.0		7.0	48.0		4.0	25.0		18.0		37.0
Max Q Clear Time (g_c+I1), s		2.4		2.3	12.8		3.3	3.0		3.9		7.2
Green Ext Time (p_c), s		0.1		0.0	2.6		0.0	0.1		0.1		1.1

Intersection Summary

HCM 6th Ctrl Delay	12.4
HCM 6th LOS	B

HCM 6th TWSC
3: Los Amigos Rd & Arata Ln

W-Trans
03/06/2025

Intersection												
Int Delay, s/veh	13.6											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰	↱		↰	↱		↰	↱		↰	↱	
Traffic Vol, veh/h	29	433	104	12	516	51	107	12	11	23	12	56
Future Vol, veh/h	29	433	104	12	516	51	107	12	11	23	12	56
Conflicting Peds, #/hr	1	0	0	0	0	1	0	0	1	1	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	150	-	-	120	-	-	165	-	-	-	-	-
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	32	471	113	13	561	55	116	13	12	25	13	61

Major/Minor	Major1	Major2	Minor1	Minor2
Conflicting Flow All	617	0	0	584
Stage 1	-	-	-	-
Stage 2	-	-	-	-
Critical Hdwy	4.12	-	-	4.12
Critical Hdwy Stg 1	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-
Follow-up Hdwy	2.218	-	-	2.218
Pot Cap-1 Maneuver	963	-	-	991
Stage 1	-	-	-	-
Stage 2	-	-	-	-
Platoon blocked, %	-	-	-	-
Mov Cap-1 Maneuver	962	-	-	991
Mov Cap-2 Maneuver	-	-	-	-
Stage 1	-	-	-	-
Stage 2	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.5	0.2	121.2	27.1
HCM LOS			F	D

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	120	252	962	-	-	991	-	-	260
HCM Lane V/C Ratio	0.969	0.099	0.033	-	-	0.013	-	-	0.38
HCM Control Delay (s)	142.7	20.9	8.9	-	-	8.7	-	-	27.1
HCM Lane LOS	F	C	A	-	-	A	-	-	D
HCM 95th %tile Q(veh)	6.4	0.3	0.1	-	-	0	-	-	1.7

HCM 6th TWSC
3: Los Amigos Rd & Arata Ln

W-Trans
03/06/2025

Intersection												
Int Delay, s/veh	4.6											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰	↱		↰	↱		↰	↱		↰	↱	
Traffic Vol, veh/h	82	384	121	11	228	34	69	16	6	19	10	38
Future Vol, veh/h	82	384	121	11	228	34	69	16	6	19	10	38
Conflicting Peds, #/hr	0	0	0	0	0	0	1	0	0	0	0	1
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	150	-	-	120	-	-	165	-	-	-	-	-
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	89	417	132	12	248	37	75	17	7	21	11	41

Major/Minor	Major1	Major2	Minor1	Minor2
Conflicting Flow All	285	0	0	549
Stage 1	-	-	-	-
Stage 2	-	-	-	-
Critical Hdwy	4.12	-	-	4.12
Critical Hdwy Stg 1	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-
Follow-up Hdwy	2.218	-	-	2.218
Pot Cap-1 Maneuver	1277	-	-	1021
Stage 1	-	-	-	-
Stage 2	-	-	-	-
Platoon blocked, %	-	-	-	-
Mov Cap-1 Maneuver	1277	-	-	1021
Mov Cap-2 Maneuver	-	-	-	-
Stage 1	-	-	-	-
Stage 2	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	1.1	0.3	30.6	17.7
HCM LOS			D	C

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	196	279	1277	-	-	1021	-	-	357
HCM Lane V/C Ratio	0.383	0.086	0.07	-	-	0.012	-	-	0.204
HCM Control Delay (s)	34.3	19.1	8	-	-	8.6	-	-	17.7
HCM Lane LOS	D	C	A	-	-	A	-	-	C
HCM 95th %tile Q(veh)	1.7	0.3	0.2	-	-	0	-	-	0.8

HCM 6th TWSC
3: Los Amigos Rd & Arata Ln

W-Trans
03/06/2025

Intersection												
Int Delay, s/veh	14.2											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	30	434	105	12	516	51	107	12	11	24	13	58
Future Vol, veh/h	30	434	105	12	516	51	107	12	11	24	13	58
Conflicting Peds, #/hr	1	0	0	0	0	1	0	0	1	1	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	150	-	-	120	-	-	165	-	-	-	-	-
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	33	472	114	13	561	55	116	13	12	26	14	63

Major/Minor	Major1	Major2	Minor1	Minor2								
Conflicting Flow All	617	0	0	586	0	0	1248	1238	530	1225	1268	590
Stage 1	-	-	-	-	-	-	595	595	-	616	616	-
Stage 2	-	-	-	-	-	-	653	643	-	609	652	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	963	-	-	989	-	-	150	176	549	156	168	508
Stage 1	-	-	-	-	-	-	491	492	-	478	482	-
Stage 2	-	-	-	-	-	-	456	468	-	482	464	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	962	-	-	989	-	-	118	168	549	138	160	508
Mov Cap-2 Maneuver	-	-	-	-	-	-	118	168	-	138	160	-
Stage 1	-	-	-	-	-	-	474	475	-	461	475	-
Stage 2	-	-	-	-	-	-	382	461	-	442	448	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.5	0.2	126	28.1
HCM LOS			F	D

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	118	251	962	-	-	989	-	-	257
HCM Lane V/C Ratio	0.986	0.1	0.034	-	-	0.013	-	-	0.402
HCM Control Delay (s)	148.6	20.9	8.9	-	-	8.7	-	-	28.1
HCM Lane LOS	F	C	A	-	-	A	-	-	D
HCM 95th %tile Q(veh)	6.5	0.3	0.1	-	-	0	-	-	1.8

HCM 6th TWSC
3: Los Amigos Rd & Arata Ln

W-Trans
03/06/2025

Intersection												
Int Delay, s/veh	4.9											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	85	385	122	11	229	35	70	17	6	20	11	40
Future Vol, veh/h	85	385	122	11	229	35	70	17	6	20	11	40
Conflicting Peds, #/hr	0	0	0	0	0	0	1	0	0	0	0	1
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	150	-	-	120	-	-	165	-	-	-	-	-
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	92	418	133	12	249	38	76	18	7	22	12	43

Major/Minor	Major1	Major2	Minor1	Minor2								
Conflicting Flow All	287	0	0	551	0	0	990	980	485	973	1027	269
Stage 1	-	-	-	-	-	-	669	669	-	292	292	-
Stage 2	-	-	-	-	-	-	321	311	-	681	735	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1275	-	-	1019	-	-	225	250	582	231	234	770
Stage 1	-	-	-	-	-	-	447	456	-	716	671	-
Stage 2	-	-	-	-	-	-	691	658	-	440	425	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1275	-	-	1019	-	-	190	229	582	201	215	769
Mov Cap-2 Maneuver	-	-	-	-	-	-	190	229	-	201	215	-
Stage 1	-	-	-	-	-	-	415	423	-	664	663	-
Stage 2	-	-	-	-	-	-	632	650	-	386	394	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	1.2	0.3	32	18.2
HCM LOS			D	C

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	190	272	1275	-	-	1019	-	-	350
HCM Lane V/C Ratio	0.4	0.092	0.072	-	-	0.012	-	-	0.22
HCM Control Delay (s)	36.1	19.6	8	-	-	8.6	-	-	18.2
HCM Lane LOS	E	C	A	-	-	A	-	-	C
HCM 95th %tile Q(veh)	1.8	0.3	0.2	-	-	0	-	-	0.8

Appendix B

Biological Resources Reports

Appendix B-1: Special-Status Plant Species with Known or Potential Occurrence in the Vicinity of the Los Amigos Cottages Project site in Sonoma County, California

Scientific Name Common Name	Status Fed/State ESA CRPR	Habitat Requirements	Potential to Occur	Rationale
<i>Alopecurus aequalis</i> var. <i>sonomensis</i> Sonoma alopecurus	FE/None 1B.1	Perennial herb. Marshes and swamps and riparian scrub. Wet areas, marshes, and riparian banks, with other wetland species. Elevation: 15-1,200 feet. Blooms May-Jul.	Not expected	Suitable habitat for this species is not present within or adjacent to the project site.
<i>Amorpha californica</i> var. <i>napensis</i> Napa false indigo	None/None 1B.2	Perennial deciduous shrub. Openings in broadleaved upland forest, chaparral, and cismontane woodland. Elevation: 165-6,560 feet. Blooms Apr-Jul.	Low	Although there are some patches of woodland on the site, suitable habitat for this species is not present on or adjacent to the project site. The nearest documented occurrence is 4.27 miles north of the project site.
<i>Amsinckia lunaris</i> bent-flowered fiddleneck	None/None 1B.2	Annual herb. Cismontane woodland, coastal bluff scrub, and valley and foothill grassland. Elevation: 10-1,640 feet. Blooms Mar-Jun.	Low	Suitable habitat for this species may be present within and adjacent to the project site; however, the nearest documented occurrence is 10.05 miles southeast of the project site from 1940.
<i>Arctostaphylos bakeri</i> ssp. <i>bakeri</i> Baker's manzanita	None/SR 1B.1	Perennial evergreen shrub. Broadleaved upland forest and chaparral. Often on serpentine soils. Elevation: 245-985 feet. Blooms Feb-Apr.	Not expected	Suitable habitat for this species is not present within or adjacent to the project site. This species occurs above the elevation range of the project site.
<i>Arctostaphylos bakeri</i> ssp. <i>sublaevis</i> Cedars manzanita	None/SR 1B.2	Perennial evergreen shrub. Chaparral and closed-cone coniferous forest. In serpentine chaparral and sargent cypress woodland. Typically, in canyons and on slopes. Elevation: 605-2,495 feet. Blooms Feb-May.	Not expected	Suitable habitat for this species is not present within or adjacent to the project site. This species occurs above the elevation range of the project site.
<i>Arctostaphylos densiflora</i> Vine Hill manzanita	None/SE 1B.1	Perennial evergreen shrub. Chaparral. Acid marine sand. Elevation: 165-395 feet. Blooms Feb-Apr.	Not expected	Suitable habitat for this species is not present within or adjacent to the project site.
<i>Arctostaphylos stanfordiana</i> ssp. <i>decumbens</i> Rincon Ridge manzanita	None/None 1B.1	Perennial evergreen shrub. Chaparral and cismontane woodland. Highly restricted endemic	Not expected	Suitable habitat for this species is not present within or adjacent to the project site. This species occurs

Scientific Name Common Name	Status Fed/State ESA CRPR	Habitat Requirements	Potential to Occur	Rationale
		to red rhyolites in Sonoma County. Elevation: 245-1,215 feet. Blooms Feb-Apr(May).		above the elevation range of the project site.
<i>Astragalus claranus</i> Clara Hunt's milk-vetch	FE/SE 1B.1	Annual herb. Chaparral, cismontane woodland, and valley and foothill grassland. On clay or rocky substrates. Sometimes on serpentinite or volcanic substrates. Elevation: 245-900 feet. Blooms Mar-May.	Not expected	Suitable habitat for this species is not present within or adjacent to the project site. This species occurs above the elevation range of the project site.
<i>Astragalus rattanii</i> var. <i>jepsonianus</i> Jepson's milk-vetch	None/None 1B.2	Annual herb. Chaparral, cismontane woodland, and valley and foothill grassland. Often on serpentine soils. Elevation: 970-2,295 feet. Blooms Mar-Jun.	Not expected	Suitable habitat for this species is not present within or adjacent to the project site. This species occurs above the elevation range of the project site.
<i>Balsamorhiza macrolepis</i> big-scale balsamroot	None/None 1B.2	Perennial herb. Chaparral, cismontane woodland, and valley and foothill grassland. Sometimes on serpentine soils. Elevation: 150-5,100 feet. Blooms Mar-Jun.	Low	Suitable habitat for this species may be present within and adjacent to the project site; however, the nearest documented occurrence is 13.75 miles southeast of the project site.
<i>Blennosperma bakeri</i> Sonoma sunshine	FE/SE 1B.1	Annual herb. Valley and foothill grassland and vernal pools and swales. Elevation: 35-360 feet. Blooms Mar-May.	Not expected	Suitable vernal pool habitat for this species is not present within or adjacent to the project site.
<i>Brodiaea leptandra</i> narrow-anthered brodiaea	None/None 1B.2	Perennial bulbiferous herb. Broadleaved upland forest, chaparral, cismontane woodland, lower montane coniferous forest, and valley and foothill grassland. Volcanic substrates. Elevation: 360-3,000 feet. Blooms May-Jul.	Not expected	Suitable habitat for this species is not present within or adjacent to the project site. This species occurs above the elevation range of the project site.
<i>Calamagrostis crassiglumis</i> Thurber's reed grass	None/None 2B.1	Perennial rhizomatous herb. Coastal scrub and marshes and swamps. Usually in marshy swales surrounded by grassland or coastal scrub. Elevation: 35-195 feet. Blooms May-Aug.	Not expected	Suitable habitat for this species is not present within or adjacent to the project site.
<i>Calochortus raichei</i> Cedars fairy-lantern	None/None 1B.2	Perennial bulbiferous herb. Chaparral and closed-cone coniferous forest. Serpentine soils. Elevation: 655-1,610 feet. Blooms May-Aug.	Not expected	Suitable habitat for this species is not present within or adjacent to the project site. This species occurs above the elevation range of the project site.

Scientific Name Common Name	Status Fed/State ESA CRPR	Habitat Requirements	Potential to Occur	Rationale
<i>Carex comosa</i> bristly sedge	None/None 2B.1	Perennial rhizomatous herb. Coastal prairie, marshes and swamps, and valley and foothill grassland. Lake margins and wet places. Elevation: 0-2,050 feet. Blooms May-Sep.	Not expected	Suitable habitat for this species is not present within or adjacent to the project site.
<i>Castilleja uliginosa</i> Pitkin Marsh paintbrush	None/SE 1A	Hemiparasitic perennial herb. Marshes and swamps. Last known remaining plant died in 1987; was known from overgrown freshwater marsh. Elevation: 785 feet. Blooms Jun-Jul.	Not expected	Suitable habitat for this species is not present within or adjacent to the project site. This species is considered extirpated in California.
<i>Ceanothus confusus</i> Rincon Ridge ceanothus	None/None 1B.1	Perennial evergreen shrub. Chaparral, cismontane woodland, and closed-cone coniferous forest. Sometimes on serpentinite or volcanic substrates. Elevation: 245-3,495 feet. Blooms Feb-Jun.	Not expected	Suitable habitat for this species is not present within or adjacent to the project site. This species occurs above the elevation range of the project site.
<i>Ceanothus divergens</i> Calistoga ceanothus	None/None 1B.2	Perennial evergreen shrub. Chaparral. Rocky, serpentine or volcanic substrates. Elevation: 560-3,115 feet. Blooms Feb-Apr.	Not expected	Suitable habitat for this species is not present within or adjacent to the project site. This species occurs above the elevation range of the project site.
<i>Ceanothus foliosus</i> var. <i>vineatus</i> Vine Hill ceanothus	None/None 1B.1	Perennial evergreen shrub. Chaparral on sandy or acidic soils. Elevation: 150-1,000 feet. Blooms Mar-May.	Not expected	Suitable habitat for this species is not present within or adjacent to the project site.
<i>Ceanothus purpureus</i> holly-leaved ceanothus	None/None 1B.2	Perennial evergreen shrub. Chaparral and cismontane woodland. Rocky or volcanic substrates. Elevation: 395-2,100 feet. Blooms Feb-Jun.	Not expected	Suitable habitat for this species is not present within or adjacent to the project site. This species occurs above the elevation range of the project site.
<i>Ceanothus sonomensis</i> Sonoma ceanothus	None/None 1B.2	Perennial evergreen shrub. Chaparral. Sandy, serpentine or volcanic soils. Elevation: 705-2,625 feet. Blooms Feb-Apr.	Not expected	Suitable habitat for this species is not present within or adjacent to the project site. This species occurs above the elevation range of the project site.
<i>Centromadia parryi</i> ssp. <i>parryi</i> pappose tarplant	None/None 1B.2	Annual herb. Chaparral, coastal prairie, marshes and swamps, meadows and seeps, and valley and foothill grassland. Often on alkaline soils. Elevation: 0-1,380 feet. Blooms May-Nov.	Moderate	Although the site lacks alkaline soils, suitable habitat for this species is present within and adjacent to the project site and the nearest

Scientific Name Common Name	Status Fed/State ESA CRPR	Habitat Requirements	Potential to Occur	Rationale
				documented occurrence is 3.35 miles south of the project site.
<i>Chorizanthe valida</i> Sonoma spineflower	FE/SE 1B.1	Annual herb. Coastal prairie on sandy soils. Elevation: 35-1,000 feet. Blooms Jun-Aug.	Not expected	Suitable habitat for this species is not present within or adjacent to the project site.
<i>Clarkia imbricata</i> Vine Hill clarkia	FE/SE 1B.1	Annual herb. Chaparral and valley and foothill grassland. Acidic, loam, or sandy soils. Elevation: 165-245 feet. Blooms Jun-Aug.	Low	While suitable habitat for this species may be present within and adjacent to the project site, documented occurrences of this species are localized to an area 6.75 miles southwest of the project site.
<i>Cordylanthus tenuis</i> ssp. <i>capillaris</i> Pennell's bird's-beak	FE/SR 1B.2	Hemiparasitic annual herb. Chaparral and closed-cone coniferous forest. Serpentine soils. Elevation: 150-1,000 feet. Blooms Jun-Sep.	Not expected	Suitable habitat for this species is not present within or adjacent to the project site.
<i>Cryptantha dissita</i> serpentine cryptantha	None/None 1B.2	Annual herb. Chaparral. Serpentine outcrops. Elevation: 1,295-1,905 feet. Blooms Apr-Jun.	Not expected	Suitable habitat for this species is not present within or adjacent to the project site. This species occurs above the elevation range of the project site.
<i>Cuscuta obtusiflora</i> var. <i>glandulosa</i> Peruvian dodder	None/None 2B.2	Parasitic annual vine. Freshwater marshes and swamps. Elevation: 50-920 feet. Blooms Jul-Oct.	Not expected	Suitable habitat for this species is not present within or adjacent to the project site.
<i>Delphinium bakeri</i> Baker's larkspur	FE/SE 1B.1	Perennial herb. Broadleaved upland forest, coastal scrub, and valley and foothill grassland. Only site occurs on northwest-facing slopes, on decomposed shale. Historically known from grassy areas along fencelines. Elevation: 260-1,000 feet. Blooms Mar-May.	Not expected	Suitable habitat for this species is not present within or adjacent to the project site. This species occurs above the elevation range of the project site.
<i>Delphinium luteum</i> golden larkspur	FE/SR 1B.1	Perennial herb. Chaparral, coastal prairie, and coastal scrub. North-facing rocky slopes. Elevation: 0-330 feet. Blooms Mar-May.	Not expected	Suitable habitat for this species is not present within or adjacent to the project site.
<i>Downingia pusilla</i> dwarf downingia	None/None 2B.2	Annual herb. Valley and foothill grassland and vernal pools. Vernal lake and pool margins with a variety of associates. In several types of vernal pools. Elevation: 5-1,460 feet. Blooms Mar-May.	Not expected	Suitable vernal pool habitat for this species is not present within or adjacent to the project site.

Scientific Name Common Name	Status Fed/State ESA CRPR	Habitat Requirements	Potential to Occur	Rationale
<i>Eastwoodiella californica</i> swamp harebell	None/None 1B.2	Bogs and fens, closed-cone coniferous forest, coastal prairie, freshwater marshes and swamps, meadows and seeps, and North Coast coniferous forest. Mesic sites. Elevation: 5-1,330 feet. Blooms Jun-Oct.	Not expected	Suitable habitat for this species is not present within or adjacent to the project site.
<i>Erigeron greenei</i> Greene's narrow-leaved daisy	None/None 1B.2	Perennial herb. Chaparral. Serpentine and volcanic substrates, generally in shrubby vegetation. Elevation: 260-3,295 feet. Blooms May-Sep.	Not expected	Suitable habitat for this species is not present within or adjacent to the project site. This species occurs above the elevation range of the project site.
<i>Erigeron serpentinus</i> serpentine daisy	None/None 1B.2	Perennial herb. Chaparral. Serpentine seeps. Elevation: 195-2,200 feet. Blooms May-Aug.	Not expected	Suitable habitat for this species is not present within or adjacent to the project site.
<i>Eriogonum nervulosum</i> Snow Mountain buckwheat	None/None 1B.2	Perennial rhizomatous herb. Chaparral. Dry serpentine outcrops, balds, and barrens. Elevation: 985-6,905 feet. Blooms Jun-Sep.	Not expected	Suitable habitat for this species is not present within or adjacent to the project site. This species occurs above the elevation range of the project site.
<i>Fritillaria liliacea</i> fragrant fritillary	None/None 1B.2	Perennial bulbiferous herb. Cismontane woodland, coastal prairie, coastal scrub, and valley and foothill grassland. Often on serpentine or clay soils. Elevation: 10-1,345 feet. Blooms Feb-Apr.	Moderate	Suitable habitat for this species is present within and adjacent to the project site, and the nearest documented occurrence is 4.53 miles northwest of the project site.
<i>Gilia capitata</i> ssp. <i>tomentosa</i> woolly-headed gilia	None/None 1B.1	Annual herb. Coastal bluff scrub and valley and foothill grassland. Rocky outcrops. Sometimes on serpentine soils. Elevation: 35-720 feet. Blooms May-Jul.	Not expected	Suitable habitat for this species is not present within or adjacent to the project site and the nearest documented occurrence is approximately 11 miles southwest of the project site and is from 1947.
<i>Gratiola heterosepala</i> Boggs Lake hedge-hyssop	None/SE 1B.2	Annual herb. Marshes and swamps and vernal pools. Clay soils. Sometimes on lake margins. Elevation: 35-7,790 feet. Blooms Apr-Aug.	Not expected	Suitable habitat for this species is not present within or adjacent to the project site.
<i>Hemizonia congesta</i> ssp. <i>congesta</i>	None/None 1B.2	Annual herb. Valley and foothill grassland. Grassy valleys and hills, often in fallow fields; sometimes	Moderate	Suitable habitat for this species is present within and adjacent to the project site. The nearest

Scientific Name Common Name	Status Fed/State ESA CRPR	Habitat Requirements	Potential to Occur	Rationale
congested-headed hayfield tarplant		along roadsides. Elevation: 65-1,835 feet. Blooms Apr-Nov.		documented occurrence is 0.3 mile west of the project site.
<i>Hesperolinon bicarpellatum</i> two-carpellate western flax	None/None 1B.2	Annual herb. Serpentine barrens at edge of chaparral. Elevation: 195-3,295 feet. Blooms (Apr)May-Jul.	Not expected	Suitable habitat for this species is not present within or adjacent to the project site.
<i>Horkelia tenuiloba</i> thin-lobed horkelia	None/None 1B.2	Perennial herb. Broadleaved upland forest, chaparral, and valley and foothill grassland. Mesic openings in sandy soils. Elevation: 165-1,640 feet. Blooms May-Jul(Aug).	Not expected	Suitable mesic habitat and sandy soils for this species is not present within or adjacent to the project site.
<i>Kopsiopsis hookeri</i> small groundcone	None/None 2B.3	Parasitic perennial rhizomatous herb. North Coast coniferous forest. Open woods, shrubby places, generally on Gaultheria shallon. Elevation: 295- 2,905 feet. Blooms Apr-Aug.	Not expected	Suitable habitat for this species is not present within or adjacent to the Project site. This species occurs above the elevation range of the project site.
<i>Lasthenia burkei</i> Burke's goldfields	FE/SE 1B.1	Annual herb. Meadows and seeps and vernal pools. Elevation: 50-1,970 feet. Blooms Apr-Jun.	Not expected	Suitable vernal pool habitat for this species is not present within or adjacent to the project site.
<i>Lasthenia californica</i> ssp. <i>bakeri</i> Baker's goldfields	None/None 1B.2	Perennial herb. Closed-cone coniferous forest, coastal scrub, marshes and swamps, and meadows and seeps. Elevation: 195-1,705 feet. Blooms Apr-Oct.	Not expected	Suitable habitat for this species is not present within or adjacent to the project site.
<i>Layia septentrionalis</i> Colusa layia	None/None 1B.2	Annual herb. Chaparral, cismontane woodland, and valley and foothill grassland. Scattered colonies in fields and grassy slopes in sandy or serpentine soil. Elevation: 330-3,595 feet. Blooms Apr-May.	Not expected	Suitable habitat for this species is not present within or adjacent to the Project site. This species occurs above the elevation range of the project site.
<i>Legenere limosa</i> legenere	None/None 1B.1	Annual herb. In beds of vernal pools. Elevation: 5- 2,885 feet. Blooms Apr-Jun.	Not expected	Suitable habitat for this species is not present within or adjacent to the project site.
<i>Leptosiphon jepsonii</i> Jepson's leptosiphon	None/None 1B.2	Annual herb. Chaparral, cismontane woodland, valley and foothill grassland. Open to partially shaded grassy slopes. On volcanics or the periphery of serpentine substrates. Elevation: 330- 1,640 feet. Blooms Mar-May.	Not expected	Suitable habitat for this species is not present within or adjacent to the project site. This species occurs above the elevation range of the project site.

Scientific Name Common Name	Status Fed/State ESA CRPR	Habitat Requirements	Potential to Occur	Rationale
<i>Lessingia arachnoidea</i> Crystal Springs lessingia	None/None 1B.2	Annual herb. Cismontane woodland, coastal scrub, and valley and foothill grassland. Grassy slopes on serpentine; sometimes on roadsides. Elevation: 195-655 feet. Blooms Jul-Oct.	Not expected	Suitable habitat for this species is not present within or adjacent to the project site.
<i>Lilium pardalinum</i> ssp. <i>pitkinense</i> Pitkin Marsh lily	FE/SE 1B.1	Perennial bulbiferous herb. Cismontane woodland, marshes and swamps, and meadows and seeps. Saturated, sandy soils with grasses and shrubs. Elevation: 115-215 feet. Blooms Jun-Jul.	Not expected	Suitable habitat for this species is not present within or adjacent to the project site.
<i>Limnanthes vinculans</i> Sebastopol meadowfoam	FE/SE 1B.1	Annual herb. Meadows and seeps, valley and foothill grassland, and vernal pools. Swales, wet meadows and marshy areas in valley oak savanna; on poorly drained soils of clays and sandy loam. Elevation: 50-1,000 feet. Blooms Apr-May.	Not expected	Suitable vernal pool and meadow habitat for this species is not present within or adjacent to the project site.
<i>Lupinus sericatus</i> Cobb Mountain lupine	None/None 1B.2	Perennial herb. Broadleaved upland forest, chaparral, cismontane woodland, and lower montane coniferous forest. In stands of knobcone pine-oak woodland, on open wooded slopes in gravelly soils; sometimes on serpentine soils. Elevation: 900-5,005 feet. Blooms Mar-Jun.	Not expected	Suitable habitat for this species is not present within or adjacent to the project site. This species occurs above the elevation range of the project site.
<i>Microseris paludosa</i> marsh microseris	None/None 1B.2	Perennial herb. Cismontane woodland, closed-cone coniferous forest, coastal scrub, and valley and foothill grassland. Elevation: 15-1,165 feet. Blooms Apr-Jun(Jul).	Moderate	Suitable habitat for this species is present within and adjacent to the project site, and the nearest documented occurrence is 0.37 miles west of the project site, although it is from 1981.
<i>Navarretia leucocephala</i> ssp. <i>bakeri</i> Baker's navarretia	None/None 1B.1	Annual herb. Cismontane woodland, lower montane coniferous forest, meadows and seeps, valley and foothill grassland, and vernal pools. Adobe or alkaline soils. Elevation: 15-5,710 feet. Blooms Apr-Jul.	Not expected	Suitable habitat for this species is not present within or adjacent to the project site.
<i>Navarretia leucocephala</i> ssp. <i>plieantha</i> many-flowered navarretia	FE/SE 1B.2	Annual herb. Volcanic ash flow vernal pools. Elevation: 100-3,115 feet. Blooms May-Jun.	Not expected	Suitable vernal pool habitat for this species is not present within or adjacent to the project site.

Scientific Name Common Name	Status Fed/State ESA CRPR	Habitat Requirements	Potential to Occur	Rationale
<i>Penstemon newberryi</i> var. <i>sonomensis</i> Sonoma beardtongue	None/None 1B.3	Perennial herb. Chaparral. Crevices in rock outcrops and talus slopes. Elevation: 2,295-4,495 feet. Blooms Apr-Aug.	Not expected	Suitable habitat for this species is not present within or adjacent to the project site. This species occurs above the elevation range of the project site.
<i>Piperia candida</i> white-flowered rein orchid	None/None 1B.2	Perennial herb. Broadleaved upland forest, lower montane coniferous forest, and North Coast coniferous forest. Sometimes on serpentine soil. Elevation: 100-4,300 feet. Blooms (Mar)May-Sep.	Not expected	Suitable habitat for this species is not present within or adjacent to the project site.
<i>Pleuropogon hooverianus</i> North Coast semaphore grass	None/ST 1B.1	Perennial rhizomatous herb. Broadleaved upland forest, meadows and seeps, and North Coast coniferous forest. Wet grassy, usually shady areas, sometimes freshwater marsh; associated with forest environments. Elevation: 35-2,200 feet. Blooms Apr-Jun.	Not expected	Suitable forest habitat for this species is not present within or adjacent to the project site.
<i>Rhynchospora alba</i> white beaked-rush	None/None 2B.2	Perennial rhizomatous herb. Bogs and fens, marshes and swamps, and meadows and seeps. Freshwater sphagnum bogs. Elevation: 195-6,695 feet. Blooms Jun-Aug.	Not expected	Suitable marsh habitat for this species is not present within or adjacent to the project site.
<i>Rhynchospora californica</i> California beaked-rush	None/None 1B.1	Perennial rhizomatous herb. Bogs and fens, lower montane coniferous forest, marshes and swamps, and meadows and seeps. Open marshy areas. Elevation: 150-3,315 feet. Blooms May-Jul.	Not expected	Suitable marsh habitat for this species is not present within or adjacent to the project site.
<i>Rhynchospora capitellata</i> brownish beaked-rush	None/None 2B.2	Perennial herb. Lower montane coniferous forest, marshes and swamps, meadows and seeps, and upper montane coniferous forest. Mesic sites. Elevation: 150-6,560 feet. Blooms Jul-Aug.	Not expected	Suitable marsh habitat for this species is not present within or adjacent to the project site.
<i>Rhynchospora globularis</i> round-headed beaked-rush	None/None 2B.1	Perennial rhizomatous herb. Freshwater marshes and swamps. Elevation: 150-195 feet. Blooms Jul-Aug.	Not expected	Suitable marsh habitat for this species is not present within or adjacent to the project site.
<i>Sidalcea oregana</i> ssp. <i>valida</i> Kenwood Marsh checkerbloom	FE/SE 1B.1	Perennial rhizomatous herb. Marshes and swamps. Edges of freshwater marshes. Elevation: 375-490 feet. Blooms Jun-Sep.	Not expected	Suitable marsh habitat for this species is not present within or adjacent to the project site. This species occurs above the elevation range of the project site.

Scientific Name Common Name	Status Fed/State ESA CRPR	Habitat Requirements	Potential to Occur	Rationale
<i>Streptanthus brachiatus</i> ssp. <i>hoffmanii</i> Freed's jewelflower	None/None 1B.2	Perennial herb. Chaparral and cismontane woodland. Serpentine rock outcrops, primarily in geothermal development areas. Elevation: 1,610-4,005 feet. Blooms May-Jul.	Not expected	Suitable habitat for this species is not present within or adjacent to the project site. This species occurs above the elevation range of the project site.
<i>Streptanthus glandulosus</i> ssp. <i>hoffmanii</i> Hoffman's bristly jewelflower	None/None 1B.3	Annual herb. Chaparral, cismontane woodland, and valley and foothill grassland. Moist, steep rocky banks, in serpentine and non-serpentine soils. Elevation: 395-1,560 feet. Blooms Mar-Jul.	Not expected	Suitable habitat for this species is not present within or adjacent to the project site. This species occurs above the elevation range of the project site.
<i>Stuckenia filiformis</i> ssp. <i>alpina</i> northern slender pondweed	None/None 2B.2	Aquatic perennial rhizomatous herb. Marshes and swamps. Shallow, clear water of lakes and drainage channels. Elevation: 985-7,055 feet. Blooms May-Jul.	Not expected	Suitable aquatic habitat for this species is not present within or adjacent to the project site. This species occurs above the elevation range of the project site.
<i>Trifolium amoenum</i> two-fork clover	FE/None 1B.1	Annual herb. Coastal bluff scrub and valley and foothill grassland. Sometimes on serpentine soil, open sunny sites, swales. Most recently cited on roadside and eroding cliff faces. Elevation: 15-1,360 feet. Blooms Apr-Jun.	Low	Although suitable habitat for this species may be present in and adjacent to the project site, the nearest documented occurrence is 8.54 miles southeast of the project site from 1929.
<i>Trifolium buckwestiorum</i> Santa Cruz clover	None/None 1B.1	Annual herb. Broadleaved upland forest, cismontane woodland, and coastal prairie. Moist grassland. Gravelly margins. Elevation: 345-2,000 feet. Blooms Apr-Oct.	Not expected	Suitable habitat for this species is not present within or adjacent to the project site. This species occurs above the elevation range of the project site.
<i>Trifolium hydrophilum</i> saline clover	None/None 1B.2	Annual herb. Marshes and swamps, valley and foothill grassland, and vernal pools. Mesic or alkaline sites. Elevation: 0-985 feet. Blooms Apr-Jun.	Not expected	Suitable habitat for this species is not present within or adjacent to the project site.
<i>Triquetrella californica</i> coastal triquetrella	None/None 1B.2	Moss. Coastal bluff scrub and coastal scrub. Grows within 100 feet of the coast in coastal scrub, grasslands and in open gravels on roadsides, hillsides, rocky slopes, and fields. On gravel or thin soil over outcrops. Elevation: 35-330 feet.	Not expected	Suitable habitat for this species is not present within or adjacent to the project site.

Scientific Name Common Name	Status Fed/State ESA CRPR	Habitat Requirements	Potential to Occur	Rationale
<i>Viburnum ellipticum</i> oval-leaved viburnum	None/None 2B.3	Perennial deciduous shrub. Chaparral, cismontane woodland, and lower montane coniferous forest. Elevation: 705-4,595 feet. Blooms May-Jun.	Not expected	Suitable habitat for this species is not present within or adjacent to the project site. This species occurs above the elevation range of the project site.
Status (Federal/State)		CRPR (CNPS California Rare Plant Rank)		
FE = Federal Endangered		1A = Presumed extirpated in California, and rare or extinct elsewhere		
FT = Federal Threatened		1B = Rare, Threatened, or Endangered in California and elsewhere		
FPE = Federal Proposed Endangered		2A = Presumed extirpated in California, but common elsewhere		
FPT = Federal Proposed Threatened		2B = Rare, Threatened, or Endangered in California, but more common elsewhere		
FC = Federal Candidate		3 = Need more information (Review List)		
SE = State Endangered		4 = Limited Distribution (Watch List)		
ST = State Threatened		CRPR Threat Code Extension		
SCE = State Candidate Endangered		.1 = Seriously endangered in California (>80% of occurrences threatened/high degree and immediacy of threat)		
SCT = State Candidate Threatened		.2 = Moderately threatened in California (20-80% of occurrences threatened/moderate degree and immediacy of threat)		
SR = State Rare		.3 = Not very endangered in California (<20% of occurrences threatened/low degree and immediacy of threat)		

Appendix B-2: Special-status Wildlife Species with Known or Potential Occurrence in the Vicinity of the Los Amigos Cottages Project in Sonoma County, California

Scientific Name Common Name	Status Fed/State ESA CDFW	Habitat Requirements	Potential to Occur	Rationale
Invertebrates				
<i>Bombus occidentalis</i> western bumble bee	None/SCE	Western bumblebee habitat requirements include availability of suitable colony nesting sites, floral resources to obtain nectar and pollen throughout the duration of the colony period (spring, summer and fall), and suitable overwintering sites for queens. Most bumble bees are primitively eusocial insects that live in colonies composed of a queen, workers, and, near the end of the season, reproductive members of the colony (new queens, or gynes, and males). Nest sites typically include underground cavities and open west-southwest slopes bordered by trees. Little is known about hibernacula or overwintering sites.	Not expected	The project site is outside of the species currently known range.
<i>Danaus plexippus plexippus</i> monarch - California overwintering population	FC/None	Monarch adults make massive, multi-generation migrations from spring to fall, flying thousands of miles to breed along the California coast and central Mexico. Monarchs stop to feed on flower nectar and to roost together at night. During warm winter days, the butterflies may take moisture and flower nectar. Most mating happens before they journey north in the spring, when females lay single eggs along the way under host plant (milkweed, <i>Asclepias</i> sp.) leaves; caterpillars eat flowers and leaves. Overwintering sites along the California coast are important for conservation of this species.	Moderate	Suitable floral resources (i.e. milkweed) that would support egg laying and larval development may be present within the project site.
<i>Syncaris pacifica</i> California freshwater shrimp	FE/SE	Endemic to Marin, Napa, and Sonoma counties. Found in low elevation, low gradient streams where riparian cover is moderate to heavy. Shallow pools away from main streamflow. Winter: undercut banks with exposed roots. Summer: leafy branches touching water.	Not expected	Suitable aquatic habitat for this species is not present in or adjacent to the project site.
Fish				

Scientific Name Common Name	Status Fed/State ESA CDFW	Habitat Requirements	Potential to Occur	Rationale
<i>Hesperoleucus venustus navarroensis</i> northern coastal roach	None/None SSC	Habitat generalists. Found generally in a wide variety of habitats in the Navarro River and Russian River basins where there is cover (e.g. fallen trees) and where alien predators are absent. Most abundant in tributaries with clear, well oxygenated water with dominant substrates of cobble and boulder, and shallow depths (average 4-20 inches) with pools up to 3 feet deep.	Not expected	Suitable aquatic habitat for this species is not present in or adjacent to the project site.
<i>Hysteroecarpus traskii pomo</i> Russian River tule perch	None/None SSC	Low elevation streams of the Russian River system. Requires clear, flowing water with abundant cover. They also require deep (> 3 feet) pool habitat.	Not expected	Suitable aquatic habitat for this species is not present in or adjacent to the project site.
<i>Mylopharodon conocephalus</i> hardhead	None/None SSC	Low to mid-elevation streams in the Sacramento-San Joaquin drainage. Also present in the Russian River. Clear, deep pools with sand-gravel-boulder bottoms and slow water velocity. Not found where exotic centrarchids predominate.	Not expected	Suitable aquatic habitat for this species is not present in or adjacent to the project site.
<i>Oncorhynchus kisutch</i> coho salmon (central California coast ESU)	FE/SE	Federal listing refers to populations between Punta Gorda and San Lorenzo River. State listing refers to populations south of Punta Gorda. Requires beds of loose, silt-free, coarse gravel for spawning. Also needs cover, cool water, and sufficient dissolved oxygen.	Not expected	Suitable aquatic habitat for this species is not present in or adjacent to the project site.
<i>Oncorhynchus mykiss irideus</i> steelhead (central California coast DPS)	FT/None SSC	DPS includes all naturally spawned populations of steelhead (and their progeny) in streams from the Russian River to Aptos Creek, Santa Cruz County, California (inclusive). Also includes the drainages of San Francisco and San Pablo Bays. Regardless of life history strategy, for the first year or two of life, rainbow trout and steelhead are found in cool, clear, fast-flowing permanent streams and rivers where riffles predominate over pools, there is ample cover from riparian vegetation or undercut banks, and invertebrate life is diverse and abundant.	Not expected	Suitable aquatic habitat for this species is not present in or adjacent to the project site.

Reptiles

Scientific Name Common Name	Status Fed/State ESA CDFW	Habitat Requirements	Potential to Occur	Rationale
<i>Actinemys marmorata</i> northwestern pond turtle	FPT/None SSC	Northwestern pond turtles are found in rivers, lakes, streams, ponds, wetlands, ephemeral creeks, reservoirs, agricultural ditches, estuaries, and brackish waters. They prefer areas that provide cover from predators, such as vegetation and algae, as well as basking sites for thermoregulation. Adults tend to favor deeper, slow-moving water, whereas hatchlings search for slow and shallow water that is slightly warmer. Terrestrial habitats are used for egg laying and wintering and usually consist of burrows in leaves and soil within 300 feet of water. They are rarely found at elevations above 5,000 feet.	Not expected	Suitable aquatic habitat is not present in or adjacent to (within 300 feet of) the project site.
Amphibians				
<i>Ambystoma californiense</i> California tiger salamander (Sonoma County DPS)	FE/ST	Lives in vacant or mammal-occupied burrows throughout most of the year; in grassland, savanna, or open woodland habitats. Need underground refuges, especially ground squirrel burrows, and vernal pools or other seasonal water sources for breeding.	Low	Although suitable breeding habitat may be present for this species in the parcel north of the project, and suitable upland habitat may be present on the site, the Sonoma County DPS is concentrated approximately 7 miles south of the site, and the northernmost occurrence from that population is approximately 6.5 miles south of the project site.
<i>Dicamptodon ensatus</i> California giant salamander	None/None SSC	Known from wet coastal forests near streams and seeps from Mendocino County south to Monterey County, and east to Napa County. Aquatic larvae found in cold, clear streams, occasionally in lakes and ponds. Adults known from wet forests under rocks and logs near streams and lakes.	Not expected	Suitable habitat for this species is not present in or adjacent to the project site.
<i>Rana boylei</i> foothill yellow-legged frog (North Coast DPS)	None/None SSC	Foothill yellow-legged frog frequents rocky streams and rivers with rocky substrate and open, sunny banks, in forests, chaparral, and woodlands. Sometimes found in isolated pools, vegetated backwaters, and deep, shaded, spring-	Not expected	Suitable habitat for this species is not present in or adjacent to the project site.

Scientific Name Common Name	Status Fed/State ESA CDFW	Habitat Requirements	Potential to Occur	Rationale
		fed pools. Foothill yellow-legged frogs rarely stray more than several feet from a water source.		
<i>Rana draytonii</i> California red-legged frog	FT/None SSC	Lowlands and foothills in or near permanent sources of deep water with dense, shrubby or emergent riparian vegetation. Requires 11-20 weeks of permanent water for larval development. Must have access to upland estivation habitat.	Not expected	Suitable habitat for this species is not present in or adjacent to the project site.
<i>Taricha rivularis</i> red-bellied newt	None/None SSC	Coastal drainages from Humboldt County south to Sonoma County, inland to Lake County. Isolated population of uncertain origin in Santa Clara County. Lives in terrestrial habitats, juveniles generally underground, adults active at surface in moist environments. Will migrate over 3,250 feet to breed, typically in streams with moderate flow and clean, rocky substrate.	Not expected	Suitable habitat for this species is not present in or adjacent to the project site.
Birds				
<i>Agelaius tricolor</i> tricolored blackbird	None/ST SSC	Highly colonial species, most numerous in Central Valley and vicinity. Largely endemic to California. Requires open water, protected nesting substrate, and foraging area with insect prey within a few kilometers of the colony, typically agricultural grain fields or pastures.	Not expected	Suitable habitat for this species is not present in or adjacent to the project site.
<i>Athene cunicularia</i> burrowing owl	None/SCE SSC	Open, dry annual or perennial grasslands, deserts, and scrublands characterized by low-growing vegetation. Subterranean nester, dependent upon burrowing mammals, most notably, the California ground squirrel.	Not expected	Although annual grassland is present on the site, it is only mowed twice per year and this species avoids tall grasses where visibility is limited. In addition, the density of trees and shrubs on the site likely precludes this species from occurring. The nearest documented occurrence is near the Sonoma County Airport approximately 3 miles south of the site.
<i>Coturnicops noveboracensis</i> yellow rail	None/None SSC	Yellow rail is highly secretive and its range and abundance is incompletely known because of this. They prefer densely vegetated marshes, and sedge	Not expected	Suitable habitat for this species is not present in or adjacent to the project site.

Scientific Name Common Name	Status Fed/State ESA CDFW	Habitat Requirements	Potential to Occur	Rationale
		marshes/meadows with moist soil or shallow standing water for breeding. They are very rare, but currently known to winter in a few coastal marshes along the Pacific coast and Suisun Marsh near Fairfield, California.		
<i>Elanus leucurus</i> white-tailed kite	None/None FP	Rolling foothills and valley margins with scattered oaks and river bottomlands or marshes next to deciduous woodland. Open grasslands, meadows, or marshes for foraging close to isolated, dense-topped trees for nesting and perching.	Moderate	Suitable nesting and foraging habitat for this species is present in and adjacent to the project site and this species is known to occur in Sonoma County.
<i>Strix occidentalis caurina</i> northern spotted owl	FT/ST	Older stands of forested habitats that contain multi-layered, multi-species canopy with moderate to high canopy closure. Stands typically contain a high number of trees with large cavities and other types of deformities, including large snags (standing dead trees), an abundance of large, dead wood on the ground, and open space within and below the upper canopy for spotted owls to fly. Prey items include primarily flying squirrels and dusky-footed woodrats, as well as mice, voles, rabbits, birds and bats.	Not expected	Suitable habitat for this species is not present in or adjacent to the project site.
Mammals				
<i>Antrozous pallidus</i> pallid bat	None/None SSC	Found in a variety of habitats including deserts, grasslands, shrublands, woodlands, and forests. Most common in open, dry habitats with rocky areas for roosting. Roosts in crevices of rock outcrops, caves, mine tunnels, buildings, bridges, and hollows of live and dead trees which must protect bats from high temperatures. Very sensitive to disturbance of roosting sites.	Moderate	Suitable roosting and foraging habitat for this species is present in and adjacent to the project site and this species is known to occur in Sonoma County.
<i>Arborimus pomo</i> Sonoma tree vole	None/None SSC	Occurs in the North coast fog belt from Oregon border to Sonoma County. Habitats include Douglas-fir, redwood and montane hardwood-conifer forests. Feeds almost exclusively on Douglas-fir needles. Will occasionally take	Not expected	Suitable habitat for this species is not present in or adjacent to the project site.

Scientific Name Common Name	Status Fed/State ESA CDFW	Habitat Requirements	Potential to Occur	Rationale
		needles of grand fir, hemlock, or spruce. Nests in trees and may use old nests of birds, squirrels, or woodrats.		
<i>Corynorhinus townsendii</i> Townsend's big-eared bat	None/None SSC	Occurs throughout California in a wide variety of habitats. Most common in mesic sites, typically coniferous or deciduous forests. Roosts in the open, hanging from walls, ceilings in caves, lava tubes, bridges, and buildings. Forages in forested habitats along open edges. This species is extremely sensitive to human disturbance.	Moderate	Suitable roosting habitat for this species may be present on adjacent properties and foraging habitat is present on the project site. There is a documented occurrence of this species approximately 0.75-mile southwest of the site from 2017.
<i>Lasiurus frantzii</i> western red bat	None/None SSC	Roosts primarily in foliage of trees, 2-40 feet above ground, from sea level up through mixed conifer forests. Prefers habitat edges and mosaics with trees that are protected from above and open below with open areas for foraging.	Moderate	Suitable roosting and foraging habitat for this species is present in and adjacent to the project site and this species is known to occur in Sonoma County.
<i>Pekania pennanti</i> Fisher	None/None SSC	Intermediate to large-tree stages of coniferous forests and deciduous-riparian areas with high percent canopy closure. Uses cavities, snags, logs and rocky areas for cover and denning. Needs large areas of mature, dense forest.	Not expected	Suitable habitat for this species is not present in or adjacent to the project site.
<i>Taxidea taxus</i> American badger	None/None SSC	American badger is most abundant in drier open stages of most shrub, forest, and grassland habitats with friable soils. It digs burrows for cover and will reuse burrows occasionally, but may also dig new burrows each night in the summer. The diet consists of rodents, small mammals, reptiles, insects, birds and carrion.	Low	Although there may be suitable habitat for this species on the project site, development and regular human disturbance in the vicinity of the site likely precludes this species from occurring. Documented occurrences of this species in Sonoma County are concentrated in the foothills and less developed areas, and the nearest documented occurrence is approximately 7 miles east of the site.
Status (Federal/State)				
DPS =	Distinct Population Segment	SC =	State Candidate	
FC =	Federal Candidate	SCE =	State Candidate Endangered	

Scientific Name Common Name		Status Fed/State ESA CDFW	Habitat Requirements	Potential to Occur	Rationale
FD =	Federal Delisted		SCT =	State Candidate Threatened	
FE =	Federal Endangered		SD =	State Delisted	
FP =	CDFW Fully Protected		SE =	State Endangered	
FPE =	Federal Proposed Endangered		SR =	State Rare	
FPT =	Federal Proposed Threatened		SSC =	CDFW Species of Special Concern	
FT =	Federal Threatened		ST =	State Threatened	

**SPECIAL-STATUS PLANT REPORT
FOR THE
±62-ACRE ARATA LANE STUDY AREA
TOWN OF WINDSOR, SONOMA COUNTY, CALIFORNIA**



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APPENDICES

Appendix A. Potentially-occurring Special-status Plants in the Vicinity of the Arata Lane Study Area	
Appendix B. Plant Species Observed within the Arata Lane Study Area	

SPECIAL-STATUS PLANT REPORT **±62-ACRE ARATA LANE STUDY AREA,** **TOWN OF WINDSOR, SONOMA COUNTY, CA**

INTRODUCTION

Salix Consulting, Inc. (Salix) conducted a rare plant survey on the ±62-acre Arata Lane study area, in the process of being annexed to the Town of Windsor, in central Sonoma County, California. The study area is located north of Arata Lane and near the intersection of U.S. Route 101. It is situated in Section 2, Township 8 North and Range 8 West on the Healdsburg, California 7.5-minute USGS topographic quadrangle (Figure 1). The approximate coordinates for the property are: 38°33' 44.92" N and 122°49' 12.26" W.

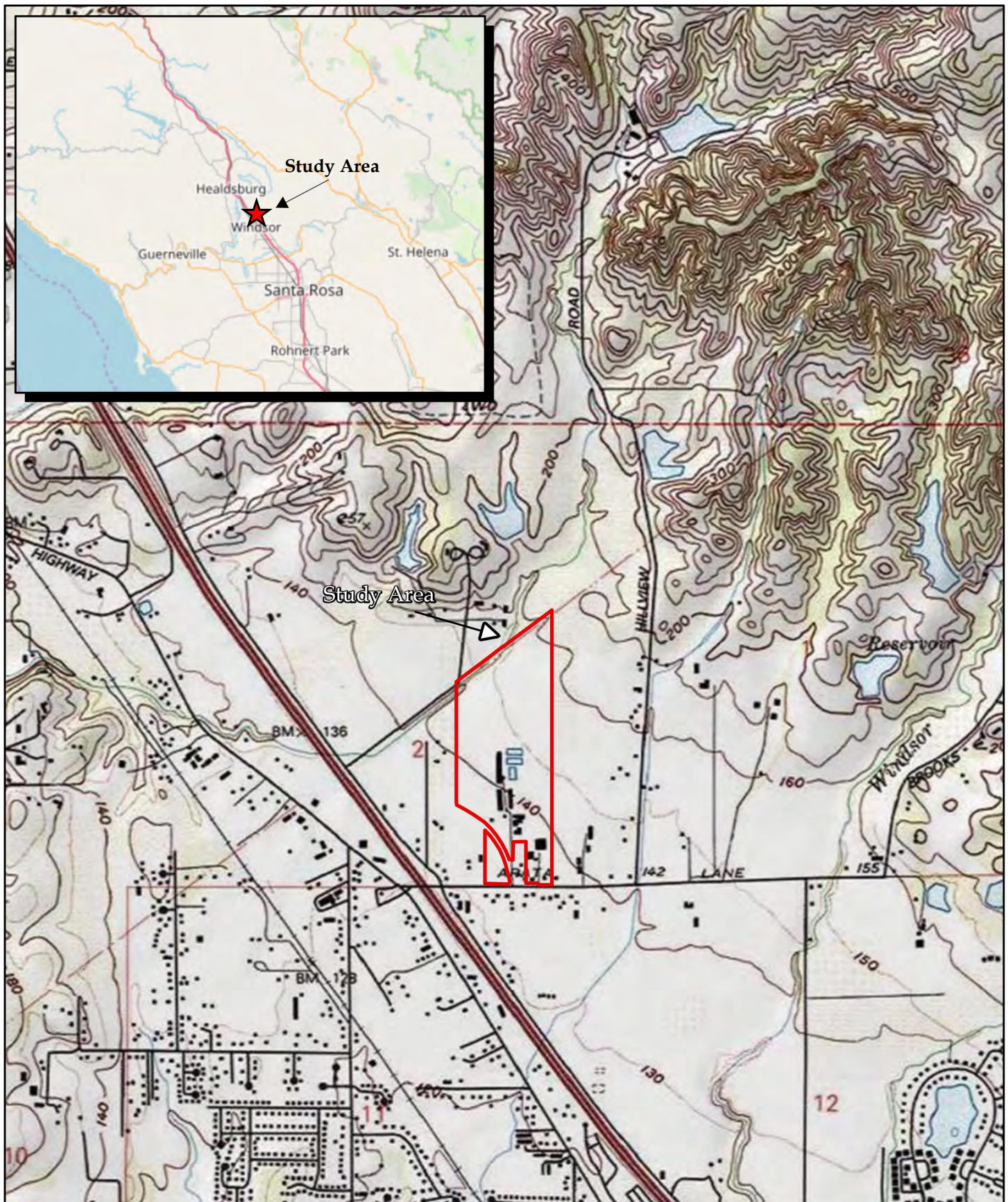
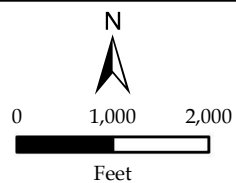
The site is located in the Russian River Valley, approximately two miles from the Russian River, at elevations ranging from approximately 140 feet in the southwest corner of the study area to 160 feet in the northeast corner. The study area is largely pasture and ruderal grassland, used mostly for horse grazing. The parcel contains several residences and associated outbuildings, including livestock shelters. Adjacent land uses include single-family residential development to the south, rural residential and agricultural uses to the west and east, and to the north by agricultural land (vineyards) (Figure 2).

While the Town has not specifically requested the survey, the Santa Rosa Plain Conservation Strategy (SRPCS) study area includes most of Windsor's urban growth boundary and includes the Arata Lane property (USFWS 2005). The majority of the "Windsor Listed Plant Conservation Area" is located south of the Town. However, a small portion of Conservation Area is located just west of the Arata Lane property, on the west side of Hwy. 101, in an area that appears to be zoned "Gateway Commercial." The Arata Lane parcel is not included in this small portion of the Conservation Area. However, due to its proximity, the Arata Lane parcel is close enough to be included in any database search for listed species. The listed plants of concern in the SRPCS include Burke's goldfields (*Lasthenia burkei*), Sonoma sunshine (*Blennosperma bakeri*), Sebastopol meadowfoam (*Limnanthes vinculans*), and many-flowered navarretia (*Navarretia leucocephala* ssp. *plieantha*).

Salix studied this area in March 2015 while conducting a preliminary wetland delineation and observed no special-status plants at that time. The purpose of this rare plant survey is to determine presence or absence of 1) the listed plants of concern in the SRPCS as well as their primary constituent elements (PCEs), 2) and any other special-status plant species with potential to occur.

METHODS

Salix queried the California Natural Diversity Data Base (CNDDB 2018) prior to conducting the rare plant survey. The five-quadrangle search area included the Healdsburg, Geyserville, Santa Rosa, Mark West Springs, and Guerneville USGS quadrangles. Salix also queried the California Native Plant Society Inventory (CNPS 2018) for reported occurrences of special-status plant species within the five-quad area. Figure 3 illustrates special-status plant species occurrences reported by the CNDDB within a 5-mile radius of the study area.



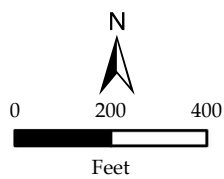
Source Maps: USGS Topographic Map
Healdsburg Quad 1:24,000
S02 T08N R09W

Figure 1

SITE AND VICINITY MAP

Arata Lane

Town of Windsor, Sonoma County, CA



 Study Area
(±62 acres)

Imagery: 4-20-18 Salix Consulting, Inc.

Figure 2

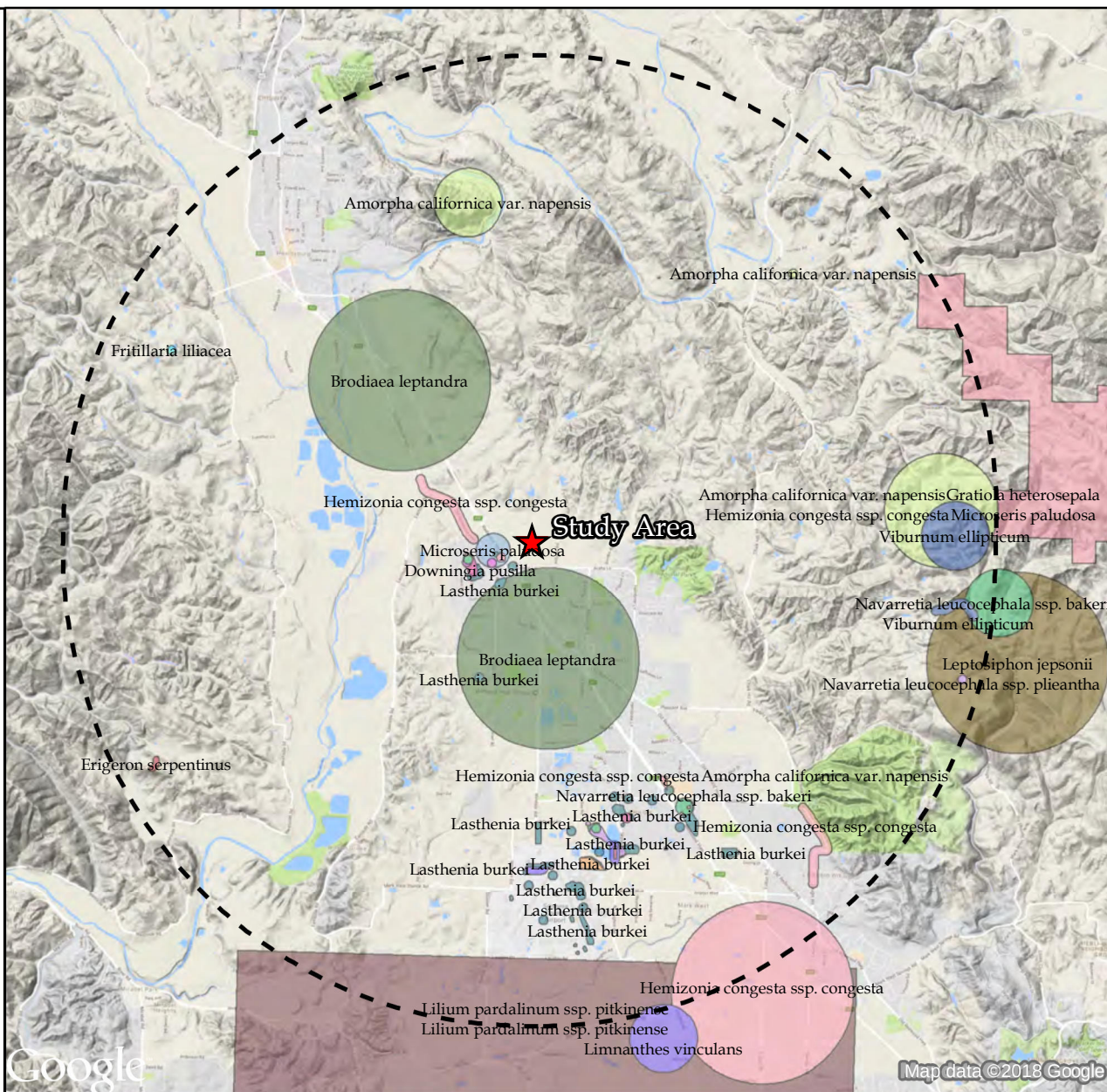
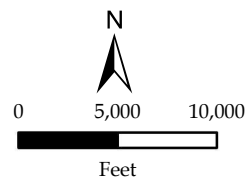
AERIAL MAP

Arata Lane

Town of Windsor, Sonoma County, CA

CNDDDB Special-Status Species

- Amorpha californica* var. *napensis*
- Blennosperma bakeri*
- Brodiaea leptandra*
- Centromadia parryi* ssp. *parryi*
- Cordylanthus tenuis* ssp. *capillaris*
- Downingia pusilla*
- Erigeron serpentinus*
- Fritillaria liliacea*
- Gratiola heterosepala*
- Hemizonia congesta* ssp. *congesta*
- Lasthenia burkei*
- Leptosiphon jepsonii*
- Lilium pardalinum* ssp. *pitkinense*
- Limnanthes vinctans*
- Microseris paludosa*
- Navarretia leucocephala* ssp. *bakeri*
- Navarretia leucocephala* ssp. *plieantha*
- Viburnum ellipticum*



★ Site ⋯ 5-Mile Buffer

Figure 3

CNDDDB OCCURRENCES MAP

Arata Lane

Town of Windsor, Sonoma County, CA

Of the 35 plant species identified in the CNDDB and CNPS queries, 22 species were determined to have no potential to occur within the study area due to the lack of suitable habitats or substrates (Appendix A).

Thirteen (13) species were determined to have some potential to occur within the study area and are listed in Appendix A. The list was further refined to exclude plants for which habitat components did not occur within the study area and to include the targeted species listed in Table 1 below. These are discussed in detail in the Findings section below and were the focus of the field survey. All of these species occur within a 5-mile radius of the study area (Figure 3).

Table 1. Special-Status Plant Species Determined to Have Potential to Occur within the Arata Lane Study Area or listed in the SRPCP as a species of concern					
Species	Status*			Habitat	Potential for Occurrence Within Study Area**
	Federal	State	CNPS		
Plants					
Burke's goldfields <i>Lasthenia burkeid</i>	FE	CE	1B.1	Meadows and seeps (mesic), Vernal pools	Unlikely. Wetland habitat marginal; wetlands too shallow.
Sonoma sunshine <i>Blennosperma bakeri</i>	FE	CE	1B.1	Valley and foothill grassland (mesic), Vernal pools	Unlikely. Wetland habitat marginal; wetlands too shallow
Sebastopol meadowfoam <i>Limnanthes vinculans</i>	FE	CE	1B.1	Meadows and seeps, Valley and foothill grassland, Vernal pools, vernally mesic	Possible. Marginal habitat in seasonal wetlands and swales.
many-flowered navarretia <i>Navarretia leucocephala</i> <i>ssp. plieantha</i>	FE	CE	1B.2	Vernal pools (volcanic ash flow)	Unlikely. Wetland habitat marginal; wetlands too shallow.
congested-headed hayfield tarplant <i>Hemizonia congesta, ssp.</i> <i>congesta</i>	-	-	1B.2	Valley and foothill grassland, sometimes roadsides	Unlikely. Marginal habitat present in pastures.
dwarf downingia <i>Downingia pusilla</i>	-	-	2B.2	Valley and foothill grassland (mesic), Vernal pools	Unlikely. Seasonal wetland habitat marginal.

<p align="center">Table 1. Special-Status Plant Species Determined to Have Potential to Occur within the Arata Lane Study Area or listed in the SRPCP as a species of concern</p>				
Species	Status*			Potential for Occurrence Within Study Area**
	Federal	State	CNPS	

***Status Codes:**

Federal

FE Federal Endangered

State

CE California Endangered

CNPS

Rank 1B Rare, Threatened, or Endangered in California

Rank 2 R, T, or E in California, more common elsewhere

1- Seriously threatened in California

2- Fairly threatened in California

****Definitions for the Potential to Occur:**

None. No suitable habitat (or nesting habitat) present within the study area.

Unlikely: Minimal or marginal quality habitat in the study area. Disturbance or other activities may restrict or eliminate possibility of species occurring.

Possible. Suitable habitat occurs within the study area. Study area within range of species.

Likely. Study area provides desirable habitat for species and there is a very high probability for its occurrence. Species documented to occur nearby in similar habitat.

Observed: Species was observed within the study area.

Field surveys were conducted on the site on April 20 and May 24 by Jeff Glazner. In addition, the site was evaluated in March 2015 during a preliminary wetland delineation and rare plant survey. The study area was walked along meandering transects, focusing on areas with the highest potential to support special status species. A list of target species is presented in Table 1. Plant species observed during the surveys are presented in Appendix B.

FINDINGS

Hydrology

The study area occurs in the Russian River watershed (Hydrologic Unit Code 18010110). One unnamed tributary to the Russian River occurs along the northern boundary of the study area. This drainage flows in a south-westerly direction and leaves the study area at the intersection of the northern and western study area boundaries. The drainage flows west under US Highway 101 and into the Russian River less than 2 miles west of the site.

Soils

Three soil units have been mapped within the study area (Figure 3) and include the following (NRCS 2015):

Cole silt loam, 0 to 2 percent slopes

The Cole series consists of very deep, somewhat poorly-drained soils that formed in alluvium from mixed sources. They display poor runoff and slow permeability. Cole soils are on river terraces, basins flood plains, or on alluvial fans with slopes of 0 to 5 percent. Mean annual precipitation is 25 to 50 inches, and elevations are 50 to 1,500 feet. Cole soils are used mostly for production of orchards, vineyards, truck crops, and irrigated pasture. Uncultivated areas have oak-grass vegetation with some shrubs and forbs.

Cole silt loam, 0-2 percent slopes have a depth to restrictive layer of more than 80 inches and depth to water table of about 12 to 48 inches.

***Huichica loam, ponded, 0 to 5 percent slopes and
Huichica loam, 0 to 2 percent slopes***

Huichica soils occur in gently sloping, smooth to hummocky floodplains under grass and scattered oaks, at elevations of 100 to 150 feet in the coastal valleys of Napa and Sonoma Counties. They are imperfectly drained, runoff is slow, and permeability is moderately slow to very slow.

The parent material for both Huichica loam ponded, 0 to 5 % slopes and Huichica loam, 0 to 2 percent slopes is alluvium derived from igneous, metamorphic and sedimentary rock. Depth to restrictive feature is 20 to 40 inches to duripan, and these soils are moderately well-drained.

None of these soil units are restrictive, or otherwise present growing conditions that restrict plant growth, or would increase the probability to support special status plant species.

Biological Communities

Within the study area, three (3) biological communities were identified as shown in Table 1. Biological communities are illustrated in Figure 4, and representative site photos (aerial obliques and ground) are presented in Figures 5a through 5d.

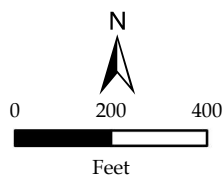
Table 1 Biological Communities within the Arata Lane Study Area	
Habitat Component	Approximate Acreage
Annual Grassland	46
Developed/Disturbed	14
Foothill Woodland	2
Total	62

Annual Grassland

Annual grassland habitat occupies the majority of the site. The grassland is in variable states of use and disturbance. The property contains many outbuildings and infrastructure that supports farm and livestock activities. Most of the species occupying the site are common and weedy due to the ongoing disturbance. Common species in the grassland include soft chess (*Bromus hordeaceus*), ripgut grass (*Bromus diandrus*), winter vetch (*Vicia villosa*), long-beaked hawkbit (*Leontodon saxatilis*), cut-leaf geranium (*Geranium dissectum*), California burclover (*Medicago polymorpha*), wall barley (*Hordeum murinum*), silver European hairgrass (*Aira caryophylla*), English plantain (*Plantago lanceolata*), spiny-fruit buttercup (*Ranunculus muricatus*), sheep sorrel (*Rumex acetosella*), and white clover (*Trifolium repens*).

Habitat Components

- Annual Grassland (±46 acres)
- Developed/Disturbed (±14 acres)
- Foothill Woodland (±2 acres)



Study Area
(±62 acres)

Imagery: 4-20-18 Salix Consulting, Inc.

Figure 4

HABITAT MAP

Arata Lane

Town of Windsor, Sonoma County, CA

Seasonal wetlands are embedded in the annual grassland habitat (Figure 4). Corresponding flora is discussed below in the waters of the U.S. section.

Foothill Woodland

Foothill Woodland occurs in one dense band along the northern boundary in association with an intermittent stream. The primary trees include coast live oak (*Quercus agrifolia*), valley oak (*Quercus lobata*), and California bay (*Umbellularia californica*). Shrubs in the oak woodland and scattered in other areas of the site include poison oak (*Toxicodendron diversilobum*), Himalayan blackberry (*Rubus armeniacus*), coyote brush (*Baccharis pilularis*), and California buckeye (*Aesculus californica*), and oak saplings.

Disturbed/Developed/Ruderal

Disturbed developed areas occur in the southern half of the study area including residential compounds and associated livestock areas and outbuildings. Vegetation is quite variable among these areas and is primarily weedy or ornamental. Many trees and shrubs are planted throughout including Eucalyptus (*Eucalyptus spp.*), redwood (*Sequoia sempervirens*), and white mulberry (*Morus alba*). These areas are unvegetated but support a ruderal flora of local weeds and ornamentals.

Waters of the U.S.

The property contains waters of the U.S. in the form of an intermittent stream, seasonal wetlands and wetland swales, and ditches (Figure 6). In general, the site is sloped from northeast to southwest and water flows through the property along this shallow gradient. Wetlands are present but are shallow.

The intermittent stream carries high velocity short seasonal flows from east to west. It is a deep scoured drainage and does not support a riparian community. The upper banks and adjacent areas support a dense stand of trees and shrubs as described in the Foothill Woodland section above.

Seasonal Wetlands occur at several locations in the property within the annual grassland habitat. These wetlands are all shallow and pond water only a few inches deep. They are not considered vernal pools due to their depth and dominant species.

Wetland swales are curvilinear drainages that meet the federal criteria as waters of the U.S. They support mostly facultative grasses.

The study area contains three ditches that meet waters of the U.S. criteria. One is located along Arata Lane, and two are located near the central portion of the study area. Both of the central ditches were excavated in relatively flat ground and contain seasonal water in a depressional landform.



5a-1: Looking southeast from northwest corner.
Photo Date 5-24-18



5a-2: Looking southwest from northeast corner.
Photo Date 5-24-18



Figure 5a

SITE PHOTOS

Arata Lane

Town of Windsor, Sonoma County, CA



5b-1: Looking south over southern portion of study area.
Photo Date 5-24-18



5b-2: Looking east over northeastern portion of study area.
Photo Date 5-24-18



Figure 5b

SITE PHOTOS

Arata Lane

Town of Windsor, Sonoma County, CA



SW-4. Shallow and dominated by *Plagiobothrys stipitatus* and *Festuca perennis*.
Photo date 4-20-18

Limnanthes douglasii subsp. *nivea*, a common meadowfoam species, in and around SW-3.
Photo date 4-20-18



SW-5 in horse corral.
Photo date 4-20-18



Looking northwest over SW-7.
Wetland is shallow and
supports *Rumex crispus* and
Festuca perennis.
Photo date 4-20-18



Looking northeast over SW-1.
Photo date 4-20-18



Looking east along Ditch 3.
Photo date 4-20-18

Potentially-occurring Special-Status Plant Species

Based on the query of the California Natural Diversity Data Base (CNDDB 2018) and the California Native Plant Society (CNPS 2018) Inventory of Rare and Endangered Plants, the following eight species were either determined to have some potential to occur within the study area due to the presence of marginal to suitable habitat or are species of concern in the SRPCS. All of these species have been reported to occur within a five-mile radius of the study area, as illustrated in Figure 3.

Sonoma sunshine (*Blennosperma bakeri*) is a small annual member of the sunflower family (Asteraceae). This species is both federally-listed and state-listed as endangered. It has CNPS Rank 1B.1. Sonoma sunshine has yellow flowers and is distinguished from the more common *B. nanum* by having dark red stigmas and upper leaves with only one to three lobes. The species is an obligate wetland plant and is found in vernal pools and other wet habitats in Sonoma County. It occurs at elevations ranging from 30 to 360 feet. Sonoma sunshine blooms between March and May.

The nearest reported occurrence of Sonoma sunshine is from 0.5 mile west of the study area between Santa Rosa and Healdsburg, on Promenade Lane, east of Herb Road, and just west of the junction of Starr Road and Old Redwood Highway, in mixed oak woodland/vernal pool complex. An eastern and a western polygon were mapped. In the western polygon, 40 plants were observed in 2006 but none by 2012. In the eastern polygon, more than 2000 plants were observed in 2006, and the population had increased to more than 266,240 plants by 2012.

It is unlikely that Sonoma sunshine occurs within the study area because the wetlands present are too shallow and provide only marginal habitat. It was not observed during the survey.

Dwarf downingia (*Downingia pusilla*) is a small annual member of the bellflower family (Campanulaceae). It has no state or federal status. It is ranked 2B.2 by CNPS. Dwarf downingia is distinguished from other members of the genus by having very small flowers that are not upside down at blooming time. The species is an obligate wetland plant that occurs primarily in vernal pools at elevations ranging from 0 to 1460 feet. It blooms from March to May, depending on the amount and distribution of winter rains.

The nearest reported occurrence of dwarf downingia is from 0.5 mile west of the study area, on both sides of Promenade Lane, west of Old Redwood Highway, about 1.25 miles north of Windsor. The location was mapped about 0.5 mile just north from where Arata Lane meets Highway 101 in vernal pools in an oak woodland. 80-100 plants were observed in 1992. Plants were seen at the southeast edge of the occurrence in 1996 and 2010.

It is unlikely that dwarf downingia occurs within the study area because the wetlands present are too shallow and provide only marginal habitat. It was not observed during the survey.

Congested-headed hayfield tarplant (*Hemizonia congesta* ssp. *congesta*), an annual member of the sunflower family (Asteraceae), has no state or federal listing but is a CNPS Rank 1B.2 species. It is a very glandular, spindly, thin-stemmed herb growing erect to 10 to 80 centimeters in height. Ray flowers are white with purple-veins. It grows in grassy areas, often near marshy edges, primarily near the coast. It blooms from April to November.

The nearest reported occurrence of congested-headed hayfield tarplant is less than 0.5 mile west of the study area, between Old Redwood Highway and Highway 101, near the northern end of Starr Road, Windsor, in a shallow depression in a grassy area. 100 thinly-scattered plants were observed in 1990.

Marginal habitat is present in the pastures within the study area. It is unlikely that the species occurs, and it was not observed during the survey.

Burke's goldfields (*Lasthenia burkei*) is an annual member of the sunflower family (Asteraceae) with state and federal endangered status. It has CNPS Rank 1B.1. It is differentiated from more common species of the genus by a number of technical characteristics. The fruits of Burke's goldfields are distinctive in having one long awn and numerous short scales. Burke's goldfields grow in vernal pools and other wet habitats in Lake, Mendocino, and Sonoma Counties. It blooms between April and June.

The nearest reported occurrence of Burke's goldfields is less than 0.5 mile west of the study area, at the junction of Highway 101 and Arata Lane, extending west to Herb Road, Windsor. Prior to development, the site was characterized as "excellent." An eastern polygon was extirpated by the highway; a polygon north of Promenade Lane (the Kerry Conservation Bank) had 10,000 plants in 1990 but none in 2008.

Habitat for Burke's goldfields is marginal within the study area because the wetlands present are too shallow and unsuitable. It was not observed during the survey.

Sebastopol meadowfoam (*Limnanthes vinculans*) is an annual member of the meadowfoam family (Limnanthaceae). It has state and federal endangered status and has CNPS Rank 1B.1. Sebastopol meadowfoam has white flowers and entire leaves. It grows in vernal pools and other wet habitats in Napa and Sonoma Counties. Sebastopol meadowfoam blooms in April and May.

The nearest reported occurrence of Sebastopol meadowfoam is three (3) miles south/southwest of the study area, at the northeast corner of the Sonoma County Airport, within the Sonoma County Airport Wildflower Preserve (the Airport Business Center mitigation site) south of an artificially-created vernal pool/swale habitat. The swale is now dominated by freshwater marsh perennials; adjacent irrigation may have altered the hydrology sufficiently to convert the swale into a persistent wetland.

Suitable habitat is present along the wetland swales and seasonal wetlands of the study area for Sebastopol meadowfoam. We observed snow white meadowfoam (*Limnanthes douglasii* subsp. *nivea*), a common species, in the study area but this was the only species of *Limnanthes* detected. Sebastopol meadowfoam was not observed during the survey.

Many-flowered navarretia (*Navarretia leucocephala* subsp. *pliantha*) is a low, spreading annual member of the phlox family (Polemoniaceae). It has state and federal endangered status and is on the CNPS Rank 1B. Many-flowered navarretia is distinguished from other subspecies by a variety of technical characteristics, but it has blue flowers and calyx lobes that are usually entire. It grows in vernal pools and other wet habitats in Lake and Sonoma Counties where it is said to prefer volcanic soils. It blooms from May to June.

The nearest reported occurrence of many-flowered navarretia is three miles south of the study area, approximately two miles south of Windsor, south of Saunders Road, where four colonies were mapped between 1986 and 1998 in vernal pools and swales.

It is unlikely that many-flowered navarretia occurs within the study area because the wetlands present are too shallow and provide only marginal habitat. It was not observed during the survey.

CONCLUSIONS

Salix Consulting conducted a rare plant survey of the Arata Lane project site located in Windsor in Sonoma County. A preliminary site assessment was conducted in March 2015 and two field surveys were conducted on April 20 and May 24, 2018. No special-status species were observed within the 62-acre study area.

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APPENDIX A

Potentially-occurring Special-status Plants in the Vicinity of the Arata Lane Study Area

Appendix A

Arata Lane - Potentially-occurring Special-status Plants

Family Taxon Common Name	Status*	Flowering Period	Habitat	Probability on Project Site
Adoxaceae				
<i>Viburnum ellipticum</i> Western viburnum	Fed: - State: - CNPS: Rank 2B.3	May-July	Chaparral; cismontane woodland; lower montane coniferous forest.	Unlikely. Site lacks necessary habitat components to support species.
Asteraceae (Compositae)				
<i>Balsamorhiza macrolepis</i> Big-scale balsam-root	Fed: - State: - CNPS: Rank 1B.2	March-June	Cismontane woodland; valley and foothill grassland; [sometimes serpentine].	Unlikely. Site lacks necessary habitat components to support species.
<i>Blennosperma bakeri</i> Sonoma sunshine	Fed: FE State: CE CNPS: Rank 1B.1	February-April	Valley and foothill grassland (mesic); vernal pools.	Unlikely. Wetlands onsite provide marginal habitat but are too shallow to support species.
<i>Centromadia parryi parryi</i> Pappose tarplant	Fed: - State: - CNPS: Rank 1B.2	May-November	Coastal prairie; meadows and seeps; marshes and swamps; vernally wet grassland (sometimes alkaline).	None. Site lacks alkaline areas and suitable wetland types.
<i>Erigeron serpentinus</i> Serpentine daisy	Fed: - State: - CNPS: Rank 1B.3	May-August	Chaparral (serpentine).	None. Site lacks serpentine soils.
<i>Hemizonia congesta congesta</i> Pale yellow hayfield tarplant	Fed: - State: - CNPS: Rank 1B.2	April-November	Valley and foothill grassland. 20 to 560 meters.	Unlikely. Marginal habitat in pastures.

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Arata Lane - Potentially-occurring Special-status Plants

Family Taxon Common Name	Status*	Flowering Period	Habitat	Probability on Project Site
<i>Lasthenia burkei</i> Burke's goldfields	Fed: FE State: CE CNPS: Rank 1B.1	April-June	Meadows (mesic); vernal pools.	Unlikely. Wetlands onsite provide marginal habitat but are too shallow to support species.
<i>Layia septentrionalis</i> Colusa layia	Fed: - State: - CNPS: Rank 1B.2	April-May	Chaparral; cismontane woodland, valley and foothill grassland; [sandy, serpentinite].	None. Site lacks serpentinite and sandy soils.
<i>Microseris paludosa</i> Marsh silverpuffs	Fed: - State: - CNPS: Rank 1B.2	April-June	Closed-cone coniferous forest; cismontane woodland; coastal scrub; valley and foothill grassland. 5-300 m.	None. Site lacks necessary habitat components to support species.
Boraginaceae				
<i>Amsinckia lunaris</i> Bent-flowered fiddleneck	Fed: - State: - CNPS: Rank 1B.2	March-June	Coastal bluff scrub; cismontane woodland; valley and foothill grassland	None. Site lacks necessary habitat components to support species.
Campanulaceae				
<i>Downingia pusilla</i> Dwarf downingia	Fed: - State: - CNPS: Rank 2B.2	March-May	Vernal pools and seasonal wetlands.	Unlikely. Marginal habitat in seasonal wetlands.
Cyperaceae				
<i>Carex comosa</i> Bristly sedge	Fed: - State: - CNPS: Rank 2B.1	May-September	Marshes and swamps.	None. Site lacks suitable wetland habitat.

Appendix A

Arata Lane - Potentially-occurring Special-status Plants

Family Taxon Common Name	Status*	Flowering Period	Habitat	Probability on Project Site
Ericaceae				
<i>Arctostaphylos bakeri sublaevis</i> The Cedars manzanita	Fed: - State: CR CNPS: Rank 1B.	April-May	closed-cone coniferous forest; chaparral; [serpentinite seeps].	None. Site lacks serpentinite soils.
<i>Arctostaphylos stanfordiana decumbens</i> Rincon manzanita	Fed: - State: - CNPS: Rank 1B.1	February-April	Chaparral (rhyolitic).	None. Site lacks chaparral.
Fabaceae (Leguminosae)				
<i>Amorpha californica napensis</i> Napa false indigo	Fed: - State: - CNPS: Rank 1B.2	April-July	Broadleaved upland forest (openings); chaparral, cismontane woodland. 150-2000 m.	None. Site lacks chaparral.
<i>Astragalus claranus</i> Clara Hunt's milkvetch	Fed: FE State: CT CNPS: Rank 1B.1	March-May	Cismontane woodland; valley and foothill grassland; [serpentinite, volcanic clay].	None. Site occurs below elevational limit of species.
<i>Lupinus sericatus</i> Cobb Mountain lupine	Fed: - State: - CNPS: Rank 1B.2	March-June	Chaparral; cismontane woodland; lower coniferous forest.	None. Site lacks open wooded slopes.
<i>Trifolium amoenum</i> Showy Indian clover	Fed: FE State: - CNPS: Rank 1B.1	April-June	Coastal bluff scrub; Valley and foothill grassland (sometimes serpentinite)	Unlikely. Marginal habitat in pastures. Typically occurs on mesic sites with an affinity for serpentine.

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Arata Lane - Potentially-occurring Special-status Plants

Family Taxon Common Name	Status*	Flowering Period	Habitat	Probability on Project Site
<i>Trifolium buckwestiorum</i> Santa Cruz clover	Fed: - State: - CNPS: Rank 1B.2	May-July	Broadleaf upland forest; coastal prairie; [margins].	Unlikely. Marginal habitat in pastures. Typically occurs in more wooded habitats nearer the coast.
<i>Trifolium hydrophilum</i> Saline clover	Fed: - State: - CNPS: Rank 1B.2	April-June	Marshes and swamps; valley and foothill grassland (mesic, alkaline); vernal pools. 0-300 m.	None. Site lacks alkaline areas.
Liliaceae				
<i>Calochortus raichei</i> Cedars fairy lantern	Fed: - State: - CNPS: Rank 1B.	May-August	Closed-cone coniferous forest; chaparral [serpentine].	None. Site lacks serpentine soils.
<i>Fritillaria liliacea</i> Fragrant fritillary	Fed: - State: - CNPS: Rank 1B.2	February-April	Coastal prairie; coastal scrub; valley and foothill grassland; [often serpentine].	None. Site lacks serpentine soils and other habitat components.
Limnanthaceae				
<i>Limnanthes vinculans</i> Sebastopol meadowfoam	Fed: FE State: CE CNPS: Rank 1B.1	April-May	Meadows (mesic); vernal pools.	Possible. Site provides marginal habitat in seasonal wetlands,
Orobanchaceae				
<i>Cordylanthus tenuis capillaris</i> Pennell's bird's-beak	Fed: FE State: CR CNPS: Rank 1B.2	June-July	Closed-cone coniferous forest; chaparral; [serpentine].	None. Site lacks serpentine soils.

Appendix A

Arata Lane - Potentially-occurring Special-status Plants

Family Taxon Common Name	Status*	Flowering Period	Habitat	Probability on Project Site
<i>Kopsiopsis hookeri</i> Small ground-cone	Fed: - State: - CNPS: Rank 2B.3	April-August	North coast coniferous forest.	None. Site lacks woodland habitat and suitable host plants.
Plantaginaceae				
<i>Gratiola heterosepala</i> Bogg's Lake hedge-hyssop	Fed: - State: CE CNPS: Rank 1B.2	April-August	Vernal pools.	Unlikely. Wetlands onsite are too shallow.
Polemoniaceae				
<i>Leptosiphon jepsonii</i> Jepson's leptosiphon	Fed: - State: - CNPS: Rank 1B.2	March-May	Chaparral; cismontane woodland (usually volcanic).	Unlikely. Typically occurs on slopes with woody vegetation, not present onsite.
<i>Navarretia leucocephala bakeri</i> Baker's navarretia	Fed: - State: - CNPS: Rank 1B.1	May-July	Cismontane woodland; lower montane coniferous forest; meadows (mesic); valley and foothill grassland; vernal pools.	Unlikely. Wetlands onsite are too shallow.
<i>Navarretia leucocephala plieantha</i> Many-flowered navarretia	Fed: FE State: CE CNPS: Rank 1B.2	May-June	Vernal pools (volcanic ash flow).	Unlikely. Wetlands onsite are too shallow.
Rhamnaceae				
<i>Ceanothus confusus</i> Rincon Ridge ceanothus	Fed: - State: - CNPS: Rank 1B.1	February-April	Closed-cone coniferous forest; chaparral; cismontane woodland; [volcanic or serpentinite].	None. Site lacks volcanic slopes and chaparral.

Appendix A

Arata Lane - Potentially-occurring Special-status Plants

Family Taxon Common Name	Status*	Flowering Period	Habitat	Probability on Project Site
<i>Ceanothus divergens</i> Calistoga ceanothus	Fed: - State: - CNPS: Rank 1B.2	March-April	Chaparral (serpentine or volcanic).	None. Site lacks volcanic or serpentine soils and chaparral.
<i>Ceanothus purpureus</i> Holly-leaf ceanothus	Fed: - State: - CNPS: Rank 1B.2	February-April	Chaparral (volcanic).	None. Site lacks volcanic soils and chaparral.
<i>Ceanothus sonomensis</i> Sonoma ceanothus	Fed: - State: - CNPS: Rank 1B.2	February-April	Chaparral (sandy, serpentine, or volcanic).	None. Site lacks volcanic or serpentine soils and chaparral.
Rosaceae				
<i>Horkelia tenuiloba</i> Thin-lobed horkelia	Fed: - State: - CNPS: Rank 1B.2	May-July	Chaparral (mesic openings).	None. Site lacks chaparral.
Themidaceae				
<i>Brodiaea leptandra</i> Narrow-flowered California brodiaea	Fed: - State: - CNPS: Rank 1B.2	May-July	Broadleaved upland forest; chaparral; lower montane coniferous forest. Volcanic.	None. Site lacks forest and chaparral and volcanic substrate.

Appendix A

Arata Lane - Potentially-occurring Special-status Plants

Family				
Taxon				
Common Name	Status*	Flowering Period	Habitat	Probability on Project Site

*Status

Federal:

FE - Federal Endangered
 FT - Federal Threatened
 FPE - Federal Proposed Endangered
 FPT - Federal Proposed Threatened
 FC - Federal Candidate
 FSS - Forest Service Sensitive
 FSW - Forest Service Watchlist

State:

CE - California Endangered
 CT - California Threatened
 CR - California Rare
 CSC - California Species of
 Special Concern

CNPS (California Native Plant Society - List.RED Code):

Rank 1A - Extinct
 Rank 1B - Plants rare, threatened, or endangered in California and elsewhere
 Rank 2A- Plants extinct in California, but more common elsewhere
 Rank 2B - Plants rare, threatened, or endangered in California, more common elsewhere
 Rank 3 - Plants about which more information is needed, a review list
 Rank 4 - Plants of limited distribution, a watch list
 RED Code
 1 - Seriously endangered (>80% of occurrences threatened)
 2 - Fairly endangered (20 to 80% of occurrences threatened)
 3 - Not very endangered (<20% of occurrences threatened)

APPENDIX B
Plant Species Observed During Field Surveys in the Study Area

Appendix B

Arata Lane - Plants Observed 2015 and 2018

Angiosperms - Dicots

Adoxaceae - Muskroot Family

Sambucus nigra

Black elderberry

Amaranthaceae - Amaranth Family

**Amaranthus retroflexus*

Rough pigweed

Anacardiaceae - Cashew or Sumac Family

Toxicodendron diversilobum

Western poison-oak

Apiaceae (Umbelliferae) - Carrot Family

**Conium maculatum*

Poison hemlock

**Torilis arvensis*

Field hedgeparsley

Asteraceae (Compositae) - Sunflower Family

Achillea millefolium

Common yarrow

Achyrachaena mollis

Blow-wives

**Anthemis cotula*

Mayweed

Baccharis pilularis

Coyote brush

**Carduus pycnocephalus*

Italian thistle

**Centaurea melitensis*

Tocalote

**Centaurea solstitialis*

Yellow starthistle

Centromadia fitchii

Fitch's spikeweed

**Cichorium intybus*

Chicory

**Cirsium vulgare*

Bull thistle

**Cotula coronopifolia*

Common brass-buttons

**Dittrichia graveolens*

Stinkwort

**Helminthotheca echioides*

Bristly ox-tongue

Heterotheca grandiflora

Telegraph weed

**Hypochaeris glabra*

Smooth cat's-ear

**Lactuca serriola*

Prickly lettuce

**Leontodon saxatilis*

Long-beaked hawkbit

**Logfia gallica*

Narrowleaf cottonrose

**Matricaria discoidea*

Pineapple-weed

Microseris acuminata

Sierra foothill microseris

**Pseudognaphalium luteoalbum*

Everlasting cudweed

**Senecio vulgaris*

Common groundsel

**Silybum marianum*

Milk thistle

**Sonchus oleraceus*

Common sow-thistle

**Taraxacum officinale*

Common dandelion

Boraginaceae - Borage Family

Amsinckia menziesii

Rancher's fireweed

Nemophila menziesii

Baby blue-eyes

Plagiobothrys stipitatus var. *micranthus*

Great Valley popcornflower

Brassicaceae (Cruciferae) - Mustard Family

Barbarea orthoceras

American wintercress

* Indicates a non-native species

Page 1 of 4

**Brassica nigra*
**Brassica rapa*
**Capsella bursa-pastoris*
Cardamine oligosperma
Lepidium nitidum
Lepidium strictum
**Raphanus sativus*
Rorippa curvisiliqua
**Sisymbrium officinale*

Caryophyllaceae - Pink Family

**Cerastium glomeratum*
Minuartia californica
**Spergularia rubra*
**Stellaria media*

Convolvulaceae - Morning-Glory Family

**Convolvulus arvensis*

Euphorbiaceae - Spurge Family

Croton setiger
**Euphorbia maculata*

Fabaceae (Leguminosae) - Legume Family

Acmispon americanus
Lupinus bicolor
Lupinus nanus
**Medicago polymorpha*
**Melilotus albus*
**Trifolium dubium*
Trifolium fucatum
**Trifolium hirtum*
Trifolium microcephalum
**Trifolium repens*
**Trifolium subterraneum*
Trifolium variegatum
**Vicia benghalensis*
**Vicia villosa*

Fagaceae - Oak Family

Quercus agrifolia var. *agrifolia*
Quercus kelloggii
Quercus lobata

Gentianaceae - Gentian Family

Zeltnera muehlenbergii

Geraniaceae - Geranium Family

**Erodium botrys*
**Erodium cicutarium*
**Erodium moschatum*
**Geranium dissectum*

Hypericaceae - St. John's Wort Family

**Hypericum perforatum* subsp. *perforatum*

Black mustard
Field mustard
Shepherd's purse
Western bitter-cress
Shining peppergrass
Peppergrass
Wild radish
Western yellow cress
Hedge mustard

Sticky mouse-ear chickweed
California sandwort
Ruby sand-spurrey
Common chickweed

Bindweed

Turkey mullein
Spotted spurge

Spanish lotus
Miniature lupine
Sky lupine
California burclover
White sweetcover
Little hop clover
Sour clover
Rose clover
Small-headed clover
White clover
Subterranean clover
Whitetip clover
Purple vetch
Winter vetch

Coast live oak
California black oak
Valley oak

June centaury

Broad-leaf filaree
Red-stem filaree
White-stem filaree
Cut-leaf geranium

Klamathweed

Juglandaceae - Walnut Family

Juglans hindsii

Northern California black walnut

Lamiaceae (Labiatae) - Mint Family

**Mentha pulegium*

Pennyroyal

Pogogyne douglasii

Douglas' mesa mint

Lauraceae - Laurel Family

Umbellularia californica

California bay

Limnanthaceae - Meadowfoam Family

Limnanthes douglasii subsp. *nivea*

Douglas' meadowfoam

Lythraceae - Loosestrife Family

**Lythrum hyssopifolia*

Hyssop loosestrife

Malvaceae - Mallow Family

**Malva neglecta*

Common mallow

**Malva parviflora*

Cheeseweed

Montiaceae - Miner's Lettuce Family

Calandrinia ciliata

Red maids

Claytonia perfoliata

Common miner's lettuce

Montia fontana

Blinks

Myrsinaceae - Myrsine Family

**Lysimachia arvensis*

Scarlet pimpernel

Onagraceae - Evening Primrose Family

Epilobium brachycarpum

Summer cottonweed

Orobanchaceae - Broomrape Family

Castilleja attenuata

Valley tassels

**Parentucellia viscosa*

Yellow glandweed

Triphysaria versicolor subsp. *faucibarbata*

Triphysaria

Papaveraceae - Poppy Family

Eschscholzia californica

California poppy

Plantaginaceae - Plantain Family

Callitriche marginata

Winged water-starwort

**Plantago coronopus*

Cut-leaf plantain

**Plantago lanceolata*

English plantain

Veronica peregrina subsp. *xalapensis*

Purslane speedwell

Polemoniaceae - Phlox Family

Navarretia intertexta

Needle-leaved navarretia

Polygonaceae - Buckwheat Family

**Rumex acetosella*

Sheep sorrel

**Rumex crispus*

Curly dock

**Rumex pulcher*

Fiddle dock

Portulacaceae - Purslane Family

**Portulaca oleracea*

Common purslane

Ranunculaceae - Buttercup Family

**Ranunculus muricatus*

Spiny-fruit buttercup

Rosaceae - Rose Family

Prunus sp.

Prunus

**Rubus armeniacus*

Himalayan blackberry

Rubiaceae - Madder Family*Galium aparine*

Goose grass

Salicaceae - Willow Family*Salix laevigata*

Red willow

Sapindaceae - Soapberry Family*Aesculus californica*

California buckeye

Angiosperms -Monocots

Alliaceae - Onion Family*Allium sp.*

Wild onion

Cyperaceae - Sedge Family*Cyperus eragrostis*

Tall flatsedge

Eleocharis macrostachya

Creeping spikerush

Iridaceae - Iris Family*Sisyrinchium bellum*

Western blue-eyed grass

Juncaceae - Rush Family*Juncus balticus subsp. ater*

Baltic rush

Juncus bufonius

Toad rush

Poaceae (Gramineae) - Grass Family**Aira caryophyllea*

Silver European hairgrass

**Avena fatua*

Wild oat

**Brachypodium distachyon*

Purple falsebrome

**Briza maxima*

Rattlesnake grass

**Briza minor*

Small quaking grass

**Bromus diandrus*

Ripgut grass

**Bromus hordeaceus*

Soft chess

**Bromus madritensis*

Foxtail brome

**Bromus madritensis subsp. rubens*

Red brome

**Cynodon dactylon*

Bermudagrass

**Cynosurus echinatus*

Hedgehog dogtail

**Dactylis glomerata*

Orchard grass

**Elymus caput-medusae*

Medusahead

**Festuca bromoides*

Brome fescue

**Festuca myuros*

Rattail sixweeks grass

**Festuca perennis*

Italian ryegrass

**Glyceria declinata*

Low mannagrass

Hordeum brachyantherum

Meadow barley

**Hordeum marinum subsp. gussoneanum*

Mediterranean barley

**Hordeum murinum*

Wall barley

Panicum capillare

Witchgrass

**Phalaris aquatica*

Harding grass

Pleuropogon californicus var. californicus

Annual semaphore grass

**Poa annua*

Annual bluegrass

**Polypogon monspeliensis*

Annual beard grass

**AQUATIC RESOURCES DELINEATION
FOR THE
±62-ACRE ARATA LANE STUDY AREA**

TOWN OF WINDSOR, SONOMA COUNTY, CALIFORNIA



Prepared for:

**Arata Properties, LLC
P.O. Box 2357
Healdsburg, CA 95448**

Prepared by:



**11601 Blocker Drive, Ste. 100
Auburn, California 95603
(530) 888-0130**

JUNE 2021

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AQUATIC RESOURCES DELINEATION FOR THE ±62-ACRE ARATA LANE STUDY AREA

INTRODUCTION

Location and Setting

Salix Consulting, Inc. (Salix) prepared an aquatic resources delineation for the ±62-acre Arata Lane Study Area located just outside the northern boundary of the Town of Windsor, in central Sonoma County, California. The study area is located north of Arata Lane and near the intersection of U.S. Route 101. It is situated in Section 2, Township 8 North and Range 8 West on the Healdsburg, California 7.5-minute USGS topographic quadrangle (Figure 1). The approximate coordinates for the property are: 38° 33' 44.92" N and 122° 49' 12.26" W.

The site is located in the Russian River Valley, approximately two miles from the Russian River, at elevations ranging from approximately 140 feet in the southwest corner of the study area to 160 feet in the northeast corner. The study area is primarily pasture and ruderal grassland, used mostly for horse grazing. Adjacent land uses include single-family residential development to the south, rural residential and agricultural uses to the west and east, and to the north by agricultural land (grapes) (Figure 2).

CONTACT INFORMATION

Property Representative:

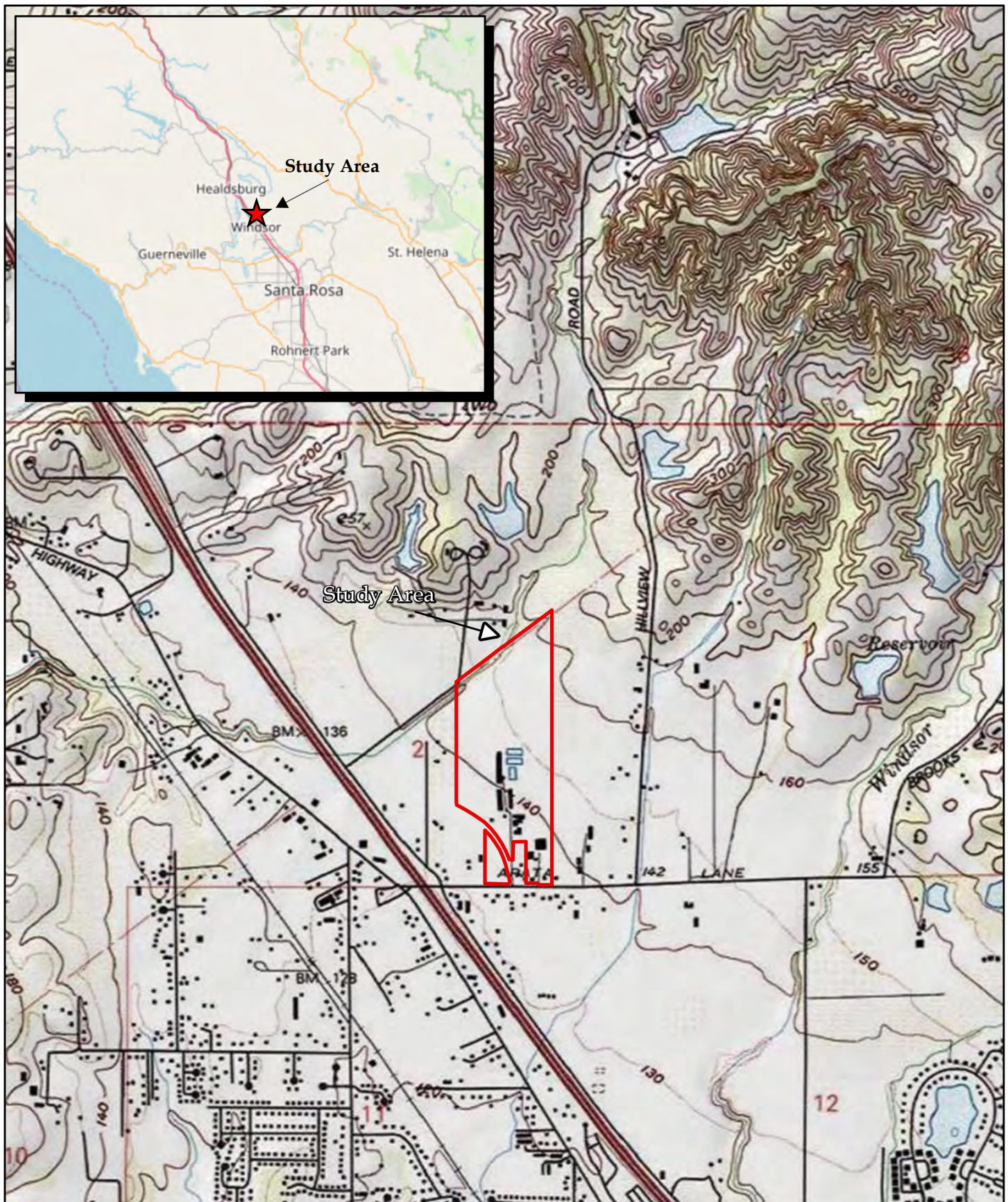
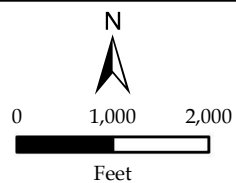
Willowglen Homes
P.O. Box 2357 Healdsburg, CA
95448 Phone: (707) 484-5944
Contact: Ben van Zutphen

Delineated by:

Salix Consulting, Inc.
11601 Blocker Drive, Ste. 100
Auburn, California 95603
Phone: (530) 888-0130
Contact: Jeff Glazner

METHODOLOGY

Salix assessed and mapped aquatic resources within the study area on several occasions between March of 2015 and April/May of 2018. This aquatic resources delineation was conducted May 6, 2021 by Jeff Glazner according to the 1987 Corps Manual (Environmental Laboratory 1987) as amended by the Arid West Regional Supplement (U.S. Army Corps of Engineers 2008). The delineation was conducted using standard techniques as outlined in the Corps manual.



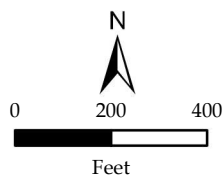
Source Maps: USGS Topographic Map
Healdsburg Quad 1:24,000
S02 T08N R09W

Figure 1

SITE AND VICINITY MAP

Arata Lane

Town of Windsor, Sonoma County, CA



 Study Area
(±62 acres)

Imagery: 5-6-21 Salix Consulting, Inc.

Figure 2

AERIAL MAP

Arata Lane

Town of Windsor, Sonoma County, CA

The property was examined by aerial photo interpretation and by several passes on foot and ATV to assess all the ground in the study area. An Unmanned Aerial Vehicle (UAV) was utilized to generate an aerial basemap of the study area and two-foot contour interval topographic mapping was obtained through Sonoma County. For areas exhibiting aquatic features, close examination was conducted, and fourteen three-parameter data forms were filled out detailing vegetation, soils, and hydrology (Appendix A). Potential aquatic resources were mapped using a Trimble GeoXT 6000 GPS (submeter).

Information on soils of the study area was obtained from the U.S. Department of Agriculture National Resource Conservation Service's online Web Soil Survey (NRCS 2021). In the field, a Munsell Color (2015) chart was used to determine moist soil colors. Appendix B is a list of plants observed during the delineation, along with the scientific name and wetland status of each species. Where a plant species observed has a wetland indicator status (not UPL), plant nomenclature follows the National Wetland Plant List, version 3.4 (USACE 2018). Otherwise, species names are according to *The Jepson Flora Project (Jepson eflora)* or more recent publications if the nomenclature for any species has changed.

FINDINGS

Climate

Windsor has a Mediterranean climate with cool, wet winters and warm, dry summers. The hottest month is July, averaging 85°, and the coolest month is January, averaging a low of 38°. Annual precipitation averages 41", nearly all of which occurs as rainfall between November and April. The wettest months of the year are December through February, with an average rainfall around 6 inches **in February**.

Soils

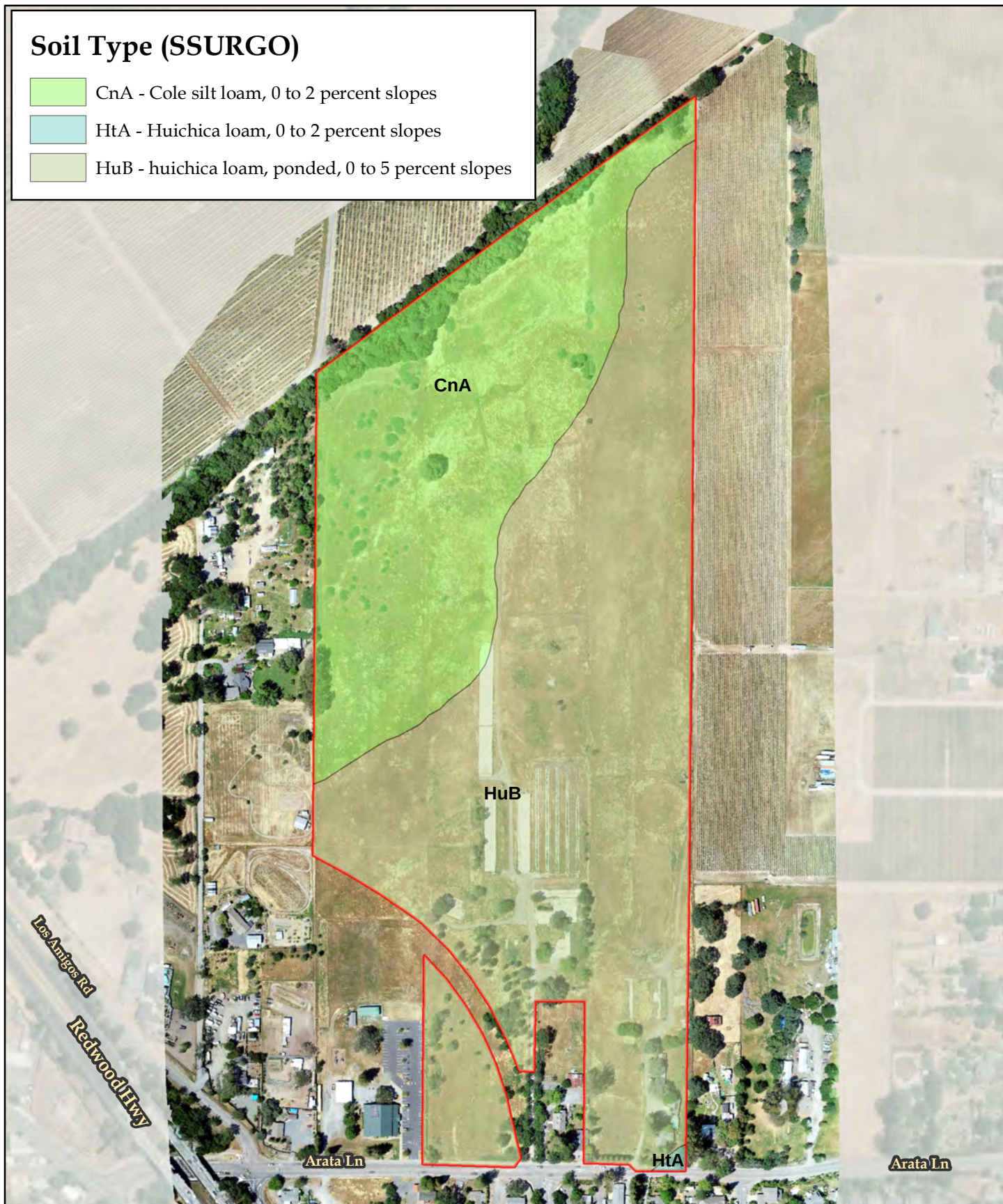
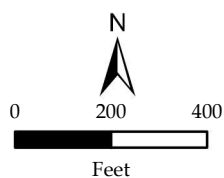
Three soil units have been mapped within the study area (Figure 3) and include the following (NRCS 2021):

Cole silt loam, 0 to 2 percent slopes

The Cole series consists of very deep, somewhat poorly-drained soils that formed in alluvium from mixed sources. They display poor runoff and slow permeability. Cole soils are on river terraces, basins flood plains, or on alluvial fans with slopes of 0 to 5 percent. Mean annual precipitation is 25 to 50 inches, and elevations are 50 to 1,500 feet. Cole soils are used mostly for production of

Soil Type (SSURGO)

- CnA - Cole silt loam, 0 to 2 percent slopes
- HtA - Huichica loam, 0 to 2 percent slopes
- HuB - huichica loam, ponded, 0 to 5 percent slopes



Study Area
(±62 acres)

Imagery: 5-6-21 Salix Consulting, Inc.

Figure 3

SOIL COMPONENTS

Arata Lane

Town of Windsor, Sonoma County, CA

orchards, vineyards, truck crops, and irrigated pasture. Uncultivated areas have oak-grass vegetation with some shrubs and forbs.

Cole silt loam, 0-2 percent slopes have a depth to restrictive layer of more than 80 inches and depth to water table of about 12 to 48 inches.

Huichica loam, ponded, 0 to 5 percent slopes

Huichica loam, 0 to 2 percent slopes

Huichica soils occur in gently sloping, smooth to hummocky floodplains under grass and scattered oaks, at elevations of 100 to 150 feet in the coastal valleys of Napa and Sonoma Counties. They are imperfectly drained, runoff is slow, and permeability is moderately slow to very slow.

The parent material for both Huichica loam ponded, 0 to 5 % slopes and Huichica loam, 0 to 2 percent slopes is alluvium derived from igneous, metamorphic and sedimentary rock. Depth to restrictive feature is 20 to 40 inches to duripan, and these soils are moderately well-drained.

Hydrology

The study area straddles two HUC12s. Porter Creek – Russian River (Hydrologic Unit Code 180101100902) at the northern end of the site, and Windsor Creek (Hydrologic Unit Code 180101100705) to the south, both of which are part of the greater Russian River watershed (Hydrologic Unit Code 18010110). One unnamed tributary to the Russian River occurs along the northern boundary of the study area. This drainage flows in a south-westerly direction and leaves the study area at the intersection of the northern and western study area boundaries. The drainage flows west under US Highway 101 and into the Russian River less than 2 miles west of the site.

Vegetation

Annual Grassland

The annual grassland habitat occupies the majority of the site. The grassland is in variable states of use and disturbance. The property contains many outbuildings and infrastructure that support farm and livestock activities. Most of the species occupying the site are common and weedy due to the ongoing disturbance. Common species in the grassland include wild oat (*Avena fatua*), soft chess (*Bromus hordeaceus*), ripgut grass (*Bromus diandrus*), winter vetch (*Vicia villosa*), cut-leaf geranium (*Geranium dissectum*), wall barley (*Hordeum murinum*), English plantain (*Plantago lanceolata*), sheep sorrel (*Rumex acetosella*), and white clover (*Trifolium repens*).

The grasslands contain a small amount of wetlands and corresponding flora (discussed in the **Aquatic Resources** section below).

Oak Woodland

Oak Woodland occurs in one band along the northern boundary in association with the intermittent stream (Figure 4a). The intermittent stream flows only during the wet season, and the channel is dry for the majority of the year. This habitat is mapped as oak woodland because the corridor is not wet enough to support a continuous band of riparian vegetation. The primary trees include coast live oak (*Quercus agrifolia*), valley oak (*Quercus lobata*), and California bay (*Umbellularia californica*). Shrubs in the oak woodland and scattered in other areas of the site include poison oak (*Toxicodendron diversilobum*), oak saplings, and Himalayan blackberry (*Rubus armeniacus*). Another area of oaks occurs in the southern area of the site, but these trees are scattered among residences, old building pads and driveways, and the oak woodland is fragmented by these anthropogenic influences.

Disturbed/Developed/Ruderal

Disturbed and developed areas occur in the southern half of the study area. This area contains former ranch structures and old building pads that no longer support structures, driveways, and an active residence.

Aquatic Resources

Three categories of aquatic resources have been mapped within the study area and are summarized in Table 1: Intermittent Stream, Seasonal Wetland, and Drainage Ditch.

Table 1.
Aquatic Resources in the Study Area

Aquatic Resources Type	Acreage
Intermittent Stream	0.266
Seasonal Wetland	0.137
Drainage Ditch	0.008
Total	0.411

Figures 4a – 4b show representative aerial photographs of the study area. Representative site photographs of each of the mapped aquatic resources are presented in Figures 4c – 4g, and the aquatic resources map is presented in Figure 5.

Seasonal Wetland

Seven seasonal wetlands are mapped in the central portion of the study area (Figure 5). Five of the seasonal wetlands are shallow depressional features, and two of the seasonal wetlands are remnants of a former drainage ditch, now cutoff and short-linear. Most of these features support a mix of facultative grasses including Italian ryegrass (*Festuca perennis*), Mediterranean barley (*Hordeum marinum*), and Kentucky bluegrass (*Poa annua*) and non-grass species including curly dock (*Rumex crispus*), hyssop loosestrife (*Lythrum hyssopifolia*), pennyroyal (*Mentha pulgium*), and rabbitsfoot grass (*Polypogon monspeliensis*). Site photos of each mapped seasonal wetland are included in Figures 4d-4g.

Drainage Ditch

One drainage ditch is mapped in the study area. Drainage Ditch 1 flows parallel to Arata Lane along a portion of the southern boundary (Figure 4c). This ditch has a rocky bottom with sparse vegetation containing curly dock and Italian ryegrass with a portion lined with Himalayan blackberry. It carries water from Arata Lane and the local residential area and flows through a culvert under Arata Lane to the south.

Intermittent Stream

One intermittent stream, an unnamed tributary to the Russian River, flows from northeast to southwest along the northern property line. This feature carries seasonal storm flows but does not sustain wetness long enough to support a riparian plant community (Figure 4c). Trees along the drainage are primarily coast live oak, valley oak, and California bay.



Looking southwest over study area.

Photo date 5-6-21



Looking southeast over study area.

Photo date 5-6-21



Study Area

Figure 4a

AERIAL SITE PHOTOS

Arata Lane

Town of Windsor, Sonoma County, CA



Looking north over northern portion of study area.

Photo date 5-6-21



Looking south over southern portion of study area.

Photo date 5-6-21



Study Area

Figure 4b

AERIAL SITE PHOTOS

Arata Lane

Town of Windsor, Sonoma County, CA



Intermittent stream along northern property line. Flows in this channel only occur during the wet season.
Photo date 5-6-21



Box culvert under Arata Lane. Water drains from roadside ditch through this culvert.
Photo date 5-6-21



Figure 4c

SITE PHOTOS

Arata Lane

Town of Windsor, Sonoma County, CA



Seasonal Wetland 1
Photo date 5-6-21



Seasonal Wetland 2
Photo date 5-6-21



Figure 4d

SITE PHOTOS

Arata Lane

Town of Windsor, Sonoma County, CA



Seasonal Wetland 3
Photo date 5-6-21



Seasonal Wetland 4
Photo date 5-6-21



Figure 4e

SITE PHOTOS

Arata Lane

Town of Windsor, Sonoma County, CA



Seasonal Wetland 5
Photo date 5-6-21



Seasonal Wetland 6
Photo date 5-6-21



Figure 4f

SITE PHOTOS

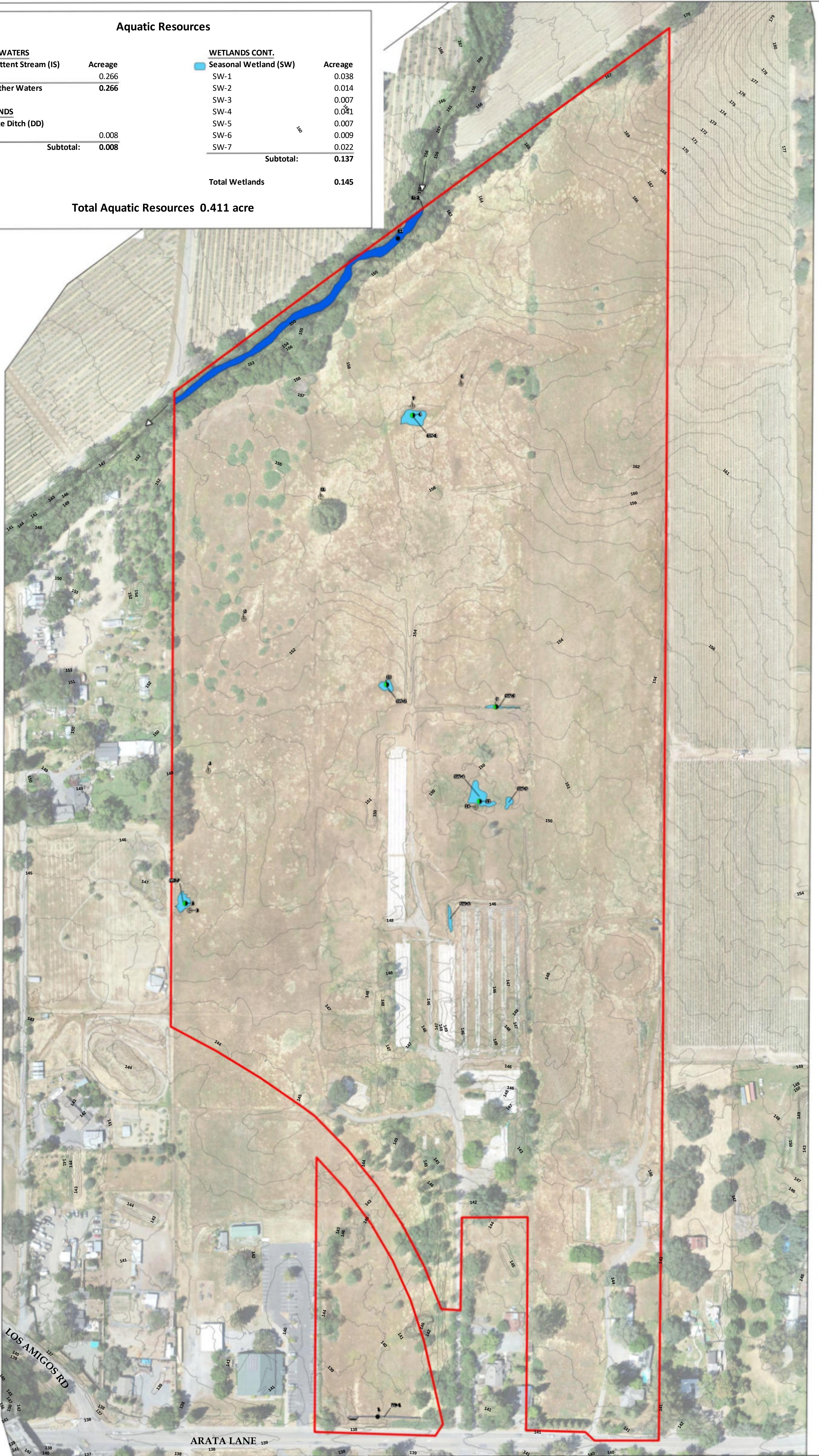
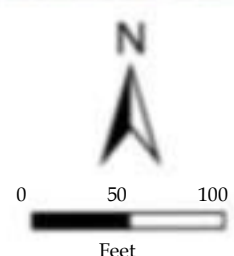
Arata Lane

Town of Windsor, Sonoma County, CA



Seasonal Wetland 7
Photo date 5-6-21

Aquatic Resources			
OTHER WATERS		WETLANDS CONT.	
Intermittent Stream (IS)	Acreage	Seasonal Wetland (SW)	Acreage
IS-1	0.266	SW-1	0.038
Total Other Waters	0.266	SW-2	0.014
		SW-3	0.007
		SW-4	0.041
WETLANDS		SW-5	0.007
Drainage Ditch (DD)		SW-6	0.009
DD-1	0.008	SW-7	0.022
Subtotal:	0.008	Subtotal:	0.137
		Total Wetlands	0.145
Total Aquatic Resources 0.411 acre			



-  Study Area (±62 acres)
  Upland Data Point
 Culvert
  Waters Data Point
 2-ft Contours (Sonoma County)
  Wetland Data Point

Figure 5
AQUATIC RESOURCE DELINEATION
<i>Arata Lane</i>
Town of Windsor, Sonoma County, CA
June 16, 2021

REFERENCES AND OTHER SOURCES

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Appendix A.
Arata Lane Wetland Data Sheets

WETLAND DETERMINATION DATA FORM – Arid West Region

3-27-15 and

Project/Site: Arata Lane City/County: Windsor/Sonoma County Sampling Date: 5-6-21
 Applicant/Owner: Redwood Equities State: CA Sampling Point: 01
 Investigator(s): Jeff Glazner Section, Township, Range: Section 2, Township 8N, Range 8W
 Landform (hillslope, terrace, etc.): _____ Local relief (concave, convex, none): none Slope (%): 1
 Subregion (LRR): Mediterranean California (LRR C) Lat: 38.5618838 Long: -122.8199616 Datum: WGS 84
 Soil Map Unit Name: HuB - Huichia loam, ponded, 0 to 5 percent slopes NWI classification: _____

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No _____ (If no, explain in Remarks.)
 Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No _____
 Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes ☒ No _____	Is the Sampled Area within a Wetland? Yes ☒ No _____
Hydric Soil Present? Yes ☒ No _____	
Wetland Hydrology Present? Yes ☒ No _____	
Remarks: In a nearly flat roadside ditch (drainage ditch). 2' wide flowing from west to east. Steep sides, vegetated bottom.	

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>1</u> (A) Total Number of Dominant Species Across All Strata: <u>1</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100</u> (A/B)
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
_____ = Total Cover				Prevalence Index worksheet: Total % Cover of: _____ Multiply by: _____ OBL species _____ x 1 = _____ FACW species _____ x 2 = _____ FAC species _____ x 3 = _____ FACU species _____ x 4 = _____ UPL species _____ x 5 = _____ Column Totals: _____ (A) _____ (B) Prevalence Index = B/A = _____
Sapling/Shrub Stratum (Plot size: _____) 1. _____ 2. _____ 3. _____ 4. _____ 5. _____ _____ = Total Cover				
Herb Stratum (Plot size: _____) 1. <u>Festuca perennis</u> <u>70</u> <u>X</u> <u>FAC</u> 2. <u>Rumex crispus</u> <u>10</u> <u></u> <u>FAC</u> 3. _____ 4. _____ 5. _____ 6. _____ 7. _____ 8. _____ _____ = Total Cover				
Woody Vine Stratum (Plot size: _____) 1. _____ 2. _____ _____ = Total Cover				
% Bare Ground in Herb Stratum <u>20</u> % Cover of Biotic Crust _____				

Remarks:
Channel contains mostly Italian ryegrass.

SOIL

Sampling Point: 01

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
2-10	10YR 4/2	95	7.5YR 4/6	5	C	M	loam	gravelly

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1) ☐ Sandy Redox (S5)
☐ Histic Epipedon (A2) ☐ Stripped Matrix (S6)
☐ Black Histic (A3) ☐ Loamy Mucky Mineral (F1)
☐ Hydrogen Sulfide (A4) ☐ Loamy Gleyed Matrix (F2)
☐ Stratified Layers (A5) (LRR C) ☒ Depleted Matrix (F3)
☐ 1 cm Muck (A9) (LRR D) ☐ Redox Dark Surface (F6)
☐ Depleted Below Dark Surface (A11) ☐ Depleted Dark Surface (F7)
☐ Thick Dark Surface (A12) ☐ Redox Depressions (F8)
☐ Sandy Mucky Mineral (S1) ☐ Vernal Pools (F9)
☐ Sandy Gleyed Matrix (S4)

Indicators for Problematic Hydric Soils³:

- ☐ 1 cm Muck (A9) (LRR C)
☐ 2 cm Muck (A10) (LRR B)
☐ Reduced Vertic (F18)
☐ Red Parent Material (TF2)
☐ Other (Explain in Remarks)

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ☒ No _____

Remarks:

Gravelly bed, but soils show redox.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required: check all that apply)

- ☐ Surface Water (A1) ☐ Salt Crust (B11)
☐ High Water Table (A2) ☐ Biotic Crust (B12)
☐ Saturation (A3) ☐ Aquatic Invertebrates (B13)
☐ Water Marks (B1) (Nonriverine) ☐ Hydrogen Sulfide Odor (C1)
☐ Sediment Deposits (B2) (Nonriverine) ☐ Oxidized Rhizospheres along Living Roots (C3)
☐ Drift Deposits (B3) (Nonriverine) ☐ Presence of Reduced Iron (C4)
☐ Surface Soil Cracks (B6) ☐ Recent Iron Reduction in Tilled Soils (C6)
☐ Inundation Visible on Aerial Imagery (B7) ☐ Thin Muck Surface (C7)
☐ Water-Stained Leaves (B9) ☒ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water Marks (B1) (Riverine)
☐ Sediment Deposits (B2) (Riverine)
☐ Drift Deposits (B3) (Riverine)
☐ Drainage Patterns (B10)
☐ Dry-Season Water Table (C2)
☐ Crayfish Burrows (C8)
☐ Saturation Visible on Aerial Imagery (C9)
☐ Shallow Aquitard (D3)
☐ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes _____ No ☒ Depth (inches): _____Water Table Present? Yes _____ No ☒ Depth (inches): _____Saturation Present? Yes _____ No ☒ Depth (inches): _____
(includes capillary fringe)Wetland Hydrology Present? Yes ☒ No _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Dry on 3/27/15 and on 5/6/21. Evidence that water lingers in channel for extended periods during wet season.

WETLAND DETERMINATION DATA FORM – Arid West Region

3-27-15 and

Project/Site: Arata Lane City/County: Windsor/Sonoma County Sampling Date: 5-6-21
 Applicant/Owner: Redwood Equities State: CA Sampling Point: 02
 Investigator(s): Jeff Glazner Section, Township, Range: Section 2, Township 8N, Range 8W
 Landform (hillslope, terrace, etc.): Basin Local relief (concave, convex, none): concave Slope (%): 0
 Subregion (LRR): Mediterranean California (LRR C) Lat: 38.5651364 Long: -122.8215238 Datum: WGS 84
 Soil Map Unit Name: CnA - Cole silt loam, 0 to 2 percent slopes NWI classification: _____

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No _____ (If no, explain in Remarks.)
 Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No _____
 Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes ☒ No _____	Is the Sampled Area within a Wetland? Yes ☒ No _____
Hydric Soil Present? Yes ☒ No _____	
Wetland Hydrology Present? Yes ☒ No _____	
Remarks: Seasonal wetland. Shallow depression within pasture supporting a mix of wetland species. Wetland supports fewer vernal pool species since grazing has ceased.	

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>2</u> (A) Total Number of Dominant Species Across All Strata: <u>2</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100</u> (A/B)
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
_____ = Total Cover				Prevalence Index worksheet: Total % Cover of: _____ Multiply by: _____ OBL species _____ x 1 = _____ FACW species _____ x 2 = _____ FAC species _____ x 3 = _____ FACU species _____ x 4 = _____ UPL species _____ x 5 = _____ Column Totals: _____ (A) _____ (B) Prevalence Index = B/A = _____
Sapling/Shrub Stratum (Plot size: _____) 1. _____ 2. _____ 3. _____ 4. _____ 5. _____ _____ = Total Cover				
Herb Stratum (Plot size: _____) 1. <u>Plagiobothrys stipitatus</u> <u>10</u> <u>FACW</u> 2. <u>Pleuropogon californicus</u> <u>10</u> <u>OBL</u> 3. <u>Rumex crispus</u> <u>5</u> <u>FAC</u> 4. <u>Leontodon saxatilis</u> <u>5</u> <u>FACU</u> 5. <u>Hordeum marinum</u> <u>35</u> <u>X</u> <u>FAC</u> 6. <u>Festuca perennis</u> <u>20</u> <u>X</u> <u>FAC</u> 7. <u>Lepidium nitidum</u> <u>5</u> <u>FAC</u> 8. _____ _____ = Total Cover				
Woody Vine Stratum (Plot size: _____) 1. _____ 2. _____ _____ = Total Cover				
% Bare Ground in Herb Stratum <u>10</u> % Cover of Biotic Crust <u>5</u>				

Remarks:
 Wetland supports a dominance of seasonal wetland grasses with a minor component of vernal pool species.

SOIL

Sampling Point: 02

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
3-12	7.5YR 4/1	85	5YR 4/6	15	C	M	loam	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

Indicators for Problematic Hydric Soils³:

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5) (**LRR C**)
- ☐ 1 cm Muck (A9) (**LRR D**)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)

- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1)
- ☐ Loamy Gleyed Matrix (F2)
- ☒ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Vernal Pools (F9)

- ☐ 1 cm Muck (A9) (**LRR C**)
- ☐ 2 cm Muck (A10) (**LRR B**)
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☐ Other (Explain in Remarks)

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ☒ No ☐

Remarks:

Strong redox below 3".

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

Secondary Indicators (2 or more required)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1) (**Nonriverine**)
- ☐ Sediment Deposits (B2) (**Nonriverine**)
- ☐ Drift Deposits (B3) (**Nonriverine**)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)

- ☐ Salt Crust (B11)
- ☐ Biotic Crust (B12)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☒ Other (Explain in Remarks)

- ☐ Water Marks (B1) (**Riverine**)
- ☐ Sediment Deposits (B2) (**Riverine**)
- ☐ Drift Deposits (B3) (**Riverine**)
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ☐ No ☒ Depth (inches): _____

Water Table Present? Yes ☐ No ☒ Depth (inches): _____

Saturation Present? Yes ☐ No ☒ Depth (inches): _____
(includes capillary fringe)

Wetland Hydrology Present? Yes ☒ No ☐

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Shallow depression shows evidence of prolonged seasonal saturation.

WETLAND DETERMINATION DATA FORM – Arid West Region

3-27-15 and

Project/Site: Arata Lane City/County: Windsor/Sonoma County Sampling Date: 5-6-21
 Applicant/Owner: Redwood Equities State: CA Sampling Point: 03
 Investigator(s): Jeff Glazner Section, Township, Range: Section 2, Township 8N, Range 8W
 Landform (hillslope, terrace, etc.): hillslope Local relief (concave, convex, none): none Slope (%): 2
 Subregion (LRR): Mediterranean California (LRR C) Lat: 38.5650822 Long: -122.8214952 Datum: WGS 84
 Soil Map Unit Name: CnA - Cole silt loam, 0 to 2 percent slopes NWI classification: _____

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No _____ (If no, explain in Remarks.)
 Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No _____
 Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes _____ No ☒	Is the Sampled Area within a Wetland? Yes _____ No ☒
Hydric Soil Present? Yes _____ No ☒	
Wetland Hydrology Present? Yes _____ No ☒	
Remarks: Upland comparison to data point 02. On a hillslope outside of basin.	

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A) Total Number of Dominant Species Across All Strata: <u>2</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A/B)														
1. _____	_____	_____	_____															
2. _____	_____	_____	_____															
3. _____	_____	_____	_____															
4. _____	_____	_____	_____															
_____ = Total Cover				Prevalence Index worksheet: <table border="0"> <tr> <td>Total % Cover of:</td> <td>Multiply by:</td> </tr> <tr> <td>OBL species <u>0</u></td> <td>x 1 = <u>0</u></td> </tr> <tr> <td>FACW species <u>0</u></td> <td>x 2 = <u>0</u></td> </tr> <tr> <td>FAC species <u>40</u></td> <td>x 3 = <u>120</u></td> </tr> <tr> <td>FACU species <u>45</u></td> <td>x 4 = <u>180</u></td> </tr> <tr> <td>UPL species <u>10</u></td> <td>x 5 = <u>50</u></td> </tr> <tr> <td>Column Totals: <u>95</u> (A)</td> <td><u>350</u> (B)</td> </tr> </table> Prevalence Index = B/A = <u>3.68</u>	Total % Cover of:	Multiply by:	OBL species <u>0</u>	x 1 = <u>0</u>	FACW species <u>0</u>	x 2 = <u>0</u>	FAC species <u>40</u>	x 3 = <u>120</u>	FACU species <u>45</u>	x 4 = <u>180</u>	UPL species <u>10</u>	x 5 = <u>50</u>	Column Totals: <u>95</u> (A)	<u>350</u> (B)
Total % Cover of:	Multiply by:																	
OBL species <u>0</u>	x 1 = <u>0</u>																	
FACW species <u>0</u>	x 2 = <u>0</u>																	
FAC species <u>40</u>	x 3 = <u>120</u>																	
FACU species <u>45</u>	x 4 = <u>180</u>																	
UPL species <u>10</u>	x 5 = <u>50</u>																	
Column Totals: <u>95</u> (A)	<u>350</u> (B)																	
_____ = Total Cover																		
Sapling/Shrub Stratum (Plot size: _____) 1. _____ 2. _____ 3. _____ 4. _____ 5. _____																		
_____ = Total Cover																		
Herb Stratum (Plot size: _____) 1. <u>Parentucellia viscosa</u> <u>10</u> <u>FAC</u> 2. <u>Lupinus nanus</u> <u>10</u> <u>UPL</u> 3. <u>Lepidium nitidum</u> <u>15</u> <u>FAC</u> 4. <u>Festuca myuros</u> <u>25</u> <u>X</u> <u>FACU</u> 5. <u>Lolium perenne</u> <u>15</u> <u>FAC</u> 6. <u>Trifolium repens</u> <u>20</u> <u>X</u> <u>FACU</u> 7. _____ 8. _____ _____ = Total Cover																		
_____ = Total Cover																		
Woody Vine Stratum (Plot size: _____) 1. _____ 2. _____ _____ = Total Cover																		
% Bare Ground in Herb Stratum <u>10</u> % Cover of Biotic Crust _____																		
Hydrophytic Vegetation Indicators: ___ Dominance Test is >50% ___ Prevalence Index is ≤3.0 ¹ ___ Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) ___ Problematic Hydrophytic Vegetation ¹ (Explain)																		
Hydrophytic Vegetation Present? Yes _____ No ☒																		
Remarks: Typical upland pasture species outside of wetland.																		

SOIL

Sampling Point: 03

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
2-12	7.5YR 4/3	95	7.5YR 4/6	5	C	M	loam	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5) (LRR C)
- ☐ 1 cm Muck (A9) (LRR D)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)

- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Vernal Pools (F9)

Indicators for Problematic Hydric Soils³:

- ☐ 1 cm Muck (A9) (LRR C)
- ☐ 2 cm Muck (A10) (LRR B)
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☐ Other (Explain in Remarks)

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No ☒

Remarks:

Redox in soils, but high chroma and clearly outside of wetland basin.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1) (Nonriverine)
- ☐ Sediment Deposits (B2) (Nonriverine)
- ☐ Drift Deposits (B3) (Nonriverine)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)

- ☐ Salt Crust (B11)
- ☐ Biotic Crust (B12)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water Marks (B1) (Riverine)
- ☐ Sediment Deposits (B2) (Riverine)
- ☐ Drift Deposits (B3) (Riverine)
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes _____ No ☒ Depth (inches): _____

Water Table Present? Yes _____ No ☒ Depth (inches): _____

Saturation Present? Yes _____ No ☒ Depth (inches): _____
(includes capillary fringe)

Wetland Hydrology Present? Yes _____ No ☒

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Just upslope of shallow basin.

WETLAND DETERMINATION DATA FORM – Arid West Region

3-27-15 and

Project/Site: Arata Lane City/County: Windsor/Sonoma County Sampling Date: 5-6-21
 Applicant/Owner: Redwood Equities State: CA Sampling Point: 04
 Investigator(s): Jeff Glazner Section, Township, Range: Section 2, Township 8N, Range 8W
 Landform (hillslope, terrace, etc.): hillslope Local relief (concave, convex, none): none Slope (%): 2
 Subregion (LRR): Mediterranean California (LRR C) Lat: 38.5659622 Long: -122.8213509 Datum: WGS 84
 Soil Map Unit Name: CnA - Cole silt loam, 0 to 2 percent slopes NWI classification: _____

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No _____ (If no, explain in Remarks.)
 Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No _____
 Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes _____ No ☒	Is the Sampled Area within a Wetland? Yes _____ No ☒
Hydric Soil Present? Yes _____ No ☒	
Wetland Hydrology Present? Yes _____ No ☒	
Remarks: Broad drainageway. Lacks evidence of prolonged saturation.	

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>1</u> (A) Total Number of Dominant Species Across All Strata: <u>2</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>50</u> (A/B)
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
_____ = Total Cover				Prevalence Index worksheet: Total % Cover of: _____ Multiply by: _____ OBL species <u>0</u> x 1 = <u>0</u> FACW species <u>0</u> x 2 = <u>0</u> FAC species <u>30</u> x 3 = <u>90</u> FACU species <u>50</u> x 4 = <u>200</u> UPL species <u>10</u> x 5 = <u>50</u> Column Totals: <u>90</u> (A) <u>340</u> (B) Prevalence Index = B/A = <u>3.78</u>
Sapling/Shrub Stratum (Plot size: _____) 1. _____ 2. _____ 3. _____ 4. _____ 5. _____ _____ = Total Cover				
Herb Stratum (Plot size: _____) 1. <u>Rumex crispus</u> <u>20</u> <u>X</u> <u>FAC</u> 2. <u>Trifolium repens</u> <u>30</u> <u>X</u> <u>FACU</u> 3. <u>Stellaria media</u> <u>10</u> <u></u> <u>FACU</u> 4. <u>Lepidium nitidum</u> <u>10</u> <u></u> <u>FAC</u> 5. <u>Allium sp.</u> <u>5</u> <u></u> <u>FACU</u> 6. <u>Festuca myuros</u> <u>5</u> <u></u> <u>FACU</u> 7. <u>Erodium cicutarium</u> <u>10</u> <u></u> <u>UPL</u> 8. _____ _____ = Total Cover				
Woody Vine Stratum (Plot size: _____) 1. _____ 2. _____ _____ = Total Cover				
% Bare Ground in Herb Stratum <u>5</u> % Cover of Biotic Crust _____				
Hydrophytic Vegetation Indicators: ___ Dominance Test is >50% ___ Prevalence Index is ≤3.0 ¹ ___ Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) ___ Problematic Hydrophytic Vegetation ¹ (Explain)				
Hydrophytic Vegetation Present? Yes _____ No ☒				
Remarks: Pasture/weedy.				

SOIL

Sampling Point: 04

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
2-12	7.5YR 4/3	95	7.5YR 4/6	5	C	M	loam	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- | | |
|--|---|
| ☐ Histosol (A1) | ☐ Sandy Redox (S5) |
| ☐ Histic Epipedon (A2) | ☐ Stripped Matrix (S6) |
| ☐ Black Histic (A3) | ☐ Loamy Mucky Mineral (F1) |
| ☐ Hydrogen Sulfide (A4) | ☐ Loamy Gleyed Matrix (F2) |
| ☐ Stratified Layers (A5) (LRR C) | ☐ Depleted Matrix (F3) |
| ☐ 1 cm Muck (A9) (LRR D) | ☐ Redox Dark Surface (F6) |
| ☐ Depleted Below Dark Surface (A11) | ☐ Depleted Dark Surface (F7) |
| ☐ Thick Dark Surface (A12) | ☐ Redox Depressions (F8) |
| ☐ Sandy Mucky Mineral (S1) | ☐ Vernal Pools (F9) |
| ☐ Sandy Gleyed Matrix (S4) | |

Indicators for Problematic Hydric Soils³:

- ☐ 1 cm Muck (A9) (LRR C)
- ☐ 2 cm Muck (A10) (LRR B)
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☐ Other (Explain in Remarks)

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____
Depth (inches): _____

Hydric Soil Present? Yes _____ No ☒

Remarks:

Redox is present in many upland landscape positions in this pasture.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- | | |
|--|--|
| ☐ Surface Water (A1) | ☐ Salt Crust (B11) |
| ☐ High Water Table (A2) | ☐ Biotic Crust (B12) |
| ☐ Saturation (A3) | ☐ Aquatic Invertebrates (B13) |
| ☐ Water Marks (B1) (Nonriverine) | ☐ Hydrogen Sulfide Odor (C1) |
| ☐ Sediment Deposits (B2) (Nonriverine) | ☐ Oxidized Rhizospheres along Living Roots (C3) |
| ☐ Drift Deposits (B3) (Nonriverine) | ☐ Presence of Reduced Iron (C4) |
| ☐ Surface Soil Cracks (B6) | ☐ Recent Iron Reduction in Tilled Soils (C6) |
| ☐ Inundation Visible on Aerial Imagery (B7) | ☐ Thin Muck Surface (C7) |
| ☐ Water-Stained Leaves (B9) | ☐ Other (Explain in Remarks) |

Secondary Indicators (2 or more required)

- ☐ Water Marks (B1) (Riverine)
- ☐ Sediment Deposits (B2) (Riverine)
- ☐ Drift Deposits (B3) (Riverine)
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes _____ No ☒ Depth (inches): _____
Water Table Present? Yes _____ No ☒ Depth (inches): _____
Saturation Present? Yes _____ No ☒ Depth (inches): _____
(includes capillary fringe)

Wetland Hydrology Present? Yes _____ No ☒

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Lacks evidence of wetland hydrology. Water sheet flows through this area but saturation is short.

WETLAND DETERMINATION DATA FORM – Arid West Region

3-27-15 and

Project/Site: Arata Lane City/County: Windsor/Sonoma County Sampling Date: 5-6-21
 Applicant/Owner: Redwood Equities State: CA Sampling Point: 05
 Investigator(s): Jeff Glazner Section, Township, Range: Section 2, Township 8N, Range 8W
 Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): none Slope (%): 1
 Subregion (LRR): Mediterranean California (LRR C) Lat: 38.5669141 Long: -122.8210768 Datum: WGS 84
 Soil Map Unit Name: CnA - Cole silt loam, 0 to 2 percent slopes NWI classification: _____

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No _____ (If no, explain in Remarks.)
 Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No _____
 Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes ☒ No _____	Is the Sampled Area within a Wetland? Yes _____ No ☒
Hydric Soil Present? Yes _____ No ☒	
Wetland Hydrology Present? Yes _____ No ☒	
Remarks: Suspect area. Supporting marginal wetland plant community. Soils lack redox and evidence of wetland hydrology.	

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>2</u> (A) Total Number of Dominant Species Across All Strata: <u>2</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100</u> (A/B)
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
_____ = Total Cover				Prevalence Index worksheet: Total % Cover of: _____ Multiply by: _____ OBL species <u>5</u> x 1 = <u>5</u> FACW species <u>10</u> x 2 = <u>20</u> FAC species <u>55</u> x 3 = <u>165</u> FACU species <u>2</u> x 4 = <u>8</u> UPL species <u>10</u> x 5 = <u>50</u> Column Totals: <u>82</u> (A) <u>248</u> (B) Prevalence Index = B/A = <u>3.02</u>
Sapling/Shrub Stratum (Plot size: _____)				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
_____ = Total Cover				
Herb Stratum (Plot size: _____)				Hydrophytic Vegetation Indicators: ☒ Dominance Test is >50% ☐ Prevalence Index is ≤3.0 ¹ ☐ Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) ☐ Problematic Hydrophytic Vegetation ¹ (Explain)
1. <u>Festuca perennis</u>	<u>20</u>	<u>x</u>	<u>FAC</u>	
2. <u>Rumex crispus</u>	<u>20</u>	<u>x</u>	<u>FAC</u>	
3. <u>Dittrichia graveolens</u>	<u>10</u>		<u>UPL</u>	
4. <u>Allium sp.</u>	<u>2</u>		<u>FACU</u>	
5. <u>Hordeum marinum</u>	<u>15</u>		<u>FAC</u>	¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
6. <u>Hordeum brachyantherum</u>	<u>10</u>		<u>FACW</u>	
7. <u>Lythrum hyssopifolium</u>	<u>5</u>		<u>OBL</u>	
8. _____	_____	_____	_____	
_____ = Total Cover				
Woody Vine Stratum (Plot size: _____)				Hydrophytic Vegetation Present? Yes ☒ No _____
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
_____ = Total Cover				
% Bare Ground in Herb Stratum <u>20</u> % Cover of Biotic Crust _____				

Remarks:

Mix of upland/wetland species.

SOIL

Sampling Point: 05

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
3-12	10YR 3/2	100						

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5) (LRR C)
- ☐ 1 cm Muck (A9) (LRR D)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)

- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Vernal Pools (F9)

Indicators for Problematic Hydric Soils³:

- ☐ 1 cm Muck (A9) (LRR C)
- ☐ 2 cm Muck (A10) (LRR B)
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☐ Other (Explain in Remarks)

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No ☒

Remarks:

No redox below hoof pan.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1) (Nonriverine)
- ☐ Sediment Deposits (B2) (Nonriverine)
- ☐ Drift Deposits (B3) (Nonriverine)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)

- ☐ Salt Crust (B11)
- ☐ Biotic Crust (B12)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water Marks (B1) (Riverine)
- ☐ Sediment Deposits (B2) (Riverine)
- ☐ Drift Deposits (B3) (Riverine)
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes _____ No ☒ Depth (inches): _____

Water Table Present? Yes _____ No ☒ Depth (inches): _____

Saturation Present? Yes _____ No ☒ Depth (inches): _____
(includes capillary fringe)

Wetland Hydrology Present? Yes _____ No ☒

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Area lacks evidence of wetland hydrology. Hillslope drains to the southwest.

WETLAND DETERMINATION DATA FORM – Arid West Region

3-27-15 and

Project/Site: Arata Lane City/County: Windsor/Sonoma County Sampling Date: 5-6-21

Applicant/Owner: Redwood Equities State: CA Sampling Point: 06

Investigator(s): Jeff Glazner Section, Township, Range: Section 2, Township 8N, Range 8W

Landform (hillslope, terrace, etc.): basin Local relief (concave, convex, none): concave Slope (%): 0

Subregion (LRR): Mediterranean California (LRR C) Lat: 38° 33' 44.92" Long: -122° 49' 12.25" Datum: WGS 84

Soil Map Unit Name: CnA - Cole silt loam, 0 to 2 percent slopes NWI classification: _____

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No _____ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No _____

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ☒ No _____	Is the Sampled Area within a Wetland? Yes ☒ No _____
Hydric Soil Present?	Yes ☒ No _____	
Wetland Hydrology Present?	Yes ☒ No _____	
Remarks: Shallow seasonal wetland depression in upland drainage swale.		

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>2</u> (A) Total Number of Dominant Species Across All Strata: <u>2</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100</u> (A/B)
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
_____ = Total Cover				Prevalence Index worksheet: Total % Cover of: _____ Multiply by: _____ OBL species _____ x 1 = _____ FACW species _____ x 2 = _____ FAC species _____ x 3 = _____ FACU species _____ x 4 = _____ UPL species _____ x 5 = _____ Column Totals: _____ (A) _____ (B) Prevalence Index = B/A = _____
Sapling/Shrub Stratum (Plot size: _____) 1. _____ 2. _____ 3. _____ 4. _____ 5. _____ _____ = Total Cover				
Herb Stratum (Plot size: _____) 1. <u>Plagiobothrys stipitatus</u> <u>40</u> <u>X</u> <u>FACW</u> 2. <u>Pleuropogon californicus</u> <u>5</u> <u></u> <u>OBL</u> 3. <u>Rumex crispus</u> <u>10</u> <u></u> <u>FAC</u> 4. <u>Ranunculus muricatus</u> <u>5</u> <u></u> <u>FACW</u> 5. <u>Lythrum hyssopifolium</u> <u>5</u> <u></u> <u>OBL</u> 6. <u>Festuca perennis</u> <u>25</u> <u></u> <u>FAC</u> 7. _____ 8. _____ _____ = Total Cover				
Woody Vine Stratum (Plot size: _____) 1. _____ 2. _____ _____ = Total Cover				
% Bare Ground in Herb Stratum <u>10</u> % Cover of Biotic Crust _____				

Remarks:

Mix of vernal pool and seasonal wetland flora. Basin very shallow.

SOIL

Sampling Point: 06

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix		Redox Features			Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹		
2-12	7.5YR 5/2	90	5YR 4/6	10	C	M	loam

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.**Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)****Indicators for Problematic Hydric Soils³:**

☐ Histic Epipedon (A2)	☐ Sandy Redox (S5)	☐ 1 cm Muck (A9) (LRR C)
☐ Black Histic (A3)	☐ Stripped Matrix (S6)	☐ 2 cm Muck (A10) (LRR B)
☐ Hydrogen Sulfide (A4)	☐ Loamy Mucky Mineral (F1)	☐ Reduced Vertic (F18)
☐ Stratified Layers (A5) (LRR C)	☐ Loamy Gleyed Matrix (F2)	☐ Red Parent Material (TF2)
☐ 1 cm Muck (A9) (LRR D)	☒ Depleted Matrix (F3)	☐ Other (Explain in Remarks)
☐ Depleted Below Dark Surface (A11)	☐ Redox Dark Surface (F6)	
☐ Thick Dark Surface (A12)	☐ Depleted Dark Surface (F7)	
☐ Sandy Mucky Mineral (S1)	☐ Redox Depressions (F8)	
☐ Sandy Gleyed Matrix (S4)	☐ Vernal Pools (F9)	

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.**Restrictive Layer (if present):**

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ☒ No ☐

Remarks:

Loamy soils, moderate redox throughout.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

Secondary Indicators (2 or more required)

☐ Surface Water (A1)	☐ Salt Crust (B11)	☐ Water Marks (B1) (Riverine)
☐ High Water Table (A2)	☐ Biotic Crust (B12)	☐ Sediment Deposits (B2) (Riverine)
☐ Saturation (A3)	☐ Aquatic Invertebrates (B13)	☐ Drift Deposits (B3) (Riverine)
☐ Water Marks (B1) (Nonriverine)	☐ Hydrogen Sulfide Odor (C1)	☐ Drainage Patterns (B10)
☐ Sediment Deposits (B2) (Nonriverine)	☒ Oxidized Rhizospheres along Living Roots (C3)	☐ Dry-Season Water Table (C2)
☐ Drift Deposits (B3) (Nonriverine)	☒ Presence of Reduced Iron (C4)	☐ Crayfish Burrows (C8)
☐ Surface Soil Cracks (B6)	☐ Recent Iron Reduction in Tilled Soils (C6)	☐ Saturation Visible on Aerial Imagery (C9)
☐ Inundation Visible on Aerial Imagery (B7)	☐ Thin Muck Surface (C7)	☐ Shallow Aquitard (D3)
☐ Water-Stained Leaves (B9)	☐ Other (Explain in Remarks)	☐ FAC-Neutral Test (D5)

Field Observations:Surface Water Present? Yes ☐ No ☒ Depth (inches): _____Water Table Present? Yes ☐ No ☒ Depth (inches): _____Saturation Present? (includes capillary fringe) Yes ☐ No ☒ Depth (inches): _____Wetland Hydrology Present? Yes ☒ No ☐

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Evidence of seasonal prolonged saturation.

WETLAND DETERMINATION DATA FORM – Arid West Region

3-27-15 and

Project/Site: Arata Lane City/County: Windsor/Sonoma County Sampling Date: 5-6-21

Applicant/Owner: Redwood Equities State: CA Sampling Point: 07

Investigator(s): Jeff Glazner Section, Township, Range: Section 2, Township 8N, Range 8W

Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): none Slope (%): 2

Subregion (LRR): Mediterranean California (LRR C) Lat: 38.5682217 Long: -122.8197500 Datum: WGS 84

Soil Map Unit Name: CnA - Cole silt loam, 0 to 2 percent slopes NWI classification: _____

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No _____ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No _____

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _____ No ☒	Is the Sampled Area within a Wetland? Yes _____ No ☒
Hydric Soil Present?	Yes _____ No ☒	
Wetland Hydrology Present?	Yes _____ No ☒	
Remarks: Upland comparison to sampling point to 6. Located just outside of shallow depression.		

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>1</u> (A) Total Number of Dominant Species Across All Strata: <u>2</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>50</u> (A/B)
1. _____				
2. _____				
3. _____				
4. _____				
_____ = Total Cover				Prevalence Index worksheet: Total % Cover of: _____ Multiply by: OBL species <u>0</u> x 1 = <u>0</u> FACW species <u>0</u> x 2 = <u>0</u> FAC species <u>31</u> x 3 = <u>93</u> FACU species <u>50</u> x 4 = <u>200</u> UPL species <u>10</u> x 5 = <u>50</u> Column Totals: <u>91</u> (A) <u>343</u> (B) Prevalence Index = B/A = <u>3.77</u>
Sapling/Shrub Stratum (Plot size: _____) 1. _____ 2. _____ 3. _____ 4. _____ 5. _____ _____ = Total Cover				
Herb Stratum (Plot size: _____) 1. <u>Festuca perennis</u> <u>30</u> x <u>FAC</u> 2. <u>Erodium cicutarium</u> <u>10</u> <u>UPL</u> 3. <u>Trifolium repens</u> <u>10</u> <u>FACU</u> 4. <u>Bromus hordeaceus</u> <u>40</u> X <u>FACU</u> 5. <u>Rumex crispus</u> <u>1</u> <u>FAC</u> 6. _____ 7. _____ 8. _____ _____ = Total Cover				
Woody Vine Stratum (Plot size: _____) 1. _____ 2. _____ _____ = Total Cover				
% Bare Ground in Herb Stratum <u>10</u> % Cover of Biotic Crust _____				
Hydrophytic Vegetation Indicators: ☐ Dominance Test is >50% ☐ Prevalence Index is ≤3.0 ¹ ☐ Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) ☐ Problematic Hydrophytic Vegetation ¹ (Explain)				
Hydrophytic Vegetation Present? Yes _____ No ☒				
Remarks: Grassy hillslope adjacent to shallow basin.				

SOIL

Sampling Point: 07

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
2-12	10YR 4/3	100					loam	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

Indicators for Problematic Hydric Soils³:

☐ Histosol (A1)	☐ Sandy Redox (S5)	☐ 1 cm Muck (A9) (LRR C)
☐ Histic Epipedon (A2)	☐ Stripped Matrix (S6)	☐ 2 cm Muck (A10) (LRR B)
☐ Black Histic (A3)	☐ Loamy Mucky Mineral (F1)	☐ Reduced Vertic (F18)
☐ Hydrogen Sulfide (A4)	☐ Loamy Gleyed Matrix (F2)	☐ Red Parent Material (TF2)
☐ Stratified Layers (A5) (LRR C)	☐ Depleted Matrix (F3)	☐ Other (Explain in Remarks)
☐ 1 cm Muck (A9) (LRR D)	☐ Redox Dark Surface (F6)	
☐ Depleted Below Dark Surface (A11)	☐ Depleted Dark Surface (F7)	
☐ Thick Dark Surface (A12)	☐ Redox Depressions (F8)	
☐ Sandy Mucky Mineral (S1)	☐ Vernal Pools (F9)	
☐ Sandy Gleyed Matrix (S4)		

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No ☒

Remarks:

Loam.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

Secondary Indicators (2 or more required)

☐ Surface Water (A1)	☐ Salt Crust (B11)	☐ Water Marks (B1) (Riverine)
☐ High Water Table (A2)	☐ Biotic Crust (B12)	☐ Sediment Deposits (B2) (Riverine)
☐ Saturation (A3)	☐ Aquatic Invertebrates (B13)	☐ Drift Deposits (B3) (Riverine)
☐ Water Marks (B1) (Nonriverine)	☐ Hydrogen Sulfide Odor (C1)	☐ Drainage Patterns (B10)
☐ Sediment Deposits (B2) (Nonriverine)	☐ Oxidized Rhizospheres along Living Roots (C3)	☐ Dry-Season Water Table (C2)
☐ Drift Deposits (B3) (Nonriverine)	☐ Presence of Reduced Iron (C4)	☐ Crayfish Burrows (C8)
☐ Surface Soil Cracks (B6)	☐ Recent Iron Reduction in Tilled Soils (C6)	☐ Saturation Visible on Aerial Imagery (C9)
☐ Inundation Visible on Aerial Imagery (B7)	☐ Thin Muck Surface (C7)	☐ Shallow Aquitard (D3)
☐ Water-Stained Leaves (B9)	☐ Other (Explain in Remarks)	☐ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes _____ No _____ Depth (inches): _____

Water Table Present? Yes _____ No _____ Depth (inches): _____

Saturation Present? Yes _____ No _____ Depth (inches): _____
(includes capillary fringe)Wetland Hydrology Present? Yes _____ No ☒

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Upland landscape position adjacent to shallow basin.

WETLAND DETERMINATION DATA FORM – Arid West Region

3-27-15 and

Project/Site: Arata Lane City/County: Windsor/Sonoma County Sampling Date: 5-6-21

Applicant/Owner: Redwood Equities State: CA Sampling Point: 08

Investigator(s): Jeff Glazner Section, Township, Range: Section 2, Township 8N, Range 8W

Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): concave Slope (%): 2

Subregion (LRR): Mediterranean California (LRR C) Lat: 38.5682845 Long: -122.8197956 Datum: WGS 84

Soil Map Unit Name: CnA - Cole silt loam, 0 to 2 percent slopes NWI classification: _____

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No _____ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No _____

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _____ No ☒	Is the Sampled Area within a Wetland? Yes _____ No ☒
Hydric Soil Present?	Yes _____ No ☒	
Wetland Hydrology Present?	Yes _____ No ☒	
Remarks: Broad meandering drainage swale. Redox present but lacks evidence of prolonged saturation.		

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>1</u> (A) Total Number of Dominant Species Across All Strata: <u>2</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>50</u> (A/B)														
1. _____	_____	_____	_____															
2. _____	_____	_____	_____															
3. _____	_____	_____	_____															
4. _____	_____	_____	_____															
_____ = Total Cover				Prevalence Index worksheet: <table border="0"> <tr> <td>Total % Cover of:</td> <td>Multiply by:</td> </tr> <tr> <td>OBL species <u>0</u></td> <td>x 1 = <u>0</u></td> </tr> <tr> <td>FACW species <u>10</u></td> <td>x 2 = <u>20</u></td> </tr> <tr> <td>FAC species <u>45</u></td> <td>x 3 = <u>135</u></td> </tr> <tr> <td>FACU species <u>40</u></td> <td>x 4 = <u>160</u></td> </tr> <tr> <td>UPL species _____</td> <td>x 5 = _____</td> </tr> <tr> <td>Column Totals: <u>95</u> (A)</td> <td><u>315</u> (B)</td> </tr> </table> Prevalence Index = B/A = <u>3.32</u>	Total % Cover of:	Multiply by:	OBL species <u>0</u>	x 1 = <u>0</u>	FACW species <u>10</u>	x 2 = <u>20</u>	FAC species <u>45</u>	x 3 = <u>135</u>	FACU species <u>40</u>	x 4 = <u>160</u>	UPL species _____	x 5 = _____	Column Totals: <u>95</u> (A)	<u>315</u> (B)
Total % Cover of:	Multiply by:																	
OBL species <u>0</u>	x 1 = <u>0</u>																	
FACW species <u>10</u>	x 2 = <u>20</u>																	
FAC species <u>45</u>	x 3 = <u>135</u>																	
FACU species <u>40</u>	x 4 = <u>160</u>																	
UPL species _____	x 5 = _____																	
Column Totals: <u>95</u> (A)	<u>315</u> (B)																	
_____ = Total Cover																		
Sapling/Shrub Stratum (Plot size: _____) 1. _____ 2. _____ 3. _____ 4. _____ 5. _____ _____ = Total Cover																		
Herb Stratum (Plot size: _____) 1. <u>Festuca perennis</u> <u>35</u> <u>X</u> <u>FAC</u> 2. <u>Rumex crispus</u> <u>10</u> _____ <u>FAC</u> 3. <u>Trifolium repens</u> <u>20</u> <u>X</u> <u>FACU</u> 4. <u>Poa annua</u> <u>10</u> _____ <u>FACU</u> 5. <u>Bromus hordeaceus</u> <u>10</u> _____ <u>FACU</u> 6. <u>Ranunculus muricatus</u> <u>10</u> _____ <u>FACW</u> 7. _____ 8. _____ _____ = Total Cover																		
Woody Vine Stratum (Plot size: _____) 1. _____ 2. _____ _____ = Total Cover																		
% Bare Ground in Herb Stratum <u>5</u> % Cover of Biotic Crust _____																		

Remarks:

Grassy swale with wetland and upland flora.

SOIL

Sampling Point: 08

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
2-12	7.5YR 5/2	90	5YR 4/6	10	C	M	loam	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains.²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

Indicators for Problematic Hydric Soils³:

- | | | |
|--|---|---|
| ☐ Histosol (A1) | ☐ Sandy Redox (S5) | ☐ 1 cm Muck (A9) (LRR C) |
| ☐ Histic Epipedon (A2) | ☐ Stripped Matrix (S6) | ☐ 2 cm Muck (A10) (LRR B) |
| ☐ Black Histic (A3) | ☐ Loamy Mucky Mineral (F1) | ☐ Reduced Vertic (F18) |
| ☐ Hydrogen Sulfide (A4) | ☐ Loamy Gleyed Matrix (F2) | ☐ Red Parent Material (TF2) |
| ☐ Stratified Layers (A5) (LRR C) | ☐ Depleted Matrix (F3) | ☐ Other (Explain in Remarks) |
| ☐ 1 cm Muck (A9) (LRR D) | ☐ Redox Dark Surface (F6) | |
| ☐ Depleted Below Dark Surface (A11) | ☐ Depleted Dark Surface (F7) | |
| ☐ Thick Dark Surface (A12) | ☐ Redox Depressions (F8) | |
| ☐ Sandy Mucky Mineral (S1) | ☐ Vernal Pools (F9) | |
| ☐ Sandy Gleyed Matrix (S4) | | |

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No ☒

Remarks:

Redox present in swale but appears to be relict.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

Secondary Indicators (2 or more required)

- | | | |
|--|--|--|
| ☐ Surface Water (A1) | ☐ Salt Crust (B11) | ☐ Water Marks (B1) (Riverine) |
| ☐ High Water Table (A2) | ☐ Biotic Crust (B12) | ☐ Sediment Deposits (B2) (Riverine) |
| ☐ Saturation (A3) | ☐ Aquatic Invertebrates (B13) | ☐ Drift Deposits (B3) (Riverine) |
| ☐ Water Marks (B1) (Nonriverine) | ☐ Hydrogen Sulfide Odor (C1) | ☐ Drainage Patterns (B10) |
| ☐ Sediment Deposits (B2) (Nonriverine) | ☐ Oxidized Rhizospheres along Living Roots (C3) | ☐ Dry-Season Water Table (C2) |
| ☐ Drift Deposits (B3) (Nonriverine) | ☐ Presence of Reduced Iron (C4) | ☐ Crayfish Burrows (C8) |
| ☐ Surface Soil Cracks (B6) | ☐ Recent Iron Reduction in Tilled Soils (C6) | ☐ Saturation Visible on Aerial Imagery (C9) |
| ☐ Inundation Visible on Aerial Imagery (B7) | ☐ Thin Muck Surface (C7) | ☐ Shallow Aquitard (D3) |
| ☐ Water-Stained Leaves (B9) | ☐ Other (Explain in Remarks) | ☐ FAC-Neutral Test (D5) |

Field Observations:

Surface Water Present? Yes _____ No ☒ Depth (inches): _____Water Table Present? Yes _____ No ☒ Depth (inches): _____Saturation Present? Yes _____ No ☒ Depth (inches): _____
(includes capillary fringe)Wetland Hydrology Present? Yes _____ No ☒

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Swale has suspect wetland hydrology but does not exhibit evidence of prolonged seasonal saturation.

WETLAND DETERMINATION DATA FORM – Arid West Region

3-27-15 and

Project/Site: Arata Lane City/County: Windsor/Sonoma County Sampling Date: 5-6-21

Applicant/Owner: Redwood Equities State: CA Sampling Point: 09

Investigator(s): Jeff Glazner Section, Township, Range: Section 2, Township 8N, Range 8W

Landform (hillslope, terrace, etc.): ditch Local relief (concave, convex, none): concave Slope (%): 0-1

Subregion (LRR): Mediterranean California (LRR C) Lat: 38.5663787 Long: -122.8190533 Datum: WGS 84

Soil Map Unit Name: HuB - Huichia loam, ponded, 0 to 5 percent slopes NWI classification: _____

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No _____ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No _____

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ☒ No _____	Is the Sampled Area within a Wetland? Yes ☒ No _____
Hydric Soil Present?	Yes ☒ No _____	
Wetland Hydrology Present?	Yes ☒ No _____	
Remarks: Constructed ditch, but cut off and now is a linear seasonal wetland. Drains to the west.		

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>2</u> (A) Total Number of Dominant Species Across All Strata: <u>2</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100</u> (A/B)
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
_____ = Total Cover				Prevalence Index worksheet: Total % Cover of: _____ Multiply by: _____ OBL species _____ x 1 = _____ FACW species _____ x 2 = _____ FAC species _____ x 3 = _____ FACU species _____ x 4 = _____ UPL species _____ x 5 = _____ Column Totals: _____ (A) _____ (B) Prevalence Index = B/A = _____
Sapling/Shrub Stratum (Plot size: _____) 1. _____ 2. _____ 3. _____ 4. _____ 5. _____ _____ = Total Cover				
Herb Stratum (Plot size: _____) 1. <u>Rumex crispus</u> <u>20</u> <u>X</u> <u>FAC</u> 2. <u>Polypogon monspeliensis</u> <u>10</u> <u></u> <u>FACW</u> 3. <u>Festuca perennis</u> <u>30</u> <u>X</u> <u>FAC</u> 4. <u>Lythrum hyssopifolium</u> <u>5</u> <u></u> <u>OBL</u> 5. <u>Poa annua</u> <u>5</u> <u></u> <u>FACU</u> 6. <u>Pleuropogon californicus</u> <u>10</u> <u></u> <u>OBL</u> 7. <u>Juncus bufonius</u> <u>5</u> <u></u> <u>FACW</u> 8. _____ _____ = Total Cover				
Woody Vine Stratum (Plot size: _____) 1. _____ 2. _____ _____ = Total Cover				
% Bare Ground in Herb Stratum <u>15</u> % Cover of Biotic Crust _____				

Remarks:

Seasonal wetland flora.

SOIL

Sampling Point: 09

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-3								mostly gravel
3-12	7.5YR 4/1	90	7.5YR 4/6	10	C	M	silty loam	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5) (LRR C)
- ☐ 1 cm Muck (A9) (LRR D)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)

- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1)
- ☐ Loamy Gleyed Matrix (F2)
- ☒ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Vernal Pools (F9)

Indicators for Problematic Hydric Soils³:

- ☐ 1 cm Muck (A9) (LRR C)
- ☐ 2 cm Muck (A10) (LRR B)
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☐ Other (Explain in Remarks)

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ☒ No ☐

Remarks:

Debris in soil. Broken concrete and rocks, but soil indicates hydric.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1) (Nonriverine)
- ☒ Sediment Deposits (B2) (Nonriverine)
- ☐ Drift Deposits (B3) (Nonriverine)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)

- ☐ Salt Crust (B11)
- ☒ Biotic Crust (B12)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water Marks (B1) (Riverine)
- ☐ Sediment Deposits (B2) (Riverine)
- ☐ Drift Deposits (B3) (Riverine)
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ☐ No ☒ Depth (inches): _____

Water Table Present? Yes ☐ No ☒ Depth (inches): _____

Saturation Present? Yes ☒ No ☐ Depth (inches): 6"

Wetland Hydrology Present? Yes ☒ No ☐

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Evidence of surface ponding noted by presence of algal matting.

WETLAND DETERMINATION DATA FORM – Arid West Region

3-27-15 and

Project/Site: Arata Lane City/County: Windsor/Sonoma County Sampling Date: 5-6-21

Applicant/Owner: Redwood Equities State: CA Sampling Point: 10

Investigator(s): Jeff Glazner Section, Township, Range: Section 2, Township 8N, Range 8W

Landform (hillslope, terrace, etc.): basin Local relief (concave, convex, none): concave Slope (%): 0

Subregion (LRR): Mediterranean California (LRR C) Lat: 38.5665211 Long: -122.8199927 Datum: WGS 84

Soil Map Unit Name: CnA - Cole silt loam, 0 to 2 percent slopes NWI classification: _____

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No _____ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No _____

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ☒ No _____	Is the Sampled Area within a Wetland? Yes ☒ No _____
Hydric Soil Present?	Yes ☒ No _____	
Wetland Hydrology Present?	Yes ☒ No _____	
Remarks: Shallow seasonal wetland.		

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>2</u> (A) Total Number of Dominant Species Across All Strata: <u>2</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100</u> (A/B)
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
_____ = Total Cover				Prevalence Index worksheet: Total % Cover of: _____ Multiply by: _____ OBL species _____ x 1 = _____ FACW species _____ x 2 = _____ FAC species _____ x 3 = _____ FACU species _____ x 4 = _____ UPL species _____ x 5 = _____ Column Totals: _____ (A) _____ (B) Prevalence Index = B/A = _____
Sapling/Shrub Stratum (Plot size: _____) 1. _____ 2. _____ 3. _____ 4. _____ 5. _____ _____ = Total Cover				
Herb Stratum (Plot size: _____) 1. <u>Plagiobothrys stipitatus</u> 30 X FACW 2. <u>Rumex crispus</u> 5 FAC 3. <u>Ranunculus muricatus</u> 5 FACW 4. <u>Pleuropogon californicus</u> 10 OBL 5. <u>Lythrum hyssopifolium</u> 5 OBL 6. <u>Hordeum marinum</u> 20 X FAC 7. <u>Festuca perennis</u> 10 FAC 8. <u>Lepidium nitidum</u> 5 FAC 90 = Total Cover				
Woody Vine Stratum (Plot size: _____) 1. _____ 2. _____ _____ = Total Cover				
% Bare Ground in Herb Stratum <u>10</u> % Cover of Biotic Crust _____				

Remarks: Wetland species in shallow basin.	Hydrophytic Vegetation Indicators: ☒ Dominance Test is >50% ☐ Prevalence Index is ≤3.0 ¹ ☐ Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) ☐ Problematic Hydrophytic Vegetation ¹ (Explain)
Hydrophytic Vegetation Present? Yes ☒ No _____	

SOIL

Sampling Point: 10

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix		Redox Features			Type ¹	Loc ²	Texture	Remarks
	Color (moist)	%	Color (moist)	%					
2-12	7.5YR 5/1	90	5YR 4/6	10	C	M		silty loam	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

Indicators for Problematic Hydric Soils³:

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5) (**LRR C**)
- ☐ 1 cm Muck (A9) (**LRR D**)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)

- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1)
- ☐ Loamy Gleyed Matrix (F2)
- ☒ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Vernal Pools (F9)

- ☐ 1 cm Muck (A9) (**LRR C**)
- ☐ 2 cm Muck (A10) (**LRR B**)
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☐ Other (Explain in Remarks)

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ☒ No ☐

Remarks:

Strong redox in this basin.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

Secondary Indicators (2 or more required)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1) (**Nonriverine**)
- ☐ Sediment Deposits (B2) (**Nonriverine**)
- ☐ Drift Deposits (B3) (**Nonriverine**)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)

- ☐ Salt Crust (B11)
- ☐ Biotic Crust (B12)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☒ Other (Explain in Remarks)

- ☐ Water Marks (B1) (**Riverine**)
- ☐ Sediment Deposits (B2) (**Riverine**)
- ☐ Drift Deposits (B3) (**Riverine**)
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ☐ No ☒ Depth (inches): _____

Water Table Present? Yes ☐ No ☒ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes ☐ No ☒ Depth (inches): _____

Wetland Hydrology Present? Yes ☒ No ☐

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Evidence of seasonal saturation in this shallow basin.

WETLAND DETERMINATION DATA FORM – Arid West Region

3-27-15 and

Project/Site: Arata Lane City/County: Windsor/Sonoma County Sampling Date: 5-6-21

Applicant/Owner: Redwood Equities State: CA Sampling Point: 11

Investigator(s): Jeff Glazner Section, Township, Range: Section 2, Township 8N, Range 8W

Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): concave Slope (%): 2

Subregion (LRR): Mediterranean California (LRR C) Lat: 38.5676800 Long: -122.8204699 Datum: WGS 84

Soil Map Unit Name: CnA - Cole silt loam, 0 to 2 percent slopes NWI classification: _____

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No _____ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No _____

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes ☒ No _____	Is the Sampled Area within a Wetland? Yes _____ No ☒
Hydric Soil Present? Yes _____ No ☒	
Wetland Hydrology Present? Yes _____ No ☒	
Remarks:	
Suspect area. Swale below SW-1 near large valley oak tree. Lacks hydric indicators.	

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>1</u> (A) Total Number of Dominant Species Across All Strata: <u>1</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100</u> (A/B)
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
_____ = Total Cover				Prevalence Index worksheet: Total % Cover of: _____ Multiply by: _____ OBL species <u>0</u> x 1 = <u>0</u> FACW species <u>5</u> x 2 = <u>10</u> FAC species <u>80</u> x 3 = <u>240</u> FACU species <u>0</u> x 4 = <u>0</u> UPL species <u>5</u> x 5 = <u>25</u> Column Totals: <u>90</u> (A) <u>275</u> (B) Prevalence Index = B/A = <u>3.06</u>
Sapling/Shrub Stratum (Plot size: _____) 1. _____ 2. _____ 3. _____ 4. _____ 5. _____ _____ = Total Cover				
Herb Stratum (Plot size: _____) 1. <u>Festuca perennis</u> <u>70</u> <u>X</u> <u>FAC</u> 2. <u>Poa annua</u> <u>10</u> <u>_____</u> <u>FAC</u> 3. <u>Ranunculus muricatus</u> <u>5</u> <u>_____</u> <u>FACW</u> 4. <u>Convolvulus arvensis</u> <u>5</u> <u>_____</u> <u>UPL</u> 5. _____ 6. _____ 7. _____ 8. _____ _____ = Total Cover				
Woody Vine Stratum (Plot size: _____) 1. _____ 2. _____ _____ = Total Cover				
% Bare Ground in Herb Stratum <u>15</u> % Cover of Biotic Crust _____				
Hydrophytic Vegetation Indicators: ☒ Dominance Test is >50% ☐ Prevalence Index is ≤3.0 ¹ ☐ Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) ☐ Problematic Hydrophytic Vegetation ¹ (Explain)				
Hydrophytic Vegetation Present? Yes ☒ No _____				
Remarks:				
Grassy swale				

Sampling Point: 11

HYDROLOGY

Arid West – Version 2.0

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Arata Lane City/County: Windsor/Sonoma County Sampling Date: 5-6-21
 Applicant/Owner: Redwood Equities State: CA Sampling Point: 12
 Investigator(s): Jeff Glazner Section, Township, Range: Section 2, Township 8N, Range 8W
 Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): concave Slope (%): 2
 Subregion (LRR): Mediterranean California (LRR C) Lat: 38.56929805 Long: -122.8198689 Datum: NAD83
 Soil Map Unit Name: CnA - Cole silt loam, 0 to 2 percent slopes NWI classification: _____

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No _____ (If no, explain in Remarks.)
 Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No _____
 Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes _____ No _____	Is the Sampled Area within a Wetland? Yes _____ No _____
Hydric Soil Present? Yes _____ No _____	
Wetland Hydrology Present? Yes _____ No _____	
Remarks: Feature is an Intermittent Stream. It is a well-defined and deeply incised channel along the northern study area boundary. Flows occur only during the wet season.	

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: _____ (A) Total Number of Dominant Species Across All Strata: _____ (B) Percent of Dominant Species That Are OBL, FACW, or FAC: _____ (A/B)
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
_____ = Total Cover				Prevalence Index worksheet: Total % Cover of: _____ Multiply by: _____ OBL species _____ x 1 = _____ FACW species _____ x 2 = _____ FAC species _____ x 3 = _____ FACU species _____ x 4 = _____ UPL species _____ x 5 = _____ Column Totals: _____ (A) _____ (B) Prevalence Index = B/A = _____
Sapling/Shrub Stratum (Plot size: _____) 1. _____ 2. _____ 3. _____ 4. _____ 5. _____ _____ = Total Cover				
Herb Stratum (Plot size: _____) 1. _____ 2. _____ 3. _____ 4. _____ 5. _____ 6. _____ 7. _____ 8. _____ _____ = Total Cover				
Woody Vine Stratum (Plot size: _____) 1. _____ 2. _____ _____ = Total Cover				
% Bare Ground in Herb Stratum _____ % Cover of Biotic Crust _____				

Remarks:
 Very little vegetation in channel bottom. Upper slopes and ground near top of bank support *Quercus agrifolia*, *Q. lobata*, *Aesculus californica*, *Unbellularia californica*, *Toxicodendron diversilobum*, and other upland woody species.

Sampling Point: 12

HYDROLOGY

US Army Corps of Engineers

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Arata Lane City/County: Windsor/Sonoma County Sampling Date: 5-6-21
 Applicant/Owner: Redwood Equities State: CA Sampling Point: 13
 Investigator(s): Jeff Glazner Section, Township, Range: Section 2, Township 8N, Range 8W
 Landform (hillslope, terrace, etc.): terrace Local relief (concave, convex, none): concave Slope (%): 0
 Subregion (LRR): Mediterranean California (LRR C) Lat: 38.565784 Long: -122.819187 Datum: NAD83
 Soil Map Unit Name: HuB - huichica loam, ponded, 0 to 5 percent slopes NWI classification: _____
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No _____ (If no, explain in Remarks.)
 Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No _____
 Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes ☒ No _____	Is the Sampled Area within a Wetland? Yes ☒ No _____
Hydric Soil Present? Yes ☒ No _____	
Wetland Hydrology Present? Yes ☒ No _____	
Remarks: Shallow seasonal wetland in former horse pasture.	

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>2</u> (A) Total Number of Dominant Species Across All Strata: <u>2</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100</u> (A/B)
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
_____ = Total Cover				Prevalence Index worksheet: Total % Cover of: _____ Multiply by: _____ OBL species _____ x 1 = _____ FACW species _____ x 2 = _____ FAC species _____ x 3 = _____ FACU species _____ x 4 = _____ UPL species _____ x 5 = _____ Column Totals: _____ (A) _____ (B) Prevalence Index = B/A = _____
Sapling/Shrub Stratum (Plot size: _____) 1. _____ 2. _____ 3. _____ 4. _____ 5. _____ _____ = Total Cover				
Herb Stratum (Plot size: _____) 1. <u>Plagiobothrys stipitatus</u> <u>10</u> <u>FACW</u> 2. <u>Festuca perennis</u> <u>5</u> <u>FAC</u> 3. <u>Hordeum marinum</u> <u>10</u> <u>FAC</u> 4. <u>Anthemis cotula</u> <u>10</u> <u>FACU</u> 5. <u>Polypogon monspeliensis</u> <u>20</u> <u>X</u> <u>FACW</u> 6. <u>Mentha pulegium</u> <u>20</u> <u>X</u> <u>OBL</u> 7. _____ 8. _____ _____ = Total Cover				
Woody Vine Stratum (Plot size: _____) 1. _____ 2. _____ _____ = Total Cover				
% Bare Ground in Herb Stratum <u>25</u> % Cover of Biotic Crust <u>5</u>				
Hydrophytic Vegetation Indicators: ☒ Dominance Test is >50% ☐ Prevalence Index is ≤3.0 ¹ ☐ Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) ☐ Problematic Hydrophytic Vegetation ¹ (Explain)				
Hydrophytic Vegetation Present? Yes ☒ No _____				
Remarks: Weedy wetland flora				

SOIL

Sampling Point: 13

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
2-12	10YR 4/2	90	7.5YR 4/6	5	C	M	silty loam	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- | | |
|--|--|
| ☐ Histosol (A1) | ☐ Sandy Redox (S5) |
| ☐ Histic Epipedon (A2) | ☐ Stripped Matrix (S6) |
| ☐ Black Histic (A3) | ☐ Loamy Mucky Mineral (F1) |
| ☐ Hydrogen Sulfide (A4) | ☐ Loamy Gleyed Matrix (F2) |
| ☐ Stratified Layers (A5) (LRR C) | ☒ Depleted Matrix (F3) |
| ☐ 1 cm Muck (A9) (LRR D) | ☐ Redox Dark Surface (F6) |
| ☐ Depleted Below Dark Surface (A11) | ☐ Depleted Dark Surface (F7) |
| ☐ Thick Dark Surface (A12) | ☐ Redox Depressions (F8) |
| ☐ Sandy Mucky Mineral (S1) | ☐ Vernal Pools (F9) |
| ☐ Sandy Gleyed Matrix (S4) | |

Indicators for Problematic Hydric Soils³:

- ☐ 1 cm Muck (A9) (LRR C)
- ☐ 2 cm Muck (A10) (LRR B)
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☐ Other (Explain in Remarks)

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ☒ No ☐

Remarks:

Redox present.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- | | |
|--|--|
| ☐ Surface Water (A1) | ☐ Salt Crust (B11) |
| ☐ High Water Table (A2) | ☒ Biotic Crust (B12) |
| ☐ Saturation (A3) | ☐ Aquatic Invertebrates (B13) |
| ☐ Water Marks (B1) (Nonriverine) | ☐ Hydrogen Sulfide Odor (C1) |
| ☐ Sediment Deposits (B2) (Nonriverine) | ☐ Oxidized Rhizospheres along Living Roots (C3) |
| ☐ Drift Deposits (B3) (Nonriverine) | ☐ Presence of Reduced Iron (C4) |
| ☐ Surface Soil Cracks (B6) | ☐ Recent Iron Reduction in Tilled Soils (C6) |
| ☐ Inundation Visible on Aerial Imagery (B7) | ☐ Thin Muck Surface (C7) |
| ☐ Water-Stained Leaves (B9) | ☒ Other (Explain in Remarks) |

Secondary Indicators (2 or more required)

- ☐ Water Marks (B1) (Riverine)
- ☐ Sediment Deposits (B2) (Riverine)
- ☐ Drift Deposits (B3) (Riverine)
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ☐ No ☒ Depth (inches): _____

Water Table Present? Yes ☐ No ☒ Depth (inches): _____

Saturation Present? Yes ☐ No ☒ Depth (inches): _____
(includes capillary fringe)

Wetland Hydrology Present? Yes ☒ No ☐

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Evidence of seasonal saturation in this shallow depression. Area abundant with geese prints in the bare muddy areas.

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Arata Lane City/County: Windsor/Sonoma County Sampling Date: 5-6-21

Applicant/Owner: Redwood Equities State: CA Sampling Point: 14

Investigator(s): Jeff Glazner Section, Township, Range: Section 2, Township 8N, Range 8W

Landform (hillslope, terrace, etc.): terrace Local relief (concave, convex, none): none Slope (%): 0-1

Subregion (LRR): Mediterranean California (LRR C) Lat: 38.565747 Long: -122.819215 Datum: NAD83

Soil Map Unit Name: HuB - huichica loam, ponded, 0 to 5 percent slopes NWI classification: _____

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No _____ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No _____

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes ☒ No _____	Is the Sampled Area within a Wetland? Yes _____ No ☒
Hydric Soil Present? Yes _____ No ☒	
Wetland Hydrology Present? Yes _____ No ☒	
Remarks: Upland, adjacent to SW4 and data point 13.	

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>1</u> (A) Total Number of Dominant Species Across All Strata: <u>1</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100</u> (A/B)
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
_____ = Total Cover				Prevalence Index worksheet: Total % Cover of: _____ Multiply by: _____ OBL species _____ x 1 = _____ FACW species _____ x 2 = _____ FAC species _____ x 3 = _____ FACU species _____ x 4 = _____ UPL species _____ x 5 = _____ Column Totals: _____ (A) _____ (B) Prevalence Index = B/A = _____
Sapling/Shrub Stratum (Plot size: _____)				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
_____ = Total Cover				Hydrophytic Vegetation Indicators: ☒ Dominance Test is >50% ☐ Prevalence Index is ≤3.0 ¹ ☐ Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) ☐ Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
Herb Stratum (Plot size: _____)				
1. <u>Festuca perennis</u>	<u>30</u>	<u>X</u>	<u>FAC</u>	
2. <u>Bromus hordeaceus</u>	<u>15</u>		<u>FACU</u>	
3. <u>Poa annua</u>	<u>15</u>		<u>FAC</u>	
4. <u>Medicago polymorpha</u>	<u>10</u>		<u>FACU</u>	
5. <u>Trifolium repens</u>	<u>10</u>		<u>FACU</u>	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
_____ = Total Cover				
Woody Vine Stratum (Plot size: _____)				Hydrophytic Vegetation Present? Yes ☒ No _____
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
_____ = Total Cover				
% Bare Ground in Herb Stratum <u>20</u> % Cover of Biotic Crust _____				
Remarks: Weedy annual vegetation.				

SOIL

Sampling Point: 14

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
2-12	10YR 4/3	100					silty loam	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains.

²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

Indicators for Problematic Hydric Soils³:

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5) (LRR C)
- ☐ 1 cm Muck (A9) (LRR D)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Vernal Pools (F9)

- ☐ 1 cm Muck (A9) (LRR C)
- ☐ 2 cm Muck (A10) (LRR B)
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☐ Other (Explain in Remarks)

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No ☒

Remarks:

Lacks redox.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

Secondary Indicators (2 or more required)

- | | | |
|--|--|--|
| ☐ Surface Water (A1) | ☐ Salt Crust (B11) | ☐ Water Marks (B1) (Riverine) |
| ☐ High Water Table (A2) | ☐ Biotic Crust (B12) | ☐ Sediment Deposits (B2) (Riverine) |
| ☐ Saturation (A3) | ☐ Aquatic Invertebrates (B13) | ☐ Drift Deposits (B3) (Riverine) |
| ☐ Water Marks (B1) (Nonriverine) | ☐ Hydrogen Sulfide Odor (C1) | ☐ Drainage Patterns (B10) |
| ☐ Sediment Deposits (B2) (Nonriverine) | ☐ Oxidized Rhizospheres along Living Roots (C3) | ☐ Dry-Season Water Table (C2) |
| ☐ Drift Deposits (B3) (Nonriverine) | ☐ Presence of Reduced Iron (C4) | ☐ Crayfish Burrows (C8) |
| ☐ Surface Soil Cracks (B6) | ☐ Recent Iron Reduction in Tilled Soils (C6) | ☐ Saturation Visible on Aerial Imagery (C9) |
| ☐ Inundation Visible on Aerial Imagery (B7) | ☐ Thin Muck Surface (C7) | ☐ Shallow Aquitard (D3) |
| ☐ Water-Stained Leaves (B9) | ☐ Other (Explain in Remarks) | ☐ FAC-Neutral Test (D5) |

Field Observations:

Surface Water Present? Yes _____ No ☒ Depth (inches): _____

Water Table Present? Yes _____ No ☒ Depth (inches): _____

Saturation Present? Yes _____ No ☒ Depth (inches): _____
(includes capillary fringe)

Wetland Hydrology Present? Yes _____ No ☒

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Outside of shallow basin and in upland landscape position.

Appendix B.
Plant Species Observed on the Arata Lane Study Area

Appendix B-Arata Lane Plants Observed 5/2018 & 5/2021 with Wetland Status

Taxon	Common Name	Wetland Status
<i>Achillea millefolium</i>	Common yarrow	FACU
<i>Achyrrachaena mollis</i>	Blow-wives	FAC
<i>Acmispon americanus</i>	Spanish lotus	UPL
<i>Aesculus californica</i>	California buckeye	UPL
<i>Aira caryophylla</i>	Silver European hairgrass	FACU
<i>Allium sp.</i>	Wild onion	VARIES
<i>Amaranthus retroflexus</i>	Rough pigweed	FACU
<i>Amsinckia menziesii</i>	Rancher's fireweed	UPL
<i>Anthemis cotula</i>	Mayweed	FACU
<i>Avena fatua</i>	Wild oat	UPL
<i>Baccharis pilularis</i>	Coyote brush	UPL
<i>Barbarea orthoceras</i>	American wintercress	FACW
<i>Brachypodium distachyon</i>	Purple falsebrome	UPL
<i>Brassica nigra</i>	Black mustard	UPL
<i>Brassica rapa</i>	Field mustard	FACU
<i>Briza maxima</i>	Rattlesnake grass	FAC
<i>Briza minor</i>	Small quaking grass	FAC
<i>Bromus diandrus</i>	Ripgut grass	UPL
<i>Bromus hordeaceus</i>	Soft chess	FACU
<i>Bromus madritensis</i>	Foxtail brome	UPL
<i>Bromus madritensis subsp. rubens</i>	Red brome	UPL
<i>Calandrinia menziesii</i>	Red maids	FACU
<i>Callitriche marginata</i>	Winged water-starwort	OBL
<i>Capsella bursa-pastoris</i>	Shepherd's purse	FACU
<i>Cardamine oligosperma</i>	Western bitter-cress	FAC
<i>Carduus pycnocephalus</i>	Italian thistle	UPL
<i>Castilleja attenuata</i>	Valley tassels	UPL
<i>Centaurea melitensis</i>	Tocalote	UPL
<i>Centaurea solstitialis</i>	Yellow starthistle	UPL
<i>Centromadia fitchii</i>	Fitch's spikeweed	FACU
<i>Cerastium glomeratum</i>	Sticky mouse-ear chickweed	UPL
<i>Cichorium intybus</i>	Chicory	FACU
<i>Cirsium vulgare</i>	Bull thistle	FACU
<i>Claytonia perfoliata</i>	Common miner's lettuce	FAC
<i>Conium maculatum</i>	Poison hemlock	FACW
<i>Convolvulus arvensis</i>	Bindweed	UPL
<i>Cotula coronopifolia</i>	Common brass-buttons	OBL
<i>Croton setiger</i>	Turkey mullein	UPL

Taxon	Common Name	Wetland Status
<i>Cynodon dactylon</i>	Bermudagrass	FACU
<i>Cynosurus echinatus</i>	Hedgehog dogtail	UPL
<i>Cyperus eragrostis</i>	Tall flatsedge	FACW
<i>Dactylis glomerata</i>	Orchard grass	FACU
<i>Dittrichia graveolens</i>	Stinkwort	UPL
<i>Eleocharis macrostachya</i>	Creeping spikerush	OBL
<i>Elymus caput-medusae</i>	Medusahead	UPL
<i>Epilobium brachycarpum</i>	Summer cottonweed	UPL
<i>Erodium botrys</i>	Broad-leaf filaree	FACU
<i>Erodium cicutarium</i>	Red-stem filaree	UPL
<i>Erodium moschatum</i>	White-stem filaree	UPL
<i>Eschscholzia californica</i>	California poppy	UPL
<i>Euphorbia maculata</i>	Spotted spurge	UPL
<i>Festuca bromoides</i>	Brome fescue	FAC
<i>Festuca myuros</i>	Rattail sixweeks grass	FACU
<i>Festuca perennis</i>	Italian ryegrass	FAC
<i>Galium aparine</i>	Goose grass	FACU
<i>Geranium dissectum</i>	Cut-leaf geranium	UPL
<i>Glyceria declinata</i>	Low mannagrass	FACW
<i>Helminthotheca echioides</i>	Bristly ox-tongue	FAC
<i>Heterotheca grandiflora</i>	Telegraph weed	UPL
<i>Hordeum brachyantherum</i>	Meadow barley	FACW
<i>Hordeum marinum subsp. gussoneanum</i>	Mediterranean barley	FAC
<i>Hordeum murinum</i>	Wall barley	FACU
<i>Hypericum perforatum subsp. perforatum</i>	Klamathweed	FACU
<i>Hypochaeris glabra</i>	Smooth cat's-ear	UPL
<i>Juglans hindsii</i>	Northern California black walnut	FAC
<i>Juncus balticus subsp. ater</i>	Baltic rush	FACW
<i>Juncus bufonius</i>	Toad rush	FACW
<i>Lactuca serriola</i>	Prickly lettuce	FACU
<i>Leontodon saxatilis</i>	Long-beaked hawkbit	FACU
<i>Lepidium nitidum</i>	Shining peppergrass	FAC
<i>Lepidium strictum</i>	Peppergrass	UPL
<i>Limnanthes douglasii subsp. nivea</i>	Douglas' meadowfoam	OBL
<i>Logfia gallica</i>	Narrowleaf cottonrose	UPL
<i>Lupinus bicolor</i>	Miniature lupine	UPL
<i>Lupinus nanus</i>	Sky lupine	UPL
<i>Lysimachia arvensis</i>	Scarlet pimpernel	FAC
<i>Lythrum hyssopifolia</i>	Hyssop loosestrife	OBL
<i>Malva neglecta</i>	Common mallow	UPL

Taxon	Common Name	Wetland Status
<i>Malva parviflora</i>	Cheeseweed	UPL
<i>Matricaria discoidea</i>	Pineapple-weed	FACU
<i>Medicago polymorpha</i>	California burclover	FACU
<i>Melilotus albus</i>	White sweetcover	UPL
<i>Mentha pulegium</i>	Pennyroyal	OBL
<i>Microseris acuminata</i>	Sierra foothill microseris	UPL
<i>Minuartia californica</i>	California sandwort	FACU
<i>Montia fontana</i>	Blinks	OBL
<i>Navarretia intertexta</i>	Needle-leaved navarretia	FACW
<i>Nemophila menziesii</i>	Baby blue-eyes	UPL
<i>Panicum capillare</i>	Witchgrass	FACU
<i>Parentucellia viscosa</i>	Yellow glandweed	FAC
<i>Phalaris aquatica</i>	Harding grass	FACU
<i>Plagiobothrys stipitatus</i> var. <i>micranthus</i>	Great Valley popcornflower	FACW
<i>Plantago coronopus</i>	Cut-leaf plantain	FAC
<i>Plantago lanceolata</i>	English plantain	FAC
<i>Pleuropogon californicus</i> var. <i>californicus</i>	Annual semaphore grass	OBL
<i>Poa annua</i>	Annual bluegrass	FAC
<i>Pogogyne douglasii</i>	Douglas' mesa mint	OBL
<i>Polypogon monspeliensis</i>	Annual beard grass	FACW
<i>Portulaca oleracea</i>	Common purslane	FAC
<i>Prunus</i> sp.	Prunus	UPL
<i>Pseudognaphalium luteoalbum</i>	Everlasting cudweed	FAC
<i>Quercus agrifolia</i> var. <i>agrifolia</i>	Coast live oak	UPL
<i>Quercus douglasii</i>	Blue oak	UPL
<i>Quercus garryana</i> var. <i>garryana</i>	Garry oak	UPL
<i>Quercus lobata</i>	Valley oak	FACU
<i>Ranunculus muricatus</i>	Spiny-fruit buttercup	FACU
<i>Raphanus sativus</i>	Wild radish	UPL
<i>Rorippa curvisiliqua</i>	Western yellow cress	OBL
<i>Rubus armeniacus</i>	Himalayan blackberry	FAC
<i>Rumex acetosella</i>	Sheep sorrel	FACU
<i>Rumex crispus</i>	Curly dock	FAC
<i>Rumex pulcher</i>	Fiddle dock	FAC
<i>Salix laevigata</i>	Red willow	FACW
<i>Sambucus nigra</i>	Black elderberry	FAC
<i>Senecio vulgaris</i>	Common groundsel	FACU
<i>Silybum marianum</i>	Milk thistle	UPL
<i>Sisymbrium officinale</i>	Hedge mustard	UPL
<i>Sisyrinchium bellum</i>	Western blue-eyed grass	FACW

Taxon	Common Name	Wetland Status
<i>Sonchus oleraceus</i>	Common sow-thistle	UPL
<i>Spergularia rubra</i>	Ruby sand-spurrey	FAC
<i>Stellaria media</i>	Common chickweed	FACU
<i>Taraxacum officinale</i>	Common dandelion	FACU
<i>Torilis arvensis</i>	Field hedgeparsley	UPL
<i>Toxicodendron diversilobum</i>	Western poison-oak	FACU
<i>Trifolium dubium</i>	Little hop clover	UPL
<i>Trifolium fucatum</i>	Sour clover	FACU
<i>Trifolium hirtum</i>	Rose clover	UPL
<i>Trifolium microcephalum</i>	Small-headed clover	FAC
<i>Trifolium repens</i>	White clover	FACU
<i>Trifolium subterraneum</i>	Subterranean clover	UPL
<i>Trifolium variegatum</i>	Whitetip clover	FAC
<i>Triphysaria versicolor subsp. faucibarata</i>	Triphysaria	UPL
<i>Umbellularia californica</i>	California bay	FAC
<i>Veronica peregrina subsp. xalapensis</i>	Purslane speedwell	OBL
<i>Vicia benghalensis</i>	Purple vetch	UPL
<i>Vicia villosa</i>	Winter vetch	UPL
<i>Xanthium strumarium</i>	Cocklebur	FAC
<i>Zeltnera muehlenbergii</i>	June centaury	FAC

Appendix C.
USACOE Aquatic Resources Spreadsheet

Waters_Name	State	Cowardin_Code	HGM_Code	Meas_Type	Amount	Units	Waters_Type	Latitude	Longitude	Local_Waterway
DD-1	CALIFORNIA	PEM2	SLOPE	Area	0.008345491	ACRE	DELINEATE	38.5619327	-122.8199107	Russian River
IS-1	CALIFORNIA	R2RB	RIVERINE	Area	0.26589533	ACRE	DELINEATE	38.568878	-122.8205725	Russian River
SW-1	CALIFORNIA	PEM2	DEPRESS	Area	0.037807409	ACRE	DELINEATE	38.5681781	-122.8197311	Russian River
SW-2	CALIFORNIA	PEM2	DEPRESS	Area	0.013737499	ACRE	DELINEATE	38.5665006	-122.8199352	Russian River
SW-3	CALIFORNIA	PEM2	DEPRESS	Area	0.006666942	ACRE	DELINEATE	38.5663741	-122.8190377	Russian River
SW-4	CALIFORNIA	PEM2	DEPRESS	Area	0.040753542	ACRE	DELINEATE	38.5658143	-122.8191894	Russian River
SW-5	CALIFORNIA	PEM2	DEPRESS	Area	0.00739516	ACRE	DELINEATE	38.5657781	-122.818953	Russian River
SW-6	CALIFORNIA	PEM2	DEPRESS	Area	0.008746971	ACRE	DELINEATE	38.5650466	-122.8194153	Russian River
SW-7	CALIFORNIA	PEM2	DEPRESS	Area	0.022094384	ACRE	DELINEATE	38.5651418	-122.8215457	Russian River



March 16, 2022

Ben vanZutphen
Willow Glen Homes
P.O. Box 2357
Healdsburg, CA 95448

**Subject: Biological Resources Addendum, 62-acre Arata Lane Parcel, Town of Windsor,
Sonoma County, California**

Dear Mr. vanZutphen:

At your request, Salix Consulting, Inc. (Salix) has prepared this report, which provides additional information regarding the biological resources present on your ±62-acre Arata Lane parcel, located just outside the northern boundary of the Town of Windsor, in central Sonoma County, California (Figures 1 and 2). In a letter to you dated November 17, 2021, the Town stated the following regarding biological reports:

The reports submitted due not include a Biological Assessment. Reports prepared by Salix were submitted for aquatic resources, wetlands, and plants. However, no report regarding fauna that could occur on the site were submitted and the reports submitted due not include any recommendations, even though wetlands and other waters were identified on the site, as was the potential for the site to include habitat for a protected plant species.

The Salix reports referenced in the Town comments include the *Special-Status Plant Report ±62-Acre Arata Lane Study Area, Town of Windsor, Sonoma County, CA*, dated June 2018, and the *Aquatic Resources Delineation for the ±62-acre Arata Lane study area*, dated June 2021. It is assumed that the Town has these reports and can reference them if necessary.

This letter report is intended to provide the following:

- information regarding fauna that occur or could occur on the site
- information regarding potential occurrence of special-status animals on the site
- recommendations regarding special-status animals
- recommendations regarding aquatic resources
- recommendations regarding special-status plants that may potentially occur on the site

Wildlife Occurrence and Usage on the Arata Lane Parcel

As described in the 2018 Rare Plant Survey and the 2021 Aquatic Resources Delineation, three (3) biological communities were identified within the study area,: annual grassland, which occupies the majority of the site, foothill woodland, which occurs in one dense band along the northern boundary in association with an intermittent stream, and developed/ disturbed, which occurs in the southern half of the study area and included residential compounds and associated livestock areas and outbuildings. Many of these buildings had been removed by the time of the 2021 aquatic resources delineation. Since the site has remained unchanged since that report was completed, please refer to the site photos that are included in the 2021 delineation report, if necessary.

Wildlife were observed on the project site within the various habitats during the 2018 Rare Plant surveys and the 2021 aquatic resources delineation survey. The site is open and provides quality habitat for foraging and temporary refugia. Animals can linger while passing through the area. The lack of water is a limiting factor for species that might otherwise reside there. Large oak trees line the northern boundary and are scattered in the southern area of the site, and one very large valley oak is present in the northern area of the property. These trees provide roosting and nesting habitat for birds. The seasonal wetlands on the property are wet in the winter and into early spring and then are dry. There is essentially no water on the site from mid-spring until the winter rains. The intermittent stream corridor along the northern boundary is a deeply incised channel that carries winter runoff. It does not flow most of the year and therefore, its aquatic function is limited. A list of wildlife species observed is presented in Appendix A.

Potential for Occurrence of Special-status animals on the Arata Lane Parcel

Salix queried the California Natural Diversity Data Base (CNDDB 2022) for reported occurrences of special-status fish and wildlife in the region surrounding the study area. The five-quadrangle search area included the Healdsburg, Geyserville, Santa Rosa, Mark West Springs, and Guerneville USGS quadrangles. For the purposes of this report, special-status species are those that fall into one or more of the following categories, including those

- Listed as endangered or threatened under the federal Endangered Species Act (or candidate species, or formally proposed for listing);
- Listed as endangered or threatened under the California Endangered Species Act (or proposed for listing);
- Designated as rare, protected, or fully protected pursuant to California Fish and Game Code;
- Designated a Species of Special Concern by the California Department of Fish and Wildlife

The CNDDB query provided a list of regionally-occurring special-status animal species and was used to determine which species have some potential to occur within or near the study area. Appendix B lists regionally-occurring special-status animals. The field surveys that have been conducted for other biological studies and the best professional judgment of Salix biologists were used to further refine the list.

Of the 18 potentially-occurring animal species listed in Appendix B, twelve (12) species were identified as occurring within or near a 5-mile radius of the study area, as shown in Figure 3 and are marked with an asterisk (*) in the lists below.

As described in Appendix B, 15 of the 18 potentially-occurring species were determined to have no potential to occur within the study area due to the absence of suitable habitats. Ten (10) of these species have no potential to occur due to the absence of suitable, supporting aquatic habitats, including

- California freshwater shrimp (*Syncaris pacifica*)
- Coho salmon - Central California Coast ESU (*Onchorhynchus kisutch*)*
- Steelhead - Central California Coast ESU (*Oncorhynchus mykiss irideus*)*
- Northern coastal roach (*Hesperoleucus venustus navarroensis*)*
- Russian River tule perch (*Hysteroecarpus traski pomo*)*
- California tiger salamander (*Ambystoma californiense*)
- California giant salamander (*Dicamptodon ensatus*)*
- California red-legged frog (*Rana draytonii*)
- Western pond turtle (*Actinemys marmorata*)*
- Yellow rail (*Coturnicops noveboracensis*)

Five (5) of these species have no potential to occur due to the absence of other types of suitable, supporting habitats such as shaded forests, appropriate roosting sites or specific species of tree, or the site is too urbanized. These species include

- Red-bellied newt (*Taricha rivularis*)*
- Townsend's big-eared bat (*Corynorhinus townsendii townsendii*)*
- Pallid bat (*Antrozous pallidus*)*
- Red (Sonoma) tree vole (*Arborimus pomo*)
- American badger (*Taxidea taxus*)

The 15 species with no potential to occur within the study area have been dismissed from further consideration.

It was determined that the following three (3) species may have some potential to occur within the study area (see Appendix B).

Special-Status Animal Species Known from the Arata Lane Region with Some Potential to Occur

Species	Status* Federal State	Habitat	Potential for Occurrence Within Study Area**
Amphibians			
Foothill yellow-legged frog * <i>Rana boylei</i>	-	CE SSC	Unlikely. Stream along northern boundary likely does not flow long enough to support species. Not observed during multiple field surveys over several years.

Species	Status*		Habitat	Potential for Occurrence Within Study Area**
	Federal	State		
Birds				
White-tailed kite* <i>Elanus leucurus</i>	-	CFP	Found in lower foothills and valley margins with scattered oaks and along river bottomlands or marshes adjacent to oak woodlands. Nests in trees with dense tops.	Possible. May nest in large trees in study area. Not observed during multiple field surveys over several years.
Burrowing owl* <i>Athene cunicularia</i>	-	SSC	Found in annual grasslands. Nests in burrows dug by small mammals, primarily ground squirrels..	Possible. Suitable habitat occurs in study area. Not observed during multiple field surveys over several years.

*Status Codes:

State

CE	California Endangered
CT	California Threatened
CFP	California Fully Protected
CCT	California Candidate
SSC	California Species of Concern

**Definitions for the Potential to Occur:

- **None.** Habitat does not occur.
- **Unlikely.** Some habitat may occur, but disturbance or other activities may restrict or eliminate the possibility of the species occurring. Habitat may be very marginal, or the study area may be outside the range of the species.
- **Possible.** Marginal to suitable habitat occurs, and the study area occurs within the range of the species.
- **Likely.** Good habitat occurs, but the species was not observed during surveys.
- **Occurs:** Species was observed during surveys.

Foothill yellow-legged frog (*Rana boylei*) (FYLF), has no federal status but is California Endangered species and California Species of Special Concern. Foothill yellow-legged frog occupies rocky streams in valley-foothill hardwood, valley foothill hardwood-conifer, valley foothill riparian, ponderosa pine, mixed conifer, coastal scrub, mixed chaparral, and wet meadow habitat types from sea level to 6,370 feet. It is nearly always found within a few feet of water. Foothill yellow-legged frog is frequently found in moving but not swiftly flowing water. The species is most common along streams with rocky bottoms but has also been found along streams with mud bottoms. Foothill yellow-legged frog requires permanent streams or, at a minimum, streams where pools persist through the dry season.

FYLF appeared in the CNDDDB query and on the five-mile radius map. The nearest reported occurrence of FYLF is 3.5 miles northwest of the study area, at Felts Creek, a tributary to Mill Creek, southwest of Healdsburg in 2018. It is unlikely that FYLF would occur in the stream on the study area northern property boundary because the stream is not likely to flow long enough to support the species. It was not observed during any of the field assessments completed over multiple years.

White-tailed kite (*Elanus leucurus*), a California fully-protected species, occurs primarily at lower elevations near agricultural areas but may occasionally nest in foothill locations. It preys mostly on voles and other small, diurnal mammals, occasionally on birds, insects, reptiles, and amphibians and forages in undisturbed, open grasslands, meadows, farmlands, and emergent wetlands. White-tailed kite uses trees with dense canopies for cover. Makes a nest of loosely

piled sticks and twigs and lined with grass, straw, or rootlets. Nest placed near top of dense oak, willow, or other tree stand; usually 20-100 feet above ground, near foraging area.

White-tailed kite appeared in the CNDDDB query and on the five-mile radius map. The nearest reported occurrence of the species is 4 miles northwest of the study area, 0.4 mile southwest of the Russian River, northeast of Healdsburg (undisclosed date). White-tailed kite was not observed during spring surveys of this site. However, it is possible for white-tailed kite to nest in the large trees within the study area.

Burrowing owl (*Athene cunicularia*), an SSC species, occurs in association with open, dry grasslands, deserts, agricultural areas, and rangeland. They often occur where numerous burrowing mammals are present and frequently occupy California ground squirrel burrows (Shuford and Gardali 2008). Burrowing owls may also use man-made structures such as debris piles, culverts, and cement piles for cover. Circumstantial evidence of burrowing owl occurrence typically consists of the presence of molted feathers, cast pellets, prey remains, or excrement near a burrow entrance. Breeding of burrowing owl occurs from March to late August and incubation lasts between 28 to 30 days. Young are fledged at about 44 days but remain near the burrow and join the adults to forage at dusk.

Burrowing owl appeared in the CNDDDB query and on the five-mile radius map. The nearest reported occurrence of burrowing owl is 3 miles south of the study area, just north of the Sonoma County airport, about 0.3 mile southwest of Windsor Road at Sanders Road, in a culvert in rock riprap along Airport Creek, adjacent to an active runway, in 2017. It was presumed to be overwintering at this site. It was not observed during any of the field assessments of the study area completed over multiple years. However, it is possible for burrowing owl to occur in the grassland habitat in the study area.

Recommendations regarding the potential occurrence of special-status animals

Foothill yellow legged frog requires permanent streams or, at a minimum, streams where pools persist through the dry season. It is unlikely that FYLF would occur in the stream on the northern property boundary because the stream does not flow long enough to support the species. However, the duration of flow should be more quantitatively determined to verify the lack of habitat.

Burrowing owl occurs in association with open, dry grasslands, agricultural areas, and rangeland. They often occur where numerous burrowing mammals are present and frequently occupy California ground squirrel burrows or certain man-made structures. While we have not observed burrowing owl within the study area, suitable habitat is present. It is recommended that according to the CDFW *Burrowing Owl Survey Protocol and Mitigation Guidelines*, a preconstruction survey should be conducted no more than 30 days prior to ground disturbing activity to look for presence/signs of burrowing owls, and if present, report and map all evidence of burrowing owls and activity to the Town of Windsor. The Town may opt for the Californian Department of Fish and Wildlife to be informed to determine appropriate mitigation measures.

White-tailed kite has not been observed nesting during our various surveys of this site. However, it is possible for white-tailed kite to nest in the large trees within the study area.

Additionally, it is possible that the trees provide potential nesting habitat for some common raptors known from the region, and for other birds protected by the Migratory Bird Treaty Act.

Take of any active raptor nest is prohibited under California Fish and Game Code sections 3503, 3503.5, and 3513. If tree removal or other ground disturbance takes place during the breeding/nesting season (February 1 through August 31), disturbance of nesting activities could occur. To avoid impacts to nesting birds, disturbance should occur outside of the typical nesting season. If disturbance occurs at any time during the nesting season, a pre-construction survey should be conducted by a qualified biologist within two weeks prior to initiation of proposed development activities. If active nests are found during the pre-construction survey, buffer zones will be established around any identified nests, and the nests will be monitored by a qualified biologist until the offspring have fledged. If the nesting bird is a bird of prey, consultation with the Town of Windsor and California Department of Fish and Wildlife (CDFW) may be warranted.

Recommendations regarding aquatic resources

The Aquatic Resources Delineation prepared by Salix Consulting (June 2021) identified and mapped three categories of aquatic resources within the study area: Intermittent Stream, Seasonal Wetland, and Drainage Ditch. Maps and photographs are included in the delineation report. The delineation has not been submitted to the Corps of Engineers for a Jurisdictional Determination (verification) as of March 2022.

The intermittent stream, which flows from northeast to southwest along the northern property line, is an unnamed tributary to the Russian River. This feature carries seasonal storm flows but does not sustain wetness long enough to support a riparian plant community. Seven seasonal wetlands were mapped in the central portion of the study area. Five of the seasonal wetlands are shallow depressional features, and two of the seasonal wetlands are remnants of a former drainage ditch, now cutoff and short-linear. One drainage ditch was mapped in the study area. It flows parallel to Arata Lane along a portion of the southern boundary. This ditch has a rocky bottom with sparse vegetation, and it carries water from Arata Lane and the local residential area and flows through a culvert under Arata Lane to the south.

Recommendation:

Some or all of the mapped aquatic resources may be subject to the jurisdiction of the U.S. Army Corps of Engineers (Corps) (federal) and the California Regional Water Quality Control Board (RWQCB) (state) under the federal Clean Water Act (Sections 404 and 401, respectively). To make the determination regarding federal jurisdiction, the delineation report and map should be submitted to the Corps of Engineers with a request for a determination. (Note that the Corps may prefer the delineation be submitted along with an application for a Clean Water Act Section 404 permit.) Activities that place fill in these areas would require a permit. The RWQCB will take jurisdiction over all of the aquatic features on the site as “waters of the State,” and the applicant will need to obtain a Water Quality Certification, commonly referred to as a “401 Certification” from that agency.

Impacts to the bed, bank, or channel of streams or ponds require a Streambed Alteration Agreement with the California Department of Fish and Wildlife (CDFW).

Recommendations regarding special-status plants that may potentially occur on the site

The Special-Status Plant Survey and Report (June 2018) was prepared in conformance with Santa Rosa Plain Conservation Strategy (SRPCS) guidelines due to its proximity to the the "Windsor Listed Plant Conservation Area." Maps and photographs are included in the report.

The listed plants of concern in the SRPCS include Burke's goldfields (*Lasthenia burkei*), Sonoma sunshine (*Blennosperma bakeri*), and many-flowered navarretia (*Navarretia leucocephala* ssp. *plieantha*). It was determined that these three plants, as well as congested-headed hayfield tarplant (*Hemizonia congesta*, ssp. *congesta*) and dwarf downingia (*Downingia pusilla*) were unlikely to occur within the study area because the wetland habitat was marginal (not vernal pools), and in some cases, too shallow to support the species. It was determined that it was possible for Sebastopol meadowfoam (*Limnanthes vinculans*), a listed plant of concern in the SRPCS, to occur within the study area because suitable habitat is present. However, none of these six species was observed during the 2018 Special-Status Plant Survey or the 2021 Aquatic Resources Delineation.

Recommendation:

While it was determined that it was possible for Sebastopol meadowfoam to occur on the site, the species not observed during the 2018 or 2021 surveys, and no further rare plant surveys are recommended.

Thank you for the opportunity to provide the information requested by the Town of Windsor. Please do not hesitate to contact me with any questions or comments.

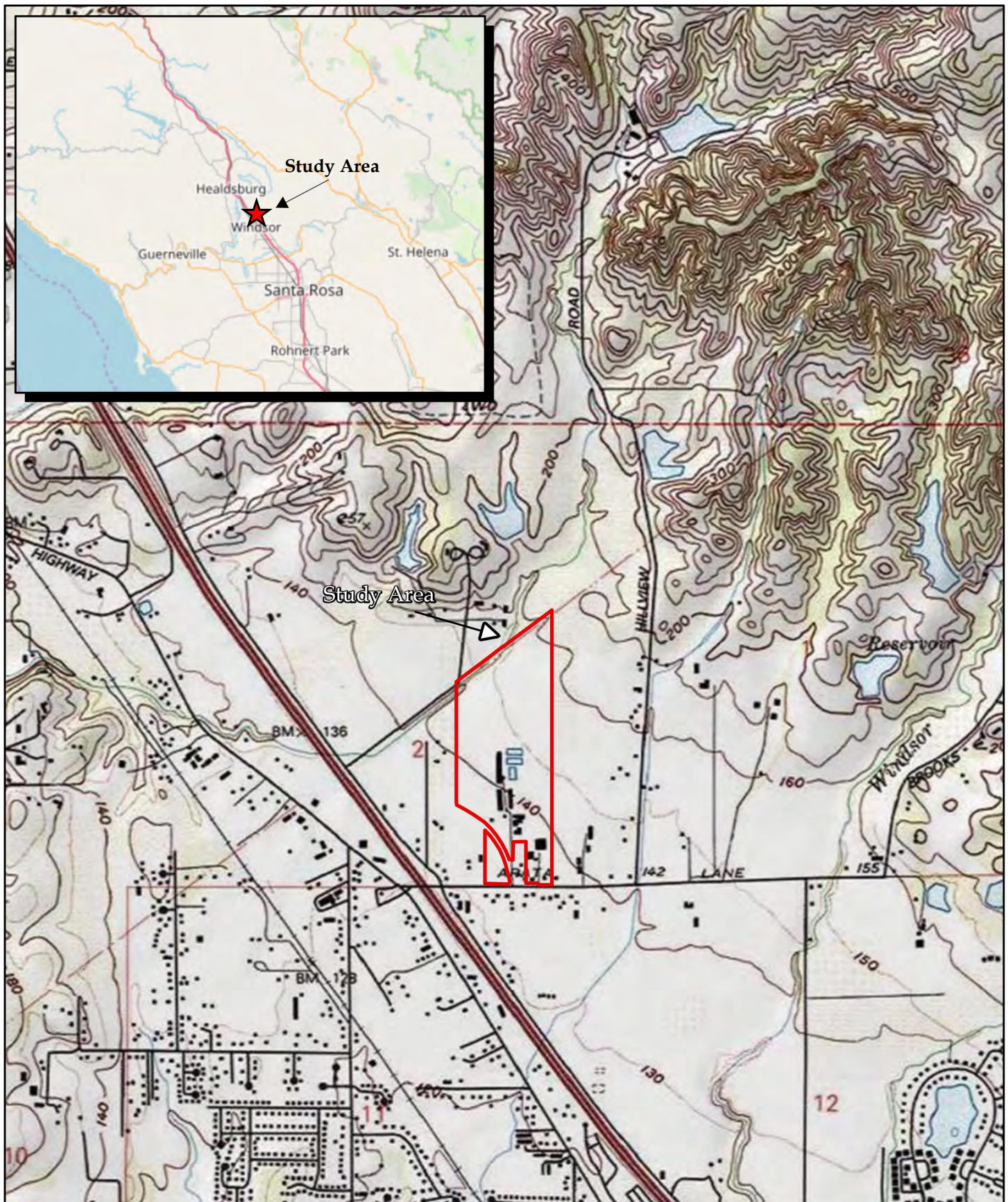
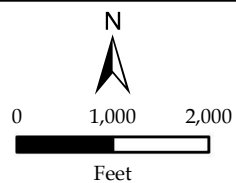
Sincerely,



Jeff Glazner
Principal Biologist

Attachments:

- Figure 1. Site and Vicinity
- Figure 2. Aerial Photo
- Figure 3. CNDDDB Special-status Animal Occurrence Map
- Appendix A. Wildlife Observed on the Arata Lane Parcel
- Appendix B. Potentially-occurring Special-status Animals



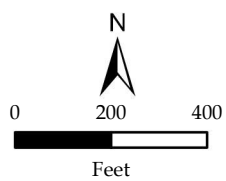
Source Maps: USGS Topographic Map
Healdsburg Quad 1:24,000
S02 T08N R09W

Figure 1

SITE AND VICINITY MAP

Arata Lane

Town of Windsor, Sonoma County, CA



 Study Area
(±62 acres)

Imagery: 5-6-21 Salix Consulting, Inc.

Figure 2

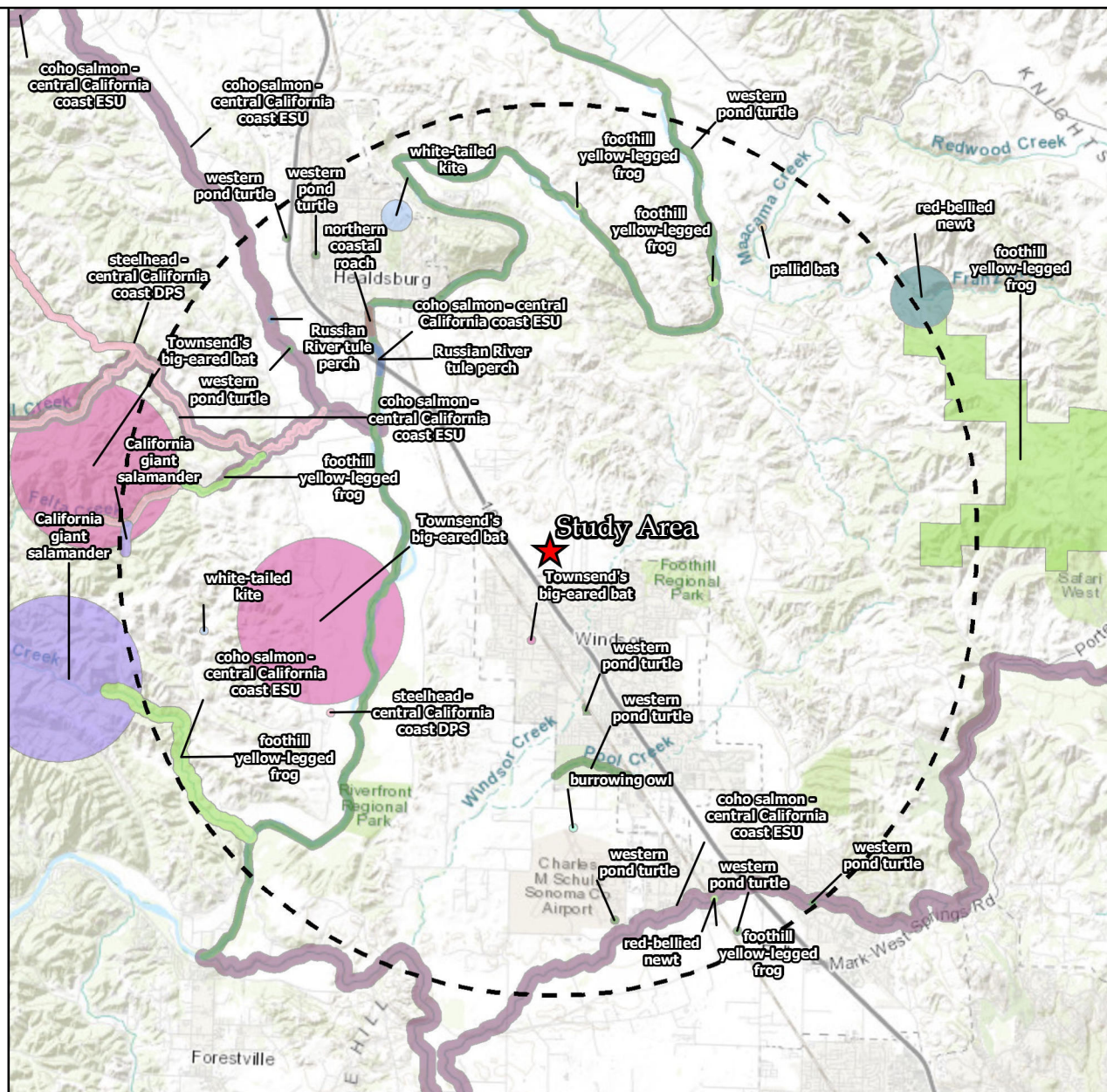
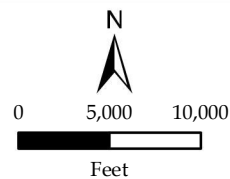
AERIAL MAP

Arata Lane

Town of Windsor, Sonoma County, CA

CNDDDB Special-Status Species

-  California giant salamander
-  Russian River tule perch
-  Townsend's big-eared bat
-  burrowing owl
-  coho salmon - central California coast ESU
-  foothill yellow-legged frog
-  northern coastal roach
-  pallid bat
-  red-bellied newt
-  steelhead - central California coast DPS
-  western pond turtle
-  white-tailed kite



★ Site --- 5-Mile Buffer

Figure 3

CNDDDB OCCURRENCES MAP

Arata Lane

Town of Windsor, Sonoma County, CA

Appendix A

Arata Lane - Wildlife Observed - Spring 2018 and June 2021

Amphibians

Pacific chorus frog	<i>Pseudacris regilla</i>
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Reptiles

Western fence lizard	<i>Sceloporus occidentalis</i>
Northern alligator lizard	<i>Elgaria coerulea</i>

Birds

Turkey vulture	<i>Cathartes aura</i>
Canada goose	<i>Branta canadensis</i>
Red-tailed hawk	<i>Buteo jamaicensis</i>
American kestrel	<i>Falco sparverius</i>
California quail	<i>Callipepla californica</i>
Anna's hummingbird	<i>Calypte anna</i>
Black phoebe	<i>Sayornis nigricans</i>
Western scrub-jay	<i>Aphelocoma californica</i>
American crow	<i>Corvus brachyrhynchos</i>
Common raven	<i>Corvus corax</i>
Bushtit	<i>Psaltiriparus minimus</i>
European starling	<i>Sturnus vulgaris</i>
California towhee	<i>Melospiza crissalis</i>
Western meadowlark	<i>Sturnella neglecta</i>
Lesser goldfinch	<i>Spinus psaltria</i>
House sparrow	<i>Passer domesticus</i>

Mammals

Western gray squirrel	<i>Sciurus griseus</i>
Black-tailed jackrabbit	<i>Lepus californicus</i>
Coyote	<i>Canis latrans</i>

Appendix B

Arata Lane - Potentially-occurring Special-status Animals

	Status*	Habitat	Probability on Project Site
Invertebrates			
California freshwater shrimp <i>Syncaris pacifica</i>	Fed: FE State: CE Other: -	Endemic to Marin, Napa, and Sonoma counties in low gradient streams with moderate to heavy riparian canopy. Needs shallow pools away from the main stream flow. Prefers undercut banks with exposed roots.	None. Site lacks suitable stream parameters.
Fish			
Coho salmon - Central California Coast ESU <i>Oncorhynchus kisutch</i>	Fed: FE State: CE Other: -	One of six distinct groups, Evolutionarily Significant Units (ESUs). Found in short, coastal drainages from Punta Gorda, CA south to Monterey Bay. Spawning habitat is small streams with stable gravel substrates.	None. Stream along northern boundary is short seasonal and does not support fish.
Steelhead - Central California Coast ESU <i>Oncorhynchus mykiss irideus</i>	Fed: FT State: - Other: -	Central coastal basins from the Russian River, south to Soquel Creek, including San Francisco and San Pablo Bay basins, but excludes the Sacramento-San Joaquin River basins.	None. Stream along northern boundary is short seasonal and does not support fish.
Northern coastal roach <i>Hesperoleucus venustus navarroensis</i>	Fed: - State: - Other: SSC	Found in a wide variety of habitats in the Russian River, including the main river where there is cover. In tributaries with clear well oxygenated, water, dominant substrates of cobble and boulder, and shallow depths.	None. Stream along northern boundary is short seasonal and does not support fish.
Russian River tule perch <i>Hysterocarpus traski pomo</i>	Fed: - State: - Other: SSC	Subspecies is confined to the Russian River and its tributaries in Sonoma and Mendocino Counties, CA. Requires clear, flowing water and abundant cover, such as beds of aquatic macrophytes, submerged tree branches, overhanging plants.	None. Stream along northern boundary is short seasonal and does not support fish.
Amphibians			
California tiger salamander <i>Ambystoma californiense</i>	Fed: FE State: CT Other: -	Occurs in annual grassland habitat (<1500 feet) and occasionally in grassy understory of valley-foothill hardwood habitats where lowland aquatic sites are available for breeding. Breeds primarily in vernal pools.	None. No vernal pools or other aquatic features suitable for breeding.
California giant salamander <i>Dicamptodon ensatus</i>	Fed: - State: - Other: SSC	Occurs in wet coastal forests in or near clear, cold permanent and semi-permanent streams and seepages in Mendocino, Lake, Glenn, Sonoma, Marin, and San Mateo to Santa Cruz counties.	None. Site lacks suitable aquatic features.

Attachment ??

Arata Lane - Potentially-occurring Special-status Animals

	Status*	Habitat	Probability on Project Site
Red-bellied newt <i>Taricha rivularis</i>	Fed: - State: - Other: SSC	Found in California along the coast from Bodega in Sonoma County, inland to Lower Lake, and north to Honeydew, Humboldt County. It lives in coastal woodlands, especially in redwood forests.	None. Site generally too distant from coast and lacks shaded redwood forest habitat.
California red-legged frog <i>Rana draytonii</i>	Fed: FT State: - Other: SSC	Occurs in lowlands and foothills in deeper pools and slow-moving streams, usually with emergent wetland vegetation. Requires 11-20 weeks of permanent water for larval development.	None. Site lacks ponds and long-term water feature.
Foothill yellow-legged frog <i>Rana boylei</i>	Fed: - State: CE Other: SSC	Found in partially shaded, shallow streams with rocky substrates. Needs some cobble-sized rocks as a substrate for egg laying. Requires water for 15 weeks for larval transformation.	Unlikely. Stream along northern boundary likely does not flow long enough to support species.

Reptiles

Western pond turtle <i>Actinemys marmorata</i>	Fed: - State: - Other: SSC	Inhabits ponds, marshes, rivers, streams, and irrigation ditches with aquatic vegetation. Needs suitable basking sites and upland habitat for egg laying.	None. Site lacks ponds.
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Birds

White-tailed kite <i>Elanus leucurus</i>	Fed: - State: - Other: CFP	Found in lower foothills and valley margins with scattered oaks and along river bottomlands or marshes adjacent to oak woodlands. Nests in trees with dense tops.	Possible. May nest in large trees in study area.
Yellow rail <i>Coturnicops noveboracensis</i>	Fed: - State: - Other: SSC	Highly secretive marsh bird. Grassy marshes, meadows. In summer, favors large wet meadows or shallow marshes dominated by sedges and grasses. Typically in fresh or brackish marsh. Winters mostly in coastal salt marsh.	None. Site lacks suitable aquatic habitat.
Burrowing owl <i>Athene cunicularia</i>	Fed: - State: - Other: SSC	Found in annual grasslands. Nests in burrows dug by small mammals, primarily ground squirrels.	Possible. Suitable habitat occurs in study area. Not observed during multiple field surveys over several years.

Attachment ??

Arata Lane - Potentially-occurring Special-status Animals

		Status*	Habitat	Probability on Project Site
Mammals				
Townsend's big-eared bat <i>Corynorhinus townsendii townsendii</i>	Fed: - State: - Other: SSC	- - SSC	Found in a variety of habitats. Most common in mesic sites with forest or woodland component. Roosting and maternity sites in caves, mines, lava tubes, tunnels, and buildings. Gleans insects from brush or trees and feeds along habitat edges.	None. Site lacks suitable roosting habitat.
Pallid bat <i>Antrozous pallidus</i>	Fed: - State: - Other: SSC	- - SSC	Occurs in grasslands, woodlands, deserts & urban habitats; open habitat required for foraging. Common in dry habitats with rocky outcrops, cliffs, and crevices for roosting. Roosts include caves, mines, bridges & occasionally hollow trees, buildings.	None. Site lacks suitable roosting habitat.
Red tree vole <i>Arborimus pomo</i>	Fed: - State: - Other: SSC	- - SSC	Inhabits the north coast fog belt from Oregon to Sonoma County. Feeds almost exclusively on Douglas-fir needles.	None. Site lacks Douglas fir. (aka Sonoma tree vole)
American badger <i>Taxidea taxus</i>	Fed: - State: - Other: SSC	- - SSC	Occurs in dry, open soils in herbaceous, shrub, and forest habitats. Needs friable, uncultivated soil. Preys on rodents.	None. Site too urbanized for denning.
*Status	Federal: FE - Federal Endangered FT - Federal Threatened FPE - Federal Proposed Endangered FPT - Federal Proposed Threatened FC - Federal Candidate FPD - Federal Proposed for Delisting	State: CE - California Endangered CT - California Threatened CR - California Rare CC - California Candidate CFP - California Fully Protected CSC - California Species of Special Concern	Other: Some species have protection under the other designations, such as the California Department of Forestry Sensitive Species, Bureau of Land Management Sensitive Species, U.S.D.A. Forest Service Sensitive Species, and the Migratory Bird Treaty Act. Raptors and their nests are protected by provisions of the California Fish and Game Code. Certain areas, such as wintering areas of the monarch butterfly, may be protected by policies of the California Department of Fish and Game. WL - CDFG Watch List	



June 20, 2022

Ben vanZutphen
Willow Glen Homes
P.O. Box 2357
Healdsburg, CA 95448

**Subject: Biological Resources Addendum, Los Amigos Connector Corridor,
Town of Windsor, Sonoma County, California**

Dear Mr. vanZutphen:

At your request, Salix Consulting, Inc. (Salix) has prepared this addendum letter report, which addresses biological and aquatic resources along the ± 5 -acre road connector corridor that connects Arata Lane to the Redwood Highway (Figures 1 and 2). Biological and aquatic resources have been previously addressed for the ± 62 -acre Arata Lane study area but this corridor had not been evaluated until now.

To assess this corridor, the study area footprint was examined from aerial photography, soil mapping (Figure 3), CNDDB and USFWS (IPaC) database queries, and a field examination conducted on May 13, 2022.

The study area begins at Arata Lane at the southern end of the proposed Arata Lane project. It is oriented northwest and then westerly before merging with the Redwood Highway. The corridor passes through primarily open grassland but also along and through several oak trees.

The corridor was walked on May 13, 2022. Plant species were recorded, wildlife observations were made, habitats/landcover was mapped, and an aquatic resource evaluation was conducted. The timing of the survey was appropriate to determine if any special status plants were present as well.

This letter addresses the landcover/habitats of the corridor (Figure 4) and observed species (Appendix A) and potential for sensitive resources. It is an addendum to the larger report so we are not duplicating all the background unless requires updating.

Findings

Vegetative cover in the corridor is primarily herbaceous and most is annually manipulated by mowing or plowing. Common species observed include long-beaked hawkbit (*Leontodon saxatilis*), soft chess (*Bromus hordeaceus*), Italian ryegrass (*Festuca perennis*), broad-leaved filaree (*Erodium botrys*), cut-leaf geranium (*Geranium dissectum*), winter vetch (*Vicia villosa*), Spanish lotus (*Acmispon americanus*), yellow glandweed (*Parentucellia viscosa*), Mediterranean barley (*Hordeum murinum*), and California burclover (*Medicago polymorpha*). Oak trees within the corridor include coast live oak (*Quercus agrifolia*) and Valley oak (*Quercus lobata*). Aerial and ground site photos are presented in Figures 5a-5c.

Wildlife usage is similar to the larger study area but does not include aquatic species and therefore, is less diverse.

Aquatic Resources

The corridor was examined for Aquatic Resources by visual field examination. No areas of aquatic resources were detected.

Special Status Species

Special status species information for the larger project was reviewed and each species was reevaluated for the potential to occur in the road corridor. Five mile radius maps were produced for animals (Figure 6a) and plants (Figure 6b) depicting all species in the database that occur in the project vicinity. Townsend's big-eared bat is shown to occur a few miles south of the property and is the nearest special status wildlife species recorded from the area.

Special status plants recorded from the nearby area include Baker's navarretia (*Navarretia leucocephala ssp. bakeri*), Sonoma sunshine (*Blennosperma bakeri*), and Burke's goldfields (*Lasthenia burkei*), all of which occur in vernal pools. Narrow-flowered californian brodiaea (*Brodiaea leptandra*) occurs in coniferous forest and chaparral on gravelly soils. None of these habitat types are present in the study study corridor.

Except for nesting birds, most of which are regulated by the Migratory Bird Treaty Act, it is highly unlikely that any of the regionally occurring special status species would occur in the road corridor. This is primarily because of the lack of aquatic resources and habitat stability. Many of the species require wetlands for all or a part of their life cycles and much of this land is regularly maintained through disking, mowing, or high human activity (roads, road noise, equipment, etc).

In summary, the Los Amigos Road connector road corridor does not contain any aquatic resources and due to lack of habitat suitability, is highly unlikely to support special status plants or animals.

Thank you for the opportunity to provide the information requested by the Town of Windsor. Please do not hesitate to contact me with any questions or comments.

Sincerely,

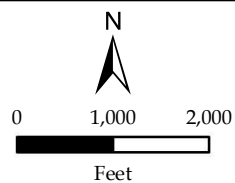


Jeff Glazner
Principal Biologist

Attachments:

- Figure 1. Site and Vicinity Map
- Figure 2. Aerial Photo
- Figure 3. Soil Components
- Figure 4. Habitat Map

- Figure 5a. Aerial Site Photos
- Figure 5b-c. Site Photos
- Figure 6a. CNDDDB Special-status Animal Occurrence Map
- Figure 6b. CNDDDB Special-status Animal Occurrence Map
- Appendix A. Plant Species Observed



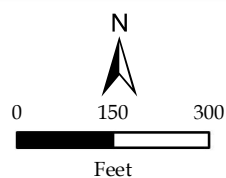
Source Maps: USGS Topographic Map
Healdsburg Quad 1:24,000
S02 T08N R09W

Figure 1

SITE AND VICINITY MAP

Arata Lane

Town of Windsor, Sonoma County, CA



 Study Area
(±5 acres)

Figure 2

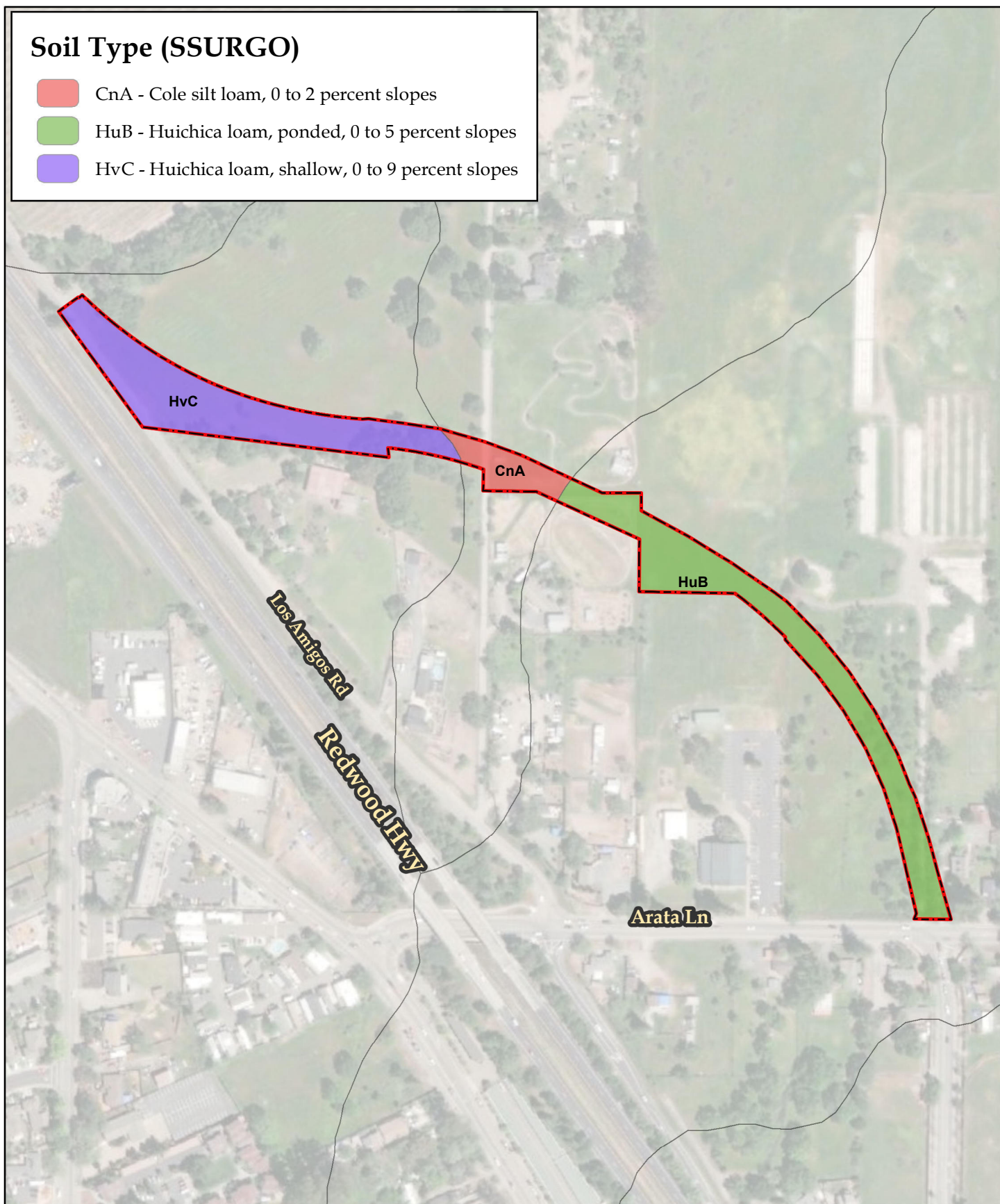
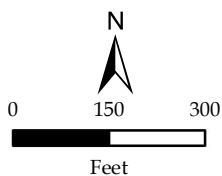
AERIAL MAP

Arata Lane

Town of Windsor, Sonoma County, CA

Soil Type (SSURGO)

-  CnA - Cole silt loam, 0 to 2 percent slopes
-  HuB - Huichica loam, ponded, 0 to 5 percent slopes
-  HvC - Huichica loam, shallow, 0 to 9 percent slopes



 Study Area

Figure 3

SOIL COMPONENTS

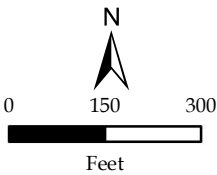
Arata Lane

Town of Windsor, Sonoma County, CA



Habitat Components

- Annual Grassland (± 3.5 acres)
- Road (± 0.5 acre)
- Oak Woodland (± 1.0 acre)



 Study Area
(± 5 acres)

Figure 4

HABITAT MAP

Arata Lane

Town of Windsor, Sonoma County, CA



Looking northwest over western portion of alignment. Redwood Highway in background. *Photo date 5-6-21*



Looking south over southern portion of alignment. Corridor connects with Arata Lane. *Photo date 5-6-21*



Study Area

Figure 5a

AERIAL SITE PHOTOS

Arata Lane

Town of Windsor, Sonoma County, CA



Looking northwest along road corridor towards Redwood Highway. *Photo date 5-13-22*



Looking southeast along road corridor. *Photo date 5-13-22*



Looking northwest along the proposed Los Amigos corridor across gravel road near center of alignment. *Photo date 5-13-22*



Looking southeast along the proposed Los Amigos corridor. *Photo date 5-13-22*

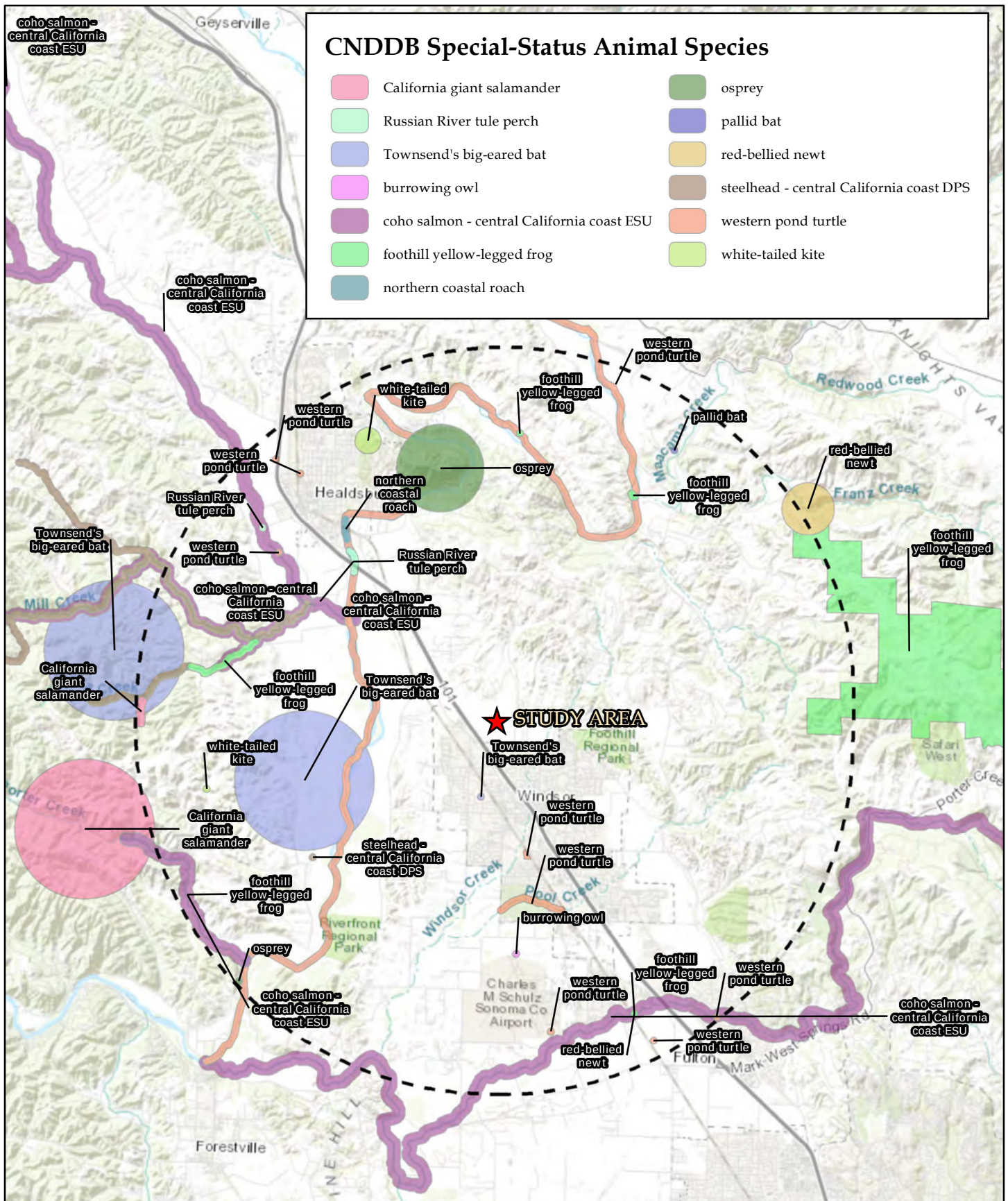
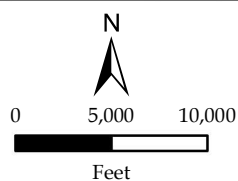


Figure 6a

CNDDDB OCCURRENCES MAP

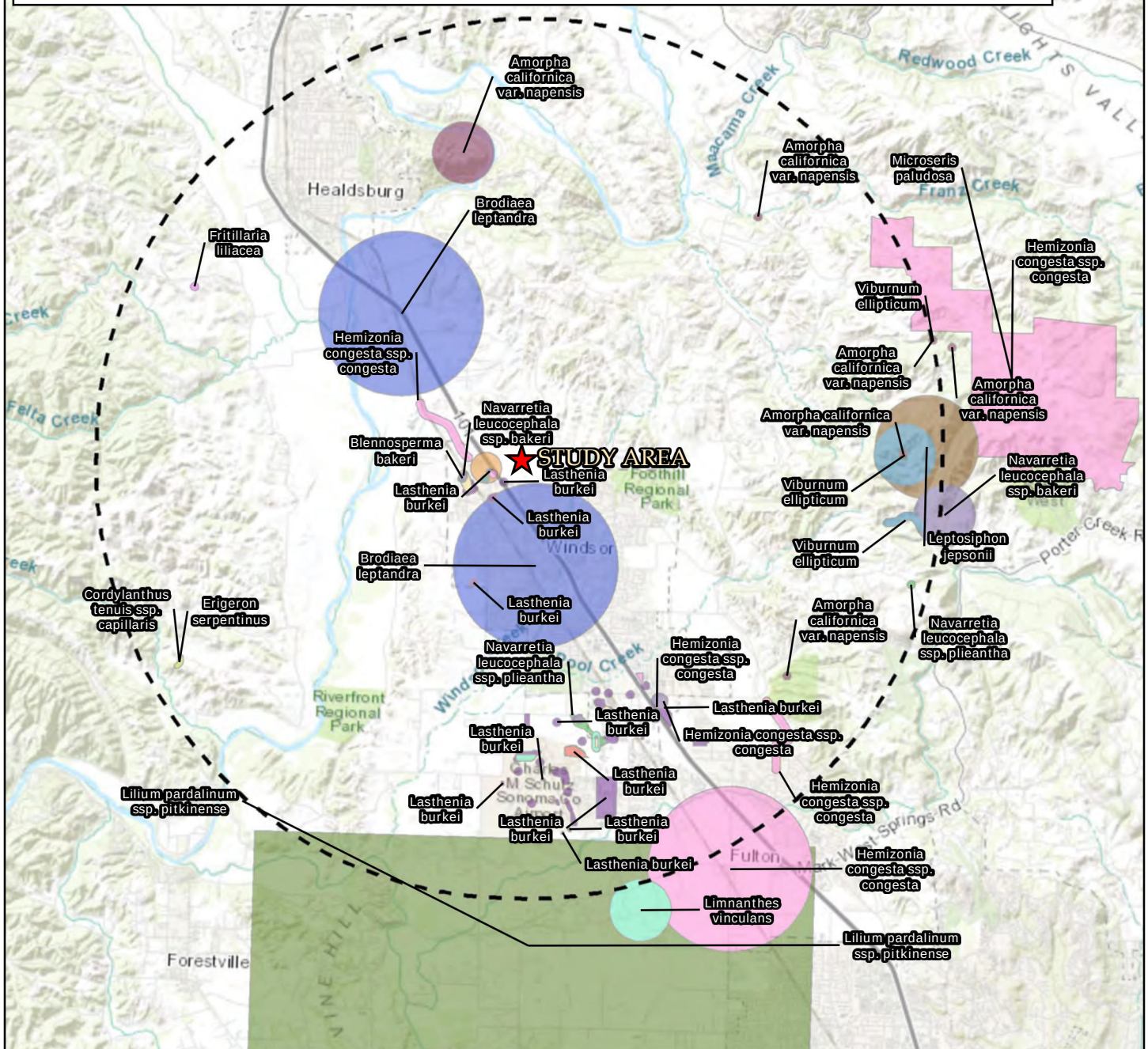
Arata Lane

Town of Windsor, Sonoma County, CA



CNDDDB Special-Status Plant Species

 <i>Amorpha californica</i> var. <i>napensis</i>	 <i>Erigeron serpentinus</i>	 <i>Lilium pardalinum</i> ssp. <i>pitkinense</i>
 <i>Blennosperma bakeri</i>	 <i>Fritillaria liliacea</i>	 <i>Limnanthes vincularis</i>
 <i>Brodiaea leptandra</i>	 <i>Gratiola heterosepala</i>	 <i>Microseris paludosa</i>
 <i>Centromadia parryi</i> ssp. <i>parryi</i>	 <i>Hemizonia congesta</i> ssp. <i>congesta</i>	 <i>Navarretia leucocephala</i> ssp. <i>bakeri</i>
 <i>Cordylanthus tenuis</i> ssp. <i>capillaris</i>	 <i>Lasthenia burkei</i>	 <i>Navarretia leucocephala</i> ssp. <i>plieantha</i>
 <i>Downingia pusilla</i>	 <i>Leptosiphon jepsonii</i>	 <i>Viburnum ellipticum</i>



Appendix A

Arata Lane/Los Amigos Corridor - Plants Observed May 13, 2022

Angiosperms - Dicots

Anacardiaceae - Cashew or Sumac Family

Toxicodendron diversilobum

Western poison-oak

Apiaceae (Umbelliferae) - Carrot Family

**Torilis arvensis*

Field hedgeparsley

Asteraceae (Compositae) - Sunflower Family

Achillea millefolium

Common yarrow

Achyrochaena mollis

Blow-wives

**Carduus pycnocephalus*

Italian thistle

**Centaurea melitensis*

Tocalote

**Centaurea solstitialis*

Yellow starthistle

**Cichorium intybus*

Chicory

**Dittrichia graveolens*

Stinkwort

**Hypochaeris glabra*

Smooth cat's-ear

**Lactuca serriola*

Prickly lettuce

**Leontodon saxatilis*

Long-beaked hawkbit

**Logfia gallica*

Narrowleaf cottonrose

**Matricaria discoidea*

Pineapple-weed

**Sonchus oleraceus*

Common sow-thistle

Brassicaceae (Cruciferae) - Mustard Family

**Raphanus sativus*

Wild radish

Caryophyllaceae - Pink Family

**Spergularia rubra*

Ruby sand-spurrey

Fabaceae (Leguminosae) - Legume Family

Acmispon americanus

Spanish lotus

Lupinus bicolor

Miniature lupine

Lupinus nanus

Sky lupine

**Medicago polymorpha*

California burclover

**Trifolium hirtum*

Rose clover

**Vicia benghalensis*

Purple vetch

**Vicia villosa*

Winter vetch

Fagaceae - Oak Family

Quercus agrifolia var. *agrifolia*

Coast live oak

Quercus lobata

Valley oak

Geraniaceae - Geranium Family

**Erodium botrys*

Broad-leaf filaree

**Geranium dissectum*

Cut-leaf geranium

Myrsinaceae - Myrsine Family

**Lysimachia arvensis*

Scarlet pimpernel

* Indicates a non-native species

Onagraceae - Evening Primrose Family*Epilobium brachycarpum*

Summer cottonweed

Orobanchaceae - Broomrape Family**Parentucellia viscosa*

Yellow glandweed

Plantaginaceae - Plantain Family**Plantago lanceolata*

English plantain

Polygonaceae - Buckwheat Family**Rumex crispus*

Curly dock

Rosaceae - Rose Family*Rosa californica*

California rose

**Rubus armeniacus*

Himalayan blackberry

Angiosperms - Monocots

Poaceae (Gramineae) - Grass Family**Aira caryophyllea*

Silver European hairgrass

**Avena fatua*

Wild oat

**Briza minor*

Small quaking grass

**Bromus diandrus*

Ripgut grass

**Bromus hordeaceus*

Soft chess

**Cynodon dactylon*

Bermudagrass

**Cynosurus echinatus*

Hedgehog dogtail

**Festuca myuros*

Rattail sixweeks grass

**Festuca perennis*

Italian ryegrass

**Hordeum murinum*

Wall barley

**Phalaris aquatica*

Harding grass

**Poa annua*

Annual bluegrass



February 27, 2024

Ben vanZutphen
Arata Properties, LLC
P.O. Box 2357
Healdsburg, CA 95448

**Subject: Aquatic Resource Permitting for the Quail Acres Project,
Town of Windsor, Sonoma County, CA**

Dear Ben:

This letter outlines the proposed permitting scenario for the Quail Acres project located north of Arata Lane and near the intersection of U.S. Route 101. The property is located in Section 2, Township 8 North and Range 8 West on the Healdsburg, California 7.5-minute U.S. Geological Survey topographic quadrangle map.

I originally conducted an Aquatic Resources Delineation in 2016 and updated the document in 2018 and again in 2021. The document has not been submitted to the U.S. Army Corps of Engineers (Corps) for verification yet.

The property contains 0.411-acre of aquatic resources including:

- Intermittent Stream (0.266 ac)
- Drainage Ditch (along Arata Ln) (0.008 ac)
- Seasonal Wetlands (seven features, 0.138 ac)

The project development plan is to utilize the entire interior of the property for development of the site and grade all of it. The seasonal wetlands scattered in seven locations over the property will be filled to accommodate the project. These wetlands are shallow basins and generally dominated by wetland grasses. The roadside drainage ditch (0.008 ac) will also be impacted. The intermittent stream along the northern boundary would be avoided. A Rare Plant Survey was conducted in 2018 and no rare plants were found.

The attached exhibit shows the existing aquatic resources and those proposed to be filled for this project. Under the assumption that the seasonal wetlands and drainage ditch are filled as part of future development, I would estimate the mitigation ratio/requirement would be as low as 1:1 through the purchase of compensatory mitigation credits from an agency-approved wetland mitigation bank. However, it won't be possible to know the actual mitigation requirement until the permit is issued.

Federal Wetland Permitting (Federal Clean Water Act Section 404)

Scenario 1 - Corps takes jurisdiction over seasonal wetlands and/or drainage ditch

If the Corps takes jurisdiction over the seasonal wetlands, they will require a Section 404 Permit to fill them. In this case, the permit would be a Nationwide Permit 29 - Residential Developments. The Corps requires Endangered Species and Cultural Resources reviews to process a 404 Permit.

Scenario 2 - Corps does not take jurisdiction over seasonal wetlands and/or drainage ditch

If the Corps does not exercise jurisdiction over seasonal wetlands, then there is no Corps permit needed.

State Wetland Permitting (Federal Clean Water Act Section 401 or State Porter-Cologne Water Quality Control Act)

Waters of the U.S. and waters of the State are generally the same. With that assumption, the wetland delineation map would be used for both Federal and State permitting governed by the Federal Clean Water Act. However, there are circumstances where the Corps does not take jurisdiction. When this occurs, the State has a separate permitting program for wetlands that are authorized under the California Porter-Cologne Water Quality Control Act. For Sonoma County, the State agency that regulates the discharge of fill into wetlands is the North Coast Regional Water Quality Control Board.

Scenario 1- Corps takes jurisdiction over seasonal wetlands and/or drainage ditch

The requirement of the State is to obtain a Section 401 Water Quality Certification. A 401 Certification is a condition of a 404 Permit and satisfies the State's requirements for the fill of wetlands.

Scenario 2- Corps does not take jurisdiction over seasonal wetlands and/or drainage ditch

If the Corps does not take jurisdiction over seasonal wetlands, then the State has independent discretion to issue a permit that allows the fill of a wetland. In this case, the permit is called a Waste Discharge Requirement (WDR).

Other

The California Department of Fish and Wildlife gets involved in wetland permitting if streams, lakes (or ponds), or riparian vegetation are impacted. That permit is a Lake and Streambed Alteration Agreement (LSAA or 1602). If the intermittent stream along the northern boundary is avoided, then a 1602 Permit will not be needed from CDFW.

Recommendations

Submit the Aquatic Resources Delineation to the Corps with a request for an Approved Jurisdictional Determination (AJD). Once the AJD is issued, and the determination of state and federal jurisdiction is made, prepare, and submit necessary permits for processing. A compensatory mitigation requirement will need to be met prior to ground disturbance (e.g., 1:1 credit purchase for the use of a mitigation bank or in lieu fee program if one is available or a higher ratio for a permittee-responsible mitigation plan).

If further information is needed, please contact me.

Sincerely,

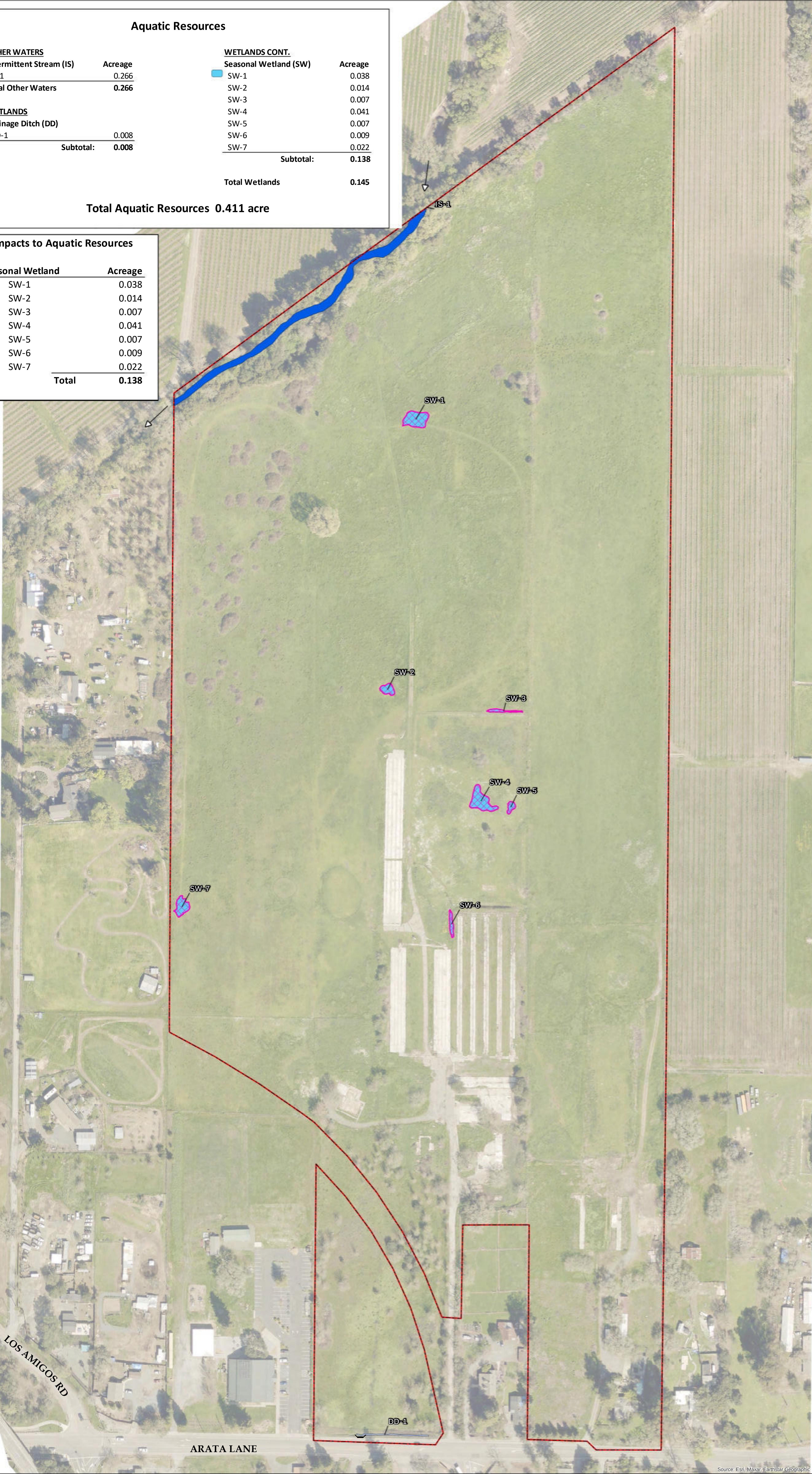
A handwritten signature in blue ink that reads "Jeff Glazner". The signature is written in a cursive, flowing style.

Jeff Glazner
Principal Biologist

Attachment: Aquatic Resources Impacts Map

Aquatic Resources			
OTHER WATERS		WETLANDS CONT.	
Intermittent Stream (IS)	Acreage	Seasonal Wetland (SW)	Acreage
IS-1	0.266	SW-1	0.038
Total Other Waters	0.266	SW-2	0.014
		SW-3	0.007
		SW-4	0.041
		SW-5	0.007
		SW-6	0.009
		SW-7	0.022
		Subtotal:	0.138
		Total Wetlands	0.145
Total Aquatic Resources 0.411 acre			

Impacts to Aquatic Resources	
Seasonal Wetland	Acreage
SW-1	0.038
SW-2	0.014
SW-3	0.007
SW-4	0.041
SW-5	0.007
SW-6	0.009
SW-7	0.022
Total	0.138



HORTICULTURAL *Associates*

Consultants in Horticulture and Arboriculture

ARBORIST REPORT

Los Amigos Cottages
Windsor, CA

Prepared for:

Arata Properties, LLC
P.O. Box 2357
Healdsburg, CA 95448

Prepared by:

John C. Meserve
ISA Certified Arborist, WE #0478A
ISA Qualified Tree Risk Assessor/TRAQ
ASCA Qualified Tree and Plant Appraiser/TPAQ

March 25, 2024
(Revised October 25, 2024)

March 25, 2024
(Revised October 25, 2024)

Dennis Dalby
Civil Design Consultants, Inc.
2200 Range Ave Suite 204
Santa Rosa, CA, 95403

Re: Completed *Arborist Report*, Los Amigos Cottages, Windsor, California

Dennis,

Attached you will find our completed *Arborist Report* for the above noted site in Windsor. A total of 39 trees were evaluated and this includes all trees that are present which are 6 inches or greater in trunk diameter and located within the designated project boundaries.

All trees in this report were evaluated and documented for species, size, health, and structural condition. The *Tree Inventory Chart* provides information about the expected impacts of development. A *Tree Location Plan* shows the location and numbering sequence of all trees.

This report is intended to be a basic inventory of trees present at this site, which includes a general review of tree health and structural condition. No in-depth evaluation has occurred on any tree, and assessment has included only external visual examination without probing, drilling, coring, root collar examination, root excavation, or dissecting any tree part. Failures, deficiencies, and problems may occur in these trees in the future, and this inventory in no way guarantees or provides a warranty for their condition. No other trees are included in this report. If other trees need to be included it is the responsibility of the client to provide that direction.

EXISTING TREE SUMMARY

Species that are native to the site include Valley Oak, Coast Live Oak, Blue Oak, Cork Oak, and Black Walnut.

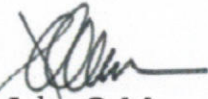
No ornamental species were found.

CONSTRUCTION IMPACT SUMMARY

All trees located at this site will require removal based on the plan reviewed.

Please feel free to contact me if you have questions regarding this report, or if further review would be helpful.

Regards,



John C. Meserve
ISA Certified Arborist, WE #0478A
ISA Qualified Tree Risk Assessor/TRAQ
ASCA Qualified Tree and Plant Appraiser/TPAQ



TREE INVENTORY CHART

Tree #	Species	Common Name	Protected Species?	Trunk (dbh ± inches)	Height (± feet)	Radius (± feet)	Health 1 - 5	Structure 1 - 4	Comments	Expected Development Impacts	Recommendations
107	<i>Quercus lobata</i>	Valley Oak	Yes	8+7	28	16	3	3		3	2
108	<i>Quercus lobata</i>	Valley Oak	Yes	8	28	14	3	3		3	2
109	<i>Quercus lobata</i>	Valley Oak	Yes	6	20	8	3	3		3	2
110	<i>Quercus douglasii</i>	Blue Oak	Yes	8	18	9	3	3		3	2
111	<i>Quercus lobata</i>	Valley Oak	Yes	6	20	8	3	3		3	2
112	<i>Quercus lobata</i>	Valley Oak	Yes	7	20	12	3	3		3	2
114	<i>Quercus lobata</i>	Valley Oak	Yes	6.5+5	25	12	3	3		3	2
115	<i>Quercus lobata</i>	Valley Oak	Yes	6	25	12	3	3		3	2
116	<i>Quercus agrifolia</i>	Coast Live Oak	Yes	6	20	12	3	3		3	2
125	<i>Quercus lobata</i>	Valley Oak	Yes	7+8+6+6	30	16	3	3		3	2
126	<i>Quercus lobata</i>	Valley Oak	Yes	6+6+4	30	14	3	3		3	2
127	<i>Quercus lobata</i>	Valley Oak	Yes	13.5	30	16	3	3		3	2
129	<i>Quercus douglasii</i>	Blue Oak	Yes	6	20	12	3	3		3	2
131	<i>Quercus douglasii</i>	Blue Oak	Yes	9	35	14	3	3		3	2

Tree #	Species	Common Name	Protected Species?	Trunk (dbh ± inches)	Height (± feet)	Radius (± feet)	Health 1 - 5	Structure 1 - 4	Comments	Expected Development Impacts	Recommendations
132	<i>Quercus agrifolia</i>	Coast Live Oak	Yes	6+multi	18	14	3	3		3	2
133	<i>Quercus douglasii</i>	Blue Oak	Yes	9.5	35	16	3	3		3	2
134	<i>Quercus lobata</i>	Valley Oak	Yes	14	38	18	3	3		3	2
135	<i>Quercus douglasii</i>	Blue Oak	Yes	10	30	18	4	3		3	2
136	<i>Quercus agrifolia</i>	Coast Live Oak	Yes	7.5+7+7+1 1	30	18	4	3		3	2
137	<i>Quercus lobata</i>	Valley Oak	Yes	7	25	12	3	3		3	2
138	<i>Juglans nigra</i>	Black Walnut	No	8+multi	35	18	3	2		3	2
139	<i>Quercus lobata</i>	Valley Oak	Yes	11.5	35	16	3	3		3	2
141	<i>Quercus lobata</i>	Valley Oak	Yes	7	38	12	3	3		3	2
142	<i>Quercus lobata</i>	Valley Oak	Yes	9+7.5+8.5	35	20	3	3		3	2
143	<i>Quercus lobata</i>	Valley Oak	Yes	8.5	30	18	3	3		3	2
144	<i>Quercus suber</i>	Cork Oak	No	±12+8+14	28	16	4	3		3	2
145	<i>Quercus lobata</i>	Valley Oak	Yes	9	25	14	3	3		3	2
146	<i>Quercus lobata</i>	Valley Oak	Yes	9.5+11.5	35	16	3	3		3	2

TREE INVENTORY
Los Amigos Cottages
Windsor, CA

March 25, 2024

Tree #	Species	Common Name	Protected Species?	Trunk (dbh ± inches)	Height (± feet)	Radius (± feet)	Health 1 - 5	Structure 1 - 4	Comments	Expected Development Impacts	Recommendations
147	<i>Quercus lobata</i>	Valley Oak	Yes	7+7	25	12	3	3		3	2
148	<i>Quercus lobata</i>	Valley Oak	Yes	12	30	14	3	3		3	2
149	<i>Quercus lobata</i>	Valley Oak	Yes	7+6	25	12	3	3		3	2
150	<i>Quercus lobata</i>	Valley Oak	Yes	11.5+7+12	35	14	3	3		3	2
152	<i>Quercus lobata</i>	Valley Oak	Yes	7+12.5	35	14	3	3	3	3	2
154	<i>Quercus lobata</i>	Valley Oak	Yes	13	30	12	3	3	3	4	2
155	<i>Quercus lobata</i>	Valley Oak	Yes	12+5.5	30	12	3	3	22	16	2
156	<i>Quercus lobata</i>	Valley Oak	Yes	6	22	10	3	3	35	20	2
157	<i>Quercus lobata</i>	Valley Oak	Yes	9.5+5.5	20	12	3	3		3	2

1, 6, 7, 8, 9, 11	1, 6, 7, 8, 9, 11
1	1
3	3
3	4
22	16
35	20
17	12
Yes	Yes
Valley Oak	Valley Oak
Quercus lobata	Quercus lobata

KEY TO TREE
INVENTORY CHART

KEY TO TREE INVENTORY CHART

Los Amigos Cottages

Windsor, CA

Tree Number

Each tree has been identified in the field with an aluminum tag and reference number. Tags are attached to the trunk at approximately eye level. The *Tree Location Plan* illustrates the location of each numbered tree.

Species

Each tree has been identified by genus, species and common name. Many species have more than one common name.

Trunk

Each trunk has been measured in inches to document its diameter at 54" above adjacent grade. Trunk diameter is a good indicator of age, and is commonly used to determine mitigation replacement requirements.

Height

Height is estimated in feet, using visual assessment.

Radius

Radius is estimated in feet, using visual assessment. Since many canopies are asymmetrical, it is not uncommon for a radius estimate to be an average of the canopy size.

Health

The following descriptions are used to rate the health of a tree. Trees with a rating of 4 or 5 are very good candidates for preservation and will tolerate more construction impacts than trees in poorer condition. Trees with a rating of 3 may or may not be good candidates for preservation, depending on the species and expected construction impacts. Trees with a rating of 1 or 2 are generally poor candidates for preservation.

- (5) Excellent - health and vigor are exceptional, no pest, disease, or distress symptoms.
- (4) Good - health and vigor are average, no significant or specific distress symptoms, no significant pest or disease.
- (3) Fair - health and vigor are somewhat compromised, distress is visible, pest or disease may be present and affecting health, problems are generally correctable.
- (2) Marginal - health and vigor are significantly compromised, distress is highly visible and present to the degree that survivability is in question.
- (1) Poor - decline has progressed beyond the point of being able to return to a healthy condition again. Long-term survival is not expected. This designation includes dead trees.

Structure

The following descriptions are used to rate the structural integrity of a tree. Trees with a rating of 3 or 4 are generally stable, sound trees which do not require significant pruning, although cleaning, thinning, or raising the canopy might be desirable. Trees with a rating of 2 are generally poor candidates for preservation unless they are preserved well away from improvements or active use areas. Significant time and effort would be required to reconstruct the canopy and improve structural integrity. Trees with a rating of 1 are hazardous and should be removed.

- (4) Good structure - minor structural problems may be present which do not require corrective action.
- (3) Moderate structure - normal, typical structural issues which can be corrected with pruning.
- (2) Marginal structure - serious structural problems are present which may or may not be correctable with pruning, cabling, bracing, etc.
- (1) Poor structure - hazardous structural condition which cannot be effectively corrected with pruning or other measures, may require removal depending on location and the presence of targets.

Construction Impacts

Considering the proximity of construction activities, type of activities, tree species, and tree condition - the following ratings are used to estimate the amount of impact on tree health and stability. Most trees will tolerate a (1) rating, many trees could tolerate a (2) rating with careful consideration and mitigation, but trees with a (3) rating are poor candidates for preservation.

- (3) A significant impact on long term tree integrity can be expected as a result of proposed development.
- (2) A moderate impact on long term tree integrity can be expected as a result of proposed development.
- (1) A minor impact on long term tree integrity can be expected as a result of proposed development.
- (0) No impacts are expected

Recommendations

Recommendations are provided for removal or preservation. For those being preserved, protection measures and mitigation procedures to offset impacts and improve tree health are provided.

- (0) No action required
- (1) Preservation appears to be possible.
- (2) Removal is required due to significant development impacts.

- (3) Removal is required due to poor health or hazardous structure.
- (4) Removal is required due to significant development impacts and poor existing condition.
- (5) Removal is recommended due to poor species characteristics.
- (6) Install temporary protective fencing at the edge of the dripline, or edge of approved construction, prior to beginning grading or construction. Maintain fencing in place for duration of all construction activity in the area.
- (7) Maintain existing grade within the fenced portion of the dripline. Route drainage swales and all underground work outside the dripline.
- (8) Place a 4" layer of chipped bark mulch over the soil surface within the fenced dripline prior to installing temporary fencing. Maintain this layer of mulch throughout construction.
- (9) Prune to clean and reduce end weights on long laterals on the project side of each canopy, per International Society of Arboriculture pruning standards.
- (10) This trunk could be located off site, but the canopy overhangs the project site.
- (11) Excavation may be required within the TPZ and the dripline for development. Excavation within the TPZ of any type must adhere to the following guidelines:

All roots encountered that are 2 inches or larger in diameter must be cleanly cut as they are encountered by excavating equipment.

Roots may not be ripped from the ground and then trimmed. They must be trimmed as encountered and this will require the use of a ground man working with a suitable power tool.

Pruned and exposed roots greater than 2 inches in diameter must be protected from desiccation if left exposed for more than 24 hours. Cover cut roots with heavy cloth, burlap, used carpeting, or similar material that has been soaked in water, until trench or excavation has been backfilled.

If excavation impacts more than 20% of the defined TPZ then supplemental irrigation may be required to offset loss of roots. Excavation in this case should be directed by the project arborist who will determine whether mitigation is required, when, and how.

Any excavation within the defined TPZ will require that the tree be monitored on a monthly basis by the project arborist for the duration of construction and for one year beyond completion of construction. Monitoring may determine other mitigation measures that may be required to offset root loss or damage.

- (12) This palm cannot be preserved in its current location, but can be successfully transplanted to another location at the site

TREE LOCATION PLAN

LEGEND

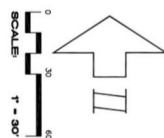
TREE # TREE LABEL

TREE DIA. DIA.

TREE TRUNK LOCATION

X TREE TO BE REMOVED

△ TREE TO BE SAVED



TREE REMOVAL PLAN
LOS AMIGOS COTTAGES
 263 ARATA LANE
 WINDSOR, CALIFORNIA

OCTOBER 2024

APN 161-020-049

CIVIL DESIGN CONSULTANTS, INC.
 2200 Range Avenue, Suite 204
 Santa Rosa, CA 95403
 (707) 542-4820



MATTHEW LAWTON
 RCE C87165

DATE

TRI
 of 1 SHEETS

JOB NO.
 23-110
 SHEET NO.

Appendix C

Archaeological Resource Management Report



ARCHAEOLOGICAL RESOURCE MANAGEMENT REPORT FOR 263 ARATA LANE, WINDSOR, SONOMA COUNTY, CA

AN ARCHAEOLOGICAL RESOURCE INVENTORY

PREPARED BY

Brehn Erskine, B.A.

Archaeological Resource Service

SUBMITTED BY

William G. Roop, M.A., RPA

Archaeological Resource Service

SUBMITTED FOR

Ben Vanzutphen, Arata Properties, LLC

C/O Ken McNab, KMAC Advising, LLC

January 16, 2024

A.R.S. Project 23-058

Prepared under the authority of the Town of Windsor

This project is located on the Healdsburg USGS quadrangle Map(s) and consists of 2.72 acres

I certify that I am a Registered Professional Archaeologist (RPA certification number 15428) and I am listed by the California Office of Historic Preservation for statewide consulting services.

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MANAGEMENT SUMMARY

As requested, and authorized, Archaeological Resource Service has conducted an archaeological evaluation of the parcel described below. The following tasks were accomplished as part of this project:

1. A check of the information on file with our office and the Regional Office of the California Historical Resources Information System, to determine the presence or absence of previously recorded historic or prehistoric cultural resources,
2. A check of appropriate historic references to determine the potential for historic era archaeological deposits,
3. Contact with the Native American Heritage Commission to determine the presence or absence of listed Sacred Lands within the project area,
4. Contact with all appropriate Native American organizations or individuals designated by the Native American Heritage Commission as interested parties for the project area,
5. A surface reconnaissance of all accessible parts of the project area to locate any visible signs of potentially significant historic or prehistoric cultural deposits,
6. Preparation of a report describing the work accomplished, the results of the research, and making appropriate recommendations for further action, if warranted.

PROJECT DESCRIPTION

The Town of Windsor required an archaeological survey of the project parcel for the proposed residential subdivision construction. The survey encompassed the entire parcel, approximately 2.72 acres. We did not encounter any archaeological resources during our survey.

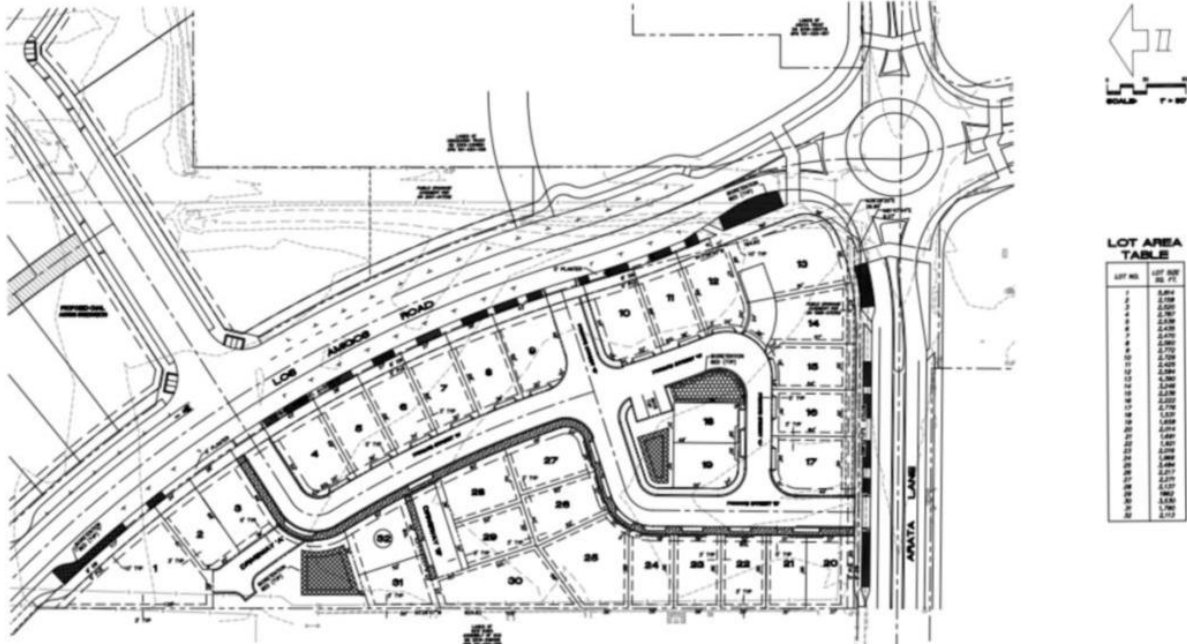


FIGURE 1 -- THE SITE PLAN PROVIDED BY THE CLIENT

The arrow in the top-right corner indicates the direction of North in regard to the site plan orientation.

PROJECT LOCATION

The project area is located at 263 Arata Lane, Windsor, Sonoma County, CA (APN 161-020-049). The parcel consists of 2.72 acres of open land bounded by a commercial building to the west, open land with foundation pads to the north, residences to the east, and Arata Lane to the south with residences past it.

The project area lies in the SE quarter of the SE quarter within Section 02 of Township 8 North, Range 9 West, Mt. Diablo Base and Meridian. The Universal Transverse Mercator Grid coordinates to the approximate center of the project area, as determined by measurement from the USGS 7.5' Healdsburg Quadrangle Map (1993) are:

4268240 Meters North,
515670 Meters East, Zone 10

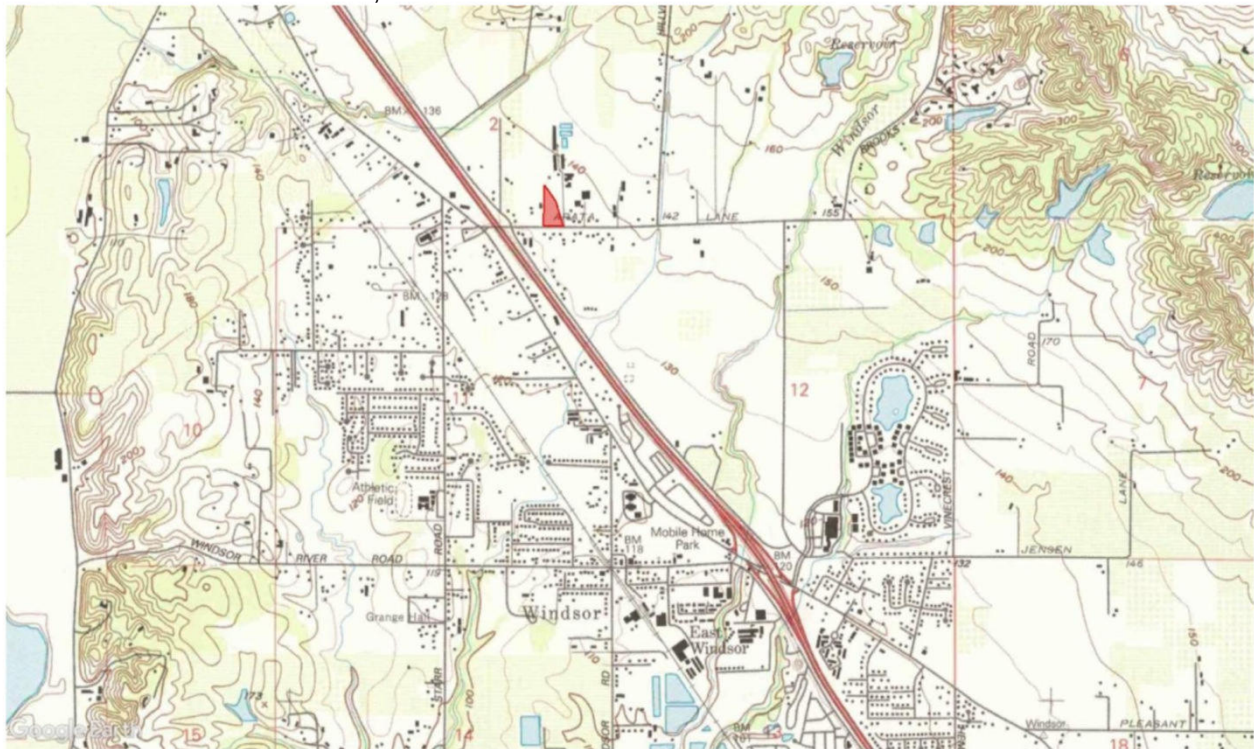


FIGURE 2 -- THE PORTION OF THE USGS 7.5' HEALDSBURG QUADRANGLE MAP (1993) CONTAINING THE PROJECT AREA

The project area is outlined in red near the top center of the image.

REGULATORY SETTING

There are no previously recorded prehistoric or historic resources located within the project area. Archaeological resources, once identified, are evaluated using criteria established in the California Environmental Quality Act (CEQA) (14 CCR 15064.5 and PRC 21084.1). Significant historical resources need to be addressed before environmental mitigation guidelines are developed and approved. A "significant historical resource" (including both a prehistoric and historic resource) is one that is found eligible for listing in the California Register of Historical

Resources. As per Title 14, California Code of Regulations Section 15064.5, historical resources are those that are:

- Listed in, or eligible for listing in, the California Register of Historic Resources (Public Resources Code 5024.1, Title 14 CCR, Section 4850 et. seq.);
- Listed in, or eligible for listing in, the National Register of Historic Places (CRHR);
- Included in a local register of historical resources, as defined in an historical resource survey meeting the requirements of Section 5024.1(g) of the Public Resource Code; or
- Any object, building, structure, site, area, place, record, or manuscript which a lead agency determines to be historically significant or significant in the architectural, engineering, scientific, economic, agricultural, educational, social, political, military, or cultural annals of California, provided the lead agency's determination is supported by substantial evidence in light of the whole record.

Additionally, historical resources and historic districts designated or listed as city or county landmarks or historic properties or districts pursuant to any city or county ordinance can also be listed in the California Register, if the criteria for listing under the ordinance have been determined by the Office of Historic Preservation to be consistent with California Register criteria adopted by the commission (pursuant to Section 5024.1(e) of the PRC).

A resource may be listed as an historical resource in the California Register if it has integrity and meets any of the following National Register of Historic Places criteria:

- 1) Is associated with events that have made a significant contribution to the broad patterns of our history; or
- 2) Is associated with the lives of persons important in our past; or
- 3) Embody the distinctive characteristics of a type, period, or method of construction, or represent the work of a master, or possesses high artistic values, or represent a significant and distinguishable entity whose components may lack individual distinction; or
- 4) Has yielded, or may be likely to yield, information important in prehistory or history.

CEQA (PRC 21083.2) also distinguishes between two classes of archaeological resources: archaeological sites that meet the definition of a historical resource as above, and "unique archaeological resources." A "unique archaeological resource" has been defined in CEQA as an archaeological artifact, object, or site about which it can be clearly demonstrated that, without merely adding to the current body of knowledge, there is a high probability that it meets any of the following criteria:

- 1) Contains information needed to answer important scientific research questions and that there is a demonstrable public interest in that information,
- 2) Has a special and particular quality such as being the oldest of its type or the best available example of its type, or
- 3) Is directly associated with a scientifically recognized important prehistoric or historic event or person.

Buildings, sites, structures, objects, and districts representative of California and United States history, architecture, archaeology, engineering, and culture convey significance when they also possess integrity of location, design, setting, materials, workmanship, feeling, and association. A resource has integrity if it retains the characteristics that were present during the resource's period of significance. Enough of these characteristics must remain to convey the reasons for its significance.

Tribal cultural resources and Tribal cultural landscapes can be any of a variety of cultural sites as defined by the individual tribe. These resources, once identified, are treated as significant resources under CEQA.

The fact that a resource is not listed in, or determined to be eligible for listing in the CRHR, or included in a local register of historical resources (pursuant to Section 5020.1(k) of the PRC), or identified in an historical resources survey (meeting the criteria in Section 5024.1(g) of the PRC) does not preclude a lead agency from determining that the resource may be an historical resource as defined in PRC sections 5020.1(j) or 5024.1.

SACRED LANDS INVENTORY / NATIVE AMERICAN CONSULTATION

The California Native American Heritage Commission (NAHC) works to identify, catalogue, and protect places of special religious or social significance, graves, and cemeteries of Native Americans per the authority given the Commission in Public Resources Code 5097.9. A check with the NAHC was done to determine if there are sites listed in the Sacred Lands file located within or near to the current project area. The check was requested on December 18th, 2023, and was completed on January 5th, 2024. The check indicates that the project area is positive for listed Sacred Lands and the following list of tribal contacts was provided. The tribal contacts were contacted on January 9th, 2024.

Table 1 – Tribal Entities List provided by the NAHC for Sonoma County

Tribe Name	Contact Person	Contact Address	Phone #	Fax #	Email Address
Cloverdale Rancheria of Pomo Indians	Patricia Hermosillo, Chairperson	555 S. Cloverdale Blvd., Suite A Cloverdale, CA, 95425	(707) 894-5775	(707) 894-5727	info@cloverdalerancheria.com
Dry Creek Rancheria of Pomo Indians	Sherrie Smith-Ferri, THPO	P.O. Box 607 Geyserville, CA, 95441	(707) 272-6767	-	sherries@drycreekrancheria.com
Federated Indians of Graton Rancheria	Greg Sarris, Chairperson	6400 Redwood Drive, Ste 300 Rohnert Park, CA, 94928	(707) 566-2288	(707) 566-2291	gbuvelot@gratonrancheria.com
Federated Indians of Graton Rancheria	Gene Buvelot	6400 Redwood Drive, Suite 300 Rohnert Park, CA, 94928	(707) 566-2288	(415) 279-4844	gbuvelot@gratonrancheria.com
Guidiville Rancheria of California	Michael Derry, Historian	PO Box 339 Talmage, CA, 95481	(707) 391-1665	-	historian@guidiville.net
Guidiville Rancheria of California	Bunny Tarin, Tribal Administrator	PO Box 339 Talmage, CA, 95481	(707) 462-3682	-	admin@guidiville.net
Kashia Band of Pomo Indians of the Stewarts Point Rancheria	Dino Franklin, Chairperson	1420 Guerneville Road, Ste 1 Santa Rosa, CA, 95403	(707) 591-0580	(707) 591-0583	dino@stewartspoint.org
Kashia Band of Pomo Indians of the Stewarts Point Rancheria	Loren Smith, Tribal Historic Preservation Officer	1420 Guerneville Road, Ste 1 Santa Rosa, CA, 95403	(707) 591-0580	(707) 591-0583	-
Lytton Rancheria	Marjorie Mejia, Chairperson	437 Aviation Boulevard Santa Rosa, CA, 95403	(707) 575-5917	(707) 575-6974	margiemejia@aol.com
Middletown Rancheria of Pomo Indians of California	Tribal Historic Preservation Department	PO Box 1035 Middletown, CA, 95461	(707) 987-1315	-	THPO@middletownrancheria.com
Middletown Rancheria of Pomo Indians of California	Michael Rivera, Tribal Historic Preservation Officer	PO Box 1035 Middletown, CA, 95461	(707) 987-1315	-	mlrivera@middletownrancheria.com
Middletown Rancheria of Pomo Indians of California	Jose Simon III, Tribal Chairman	PO Box 1035 Middletown, CA, 95461	(707) 987-1303	-	jsimon@middletownrancheria.com

Tribe Name	Contact Person	Contact Address	Phone #	Fax #	Email Address
Mishewal-Wappo Tribe of Alexander Valley	Scott Gabaldon, Chairperson	2275 Silk Road Windsor, CA, 95492	(707) 494-9159	-	scottg@mishewalwappotribe.com
Pinoleville Pomo Nation	Erica Carson, Tribal Historic Preservation Officer	500 B Pinoleville Drive Ukiah, CA, 95482	(707) 463-1454	(707) 463-6601	-
Pinoleville Pomo Nation	Leona Williams, Chairperson	500 B Pinoleville Drive Ukiah, CA, 95482	(707) 463-1454	(707) 463-6601	-
Robinson Rancheria of Pomo Indians	Beniakem Cromwell, Chairperson	P.O. Box 4015 Nice, CA, 95464	(707) 275-0527	(707) 275-0235	bcromwell@rrcbc-nsn.gov

METHODOLOGY

On January 8th, 2024, Archaeological Resource Service (ARS) employees, Brehn Erskine and Andrew Von Pinnon inspected the project area. The area in question consisted of 2.72 acres of roughly flat grassland with signs of old irrigation and cattle grazing. The area in question is proposed to be developed into a housing subdivision that would cover the entirety of the parcel. We conducted transects across the entire project area in approximately 5-meter separations, conducting surface scrapes with trowels every 5-meters when necessary (necessity was based on the surveyors' ability to observe the underlying soil conditions beneath existing material and vegetation). Given the dense vegetation, we had to perform surface scrapes at every interval. There was a heavy concentration of bramble on the northern side of the project area, but we were able to traverse through it and observe the ground beneath to a limited extent.

Artifacts that are typically seen within the local region's prehistoric sites include human modified stone (typically obsidian, basalt, and chert), shell, bone, or other archaeological materials such as charcoal, ash, and burned rock indicating food procurement or processing activities. Prehistoric domestic features are presented by human skeletal remains.

Historic artifacts potentially include all by-products of human land use greater than 50 years of age (outhouse shafts, trash pits, ceramics, glass, nails, etc.). We would expect to see historic artifacts related to the early development of the area around Windsor and possible historic ranching given the evidence of grazing and irrigation on the property.

Prior to conducting the surface reconnaissance, research was conducted to identify archaeological sites within half a mile of the project area. The archaeologists were familiar with nearby resources and potential artifacts of the area before completing the archaeological evaluation. Records used for the contextual setting focus primarily within a half-mile vicinity and on relevant sites. Records consulted include, but are not limited to, archaeological base maps, reports, and historical documents. This includes material on file at Archaeological Resource Service (ARS) and the Northwest Information Center (NWIC) of the California Historical Resources Information System (CHRIS). We also consulted data from the OHP's Historic Properties Directory, the National Register of Historic Places, California Register of Historical Resources, and California Historical Landmarks. The results of our literature search are discussed in the proceeding section.

RESULTS OF LITERATURE CHECK

The Directory of Properties in the Historic Property Data File for Sonoma County lists 1 property as being located in Windsor (OHP 2024). Within our focus range of a half-mile radius from our current project area, we found there are no historic properties.

The overall literature search determined that the current project area has not been the subject of a previous archaeological study nor is there a previously recorded archaeological resource within the project area. Table 2 below lists the reports found within the half-mile radius and resources within the radius associated with those reports.

Table 2 – Archaeological Reports within a Half-Mile of the Project Area

NWIC File No.	Date	Author(s)	Report Title	Affiliation	Resources w/i vicinity
S-000619	1977	James P. Quinn	Archaeological Survey Report for a Proposed Subdivision off Old Redwood Highway, Windsor, California	The Anthropology Laboratory, Sonoma State College	-
S-001026	1978	Robert A. Stillinger	An Archaeological Survey of a Proposed Minor Subdivision, Assessor's Parcel Number 65-150-59, 450 Arata Lane, Windsor, Sonoma County, California.	Department of Anthropology, Sonoma State	-
S-008916	1986	Miley Paul Holman	Archaeological Inspection of Windsor Equity Partners and Windsor Investments Property, East Windsor, Sonoma County, California (letter report)	Holman & Associates	-
S-008930	1987	Thomas M. Origer	Archaeological Survey Within the Conde Assessment District and the Brooks Assessment District, Windsor, Sonoma County, California	--	-
S-010232	1988	Albert J. Villemaire	An Archaeological Investigation of a 2.9-acre parcel (APN 65-140-03), located at 9781 Old Redwood Highway, Windsor, Sonoma County, California	Anthropological Studies Center, Sonoma State University	-
S-010496	1989	Sharon A. Waechter	An Archaeological Survey of the AT&T Fiber Optics Cable Route from East Windsor to Cloverdale Peak, Sonoma and Mendocino Counties, California	--	-
S-010496a	1989	Sharon A. Waechter	Archaeological Test Excavations at CA-MEN- 2228, CA-SON-1759, and CA-SON-1760/H, for the At&T Buried Fiber Optics Cable from East Windsor to Cloverdale Peak, Sonoma and Mendocino counties, California	--	-
S-011325	1989	Michael Jablonowski	An Archaeological Study of the Blasi Property Located at 9976 Los Amigos Road, Windsor, Sonoma County, California	Sonoma State University	-
S-013217	1990	Thomas M. Origer	An Archaeological Survey for the AT&T Fiber Optics Cable, San Francisco to Point Arena, California	--	P-49-002834
S-013217a	1990	Thomas M. Origer	Archaeological findings regarding a selection of a route through Novato for the AT&T Fiber Optics Cable (letter report)	--	-
S-013217b	1991	Thomas M. Origer	An archaeological study of revised portions of the AT&T route near Santa Rosa and Sausalito (letter report)	--	-
S-013217c	1991	Thomas M. Origer	Archaeological study of AT&T revised fiber cable routes (letter report)	--	-

NWIC File No.	Date	Author(s)	Report Title	Affiliation	Resources w/i vicinity
S-013217d	1992	Thomas M. Origer	Archaeological survey of alternative fiber optics cable routes, Point Arena (letter report)	Tom Origer & Associates	-
S-014651	1992	Stephen Bryne	A Cultural Resources Evaluation of the California Creekside II Development, 10070 and 10120 Los Amigos Road, Windsor, Sonoma County, California	Archaeological Resource Service	-
S-014957	1993	Michael Jablonowski and Cookie Hirn	An Archaeological Study of the 2.97-acre Stinematess Property Located at 10309 Starr Road, Windsor, Sonoma County, California	Cultural Resources Facility, Sonoma State University	-
S-022736	2000	--	Final Cultural Resources Inventory Report for Williams Communications, Inc., Fiber Optic Cable System Installation Project, Point Arena to Robbins and Point Arena to Sacramento, California: Volume I	Jones & Stokes Associates, Inc.	P-49-002834
S-022736a	2000	--	Volume II - Project Maps: Final Cultural Resources Inventory Map Atlas for the Williams Communications, Inc. Fiber Optic Cable System Installation Project, Point Arena to Robbins and Point Arena to Sacramento, California	Jones & Stokes	-
S-022736b	2000	--	Volume III, Technical Appendices: Final Cultural Resources Inventory Report for the Williams Communications, Inc. Fiber Optic Cable System Installation Project, Point Arena to Robbins and Point Arena to Sacramento, California	Jones & Stokes	-
S-030957	2005	Vicki R. Beard	A Cultural Resources Survey of a 1.92-Acre Parcel at 9989 Los Amigos Road, Windsor, Sonoma County, California.	Tom Origer & Associates	-
S-031737	2004	Carole Denardo and Daniel Hart	Archaeological Resources Technical Report for the Sonoma Marin Rail Transit (SMART) Project, Sonoma and Marin Counties, California	Garcia and Associates	P-49-002834
S-031737a	2004	--	Historic Architectural Resources Technical Report for the Sonoma Marin Area Rail Transit (SMART) Project	Garcia and Associates	-
S-032071	2006	Cassandra Chattan	A Cultural Resources Evaluation of the Tuscan Ridge Winery, 10540 Los Amigos Road, Sonoma County (A Portion of APN 086- 170-023)	Archaeological Resource Service	-
S-032531	2006	Dana E. Supernowicz	New Tower ("NT") Submission Packet, FCC Form 620, Nor Cal Metal Stripping, SF- 13250B	Earth Touch, Inc.	P-49-003548
S-033480	2006	Roger H. Werner	Archaeological Investigation, Rossetti Property (APN 066-021-000), 10220 Herb Road, Windsor, Sonoma County, California (letter report)	Archaeological Services, Inc.	-
S-033946	2007	Vicki R. Beard	A Cultural Resources Survey of the Parcel at 9950 Los Amigos Road, Windsor, Sonoma County, California	Tom Origer & Associates	-

NWIC File No.	Date	Author(s)	Report Title	Affiliation	Resources w/i vicinity
S-044064	2011	Michael A. Way	Cultural Resources Analysis, Old Redwood Hwy. & Starr Road, 10342 Old Redwood Highway, Windsor, Sonoma County, California 95492,	EBI Consulting	-
S-045457	2014	Vicki R. Beard	A Cultural Resources Survey for the Starr Road ADA Sidewalk Project, Windsor, Sonoma County, California	Tom Origer & Associates	-
S-047411	2015	Justin Castells	Submission Packet, FCC Form 620, for proposed New Tower Project 167 Arata Lane, Windsor, Sonoma County, California 95492 / Ensite #23311 / Windsor North; EBI Project Number: 6114009629	EBI Consulting	-
S-047411a	2015	Andrea K. Fink	Cultural Resources Survey Windsor North/Ensite #23311 (283609) / 167 Arata Lane, Windsor, Sonoma County, California 95492 / EBI Project No. 6114009629	EBI Consulting	-
S-047411b	2015	Carol Roland-Nawi	FCC_2015_0430_002; Windsor North/Ensite #23311 (283609) 167 Arata Lane, Windsor, Sonoma County, New Tower	Office of Historic Preservation	-
S-048451	1993	Ward Hill and Miley Holman	Historic Properties Survey Report (HPSR) and Finding of Effect, Arata Lane Interchange Project Town of Windsor, California	Holman & Associates	P-49-004249 P-49-005342 - 005374 P-49-005385 – 005392 P-49-005395 P-49-005396 P-49-005397 P-49-005399 P-49-005400
S-048451a	1995	Ward Hill	Historic Architectural Survey Report, Arata Lane Interchange Project in the City of Windsor within Sonoma County, California (30.4-31.3)	--	-
S-048451b	1995	Miley Holman	An Archaeological Study of the Arata Lane Interchange Realignment Project, Located in the Area of Arata Lane at Highway 101 Near Windsor, Sonoma County, California. A Supplemental Report.	Holman & Associates	-
S-048451c	1995	Cherilyn Widell	FHWA950331B; Arata Lane Interchange Project, Windsor, Sonoma County.	Office Of Historic Preservation	-
S-048451d	1995	Cherilyn Widell	FHWA950331B; Additional Information on the Historic Property Survey Report/ Historic Architecture Survey Report, Arata Lane Interchange Project, Windsor, Sonoma County.	Office Of Historic Preservation	-
S-053095	2018	Eileen Barrow	A Cultural Resources Study for the Affordable Housing Project, 10221 Old Redwood Highway, Windsor, Sonoma County, California	Tom Origer & Associates	-

NWIC File No.	Date	Author(s)	Report Title	Affiliation	Resources w/i vicinity
S-054934	2021	Andrew Von Pinnon	ARS Project 21-018; Results of an Archaeological Monitoring Program for the Two 6-lot Residential Subdivisions at 280 and 330 Arata Lane, Windsor, Sonoma County, California (APNs 161-050-068 and 161-500-030) (letter report)	Archaeological Resource Service	P-49-006767

PREVIOUS STUDIES

Our literature search indicates that there have been no previous studies that included the current project area within its area of interest. The records search conducted at the NWIC, #23-0860, found that there are 37 previous studies and 50 discovered resources within the half-mile radius (NWIC 2023). Of the previous studies, 6 were positive for resources within the half-mile radius (Origer 1990; Jones & Stokes 2000; Denardo & Hart 2004; Supernowicz 2006; Hill & Holman 1993; Von Pinnon 2021). Of the 50 discovered resources within the half-mile radius, none were adjacent to the current project parcel. None of the discovered resources are close enough to the current project parcel to be negatively impacted by the proposed housing subdivision development.

Out of the 50 discovered resources within the half-mile radius, 49 are historic era and 1 is prehistoric. The prehistoric era resource is an isolate Obsidian Projectile Point Base Fragment found on the opposite side of Arata Lane across from the current project area, P-49-006767 (Von Pinnon 2021). It was found during a monitoring project performed by Andrew Von Pinnon of ARS in 2021, but no other artifacts were found. As one artifact does not constitute a site and no evidence beyond it was found to indicate a site during the monitoring, it does not significantly increase the likelihood of finding a prehistoric site on the current project.

In 1990, Thomas Origer recorded P-49-02834/CA-Son-002322H as part of the archaeological survey for the AT&T Fiber Optics Cable running from Point Arena to San Francisco. The resource is recorded as the “Northwestern Pacific Railroad” and encompasses multiple aspects of the portion of the railroad that enters through the area. The resource was subsequently recorded in 2000 by Jones & Stokes and 2004 by Denardo & Hart of Garcia and Associates (Origer 1990; Jones & Stokes 2000; Denardo & Hart 2004).

In 2006, Dana E. Supernowicz with Earth Touch, Inc. recorded P-49-003548 as part of an archaeological survey. The resource is recorded as the “Nor Cal Metal Stripping Building” and is a historical 1 to 3 story commercial building (Supernowicz 2006).

The largest collection of recorded sites in the half-mile vicinity was recorded in 1993 by Hill and Holman with Holman & Associates as part of a historic properties survey report done for the interchange on Arata Lane. The following is a table of the historic resources recorded during the project:

Table 3 – Historical resources recorded in Hill & Holman 1993

Primary No.	Resource Name	Attribute Codes
P-49-004249	Thomas Ward Ranch Complex	HP02 (Single family property; HP04 (Ancillary building); HP30 (Trees/vegetation); HP33 (Farm/ranch); HP39 (other) – tree house
P-49-005342	10047 Old Redwood SR	HP02 (Single family property)
P-49-005343	10070 Old Redwood Highway	HP02 (Single family property)

Primary No.	Resource Name	Attribute Codes
P-49-005344	10071 Old Redwood Highway	HP04 (Ancillary building)
P-49-005345	10090 Old Redwood Highway	HP06 (1-3 story commercial building)
P-49-005346	10117 Old Redwood Highway	HP03 (Multiple family property)
P-49-005347	10139 Old Redwood Highway	HP02 (Single family property)
P-49-005348	Dawson House	HP02 (Single family property); HP04 (Ancillary building)
P-49-005349	10185 Old Redwood Highway	HP02 (Single family property)
P-49-005350	Phil's Country Store	HP02 (Single family property); HP04 (Ancillary building); HP05 (Hotel/motel)
P-49-005351	Evergreen Mobile Home Park	HP39 (Other) – mobile home park
P-49-005352	10315 Old Redwood Highway	HP02 (Single family property)
P-49-005353	10333 Old Redwood Highway	HP04 (Ancillary building)
P-49-005354	Warehouse Carpets	HP06 (1-3 story commercial building)
P-49-005355	Windsor Landscape Materials	HP06 (1-3 story commercial building)
P-49-005356	10351 Redwood Highway	HP06 (1-3 story commercial building)
P-49-005357	9984 Los Amigos Road	HP02 (Single family property); HP04 (Ancillary building)
P-49-005358	9990 Los Amigos	HP02 (Single family property)
P-49-005359	10160 Los Amigos Road	HP02 (Single family property)
P-49-005360	10164 Los Amigos Road	HP02 (Single family property)
P-49-005361	160 Arata Lane	HP02 (Single family property); HP04 (Ancillary building)
P-49-005362	186 Arata Lane	HP02 (Single family property)
P-49-005363	210 Arata Lane	HP02 (Single family property)
P-49-005364	252 Arata Lane	HP02 (Single family property)
P-49-005365	260 Arata Lane	HP02 (Single family property)
P-49-005366	280 Arata Lane	HP02 (Single family property)
P-49-005367	259 – 269 Arata Lane	HP02 (Single family property); HP04 (Ancillary building); HP33 (Farm/ranch)
P-49-005368	167 Arata Lane	HP02 (Single family property)
P-49-005369	121 Arata Lane	HP02 (Single family property); HP04 (Ancillary building); HP33 (Farm/ranch)
P-49-005370	10150 Los Amigos	HP02 (Single family property)
P-49-005371	10210 Los Amigos Road	HP02 (Single family property); HP04 (Ancillary building)
P-49-005372	10154 Los Amigos	HP02 (Single family property)
P-49-005373	10156 Los Amigos	HP02 (Single family property)
P-49-005374	10354 Los Amigos	HP02 (Single family property)
P-49-005385	10294 Starr Rd	HP01 (Unknown)
P-49-005386	10309 Starr Rd	HP01 (Unknown)
P-49-005387	10350 Old Redwood Sr	HP01 (Unknown)
P-49-005388	10435 Old Redwood Sr	HP01 (Unknown)
P-49-005389	10437 Old Redwood Sr	HP01 (Unknown)
P-49-005390	10540 Old Redwood Sr	HP01 (Unknown)

Primary No.	Resource Name	Attribute Codes
P-49-005391	10545 Old Redwood Sr	HP01 (Unknown)
P-49-005392	10560 Old Redwood Sr	HP01 (Unknown)
P-49-005395	Action Rents	HP01 (Unknown)
P-49-005396	Redwood Dismantling	HP01 (Unknown)
P-49-005397	Vineyard Industrial Supply	HP01 (Unknown)
P-49-005399	West Coast Metals	HP01 (Unknown)
P-49-005400	Whitman's Steel and Supply	HP01 (Unknown)

PREHISTORIC SETTING

Native American habitation sites throughout most of Sonoma County are characterized by the presence of midden soil deposits, various kinds of chipped and ground stone implements, stone manufacturing debris (flakes), minor quantities of marine shellfish remains (contrasted to what comes from actual shellmound locations in the portions of Sonoma County located along the upper part of San Francisco Bay), fire-affected rock, and other organic materials, as well as domestic and mortuary features (such as human skeletal remains or human burials) (Bryne 1993; Chattan 2004, 2009a, 2009b; Evans 2009).

Activity areas are often represented by scatters of stone tool manufacturing waste and broken tools such as projectile points and knives which may be distributed along trails used by hunting and gathering parties or related to places where economic commodities (such as shellfish, knappable stone) could be obtained (Bryne 1993b; Chattan 2004, 2009a, 2009b). Other kinds of prehistoric activity areas include bedrock milling features, which contain depressions that were used to pulverize acorns and other materials. These features are called mortars, some of which are made from cobbles that are quite portable (rather than from bedrock and thus stationary).

The prehistoric overview provided below for the region encompassing Windsor is based on research from the following: Fredrickson (1973, 1974); Moratto (1984); and Origer and Fredrickson (1980).

PALEO-INDIAN PERIOD (10,000-6,000 B.C.)

During this period, the first entry of humans into California has been documented. A reliance on the hunting of Pleistocene megafauna at this time is posited. This period is recognized as the archaeological Post Pattern (Fredrickson 1973, 1974). An archaeological pattern is described as "an adaptive mode extending across one or more regions, characterized by particular technological skills and devices, by particular economic modes, and by particular mortuary and ceremonial practices" (Moratto 1984:593). The economic focus of the Post Pattern appears to have revolved around hunting and lacustrine (lakeside) activities. Attributes of the Post Pattern include the inferred use of the dart and atlatl tipped with fluted projectile points (Fredrickson 1974; Origer and Fredrickson 1980:47). Chipped stone crescents were also utilized during this period.

LOWER ARCHAIC PERIOD (6,000 - 3,000 B.C.)

A warmer, drier climate period (Altithermal) may have begun about 6,000 B.C. A semi-sedentary lifestyle with an emphasis on plant foods and a concomitant decrease in the importance of hunting is suggested for this cultural period. Milling stones were introduced or developed and most artifacts were manufactured of local materials.

MIDDLE ARCHAIC PERIOD (3,000 -1,000 B.C.)

The Altithermal may have ended about 3,000 B.C. and the climate became similar to the present climate. Mortars and pestles were introduced and suggest the advent of acorn processing. A diversification of the economy and population growth may have occurred along with sedentary village settlement.

The Borax Lake Pattern lasted through the Lower Archaic and Middle Archaic periods. Two projectile point traditions are recognized for the southern aspect of the Borax Lake Pattern. The earlier, wide-stemmed tradition may have a temporal range from 6,000 to about 4,000 B.C. while the later, concave base tradition may date from the period from about 3,000 to 500 B.C.

The economy of the Borax Lake Pattern focused on the collecting and processing of hard seeds with hunting of possibly equal importance. Significant attributes of the Borax Lake Pattern include the occurrence of the milling slab and handstone and relatively large projectile points, which suggest the use of the dart and atlatl.

UPPER ARCHAIC PERIOD (1,000 B.C. - A.D. 500)

Growth of sociopolitical complexity and development of status distinctions based on wealth may have occurred at this time. Long-distance exchange systems, as indicated by the widespread occurrence of shell beads, were developed.

During the Upper Archaic period, the Borax Lake Pattern was replaced in the southern North Coast Ranges by the Houx Aspect of the Berkeley Pattern (Fredrickson 1973; Origer and

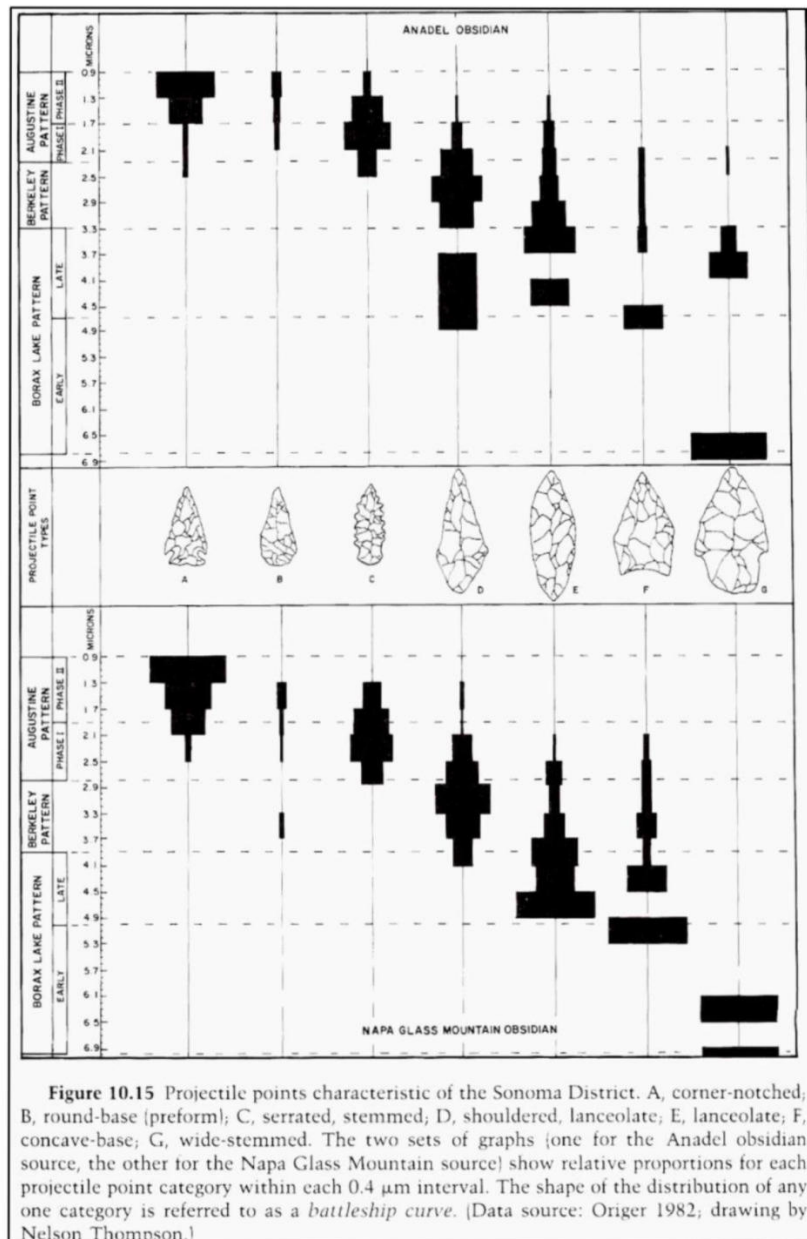


FIGURE 3 -- CULTURAL PATTERNS IN THE SONOMA DISTRICT

Taken from Moratto 1984, Windsor is included in the Sonoma District. Age ranges are in Microns of obsidian hydration. Obsidian hydration occurs at an ever-slowing rate. The first micron takes about 100 years to develop, but a measurement of 6 microns might represent 5 to 6,000 years or more.

Fredrickson 1980). Influenced by the cultures of the Sacramento Valley and the San Francisco Bay regions, the Houx Aspect had a continuing economic focus on hunting but was also marked by the acorn economy as inferred from the presence of the bowl mortar and pestle (Origer and Fredrickson 1980:48). Houx attributes include large lanceolate projectile points suggestive of the continued use of the dart and atlatl, and the replacement of milling slab and handstone technology by the bowl mortar and pestle (Origer and Fredrickson 1980:48; Fredrickson 1984).

EMERGENT PERIOD (A.D. 500 - 1800)

The bow and arrow were introduced at this time, and they replaced the earlier dart and atlatl. Territorial boundaries were well-established during this period. Widespread exchange networks and an economy based on clam shell disk bead money appeared.

Archaeologically, this cultural period is recognized by the Augustine Pattern, which represents a fusion of introduced elements with those of the older Berkeley Pattern (Fredrickson 1973, 1984). The Augustine Pattern is distinguished by intensive fishing, hunting, and gathering (especially of acorns); large, dense populations; highly developed exchange systems; social stratification; and the mortuary practices of cremation and pre-interment grave-pit burning of artifacts, coupled with flexed burial (Fredrickson 1973; Moratto 1984). Augustine Pattern technological innovations included shaped mortars and pestles, bone awls for making baskets, and the bow and arrow (Fredrickson 1973; Moratto 1984). Archaeological survey performed by this firm (Roop et al. 1993) on nearby Rincon Ridge for the Fountaingrove Parkway Extension identified a number of prehistoric sites attributable to the Emergent period. The latter sites, which lack any indications of habitation, appear to be hunting stations related to resource extraction.

ETHNOGRAPHIC SETTING

The project site lies within the ethnographic territory of the Pomo. Pomoan refers to seven distinct and mutually unintelligible dialects that are part of the larger Hokan language group. The seven Pomoan languages are as follows: Southwestern Pomo, Southern Pomo, Central Pomo, Northern Pomo, Northeastern Pomo, Eastern Pomo, and Southeastern Pomo (McLendon and Oswalt 1978: 274). The project site is specifically within the Aboriginal territory of the Southern Pomo, which extended from about five miles south of Santa Rosa northward for 40 miles and from the eastern drainage of the Russian River westward to Kashaya and Central Pomo territory, with a narrow extension to the coast between those two. The Southern Pomo also held the lower half of the Russian River except for the mouth and a section between the towns of Geyserville and Healdsburg (McLendon and Oswalt 1978: 279). Although several village sites were situated within the Windsor vicinity, none lie near or within the project site (Barrett 1908: Figure 4).

The Pomo developed a subsistence economy that utilized natural resources from the local environment. Acorns provided a staple, although other plant resources were eaten and stored including buckeye nuts, a variety of berries, seeds from at least 15 kinds of grasses, roots and bulbs, and edible greens. Deer, elk, and antelope were the chief game and hunted using a bow and arrow. Smaller game such as rabbits, squirrels, and various bird species would be captured using a bola, low brush fences, nets, snares, and basketry traps, while fish from lakes, streams, and the ocean would be caught in traps, with lines, or weirs (Bean and Theodoratus 1978: 290).

In general, there were three basic types of structures constructed by the Pomo: Dwelling houses, temporary shelters, and semisubterranean houses. Dwelling houses, which were constructed primarily from redwood bark slabs and had diameters of 8 to 15 feet and heights of 6 to 8 feet, seem to have functioned as single-family conical dwellings housing as many as 12 people. Multifamily communal structures, constructed of brush and grass or tule and circular, elliptical, or L-shaped, were also common, especially in the valleys inland from the redwood belt along the Russian River and around Clear Lake. Temporary summer shelters provided shade from the

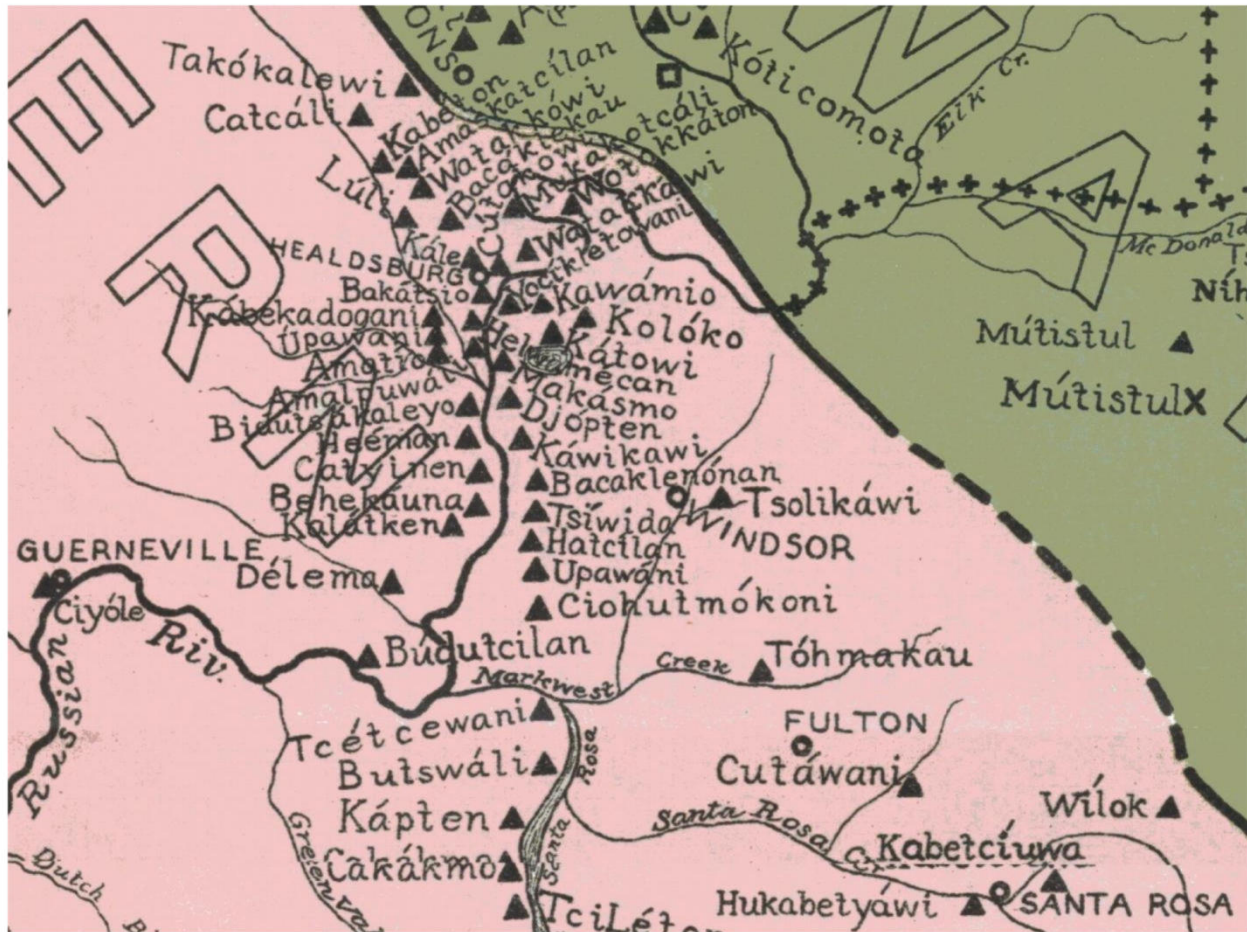


FIGURE 3 -- ETHNOGRAPHIC TERRITORIES ACCORDING TO BARRETT (1908)

This is part of Barrett's (1908) map of ethnographic territories and village sites associated with the Pomo and their neighbors. Pink marks Pomo territory, with the project area lying entirely in Southern Pomo territory northwest of the labeled Windsor on the map. Green marks Wappo territory, a distinct entity from a different linguistic tradition. Open circles mark the modern towns of Windsor and Healdsburg. Black triangles mark the sites of "old villages" meaning places that living people remembered but are no longer occupied.

summer sun and the easy movement of cooling breezes during hunting or gathering excursions, while semisubterranean structures functioned as either a men's sweathouse or for housing dancing ceremonies (Bean and Theodoratus 1978: 292-293).

Within Pomoan society, the tribelet was composed of one or more bilaterally extended kin groups ranging in size from 100 to 2,000 individuals. Each extended family was led by a chief who was part of a larger ruling elite of individual tribelets, which, together, functioned as a council. Kin groups were the most significant unit; extended kin groups were composed of nuclear family hearth groups that averaged five to six persons, who generally lived in multifamily dwellings for much of the year and separate temporary dwellings when the population of a village dispersed to a seasonal fishing and collecting area (Bean and Theodoratus 1978: 293-294).

HISTORIC SETTING

Prior to European contact, and into the Mexican era, the project area was located within the territorial boundary of the Southern Pomo but was close to the territory of the Wappo who occupied the territory to the east. Early ethnographic accounts record the presence of these two groups in the area, with their territorial boundaries passing just east of the area known as Lytton.

Samuel A. Barrett, an ethnographer from U.C. Berkeley, who recorded village sites throughout the territory of the Pomo in the early part of the twentieth century, noted an abundance of village sites on either side of the Russian River in the vicinity of Windsor. While none of the villages appear to have been located within the subject property the following are in close proximity (within a few miles of the current project parcel):

cīōhūtmō'kōnī. "This site was rather indefinitely located by the informant but was probably on the ranch owned by Messrs. White and Wilson at a point about a mile and a half east of Russian river and about a mile and a quarter north of Markwest Creek" (Barrett 1908: 215).

ūpawa'ni, "on what is known as the Miller ranch at a point about a mile east of Russian river and two and three-quarters miles southwest of the town of Windsor (Barrett 1908:215).

Bacaklenō'nan, (an old village site) "from *ba'ca* or *bē'ce*, buckeye, *kale*, tree, and *nōnan*, ?, on the ranch of Mr. J.W. Calhoun near the east bank of Russian River at a point about two and a half miles a little north of west of the town of Windsor" (Barrett 1908: 215-216).

Káwikawi "near the east bank of Russian River at a point about two and three-quarters miles a little east of south of the town of Healdsburg" (Barrett 1908: 216).



FIGURE 4 -- GENERAL AREA AS SHOWN ON THE THOS H. THOMPSON & CO. 1877 MAP OF SONOMA COUNTY

The current project location is within Section 2, northwest of Windsor on the map and directly under the R of the Russian River label.

Farther upstream on the Russian River, between Windsor and Healdsburg, the number of reported villages and Pomo place names is more abundant (Barrett 1908). This density increase is likely related to physical setting since there are relatively more open valleys and broader riparian plains available for habitation. Other ethnographers made the same observations as Barrett

regarding the relatively higher density of settlements along the coast and near permanent streams contrasted to that of the more rugged and forested interior (Kroeber 1925; Stewart 1943; McLendon and Oswalt 1978:278-279).

With the arrival of Europeans in the nineteenth century, the native Pomo population was decimated. Along with other Native American tribal groups in the region, the Spanish captured

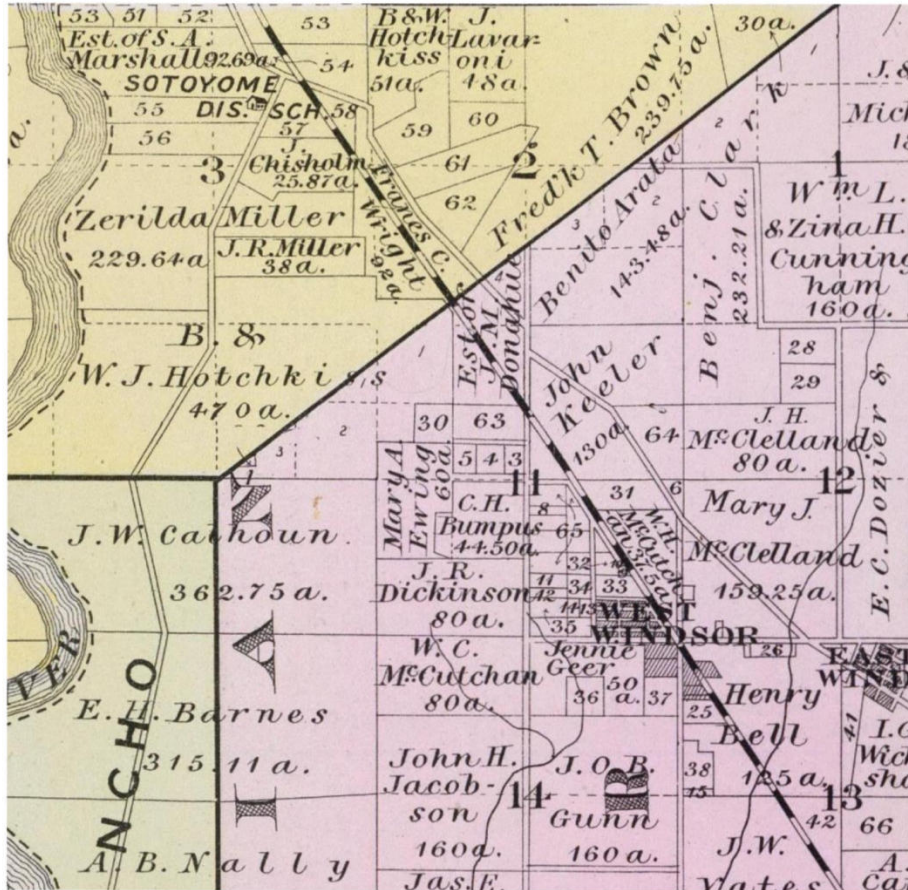


FIGURE 5 -- GENERAL AREA AS SHOWN ON THE REYNOLDS & PROCTOR 1898 MAP OF T. 8 N, R. 9 W

The current project location appears to be within the 143.48-acreage lands of Benito Arata, near the southern border of the Sotoyome Rancho.

large numbers of Pomo Indians and brought them to Mission San Francisco de Solano (Sonoma Mission) and Mission San Rafael between 1823 and 1834 (Cook 1978: 92). For the purpose of Hispanicizing these indigenous peoples and shaping them into "civilized" and law-abiding citizens loyal to the Spanish crown, which also included forced conversion to Catholicism, about 600 Pomoans were baptized at Missions San Francisco de Solano and San Rafael (Bean and Theodoratus 1978: 299).

After the secularization of the missions in these early decades of the 19th century, only a fraction of the original native population remained. While some

of the Indians remained in the area around the Sonoma Valley after secularization, others found their way back to their ancestral areas where they attempted to re-establish their past settlement patterns and continue their livelihoods as hunters and gatherers, rather than continuing to work for the growing ranchos that replaced the missions. Pomos and other Indian groups were also moved to the Mendocino Indian Reserve, yet most left shortly thereafter. By 1867, the reservation had been forced to close (Bean and Theodoratus 1978: 299). The reduction in the size of native populations was due to a variety of factors that included various diseases that took their toll on the tribal peoples who often had no immunity from communicable diseases such as smallpox, measles, and the like that Euro-American peoples often had (Cook 1978: 92).

Following Mexico's independence from Spain in 1821, California came under the control of the Mexican government, thus ushering in the Mexican Period. Under Mexican law, large tracts of land, referred to as ranchos, were given to distinguished individuals, generally those with an

exceptional military service record or those who wished to become naturalized citizens and accept Roman Catholicism (Rawls and Bean 2011: 58). Within these land grants, individuals often engaged in cattle and livestock raising and employed a large labor force to support these activities. In fact, many of the laborers were native peoples who had lived and worked under the Spanish mission system (Castillo 1978: 105). Specifically, the project site lies just south of the 48,836.51-acre Mexican era land grant of Rancho Sotoyome. This rancho was originally bestowed to Henry D. Fitch by Governor Manuel Micheltorena circa 1841 or 1844 (Lewis Publishing Company 1889: 153; Munro-Fraser 1880: 82; Gregory 1911: 133). A claim for this land grant was filed in 1852, which was confirmed a year later and patented to Josefa Carrillo Fitch (1889: 153; 1911: 133). Another claim for two square leagues of Rancho Sotoyome was filed by Cyrus Alexander, only later to be rejected by the Land Commission in 1855 (1880: 158; 1911: 133).

The Treaty of Guadalupe Hidalgo, which was signed in 1848, marked the end of the Mexican American War and the beginning of the American era in California (Rawls and Bean 2011: 97). As shown on historic maps from this period, the project site was formerly situated near the 54-acre and 270-acre properties of G.H. Brigham and Leopold and Mary Dotta, respectively (Reynolds & Proctor 1898; Ricksecker & Walkup 1900) (Figure 5). The project site itself, however, seems to have been void of any prior buildings and/or structures since the area encompassing Windsor was initially settled in the mid-19th century (Bowers 1865; United States General Land Office 1870; Thompson 1877; Corps of Engineers, U.S. Army 1920 United States Geological Survey 1933, 1940, 1955; Regents of the University of California 1952, 1965; NETRonline 2023).

Hops were a substantial agricultural product of the county from circa 1880 until 1950; and the first hops were grown in 1858 (Le Baron and Mitchell 1993: 72). The distinctive hop kilns dotted the landscape and hop vines spread across the county as vineyards do today. Because of the seasonal hop picking, ranches would have large campsites on their property for the hop-pickers. At least one of these campsites was located within a mile of the project area (Chattan 2007). Other agricultural products included wheat, barley, corn, rye, peas and beans, potatoes, grapes and other fruits.

GEOLOGIC SETTING AND BURIED SITE SENSITIVITY

Knowledge of the overarching geology of a particular region is essential when evaluating a project site's potential for containing buried archaeological resources. Generally, buried sites are found within landforms dating to the Holocene era (11,800 calibrated years before the present), during which humans first settled in California, although those dating to the latest Pleistocene may also contain archaeological deposits (Meyer and Rosenthal 2007:15, 26). Alluvial fans and other landforms, namely those where water plays a large role in geomorphic processes (i.e., estuarine deposits, floodplains, basins, terraces), are also more likely to contain such resources, as flowing water creates a dynamic environment for the transportation, deposition, and burial of sediments that help to preserve (or, in some cases, disturb) artifactual material; these types of environments have also been used by humans intensively through time for activities such as hunting, gathering, and farming (Waters 1992:115). According to Meyer and Rosenthal, "buried archaeological potential can be conceptualized as a set of factors that either encouraged or discouraged human occupation of certain landforms (e.g., aspect, extent, setting, slope), and those factors that affected the subsequent preservation (i.e., erosion or burial) of those landforms" (2007:25).

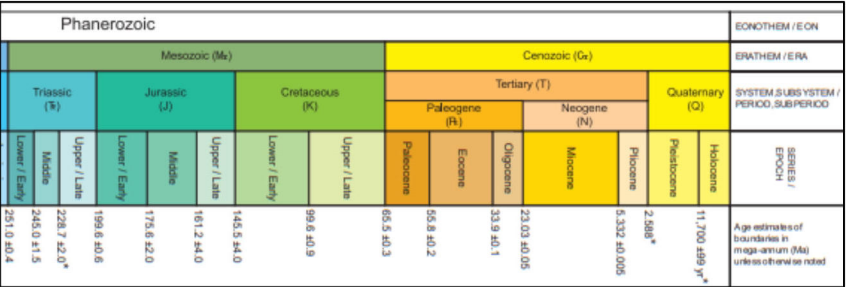


FIGURE 7 -- DIVISIONS OF GEOLOGICAL TIME CHART (USGS 2010)

between 200 million and 80 million years (DeCourten 2009:19). As shown on the updated version of Jennings' geologic map of California, the parcel lies within the generalized rock type of Q. The Geological Map of California 2015 describes the general lithology of Q as "Alluvium, lake, playa, and terrace deposits; unconsolidated and semi-consolidated. Mostly nonmarine but includes marine deposits near the coast". The potential geological age range is from the beginning of the Pleistocene to the Holocene. As shown within the Divisions of Geological Time chart (USGS 2010), this age range dates to between 2.588 mya and the current day (Jennings 2010b). The vast majority of buried sites encountered date back to the Holocene Epoch, our geologic setting may be within the Holocene Epoch indicating an increased possibility of buried archaeological resources.

According to the UC Davis' soil data for the project parcel, the general soil composition for the project area is primarily Hub which is mostly represented by the soil series *Huichica* (UC Davis 1974). The average slope for Hub is 0 to 5 degrees.

Given the lack of slopes, the expected areas of archaeological resources buried via natural soil deposition could be anywhere within the parcel. The closest source of running water is the Russian River 1 ¾ miles to the west. The geological setting and soil data indicate that the parcel has likely been flooded before indicating a possibility of naturally buried archaeological resources.

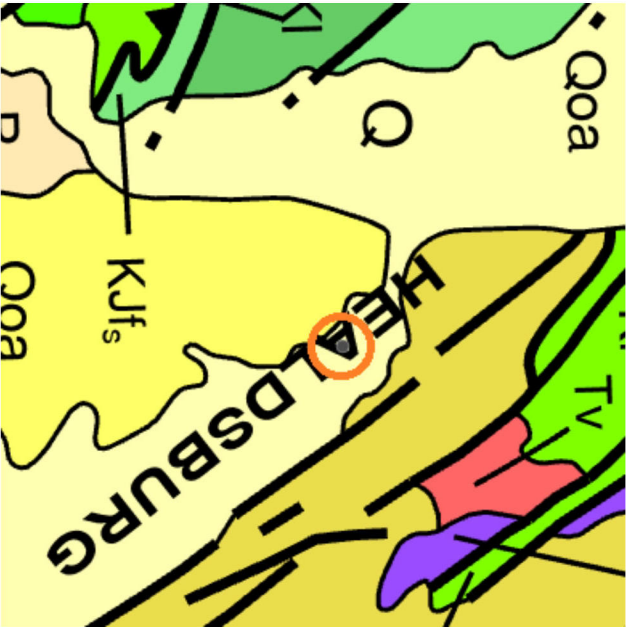


FIGURE 8 -- GEOLOGIC MAP OF CALIFORNIA 2015

The area shown above is the general area for our project parcel. Our project parcel is within the orange circle in the center of the image within the generalized rock type of Q.



FIGURE 6 -- EXAMPLE OF THE SURFACE SOIL BEING SEEN

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HUICHICA (85% OF THE SOIL UNIT HUB)

Huichica has a high runoff rating, meaning the soil is likely to erode during rainfall and flood events leading to a higher potential for buried archaeological resources. It is part of the Hydrologic Group D, which is the most likely to have significant runoff due to water. It is in the Wind Erodibility Group 6, which has a high resistance to wind erosion. The parent material for Huichica is “alluvium derived from igneous, metamorphic, and sedimentary rock” (UC Davis 1974). The soil profile for Huichica is: 0 to 18 cm is topsoil, 18 to 36 cm is topsoil, 36 to 58 cm is topsoil, 58 to 76 cm subsoil with a heavy clay constituency, 76 to 119 cm is substratum, and 119 to 145 cm is substratum.

RESULTS OF SURFACE EXAMINATION

The archaeological resource evaluation has resulted in a negative finding. A negative result indicates that no artifacts or potentially significant cultural features were observed. The parcel has both irrigation lines and signs of cattle grazing throughout, indicating it has been used as pastureland for cattle. Besides this, there are no signs of occupation within the project area; prehistoric or historic. The parcel was damp due to recent rains and there were areas of low standing pooled water that seem to be related to nearby man-made drainages designed to keep water from flowing over the private road to the east and Arata Lane to the south. The observed soil surface soil was grey color with a heavy clay constituency that had no observable variation over the parcel. At no point did the soil we observe indicate the presence of archaeological resources.



FIGURE 9 -- OVERVIEW OF THE PARCEL STANDING NEAR THE SOUTHERN SIDE LOOKING NORTHWARD

INTERPRETATION OF RESULTS

No artifacts, archaeological deposits, or features have been identified within the project parcel. The surface soil did not indicate any subsurface deposits or evidence of prehistoric human occupation. The soil is alluvial, significantly increasing the likelihood of naturally buried resources within the project parcel. The geological setting includes the Holocene increasing the possibility of naturally buried archaeological remains being within the parcel. We are aware that prehistoric

populations utilized the local vicinity, however there is no sign that they were actively occupying the land within the project area. None of the regionally expected artifacts mentioned within the Methodology section were observed, nor were signs of their existence observed.

We know the local region was historically used for ranching and viticulture, but there is no sign of historic deposits or features related to these practices within the project area. There is always a potential for discovery of isolated tools or artifacts that were lost by previous inhabitants of the region, historic or prehistoric. Keep in mind that isolated artifacts are not considered archaeologically significant finds unless made from a very special type of stone that is not native to an area or of a highly unusual shape or apparent function not associated with hunting, food preparation, or domestic activity. The potential for discovery of surface artifact concentrations is extremely low.

RECOMMENDATIONS

No archaeological resources were identified within the project area during the surface reconnaissance. At this time, we do not recommend archaeological subsurface testing or monitoring. While we recognize the parcel has an increased potential for naturally buried archaeological resources, that increase alone is not significant enough given the lack of recorded resources adjacent to the project area. In the event that a concentration of artifacts is encountered, all work should be halted in the vicinity of the find and an archaeologist contacted immediately. For a list of common prehistoric or historic resources, check the Methodology section.

If human remains are encountered anywhere on the property, all work must stop in the immediate vicinity of the discovered remains and the County Coroner and a qualified archaeologist must be notified immediately so that an evaluation can be performed. If the remains are deemed to be Native American and prehistoric, the Native American Heritage Commission (NAHC) must be contacted by the coroner so that a "Most Likely Descendant" can be designated and the appropriate procedures followed.

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APPENDIX 1— SIGNIFICANCE AND CULTURAL RESOURCES

To be significant an archaeological site must qualify for registration as an “historic resource” the following criteria must be met for this listing:

An archeological site may be considered an historical resource if it is significant in the architectural, engineering, scientific, economic, agricultural, educational, social, political, military or cultural annals of California (PRC § 5020.1(j)) or if it meets the criteria for listing on the California Register (14 CCR § 4850). CEQA provides somewhat conflicting direction regarding the evaluation and treatment of archeological sites. The most recent amendments to the CEQA Guidelines try to resolve this ambiguity by directing that lead agencies should first evaluate an archeological site to determine if it meets the criteria for listing in the California Register. If an archeological site is an historical resource (i.e., listed or eligible for listing in the California Register) potential adverse impacts to it must be considered, just as for any other historical resource (PRC § 21084.1 and 21083.2(l)). If an archeological site is not an historical resource, but meets the definition of a “unique archeological resource” as defined in PRC § 21083.2, then it should be treated in accordance with the provisions of that section.

If an archaeological site does not qualify for listing, the directive is clear. The Public Resources Code states:

(4) If an archaeological resource is neither a unique archaeological nor an historical resource, the effects of the project on those resources shall not be considered a significant effect on the environment. It shall be sufficient that both the resource and the effect on it are noted in the Initial Study or EIR, if one is prepared to address impacts on other resources, but they need not be considered further in the CEQA process.

APPENDIX 2 – PROFESSIONAL STANDARDS FOR CONSULTANTS

Secretary of the Interior's Standards

The minimum professional qualifications in archeology are a graduate degree in archeology, anthropology, or closely related field plus:

1. At least one year of full-time professional experience or equivalent specialized training in archeological research, administration or management;
2. At least four months of supervised field and analytic experience in general North American archeology; and
3. Demonstrated ability to carry research to completion.

In addition to these minimum qualifications, a professional in prehistoric archeology shall have at least one year of full-time professional experience at a supervisory level in the study of archeological resources of the prehistoric period. A professional in historic archeology shall have at least one year of full-time professional experience at a supervisory level in the study of archeological resources of the historic period.

Appendix D

Appendix D.1 California Emission Estimator Model (CalEEMod) Results

Appendix D.2 Operational Energy Calculation

Appendix D.1

California Emission Estimator Model (CalEEMod) Calculations

1. Basic Project Information

1.1. Basic Project Information

Data Field	Value
Project Name	Los Amigos Cottages Project
Construction Start Date	1/1/2025
Operational Year	2026
Lead Agency	—
Land Use Scale	Project/site
Analysis Level for Defaults	County
Windspeed (m/s)	2.20
Precipitation (days)	44.6
Location	263 Arata Ln, Windsor, CA 95492, USA
County	Sonoma-San Francisco
City	Windsor
Air District	Bay Area AQMD
Air Basin	San Francisco Bay Area
TAZ	891
EDFZ	2
Electric Utility	Pacific Gas & Electric Company
Gas Utility	Pacific Gas & Electric
App Version	2022.1.1.29

1.2. Land Use Types

Land Use Subtype	Size	Unit	Lot Acreage	Building Area (sq ft)	Landscape Area (sq ft)	Special Landscape Area (sq ft)	Population	Description
Single Family Housing	32.0	Dwelling Unit	2.41	62,400	374,811	—	82.0	—

Parking Lot	33.0	Space	0.30	0.00	0.00	—	—	—
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1.3. User-Selected Emission Reduction Measures by Emissions Sector

No measures selected

2. Emissions Summary

2.1. Construction Emissions Compared Against Thresholds

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Un/Mit.	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	1.54	1.29	10.8	12.5	0.02	0.41	0.12	0.52	0.37	0.03	0.40	—	2,396	2,396	0.10	0.04	0.67	2,410
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	88.4	88.4	14.1	15.6	0.03	0.64	2.84	3.49	0.59	1.36	1.95	—	2,778	2,778	0.11	0.04	0.02	2,788
Average Daily (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	2.43	2.42	7.74	8.89	0.02	0.30	0.13	0.43	0.27	0.04	0.32	—	1,682	1,682	0.07	0.02	0.19	1,691
Annual (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.44	0.44	1.41	1.62	< 0.005	0.05	0.02	0.08	0.05	0.01	0.06	—	279	279	0.01	< 0.005	0.03	280

2.2. Construction Emissions by Year, Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Year	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily - Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

5.6.1. Construction Earthmoving Activities

Phase Name	Material Imported (cy)	Material Exported (cy)	Acres Graded (acres)	Material Demolished (sq. ft.)	Acres Paved (acres)
Demolition	0.00	0.00	0.00	—	—
Site Preparation	—	—	4.50	0.00	—
Grading	—	—	6.00	0.00	—
Paving	0.00	0.00	0.00	0.00	0.65

5.6.2. Construction Earthmoving Control Strategies

Control Strategies Applied	Frequency (per day)	PM10 Reduction	PM2.5 Reduction
Water Exposed Area	2	61%	61%

5.7. Construction Paving

Land Use	Area Paved (acres)	% Asphalt
Single Family Housing	0.35	0%
Parking Lot	0.30	100%

5.8. Construction Electricity Consumption and Emissions Factors

kWh per Year and Emission Factor (lb/MWh)

Year	kWh per Year	CO2	CH4	N2O
2025	0.00	204	0.03	< 0.005
2026	0.00	204	0.03	< 0.005

5.9. Operational Mobile Sources

5.9.1. Unmitigated

Land Use Type	Trips/Weekday	Trips/Saturday	Trips/Sunday	Trips/Year	VT/Weekday	VT/Saturday	VT/Sunday	VT/Year
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Single Family Housing	288	288	288	105,120	2,353	2,353	2,353	858,903
Parking Lot	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

5.10. Operational Area Sources

5.10.1. Hearths

5.10.1.1. Unmitigated

Hearth Type	Unmitigated (number)
Single Family Housing	—
Wood Fireplaces	0
Gas Fireplaces	6
Propane Fireplaces	0
Electric Fireplaces	0
No Fireplaces	26
Conventional Wood Stoves	0
Catalytic Wood Stoves	0
Non-Catalytic Wood Stoves	0
Pellet Wood Stoves	0

5.10.2. Architectural Coatings

Residential Interior Area Coated (sq ft)	Residential Exterior Area Coated (sq ft)	Non-Residential Interior Area Coated (sq ft)	Non-Residential Exterior Area Coated (sq ft)	Parking Area Coated (sq ft)
126360	42,120	0.00	0.00	776

5.10.3. Landscape Equipment

Season	Unit	Value
Snow Days	day/yr	0.00

Summer Days	day/yr	180
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5.11. Operational Energy Consumption

5.11.1. Unmitigated

Electricity (kWh/yr) and CO2 and CH4 and N2O and Natural Gas (kBTU/yr)

Land Use	Electricity (kWh/yr)	CO2	CH4	N2O	Natural Gas (kBTU/yr)
Single Family Housing	578,775	204	0.0330	0.0040	0.00
Parking Lot	11,333	204	0.0330	0.0040	0.00

5.12. Operational Water and Wastewater Consumption

5.12.1. Unmitigated

Land Use	Indoor Water (gal/year)	Outdoor Water (gal/year)
Single Family Housing	1,031,578	4,103,758
Parking Lot	0.00	0.00

5.13. Operational Waste Generation

5.13.1. Unmitigated

Land Use	Waste (ton/year)	Cogeneration (kWh/year)
Single Family Housing	17.3	—
Parking Lot	0.00	—

5.14. Operational Refrigeration and Air Conditioning Equipment

5.14.1. Unmitigated

Land Use Type	Equipment Type	Refrigerant	GWP	Quantity (kg)	Operations Leak Rate	Service Leak Rate	Times Serviced
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Appendix D.2

Operational Energy Calculations

Los Amigos Cottages Project

Last Updated: 1/22/25

Populate one of the following tables (Leave the other blank):

Annual VMT		OR	Daily Vehicle Trips	
Annual VMT:	858,903		Daily Vehicle Trips:	
			Average Trip	
			Distance:	

Fleet Class	Fleet Mix	Fuel Economy (MPG) [1]	
Light Duty Auto (LDA)	0.474700	Passenger Vehicles	24.8
Light Duty Truck 1 (LDT1)	0.048087	Light-Med Duty Trucks	18.1
Light Duty Truck 2 (LDT2)	0.213600	Heavy Trucks/Other	7.9
Medium Duty Vehicle (MDV)	0.143780	Motorcycles	44
Light Heavy Duty 1 (LHD1)	0.043935		
Light Heavy Duty 2 (LHD2)	0.011746		
Medium Heavy Duty (MHD)	0.019400		
Heavy Heavy Duty (HHD)	0.007906		
Other Bus (OBUS)	0.001103		
Urban Bus (UBUS)	0.000516		
Motorcycle (MCY)	0.029040		
School Bus (SBUS)	0.001698		
Motorhome (MH)	0.004409		

Fleet Mix					
Vehicle Type	Percent	Fuel Type	Annual VMT:	Vehicle Trips: VMT	Fuel Consumption
			VMT		(Gallons)
Passenger Vehicles	47.47%	Gasoline	407,721	0.00	16,440
Light-Medium Duty Trucks	40.55%	Gasoline	348,257	0.00	19,241
Heavy Trucks/Other	9.07%	Diesel	77,913	0.00	9,862
Motorcycle	2.90%	Gasoline	24,943	0.00	567

Total Gasoline Consumption (gallons)	36,248
Total Diesel Consumption (gallons)	9,862

Sources:

[1] United States Department of Transportation, Bureau of Transportation Statistics. 2024. National Transportation Statistics. Available at: <https://www.bts.gov/topics/national-transportation-statistics>.

Appendix E

Greenhouse Gas Consistency Checklist

LOS AMIGOS COTTAGES PROJECT

**TOWN OF WINDSOR GREENHOUSE GAS CONSISTENCY
DETERMINATION**

April 7, 2026

LOS AMIGOS COTTAGES

TOWN OF WINDSOR GREENHOUSE GAS CONSISTENCY DETERMINATION APPLICANT RESPONSES

April 7, 2026

I. GHG CONSISTENCY STEPS ANALYSIS

The following steps outline the process for GHG CEQA Streamlining in the Town of Windsor:

Determine Land Use Consistency: Is the proposed project consistent with the approved General Plan land use designation(s)? Consistency shall be demonstrated by showing that the proposed project complies with the allowed land use type, density, and floor-area ratio (FAR) of the designated land use.

[APPLICANT RESPONSE]: The Los Amigos Cottages - SB 330 Builders Remedy Project proposes to subdivide the subject 2.72-acre site into 32 residential lots, comprised of twenty-six (26) detached single-family homes and six (6) “duet” single-family attached homes. Five (5) of the six proposed duet units will be designated for-sale units for lower income households. The project is a “housing development project” under the Housing Crisis Act (“SB 330”) and the Housing Accountability Act (“HAA”), and housing “for very low, low-, or moderate-income households” under the HAA.

At the time the Project’s SB 330 Preliminary Application was submitted to the Town, the Town’s Housing Element was out of substantial compliance with State Housing Element Law. Accordingly, the Town may not rely on Government Code Section 65589.5, subdivision (d)(5), to lawfully disapprove or conditionally approve the Project. Specifically, under the HAA, the Town may not disapprove or conditionally approve a housing development project “for very low, low-, or moderate-income households” because the project is inconsistent with the Town’s zoning ordinance and general plan land use designation.

The General Plan land use designation of the project site is currently “General Business,” which does not allow residential uses. As a SB 330 Builders Remedy project, the Project proposes residential development that is inconsistent with the General Business land use designation. Therefore, the Project is subject to the steps identified below for Category B Projects.

A. Category A Projects: If the answer is Yes, the project is consistent with the approved General Plan land use designation, the project applicant shall complete the Town of Windsor General Plan GHG Policy Consistency Checklist (see Appendix A) and submit the Checklist for Town staff review and approval.

If the project does not comply with all applicable Checklist items, streamlining is not possible. Proceed to Step 2 below (Bay Area Air Quality Management District Thresholds).

B. Category B Projects: If the answer is No, the project is not consistent with the approved General Plan land use designation, the project applicant shall complete Steps 1 and 2 below:

1. Complete the Checklist. The project applicant shall complete the Town of Windsor General Plan GHG Policy Consistency Checklist (see Appendix A) and submit the Checklist for Town staff review and approval.

[APPLICANT RESPONSE]: A completed Town of Windsor General Plan GHG Policy Consistency Checklist form has been completed and is attached (Attachment "A").

2. Bay Area Air Quality Management District Thresholds. For land use development projects, the Bay Area Air Quality Management District (BAAQMD) considers a project to have a less-than-significant impact related to GHG emissions if it meets specific project design elements related to buildings and transportation.¹ These design elements are:

a) Buildings

- (1) The project will not include natural gas appliances or natural gas plumbing (in both residential and nonresidential development).

[APPLICANT RESPONSE]: The proposed project does not include natural gas appliances or plumbing in any of the residential units or within the project area.

- (2) The project will not result in any wasteful, inefficient, or unnecessary energy usage as determined by the analysis required under State CEQA Guidelines Section 21100(b)(3) and Section 15126.2(b).

[APPLICANT RESPONSE]: The Energy section of the Los Amigos Cottages Initial Study prepared for the project includes the required analysis and concludes that the project will not result in any wasteful, inefficient, or unnecessary energy usage.

b) Transportation

- (1) Achieve a reduction in project-generated vehicle miles traveled (VMT) below the regional average consistent with the current version of the California Climate Change Scoping Plan (currently 15 percent) or meet a locally adopted Senate Bill 743 VMT target, reflecting the recommendations provided in the Governor's Office of Planning and Research's Technical Advisory on Evaluating Transportation Impacts in CEQA:

- (a) Residential projects: 15 percent below the existing VMT per capita
- (b) Office projects: 15 percent below the existing VMT per employee
- (c) Retail projects: No net increase in existing VMT

[APPLICANT RESPONSE]: The Traffic Impact Study Addendum dated December 10, 2025, prepared for the project documents that project VMT would be more than 15% below County-wide VMT per capita. The county-wide VMT threshold is 14.11, which is fifteen percent (15%) below the county-wide VMT per capita of 16.60. The project would result in 12.78 VMT per capita, which is below the required threshold.

- (2) Achieve compliance with off-street electric vehicle requirements in the most recently adopted version of California Green Building Standards Code (CALGreen) Tier 2.

[APPLICANT RESPONSE]: Consistent with the requirements of Section A4.106.8 of the 2025 CALGreen Code, each dwelling unit will be provided with a dedicated 240-volt electrical line with appropriate overcurrent device from the main electrical panel or subpanel to a cabinet, box or other enclosure inside of the garage where an EV charger may be installed. Other electrical components, including a receptacle or blank cover, related to this section will be installed as required in accordance with the California Electrical Code.

II. EXPLANATIONS IN RESPONSE TO GENERAL PLAN GHG POLICY CONSISTENCY CHECKLIST ITEMS (APPENDIX A)

The following explanations are provided in response to applicable items in the Town's GHG Policy Consistency Checklist.

Construction.

Implement construction emissions measures:

- *Limit construction equipment idling time to 5 minutes or less.*
- *Maintain construction equipment per manufacturer's specifications.*

[APPLICANT EXPLANATION]: During project construction, project contractors will be required to limit the idling time of construction equipment to 5 minutes or less. Project contractors will also be required to maintain construction equipment used on the project site per manufacturer's specifications. This requirement will be included as a note on the Project's construction plans.

Land Use and Site Design:

Provide Shade

Project includes shade trees to provide at least 50% shade coverage within 10 years of planting in public rights-of-way, public spaces, and parking lots. Shade may also be provided in part by carports and shade structures if they are equipped with rooftop solar panels.

[APPLICANT EXPLANATION]: The proposed project will achieve the 50% shading requirement and advance the objectives of General Plan Policy ER-5.16 through the planting of Red Maple trees in the public right-of-way along the site's Los Amigos Road Extension and Arata Lane frontages. Red maples (*Acer rubrum*) are fast-growing trees with large canopies that provide significant shade for cooling. Their rapid growth also makes them effective for quick carbon sequestration and urban greening. Red Maples have excellent adaptability to diverse soils, urban pollution, and varied moisture conditions, including drought once established. Red Maple trees are identified as an acceptable tree in the City of Santa Rosa's Storm Water Low Impact Development Technical Design Manual (which the Town utilizes) and have been approved as an acceptable tree species in other areas of the Town. A shading analysis showing tree shading coverage 10 years after planting is attached (Attachment "B").

The planting of shade trees along the proposed internal private road was explored but determined to be significantly constrained by the following factors:

- The project site is located within a Moderate Fire Hazard Severity Zone and is subject to Fire Code requirements for maintaining spacing between building structures and vegetative plantings. Planting larger canopy trees within the small yard areas being proposed would conflict with the interest of maintaining a “Zone 0” clear separation between building structures and plantings. Maintaining an adequate distance between plantings and building structures is necessary to mitigate the potential spread of fire that could occur during a wildfire event.
- The compact form of development being proposed (which is necessary for providing housing that is affordable to lower-income households and first-time homebuyers) limits the amount of private yard area available for planting of large canopy trees. Most of the length of the private street is abutted by side and rear yard areas that are too narrow to support the planting and healthy growth and development of large canopy trees.
- Public utility easements within the yard areas adjacent to the private street are also a constraint. Planting large canopy trees within public utility easement areas could constrain access to utility lines and/or result in root-related damage to the utility lines.

It should be noted that there are other proposed features of the project design that will serve to reduce the “heat island effect” of sun-exposed paving materials consistent with the objective of General Policy ER-5.16. The private internal street has been designed to meet the Town’s “Narrow Residential Street” standard, which is narrower than a typical street, has a sidewalk on only one side of the street, and has no “on-street” parking. Twenty of the thirty-two proposed homes do not have paved driveway areas leading into the garage. These features serve to reduce the amount of paved area that would otherwise be exposed to heating in a more typical subdivision design.

The project also proposes to defer construction of Arata Lane to its full buildout width until such a time the Town determines full buildout is necessary. This allows for the land area that would be needed for full buildout (which will be held in reserve for the Town) to remain unpaved, reducing the amount of heat island effect resulting from development of the project site for an indeterminate number of years.

Facilitate Multimodal Travel

Where appropriate, project provides transit facilities, including, but not limited to, drop-off/parking facilities for ridesharing and car-sharing services, bus turnouts, shelters, and benches.

Project provides facilities to support multimodal travel, including, but not limited to, adequate bicycle parking facilities, secure long-term bicycle parking, and streetlights.

[APPLICANT EXPLANATION]: The proposed project will advance the objectives of General Plan Policies M-1.4 (Multimodal System Additions), M-2.10 (Bicycle and Pedestrian Connectivity), M-3.2 (Private Development Street Connections), M-4.5 (Bicycle Infrastructure Planning), and M-5.3 (Safe Routes to Transit) by facilitating multi-modal travel for pedestrians and bicyclists through the construction of public sidewalks and bicycle lanes along the project site’s Los Amigos Road Extension and Arata Lane frontages. The proposed project also proposes an internal private street that will accommodate pedestrian travel and connection to an existing transit stop located

approximately 200 feet to the west of the project site in front of New Song Church. Street lighting will be installed on both the public and private streets. These improvements are noted in the submitted development plans.

Street Design

New or modified streets comply with the Town's Complete Streets Design Guidelines (and Old Redwood Highway Corridor Enhancement Plan where applicable).

[APPLICANT EXPLANATION]: As illustrated on the submitted development plans, the proposed public and private street improvements have been designed in consultation with Town staff and comply with the Town's Complete Street Design Guidelines. The project site is not located within the Old Redwood Highway Corridor Enhancement Plan area and is not subject to its standards and/or guidelines.

Street Connectivity

New or modified streets provide bicycle and pedestrian connection(s) from a street or driveway to the nearest public street.

[APPLICANT EXPLANATION]: Consistent with Policy M-1.4 (Transportation and Mobility), the project proposes to construct a new street extension – the Los Amigos Road realignment - north of Arata Lane and proposes to widen and improve Arata Lane to the west of Los Amigos Road. These public street improvements will build upon the Town's existing multi-modal transportation network and set the foundation for future network extension and connectivity for all modes of transportation within the larger North of Arata Lane Community Place area. In addition, completion of the Los Amigos Road extension will accommodate construction of a new on-ramp to northbound Highway 101 – improving area access and connectivity to the highway.

As required by Policy M-3.4 (Street Design), all new streets, public and private, have been designed consistent with the Town's Complete Street Design Guidelines and will support walking and biking. Sidewalks and bicycle lanes will be provided along the project site's Arata Lane and Los Amigos Road realignment frontages. Street lighting and street tree planting along these streets will create a safe and pleasant travel environment. The internal private street provides a sidewalk on one-side of the street that connects directly to both Arata Lane and the Los Amigos Road realignment. The relatively low traffic volume anticipated on the internal private street makes it safe for bicyclists to "share the road."

The majority of home sites will provide a direct connection to a public and/or private sidewalk. On lots located adjacent to the Los Amigos Road realignment and to Arata Lane (Lots 1 through 18), each home will have a pathway connecting the home to the street. For lots 19 through 26, each home will have a direct connection to the sidewalk on the private street. Lots 27 through 31 are located on a private driveway that connects to the internal private street. A sidewalk is proposed on one side of the private driveway that will provide a safe connection to the sidewalk on the internal private street.

As described above, the proposed streets and street improvements will facilitate convenient connections to future adjacent neighborhoods, nearby transit and other local destinations (as further described in the response below).

Development Patterns

Project siting and design supports compact development; mixed land uses; or transit-oriented development. (Consider the standards listed below for the applicable land use type.)

- *Residential: encourage high-density residential uses to be located in areas close to services and transit.*

[APPLICANT EXPLANATION]: The project site and design support compact residential development and it is located close to services and transit. There is an existing transit stop located approximately 200 feet west of the project site, and small commercial center that is approximately one-quarter mile west of the of the project site. Michael A. Hall Park and Brooks Elementary School are just over one-half mile to the southeast of the project site. A future community park and linear parks are planned to the east of the project site as part of the approved Quail Acres subdivision project.

The project site is currently designated for non-residential uses and has no established residential density range. The highest density land use designation located closest to the project site is an area designated as “Neighborhood Center/Mixed Use,” which allows a density of up to 16 units per acre. The proposed density of the project is 11.76 units per acre, which would be consistent with the “Medium Density Residential” land use designation (8 to 16 units per acre).

Water:

Indoor Water Use

The project incorporates water efficient appliances and fixtures and meets CALGreen Code Chapter 4, Section 4.303, indoor water-efficiency standards.

[APPLICANT EXPLANATION]: The proposed project will incorporate water efficient appliances and fixtures that meet the following CALGreen Code indoor water-efficiency standards:

- *Water Closets (4.303.1.1): Volume will not exceed 1.28 gallons per flush.*
- *Showerheads (4.303.1.3): Single showerheads will not exceed 1.8 gallons per minute at 80 psi.*
- *Faucets (4.303.1.4):*
 - *Lavatory: Lavatory faucets will not exceed 1.2 gallons per minute at 60 psi.*
 - *Kitchen: Kitchen faucets will not exceed 1.8 gallons per minute at 60 psi.*

Outdoor Water Use

Project landscape irrigation system complies with the minimum requirements of the State Model Water Efficient Landscape Ordinance (MWELo) and Town of Windsor Water Efficient Landscape Ordinance (WELO). The most conservative requirements are applicable, in case of a discrepancy. Projects shall consider installation of gray water systems for irrigation.

[APPLICANT EXPLANATION]: The project landscape irrigation systems will be designed to comply with the more conservative minimum requirement of the State Model Water Efficient Landscape Ordinance (MWELo) and Town of Windsor Water Efficient Landscape Ordinance (WELO). Grey

water diversion valves will be installed in each unit to accommodate future installation of grey water systems for irrigation.

Energy Efficiency:

Tier 1 CALGreen Code Compliance

Consistent with Title VII Article 12 - California Green Building Code—Title 24, Part 11 of the Town Municipal Code, the project meets Tier 1 CALGreen Code requirements. The requirements to achieve Tier 1 of the 2025 CALGreen Code are outlined in Appendix B.

[APPLICANT EXPLANATION]: The proposed project will be designed to achieve the Tier 1 energy efficiency requirements of the 2025 CALGreen Code, consistent with Title VII Article 12 - California Green Building Code—Title 24, Part 11 of the Town Municipal Code.

Energy Efficiency

Project meets or exceeds minimum energy-efficiency standards such as those contained in Title 24, Part 6 of the California Code of Regulations (Energy Efficiency Standards for Residential and Nonresidential Buildings) and the Town's Green Building Ordinance, including in the area of passive design to reduce cooling loads. For commercial buildings, project meets or exceeds minimum energy-efficiency standards.

[APPLICANT EXPLANATION]: Each of the proposed residential homes will be designed as an "all electric" home including Solar PV (photovoltaic) panels, high-efficiency heat pump HVAC and water heating equipment, high-efficiency electrical appliances, roofline insulation, and advanced lighting features so that the home meets or exceeds standards contained in Title 24, Part 6 of the California Code of Regulations and the Town of Windsor's Green Building Ordinance.

Energy Performance Standards and Zero Net Energy Advancement

To further support the Town's General Plan policy to strive toward Zero Net Energy (ZNE) buildings, the project incorporates one or more of the following measures from each category (A, B, C, D, and E), to the extent feasible.

A. Enhanced Building Efficiency (Above Tier 1)

[APPLICANT EXPLANATION]: As identified in Category A.3, the project will install high-efficiency HVAC and Water-Heating Equipment systems exceeding CALGreen Tier 1 assumptions, such as:

- *Heat-pump HVAC with variable-speed compressors (≥ 18 SEER or equivalent)*
- *Heat-pump water heaters with high UEF ratings (≥ 3.3 UEF)*
- *Smart or adaptive controls (advanced thermostats, control meters, occupancy-based ventilation)*
- *Duct leakage $\leq 3\%$ to outside*

B. Renewable Energy, Storage, and Grid Support

[APPLICANT EXPLANATION]: As identified in Category B.1, the project will install on-Site Solar PV (photovoltaic) panels sized at least 10% above Title 24 minimums on the roof of each home.

C. Voluntary Electrification and Load Reduction

[APPLICANT EXPLANATION]: As identified in Category C.1, the project will install high-efficiency electric appliances (i.e., space conditioning, water heating, cooking, and laundry, as applicable) in each home.

D. Low Emissions Construction and Building Materials

[APPLICANT EXPLANATION]: As identified in Category D.1, construction equipment and truck idling will be limited to no more than two minutes during project construction.

E. Additional High-Performance Design Enhancements

[APPLICANT EXPLANATION]: As identified in Category E.1, 100% LED advanced lighting that exceeds Title 24 requirements by at least 10% Lighting Power Density will be installed in each home.

ATTACHMENTS:

- A. Completed Town of Windsor General Plan GHG Policy Consistency Checklist.
- B. Tree Shading Analysis.

ATTACHMENT “A”

Completed Town of Windsor General Plan GHG Policy
Consistency Checklist form

Town of Windsor General Plan GHG Policy Consistency Checklist

Instructions: Each checklist item included in this table corresponds to specific policies and measures that are required by the Town of Windsor (Town). For each checklist item, the Applicant shall identify whether the proposed project complies with the item by checking “Yes” or “No” and provide a detailed explanation of the selected response. For checklist items that are not applicable, enter “Not applicable” in the “Explanation” column and provide a detailed explanation of why the measure is not applicable. The completed checklist will be reviewed by Town Planning staff, and the ultimate consistency determination will be made by the Community Development Director.

Checklist Item	Relevant GP Policy, GP EIR Mitigation Measure, or Town Policy	Complies with Checklist Item?		Explanation
		Yes	No	
Construction				
Implement construction emissions measures: <ul style="list-style-type: none">Limit construction equipment idling time to 5 minutes or less.Maintain construction equipment per manufacturer's specifications.	GP EIR Mitigation Measure AQ-1	☒	☐	The project will comply. See responses.
Land Use and Site Design				
Provide Shade: Project includes shade trees to provide at least 50% shade coverage within 10 years of planting in public rights-of-way, public spaces, and parking lots. Shade may also be provided in part by carports and shade structures if they are equipped with rooftop solar panels.	GP Policies M-6.3, ER-5.16, ER-5.17, and DRAFT ER-5.22	☒	☐	The project meets 50% shading req. See responses.
Facilitate Multimodal Travel: Where appropriate, project provides transit facilities, including, but not limited to, drop-off/parking facilities for ridesharing and car-sharing services, bus turnouts, shelters, and benches. Project provides facilities to support multimodal travel, including, but not limited to, adequate bicycle parking facilities, secure long-term bicycle parking, and streetlights.	GP Policies M-1.3, M-1.4, M-2.6, M-2.10, M-3.2, M-4.4, M-4.5, M-4.6, M-4.10, M-4.11, M-5.3, and M-5.5	☒	☐	The project will facilitate multi-modal travel. See responses.
Street Design: New or modified streets comply with the Town's Complete Streets Design Guidelines (and Old Redwood Highway Corridor Enhancement Plan where applicable).	GP Policies M-2.1, M-2.2, and M-2.3	☒	☐	See responses for details.
Street Connectivity: New or modified streets provide bicycle and pedestrian connection(s) from a street or driveway to the nearest public street.	GP Policies M-1.4, M-3.4, and M-3.7	☒	☐	See responses for details.
Development Patterns: Project siting and design supports compact development; mixed land uses; or transit-oriented development. (Consider the standards listed below for the applicable land use type.) <ul style="list-style-type: none">Residential: encourage high-density residential uses to be located in areas close to services and transit.Commercial: encourage commercial areas to be linked to adjoining residential neighborhoods by well-designed and attractive streetscapes that have well-designed buildings fronting on tree-lined sidewalks with bicycle paths and street amenities.Mixed-Use: Mixed use projects shall comply with the following objectives:<ul style="list-style-type: none">A blend of uses that are physically and functionally integrated to create a synergy between different uses and a unique sense of place;	GP Policies LU-2.5, LU-3.2, LU-4.1, LU-5.5, LU-6.1, M-5.1, ER-5.4, ER-5.9, H-8.2, and H-8.5	☒	☐	The project siting and design supports compact residential development and it is located close to services and transit. See responses for details.

Appendix A

CEQA Greenhouse Gas Consistency Determination

Checklist Item	Relevant GP Policy, GP EIR Mitigation Measure, or Town Policy	Complies with Checklist Item?		Explanation
		Yes	No	
<ul style="list-style-type: none"> Compact development that reduces reliance on automobiles and promotes transit, walking, and biking; Pedestrian-oriented design with active uses built up to the sidewalks; Industrial: discourage new industrial land uses designed or operated in a manner that produces hazardous materials/waste, vibration, noise, glare, heat, and/or air emissions at levels that adversely affect surrounding land uses. 		☐	☐	(See previous page)
Water				
<i>Indoor Water Use:</i> The project incorporates water efficient appliances and fixtures and meets CALGreen Code Chapter 4, Section 4.303, indoor water-efficiency standards.	GP Policies DRAFT ER-5.23, PFS-2.8 and H-8.3; CALGreen Code	☒	☐	The project will comply.
<i>Outdoor Water Use:</i> Project landscape irrigation system complies with the minimum requirements of the State Model Water Efficient Landscape Ordinance (MWELo) and Town of Windsor Water Efficient Landscape Ordinance (WELO). The most conservative requirements are applicable, in case of a discrepancy. Projects shall consider installation of gray water systems for irrigation.	GP Policy DRAFT ER-5.23, PFS-2.9; State MWELo; Town WELO	☒	☐	The project will comply with this item. See responses.
Energy Efficiency				
<i>Tier 1 CALGreen Code Compliance:</i> Consistent with Title VII Article 12 - California Green Building Code—Title 24, Part 11 of the Town Municipal Code, the project meets Tier 1 CALGreen Code requirements. The requirements to achieve Tier 1 of the 2025 CALGreen Code are outlined in Appendix B. ³	GP Policies ER-5.15 and H-8.1; CALGreen Code	☒	☐	The project will meet Tier 1 energy requirements.
<i>Energy Efficiency:</i> Project meets or exceeds minimum energy-efficiency standards such as those contained in Title 24, Part 6 of the California Code of Regulations (Energy Efficiency Standards for Residential and Nonresidential Buildings) and the Town's Green Building Ordinance, including in the area of passive design to reduce cooling loads. For commercial buildings, project meets or exceeds minimum energy-efficiency standards.	GP Policies ER-5.15 and H-38; 2019 Windsor Climate Emergency Resolution 3548-19; Title 24 Building Energy Efficiency Standards	☒	☐	The project will meet or exceed minimum energy efficiency standards.
<p><i>Energy Performance Standards and Zero Net Energy Advancement:</i> To further support the Town's General Plan policy to strive toward Zero Net Energy (ZNE) buildings, the project incorporates one or more of the following measures from each category (A, B, C, D, and E), to the extent feasible.</p> <p>A. Enhanced Building Efficiency (Above Tier 1)</p> <ol style="list-style-type: none"> Energy Code Performance Exceedance: Project exceeds the applicable Title 24, Part 6 Energy Code performance requirements by 10% or more. Advanced Building Envelope Measures: Project incorporates envelope improvements beyond CALGreen Tier 1, including one or more of the following: <ul style="list-style-type: none"> Increased wall, roof, or floor insulation above Title 24 baseline High-performance windows (improved U-factor/SHGC performance) Cool roof materials exceeding Title 24 cool-roof criteria Exterior shading design (overhangs, fins, or similar) 	GP Policies ER-5.11 and ER-5.10; Implementation Program ER-5; 2019 Windsor Climate Emergency Resolution 3548-19	☒	☐	As identified in Category A.3, the project will install high-efficiency HVAC and Water-Heating Equipment systems exceeding CALGreen Tier 1 assumptions standards.

³ The 2025 CALGreen Code will go into effect January 1, 2026.

Appendix A

CEQA Greenhouse Gas Consistency Determination

Checklist Item	Relevant GP Policy, GP EIR Mitigation Measure, or Town Policy	Complies with Checklist Item?		Explanation
		Yes	No	
3. High-Efficiency HVAC and Water-Heating Equipment: Project installs high-efficiency systems exceeding CALGreen Tier 1 assumptions, such as: <ul style="list-style-type: none"> • Heat-pump HVAC with variable-speed compressors (≥ 18 SEER or equivalent) • Heat-pump water heaters with high UEF ratings (≥ 3.3 UEF) • Smart or adaptive controls (advanced thermostats, control meters, occupancy-based ventilation) • Duct leakage $\leq 3\%$ to outside 				(See previous page)
B. Renewable Energy, Storage, and Grid Support <ol style="list-style-type: none"> 1. On-Site Solar PV Above Minimum Code: Installs on-site solar PV sized at least 10% above Title 24 minimums. 2. Battery Storage: Installs on-site battery storage sized to reduce peak load or increase utilization of on-site renewable energy. 3. Solar-Ready/Battery-Ready Infrastructure: Provides solar-ready and/or battery-ready infrastructure beyond the minimum code requirements. 4. Grid-Harmonizing Controls: Installs demand-response capable or load-shifting controls (e.g., smart thermostats, load management systems). 5. Purchase Renewable Electricity: For non-residential projects, demonstrate a commitment to purchase electricity generated from renewable sources (i.e., Sonoma Clean Power EverGreen Service enrollment). 6. Participate in alternative electricity grid systems, such as community or privately-funded solar and/or microgrid programs. 		☒	☐	As identified in Category B.1, the project will install on-Site Solar PV (photovoltaic) panels sized at least 10% above Title 24 minimums on the roof of each home.
C. Voluntary Electrification and Load Reduction <ol style="list-style-type: none"> 1. High-Efficiency Electric Appliances: All installed appliances (i.e., space conditioning, water heating, cooking, and laundry, as applicable) are high-efficiency electric models. 2. Electrification of Non-Building Loads: Electrifies non-building loads (e.g., outdoor equipment, forklifts, landscaping tools, process loads) where feasible. 3. Enhanced EV Infrastructure: Provides EV-capable or EV-ready spaces at least 10 percent above what is required under Tier 1 minimums, rounded up to the nearest whole number of spaces. 		☒	☐	As identified in Category C.1, the project will install high-efficiency electric appliances in each home. See responses for details.
D. Low Emissions Construction and Building Materials <ol style="list-style-type: none"> 1. Prohibit construction equipment and truck idling beyond two minutes. 2. Use low-emissions construction materials, such as low-carbon concrete and recycled steel, or other materials that sequester carbon. 		☒	☐	Construction equipment and truck idling will not exceed 2 min.
E. Additional High-Performance Design Enhancements <ol style="list-style-type: none"> 1. Advanced Lighting and Controls: Installs advanced lighting and control systems that exceed Title 24 requirements by at least 10% Lighting Power Density. This can be achieved by measures such as, but not limited to, providing 100% LED lighting; 		☒	☐	(See following page)

Appendix A

CEQA Greenhouse Gas Consistency Determination

Checklist Item	Relevant GP Policy, GP EIR Mitigation Measure, or Town Policy	Complies with Checklist Item?		Explanation
		Yes	No	
<p>incorporating daylighting controls with automatic dimming during daylight hours; and installing occupancy sensors such that lighting automatically turns off in vacant areas.</p> <p>2. Enhanced Temperature Regulation Measures: Integrates passive cooling or cool-community strategies (e.g., cool paving, shade trees, reflective hardscape) that reduce building energy loads to at least 10% below demand that would occur under baseline Title 24 requirements.</p> <p>The project applicant shall indicate which measure(s) from each category the proposed project would include. Supporting documentation must be included as an attachment to this Checklist.</p> <p>If the applicant demonstrates that the above measures are physically, technically, or financially infeasible (due to site constraints, shading, operational needs, disproportionate cost, etc.), the project may submit documentation of the infeasibility and comply with Tier 1 CALGreen Code (and other mandatory building codes) only, subject to review and approval by the Community Development Director.</p>				<p>100% LED advanced lighting that exceeds Title 24 requirements by at least 10% Lighting Power Density will be installed in each home.</p>

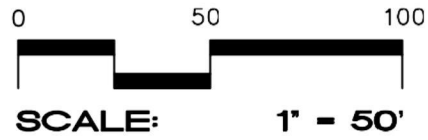
EIR = Environmental Impact Report

GP = Town of Windsor 2040 General Plan

This Checklist shall be reviewed at least every 5 years to incorporate new Town programs, implementation updates, and State regulations. Updates to this Checklist are subject to approval by the Community Development Director and/or the Town Manager. The Town Planning and Building Divisions will maintain a master version and a summary of approved projects demonstrating compliance.

ATTACHMENT “B”

Los Amigos Cottages Tree Shading Analysis



LEGEND

- 10 YEAR TREE SPREAD OVER RIGHT-OF-WAY (11,604 SQ. FT.)
COVERAGE AREA TO PARKING (20,383 SQ. FT.)

COVERAGE: 57%

NOTE: CALCULATION BASED ON CONSULTATION WITH A LANDSCAPE ARCHITECT. 25' CANOPY WIDTH BASED ON RED MAPLES AGED 5 YEARS WHEN PLANTED IN 36" BOXES. TREE HEIGHT AND WIDTH 10 YEARS AFTER PLANTING ESTIMATED TO BE 30' AND 25', RESPECTIVELY.



CIVIL DESIGN CONSULTANTS, INC.
2200 Range Avenue, Suite 204
Santa Rosa, CA 95403
(707) 542-4820

APN 161-020-049

10 YEAR TREE CANOPY SPREAD PERCENTAGE TO EDGE OF PARKING

LOS AMIGOS COTTAGES

263 ARATA LANE
WINDSOR, CALIFORNIA

MARCH 2026

JOB NO.
23-110

EXHIBIT

A2

Appendix F

Storm Water Low Impact Development Submittal



Storm Water Low Impact Development Submittal (SW LIDS) Coversheet and Checklist

Note: SW LIDS was previously referred to as "SUSMP" or "SWMP"

Instructions: Fill in Part A for Initial SW LIDS and Part B for Final SW LIDS.
Any drawings or calculations must be attached to this sheet.

1. Submittal Information:

☒ Initial SW LIDS, Submitted Date: November 2023 ☐ Final SW LIDS, Submitted Date: _____

Design Manual Used for Design:

- ☐ 2005 Standard Urban Storm Water Mitigation Plan (SUSMP)
☐ 2011 Storm Water Low Impact Development Technical Design Manual (SWMP) (Windsor 10-15-14 to 5-2-17)
☒ 2017 Storm Water Low Impact Development Technical Design Manual (SW LIDS) (Windsor 5-3-17 to Present)

2. Applicant Information:

Applicant Name (Owner or Developer): Willowglen Homes - Arata Properties, LLC

Mailing Address: P.O. Box 2357

City/State/Zip: Healdsburg, CA 95448

Phone/Email/Fax: 707-473-8620

3. Project Information:

Project Name: Los Amigos Cottages

4. Site Address:

City/State/Zip: 263 Arata Lane Windsor, CA 95492

5. Permit(s):

Note: If the applicant has already applied for permits, please indicate permit number(s) below.

☐ Building Permit	# _____	☐ Design Review	# _____
☐ Encroachment	# _____	☐ Grading Permit	# _____
☐ Hillside Development	# _____	☒ Subdivision	# _____
☐ Time Extension	# _____	☐ Use Permit	# _____
☐ Other(s)	_____		

Part A: Initial SW LID Submittal

1. Design Information:

Narrative: Please check the items attached to this form, leaving lines to the left blank.

Note: To be submitted with all Project Applications.

Project Description

Reviewer/Applicant

- ____ ☒ Description of proposed project type, size, location, and any specific uses or features
- ____ ☐ Description of any sensitive features (creeks, wetlands, trees, etc.) and whether they are going to be preserved, removed or altered
- ____ ☒ Description of the existing site, including impervious area noted
- ____ ☐ Description of other triggering factor(s) such as 401 water quality certification
- ____ ☒ Level of treatment and Volume Capture
- ____ ☐ Treatment Only ☐ Delta Volume and Treatment ☒ 100% Volume Capture and Treatment
- ____ ☐ Describe any "on-site offset" used. "On-site offset" refers to BMPs developed or sized to receive runoff from project improvements made in the public right-of-way, or on a separate parcel, but treated on the project site.

Determination Worksheet

Reviewer/Applicant

- ____ ☒ Determination Worksheet must be completed.

Pollution Prevention and Runoff Reduction Measures

Reviewer/Applicant

- ____ ☒ Description of all proposed pollution prevention measures (street sweeping, covered trash enclosures, indoor uses, etc.).
- ____ ☒ Description of all Runoff Reduction Measures which provide area reduction credits (Interceptor Trees, Impervious Area Disconnection, and/or Alternative Driveway Design).

Type of BMPs Proposed

Reviewer/Applicant

- ____ ☒ Description of each type of BMP selected, its priority group, reason for selection, and a narrative of how each works. (A full detail drawing will be required for the final SW LIDS submittal.)
- ____ ☒ Completed BMP Selection Table
- ____ ☒ Description of level of treatment and volume capture achieved for each BMP.

Maintenance

Reviewer/Applicant

- ____ ☒ Preliminary description of maintenance for each type of BMP
- ____ ☒ Description of proposed funding source

2. Exhibits:

Proposed SW LIDS Exhibit:

Reviewer/Applicant

- ____ ☒ Exhibit should include: site layout, new or replaced impervious areas, street names, property lines, storm drainage system, and waterways. Also include title, block, scale and north arrow.
- ____ ☒ Tributary areas shown for all BMPs (including off-site drainage areas)
- ____ ☒ C value for each tributary area.
- ____ ☒ Soil Type of existing site.
- ____ ☒ New or replaced impervious area shown.
- ____ ☒ All inlets and BMPs, shown (including unique identifier).
- ____ ☒ All interceptor trees shown.
- ____ ☒ All proposed BMPs shown including dimensions.

Existing Condition Exhibit

Reviewer/Applicant

- ____ ☐ Exhibit should include: street names, property lines, storm drainage system, waterways, title block, scale and north arrow.
- ____ ☐ Soil Type of existing site.
- ____ ☐ Proposed tributary areas shown for all proposed BMPs with existing impervious area shown and labeled in square feet or acres (including offsite drainage areas). Also, show land cover types and associated C values.
- ____ ☐ Existing impervious areas. Existing impervious area.

3. BMP Details:

Reviewer/Applicant

- ____ ☒ For each type of BMP selected, provide a preliminary 8.5" x 11" detail for each BMP type or include changes are proposed. If the design varies from fact sheets, describe how and why there were modified.

4. On Plans:

Reviewer/Applicant

- ____ ☒ Show all applicable elements of the selected BMPs on the appropriate plan sheets.

5. Calculations:

Reviewer/Applicant

- ____ ☒ Sizing calculations for each BMP and summary sheet using the Storm Water Calculator found at www.srcity.org/stormwaterLID
- ____ ☐ Supplemental or supporting calculation if applicable.

6. Preliminary Plan

Project Representative/Title

Date

Signature

Town Approval/Title

Date

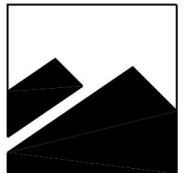
Signature

INITIAL STORM WATER LOW IMPACT DEVELOPMENT SUBMITTAL
LOS AMIGOS COTTAGES

OCTOBER 2024

CIVIL DESIGN CONSULTANTS, INC.

2200 Range Avenue, Suite 204
Santa Rosa, CA 95403
(707) 542-4820



**INITIAL
STORM WATER LOW IMPACT DEVELOPMENT SUBMITTAL**

FOR
LOS AMIGOS COTTAGES

Location

*263 Arata Lane
Windsor, CA*

APNs 161-020-049

Prepared for

Arata Properties, LLC
P.O. Box 2357
Healdsburg, CA 95448

October 2024



Prepared by

CIVIL DESIGN CONSULTANTS, INC.
2200 RANGE AVENUE, SUITE 204
SANTA ROSA, CA 95403

CONTENTS

- 1 INTRODUCTION**
- 2 PROJECT DESCRIPTION**
- 3 POLLUTION PREVENTION MEASURES**
- 4 TYPES OF BMP'S SELECTED TO MITIGATE POLLUTANTS
AND PROVIDE VOLUME CAPTURE**
- 5 RESPONSIBILITY FOR BMP MAINTENANCE**

ATTACHMENTS

Determination Worksheet

Soils Analysis

BMP Selection Tables

ISWLID Hydrology Map

BMP Details

Stormwater Calculator Spreadsheets

Maintenance Checklists

Stormwater BMP Facility Maintenance/Monitoring Agreement

1 INTRODUCTION

The project site is within the limits of the Town of Windsor, a CoPermittee of the National Pollutant Discharge Elimination System (NPDES) Phase I Municipal Separate Storm Sewer System (MS4) Storm Water Permit issued by the North Coast Regional Water Quality Control Board (NCRWQCB) for Region 1 in 2016. The NPDES regulates discharges into the watershed with the intent to reduce storm water pollution and protect the water quality of our local creeks and waterways and continue to promote groundwater recharge. The Town of Windsor and the County of Sonoma have adopted the Storm Water Low Impact Development (LID) Technical Design Manual as part of the Storm Water Management Program (SWMP) that is an enforceable part of the NPDES MS4 permit. This Initial Storm Water Low Impact Development Submittal (SWLIDS) was developed to show compliance with the NPDES MS4 permit and the following requirements to the maximum extent practicable:

1. Prevent pollutants generated at the site from leaving the site.
2. Prevent increases in Storm Water runoff for 1.0 inch of rainfall over a 24-hour period.
3. Strive to maximize the amount of land left in a natural undisturbed condition.

This Initial SWLIDS will provide the following information:

- Project Description
- Pollution Prevention Measures
- Types of Best Management Practices (BMPs) selected to mitigate pollutants and provide volume capture.
- Responsibility for BMP maintenance
- Location and design of BMP (on project drawings)

2 PROJECT DESCRIPTION

The project site is located at the northern edge of the Town of Windsor, approximately 700 feet east of State Highway 101, adjacent to Arata Lane. The project site has a total area of approximately 2.72 acres and is contained within a single assessors parcel: APN 161-020-049. The site is primarily undeveloped, containing scattered trees and vacant grassland. The existing topography is relatively flat, slightly sloping south toward a drainage ditch and culvert entrance on the north side of Arata Lane.

The project site's native soil has been classified by the Natural Resources Conservation Service as Huichica loam (HuB) in Hydrologic Soil Group D. These are a poorly drained soils with an expected infiltration rate less than 0.06 in/hr. No site specific percolation/infiltration studies have been performed.

The project is proposed by Arata Properties, LLC, as a single-phased project. The proposed improvements include the construction of 32 residential lots and private common driveways to service them. Based on the pre- and post-development impervious area, 100% volume capture and treatment is required.

The project will collect overland flow and route it to a series of proposed Low Impact Development Best Management Practices (LID BMP's) with underground volume capture, before entering the underground drainage system. These features shall not only remove pollutants but will also reduce the amount of runoff by capturing and infiltrating storm water onsite. The LID BMP's are proposed at various locations throughout the project site, providing treatment for each of the site tributaries. The purpose of these features and their effect on the quality and quantity of runoff leaving the developed site will be further explained throughout this report.

3 POLLUTION PREVENTION MEASURES

The project will incorporate a robust Landscape plan including interceptor trees that will be planted throughout the project (to be shown and credited with the Final Storm Water Low Impact Development Submittal).

Drainage inlets will be raised a minimum of 3-inches above the bio-retention flowline to provide trash capture.

4 TYPES OF BMP'S SELECTED TO MITIGATE POLLUTANTS AND PROVIDE VOLUME CAPTURE

Low Impact Development Best Management Practices (LID BMP's) are design features that address the quality and quantity of the storm waters that flow from a development. In most cases, these LID BMPs are used to mitigate a development's impact on the quality of storm water by treating or cleaning the storm water. Some controls have dual treatment control measure capabilities, not only treating, but also containing a required volume of storm water. Due to the very low expected infiltration rate, the selected LID features will be Priority 2 containing subsurface perforated pipe to prevent long term surface ponding of storm water. The project will implement bio-retention beds (Priority 2) to mitigate pollutants and provide volume capture for 1.0 inch of rainfall over a 24-hour period. Volume capture is accomplished by incorporating an area for storm water storage beneath the bio-retention beds.

Bio-retention beds (Priority 2) have been selected for this project because of their ability to remove pollutants through a variety of natural physical, biological and chemical treatment processes. Large trash is collected at the surface and easily removed with routine maintenance. Suspended solids and hydrocarbons, pollutants that can degrade the downstream receiving waters of the project, settle out and are removed from runoff. Fine particles are collected within vegetated buffer strips or within the planting soil layer, providing potential nutrients for plant growth. Compared to pipe networks, bio-retention beds with a volume capture layer will provide an opportunity for runoff to infiltrate through native soil before entering the underground storm drain system. This infiltration will reduce runoff from a site, reduce the peak flow in a basin, and provide ground water recharge.

The bio-retention bed section will consist of 12" planting soil on top of structural soil (volume capture) of various depths. The structural soil consists of $\frac{3}{4}$ inch to 1- $\frac{1}{2}$ inch aggregate, with a porosity of 30%, and organic soil material for a thriving landscape environment, meeting standards set forth in the City of Santa Rosa Low Impact Development Design Manual reference document 'E'.

The bio-retention bed located in Tributary 2 will have a structural soil consisting of a porosity of 40%. This BMP provides treatment for the majority of the site and the increased structural soil porosity is necessary to reduce the required depth for 100% volume capture for TRIB 2.

The attached plans titled "Initial Storm Water LID Hydrology Map" shows the proposed general grading pattern for the project along with the tributary drainage areas and proposed LID BMP's. Standard LID BMP details with volume capture can be found in the attachments section of this document. This project meets the hydromodification control requirement by achieving 100% volume capture.

5 RESPONSIBILITY FOR BMP MAINTENANCE

LID BMPs serving the Quail Acres project are located between the back of curb and sidewalk within the public right of way and at the ends of common driveways on private property. The developer will be responsible for the surface and sub-surface oversight and maintenance of all on-site LID BMP's during the construction of each phase.

Upon project completion the Town of Windsor will own and maintain the bio-retention beds within the parkway planter strips running along public streets, within the right-of-way of Los Amigos Road and Arata Lane. A special tax district such as a Landscape & Lighting Assessment Districts (LLAD) will be formed to fund the surface and sub-surface oversight and maintenance of public LID BMPs serving the Quail Acres project.

LID BMPs at the ends of the private common driveways on private property will be privately owned and maintained by a joint maintenance agreement that will also cover maintenance of the private common driveways.

Attached is a Draft of the Stormwater BMP Facilities Maintenance/Monitoring Agreement.

Typical maintenance shall include the following:

- Dry pavement sweeping during and upon completion of construction
- Dry pavement sweeping annually and when algae is observed in gutters and when sediment/debris is observed
- Inspect twice annually for sediment and trash accumulation
- Pesticides and fertilizers shall not be used in bioretention area
- Plants shall be pruned, weeds pulled and dead plants replaced as needed
- Inspect twice annually for ponded water. If ponded water exists, then top layer of planting soil or aggregate may need to be replaced
- Drain inlets shall be inspected and cleaned as necessary to remove any obstructions

Sample maintenance checklists have been added in the attachments section of this report.

Although the proposed on-site BMP's are all anticipated to provide effective treatment for 10-20 years, their life will depend on the quality of water draining to them and how well these areas are maintained. BMP maintenance and replacement should be conducted to ensure that their character and function are in substantial conformance with the original design. Approximate anticipated replacement costs are summarized below to assist the Owner(s) in budgeting for BMP end of life replacement activities.

Approximate BMP Replacement Costs

Bioretention Area Replacement for Public Parkways:	\$ 80,550
Bioretention Landscape Replacement for Public Parkways:	<u>\$ 50,050</u>
	\$ 138,600

ATTACHMENTS

FOR OFFICE USE ONLY:

Does this project require permanent storm water BMP's?

☐ Y ☐ N

Date Submitted: _____

Print Form



2017 Storm Water LID Determination Worksheet

PURPOSE AND APPLICABILITY: This determination worksheet is intended to satisfy the specific requirements of "ORDER NO. R1-2015-0030, NPDES NO. CA0025054 NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) PERMIT AND WASTE DISCHARGE REQUIREMENTS FOR DISCHARGES FROM THE MUNICIPAL SEPARATE STORM SEWER SYSTEMS." Additional design requirements imposed by Governing Agencies, such as local grading ordinances, CAL Green, CEQA, 401 permitting, and hydraulic design for flood control still apply as appropriate. Additionally, coverage under another regulation may trigger the requirement to design in accordance with the Storm Water LID Technical Design Manual.

Part 1: Project Information

Los Amigos Cottages

Project Name

263 Arata Lane

Project Site Address

Windsor, CA 95492

Project City/State/Zip

Willowglen Homes - Arata Properties, LLC

Applicant (owner or developer) Name

P.O. Box 2357

Applicant Mailing Address

Healdsburg, CA 95448

Applicant City/State/Zip

707-473-8620

Applicant Phone/Email/Fax

Permit Number(s) - (if applicable)

Civil Design Consultants, Inc.

Designer Name

Santa Rosa, CA 95403

Designer City/State/Zip

2200 Range Avenue, Suite 204

Designer Mailing Address

707-542-4820 / matt@civildesignconsultants.co

Designer Phone/Email

Type of Application/Project:

☒ Subdivision
 ☐ Grading Permit
 ☐ Building Permit
 ☐ Hillside Development
☐ Design Review
 ☐ Use Permit
 ☐ Encroachment
 ☐ Time Extensions
 ☐ Other : _____

PART 2: Project Exemptions

1. Is this a project that creates or replaces *less than* 10,000 square feet of impervious surface¹, including all project phases and off-site improvements?

☐ Yes
 ☒ No

¹ Impervious surface replacement, such as the reconstruction of parking lots or excavation to roadway subgrades, is not a routine maintenance activity. Reconstruction is defined as work that replaces surfaces down to the subgrade. Overlays, resurfacing, trenching and patching are defined as maintenance activities per section VI.D.2.b.

2. Is this project a routine maintenance activity² that is being conducted to maintain original line and grade, hydraulic capacity, and original purpose of facility such as resurfacing existing roads and parking lots?

☐ Yes ☒ No

3. Is this project a stand alone pedestrian pathway, trail or off-street bike lane?

☐ Yes ☒ No

4. Did you answer "YES" to any of the questions in Part 2?

☐ **YES:** This project will *not* need to incorporate permanent Storm Water BMP's as required by the NPDES MS4 Permit. **Please complete the "Exemption Signature Section" on Page 4.**

☒ **NO:** Please complete the remainder of this worksheet.

Part 3: Project Triggers

Projects that Trigger Requirements:

Please answer the following questions to determine whether this project requires permanent Storm Water BMP's and the submittal of a SW LIDs as required by the NPDES MS4 Permit order No. R1-2015-0030.

1. Does this project create or replace a combined total of 10,000 square feet or more of impervious surface¹ including all project phases and off-site improvements?

☒ Yes ☐ No

2. Does this project create or replace a combined total or 10,000 square feet or more of impervious streets, roads, highways, or freeway construction or reconstruction³? ☒ Yes ☐ No

3. Does this project create or replace a combined total of 1.0 acre or more of impervious surface¹ including all project phases and off-site improvements? ☒ Yes ☐ No

4. Did you answer "YES" to any of the above questions in Part 3?

☒ **YES:** This project will need to incorporate permanent Storm Water BMP's as required by the NPDES MS4 Permit. **Please complete remainder of worksheet and sign the "Acknowledgement Signature Section" on Page 4.**

☐ **NO:** This project will *not* need to incorporate permanent Storm Water BMP's as required by the NPDES MS4 permit. **Please complete the "Exemption Signature Section" on Page 4.**

¹ Impervious surface replacement, such as the reconstruction of parking lots or excavation to roadway subgrades, is not a routine maintenance activity. Reconstruction is defined as work that replaces surfaces down to the subgrade. Overlays, resurfacing, trenching and patching are defined as maintenance activities per section VI.D.2.b.

² "Routine Maintenance Activity" includes activities such as overlays and/or resurfacing of existing roads or parking lots as well as trenching and patching activities and reroofing activities per section VI.D.2.b.

³ "Reconstruction" is defined as work that extends into the subgrade of a pavement per section VI.D.2.b.

Part 4: Project Description

1. Total Project area: 2.72

☐ square feet
☒ acres

2. Existing land use(s): (check all that apply)

☐ Commercial ☐ Industrial ☒ Residential ☐ Public ☐ Other

Description of buildings, significant site features (creeks, wetlands, heritage trees), etc.:

The site is primarily undeveloped, containing scattered trees and vacant grassland.

3. Existing impervious surface area: 0

☐ square feet
☒ acres

4. Proposed Land Use(s): (check all that apply)

☐ Commercial ☐ Industrial ☒ Residential ☒ Public ☐ Other

Description of buildings, significant site features (creeks, wetlands, heritage trees), etc.:

The proposed site plan will feature 32 residential lots and private common driveways to service them.

5. Proposed impervious surface area:

1.88

☐ square feet
☒ acres

Acknowledgment Signature Section:

As the property owner or developer, I understand that this project is required to implement permanent Storm Water Best Management Practices and provide a Storm Water Low Impact Development Submittal (SW LIDS) as required by the City's National Pollutant Discharge Elimination System (NPDES) Municipal Separate Storm Sewer Systems (MS4) Permit Order No. R1-2015-0030. *Any unknown responses must be resolved to determine if the project is subject to these requirements.

Applicant Signature_____
Date**Exemption Signature Section:**

As the property owner or developer, I understand that this project as currently designed does not require permanent Storm Water BMP's nor the submittal of a Storm Water Low Impact Development Submittal (SW LIDS) as required by the City's National Pollutant Discharge Elimination System (NPDES) Municipal Separate Storm Sewer Systems (MS4) Permit*. I understand that redesign may require submittal of a new Determination Worksheet and may require permanent Storm Water BMP's.

Applicant Signature_____
Date

Please Read:

*** This determination worksheet is intended to satisfy the specific requirements of "ORDER NO. R1-2015-0030, NPDES NO. CA0025054 NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) PERMIT AND WASTE DISCHARGE REQUIREMENTS FOR DISCHARGES FROM THE MUNICIPAL SEPARATE STORM SEWER SYSTEMS."** Additional design requirements imposed by Governing Agencies, such as local grading ordinances, CAL Green, CEQA, 401 permitting, and hydraulic design for flood control still apply as appropriate. Additionally, coverage under another regulation may trigger the requirement to design in accordance with the Storm Water LID Technical Design Manual.

Implementation Requirements: All calculations shall be completed using the "Storm Water Calculator" available at: www.srcity.org/stormwaterLID

Hydromodification Control/100% Volume Capture: Capture (infiltration and/or reuse) of 100% of the volume of runoff generated by a 1.0" 24-hour storm event, as calculated using the "Urban Hydrology for Small Watersheds" TR-55 Manual method. This is a retention requirement.

Treatment Requirement: Treatment of 100% of the flow calculated using the modified Rational Method and a known intensity of 0.20 inches per hour.

Delta Volume Capture Requirement: Capture (infiltration and/or reuse) of the increase in volume of storm water due to development generated by a 1.0" 24-hour storm event, as calculated using the "Urban Hydrology for Small Watersheds" TR-55 Manual method. This is a retention requirement.

Soil Map—Sonoma County, California
(Los Amigos Cottages)



MAP LEGEND

Area of Interest (AOI)

 Area of Interest (AOI)

Soils

 Soil Map Unit Polygons

 Soil Map Unit Lines

 Soil Map Unit Points

Special Point Features



Blowout



Borrow Pit



Clay Spot



Closed Depression



Gravel Pit



Gravelly Spot



Landfill



Lava Flow



Marsh or swamp



Mine or Quarry



Miscellaneous Water



Perennial Water



Rock Outcrop



Saline Spot



Sandy Spot



Severely Eroded Spot



Sinkhole



Slide or Slip



Sodic Spot



Spoil Area



Stony Spot



Very Stony Spot



Wet Spot



Other



Special Line Features

Water Features



Streams and Canals

Transportation



Rails



Interstate Highways



US Routes



Major Roads



Local Roads

Background



Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:20,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service

Web Soil Survey URL:

Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Sonoma County, California

Survey Area Data: Version 16, Sep 14, 2022

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Mar 26, 2022—Apr 25, 2022

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
HuB	Huichica loam, ponded, 0 to 5 percent slopes	3.1	100.0%
Totals for Area of Interest		3.1	100.0%

Sonoma County, California

HuB—Huichica loam, ponded, 0 to 5 percent slopes

Map Unit Setting

National map unit symbol: hffn

Elevation: 100 to 300 feet

Mean annual precipitation: 30 inches

Mean annual air temperature: 61 degrees F

Frost-free period: 260 days

Farmland classification: Farmland of statewide importance

Map Unit Composition

Huichica and similar soils: 85 percent

Minor components: 15 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Huichica

Setting

Landform: Terraces

Landform position (two-dimensional): Footslope

Landform position (three-dimensional): Base slope

Down-slope shape: Linear

Across-slope shape: Linear

Parent material: Alluvium derived from igneous, metamorphic and sedimentary rock

Typical profile

H1 - 0 to 14 inches: loam

H2 - 14 to 23 inches: sandy clay loam

H3 - 23 to 38 inches: clay

H4 - 38 to 57 inches: cemented

Properties and qualities

Slope: 0 to 5 percent

Depth to restrictive feature: More than 80 inches; 20 to 40 inches to duripan

Drainage class: Moderately well drained

Runoff class: High

Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately low (0.00 to 0.06 in/hr)

Depth to water table: About 0 inches

Frequency of flooding: None

Frequency of ponding: Frequent

Available water supply, 0 to 60 inches: Low (about 3.5 inches)

Interpretive groups

Land capability classification (irrigated): 3w

Land capability classification (nonirrigated): 3w

Hydrologic Soil Group: D

Ecological site: R014XG912CA - Loamy Terrace

Hydric soil rating: Yes

Minor Components

Clear lake

Percent of map unit: 5 percent

Landform: Depressions

Hydric soil rating: Yes

Zamora

Percent of map unit: 5 percent

Hydric soil rating: No

Wright

Percent of map unit: 5 percent

Hydric soil rating: No

Data Source Information

Soil Survey Area: Sonoma County, California

Survey Area Data: Version 16, Sep 14, 2022

	Best Management Practice (BMP)	Detail Sheet	Detail Title	Can be used with...										Achieves...		BMP in priority selected?	Unique Identifier of BMP per planes		Explanation of selection	Other notes:
				High Ground Water	Contamination	Slope Constraints	Treatment	Volume Capture	Runoff Reduction Measure	Yes	No									
Universal BMP- to be considered on all projects.	Living Roof	N/A	N/A	X	X	X	X	X	X											
	Rainwater Harvesting	N/A	N/A	X	X	X		X												
Runoff Reduction Measures	Interceptor Trees	N/A	N/A	X	X	X				X		✓								
	Bovine Terrace	RRM-01	Bovine Terrace	X						X										
	Vegetated Buffer Strip	RRM-02	Vegetated Buffer Strip							X										
	Impervious Area Disconnection	N/A	N/A	X	X	X				X										
Priority 1- to be installed with no underdrains or liners. Must drain all staging water within 72 hours.	Bioretention	P1-02	Roadside Bioretention - no C & G					X	X											
	Vegetated Swale-with Bioretention	P1-06	Swale with Bioretention					X	X											
	Constructed Wetlands	N/A	N/A					X	X											
Priority 2 BMPs- with subsurface drains installed above the capture volume.	Bioretention	P2-02	Roadside Bioretention - Flush Design Roadside					X	X											
		P2-03	Roadside Bioretention-Contiguous SW					X	X											
		P2-04	Roadside Bioretention-Curb Opening					X	X											
		P2-05	Roadside Bioretention- No C & G					X	X											
	Constructed Wetlands	N/A	N/A					X	X											

Date: _____

Page ____ of ____

Best Management Practice (BMP)	Detail Sheet	Detail Title	Can be used with...			High Ground Water Contamination	Slope Constraints	Achieves...	Treatment	Volume Capture	Runoff Reduction Measure	BMP in priority selected?		Unique Identifier of BMP per planes	Explanation of selection	Other notes:
Priority 3 BMPs- installed with subdrains and/or impermeable liner. Does not achieve volume capture and must be used as part of a treatment train.	Bioretention	P3-02	Roadside Bioretinton - Flush Design Roadside	X	X	X	X									
		P3-03	Roadside Bioretenion- Contiguous SW	X	X	X	X									
		P3-04	Roadside Bioretenion- Curb Opening	X	X	X	X									
	Flow Through Planters	P3-05	Flow Through Planters	X	X	X	X									
	Vegetated Swale	P3-06	With Bioretention	X	X	X	X	X								
		P3-07	Vegetated Swale	X	X	X	X									
Priority 4 BMPs- does not achieve volume capture and must be used as part of a	Tree Filter Unit		X	X	X	X										
	Modular Bioretention		X	X	X	X										
Priority 5 BMPs- does not achieve volume capture and must be used as part of a treatment train.	Chambered Separator Units		X	X	X	X										
	Centrifugal Separator Units		X	X	X	X										
	Trash Excluders		X	X	X	X										
	Filter Inserts		X	X	X	X										
Priority 6 BMPs- see the "Offset Program" chapter for details.	Offset Program						N/A	N/A	N/A							
Other	Detention		X													

LEGEND

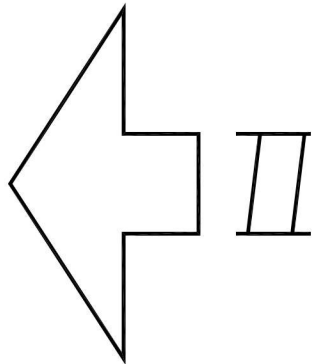
- TRIB-#

TRIBUTARY DESIGNATION
(SEE STORM WATER CALC. SHEETS)
- PROPOSED TRIBUTARY BOUNDARY
- BIO-RETENTION BED - CURB OPENING, DETAIL P2-04

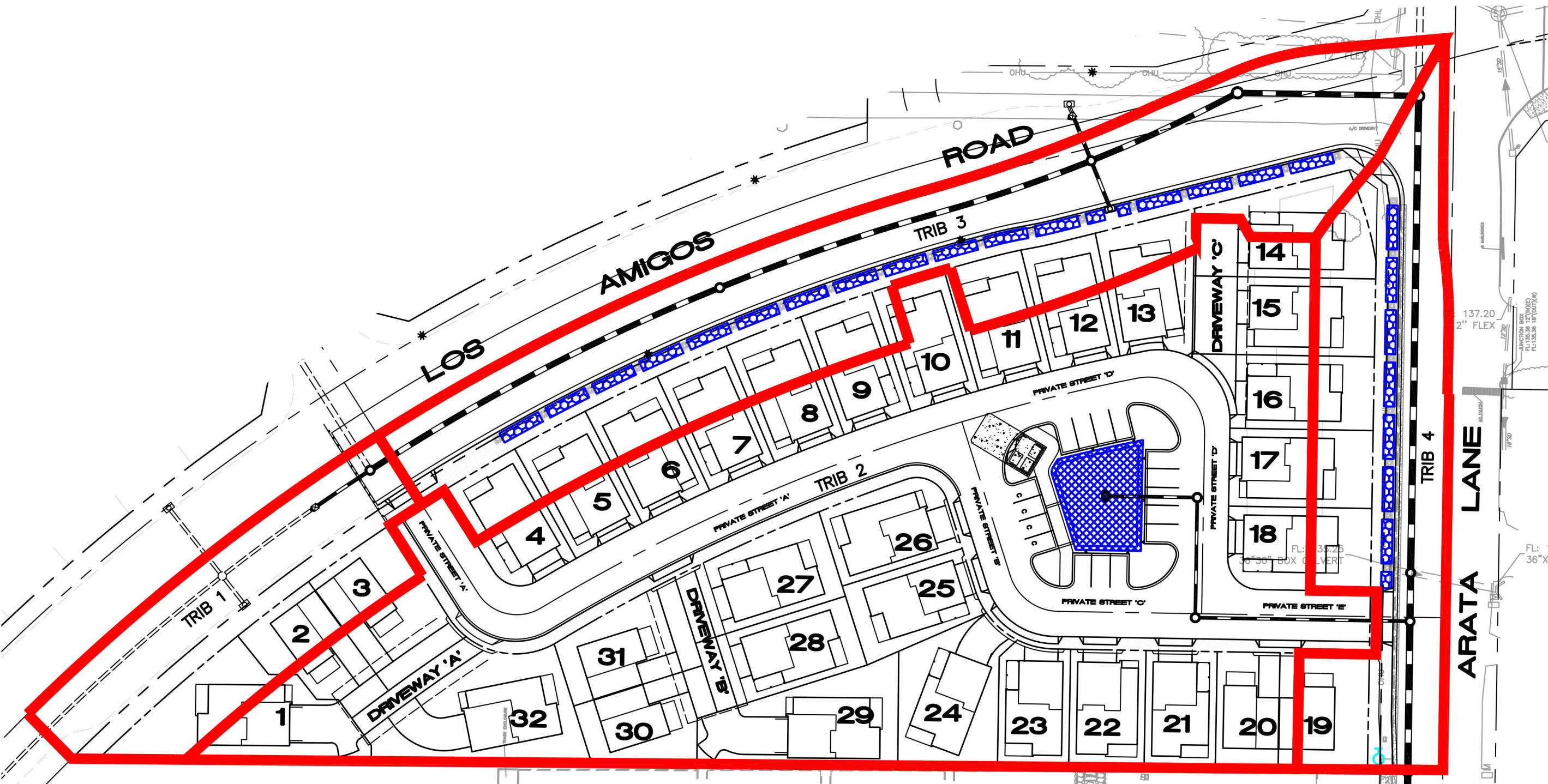
BIO-RETENTION BED DATA

TRIB. NO.	TRIB AREA	CN	BMP AREA	DEPTH*
1	12,793 SF	91	594 SF	2.17'
2	87,578 SF	92	1,845 SF	4.00'
3	34,072 SF	93	1,748 SF	2.50'
4	18,321 SF	93	774 SF	3.00'

*DEPTH BELOW PERF PIPE



SCALE: 1" = 50'



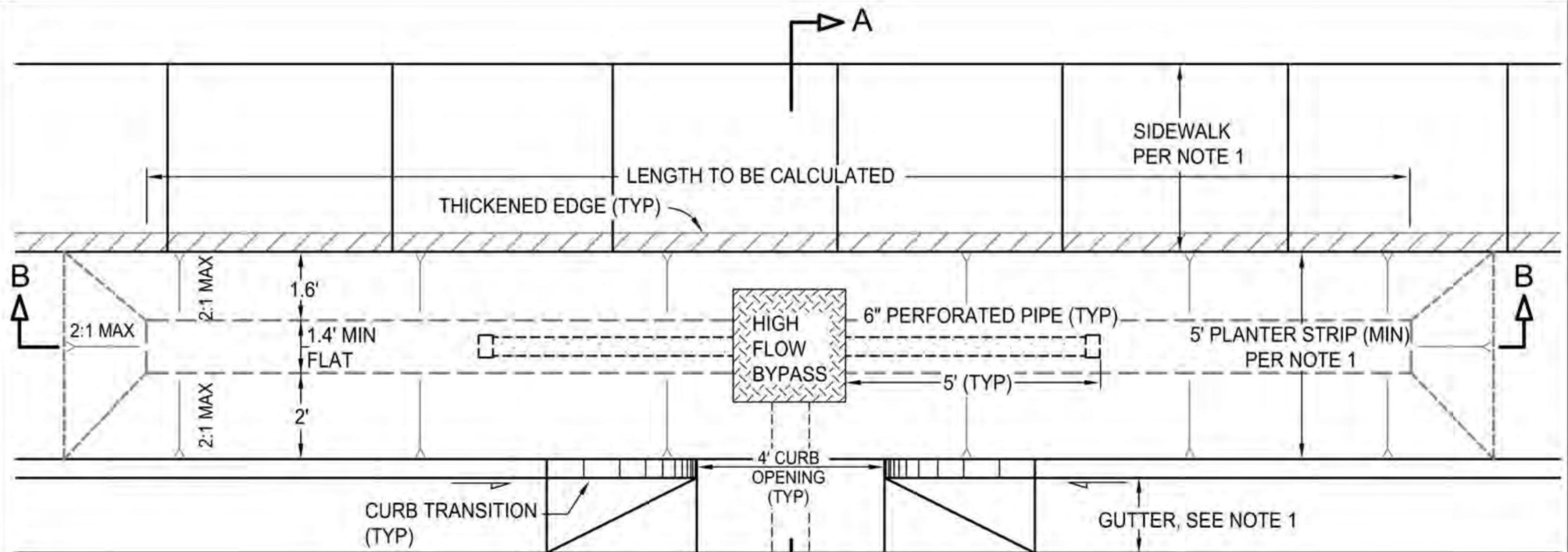
CML DESIGN CONSULTANTS, INC.
2200 Range Avenue, Suite 204
Santa Rosa, CA 95403
(707) 542-4820

ISWLD - HYDROLOGY MAP
LOS AMIGOS COTTAGES
263 ARATA LANE
WINDSOR, CALIFORNIA
APN 161-020-049

JOB NO.
23-110

ATTACHMENT

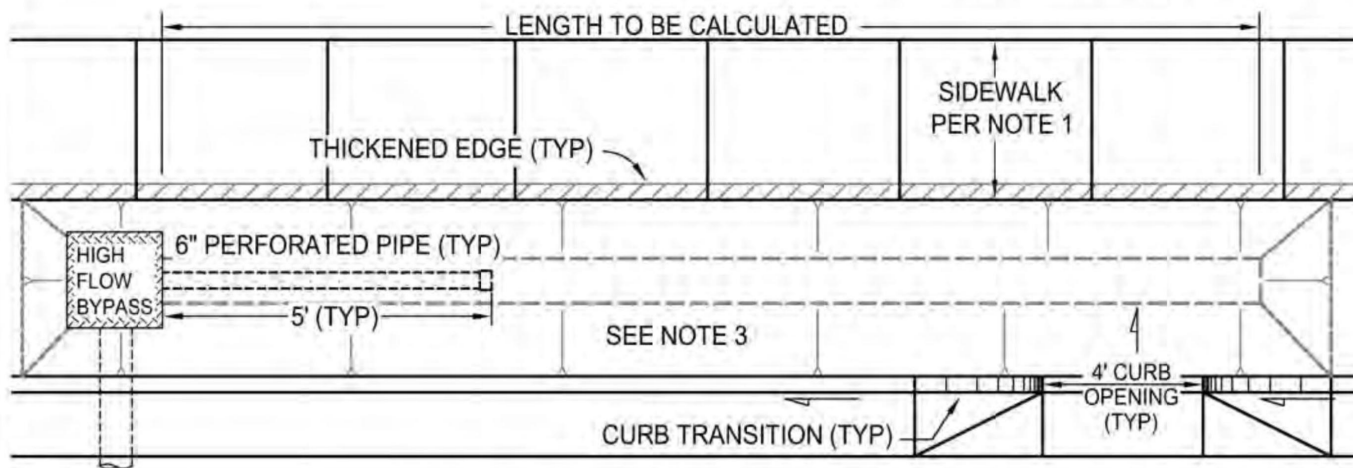
4



PLAN
TYPE A - CURB OPENING AT LOW POINT

NOTE:

1. SIDEWALK, GUTTER AND PLANTER WIDTHS PER APPLICABLE MUNICIPAL STANDARDS (TYP).
2. TOP OF 6" PERFORATED PIPE TO BE SET 6" BELOW ROAD STRUCTURAL SECTION, MIN.
3. TYPE A MINIMUM DIMENSIONS AND GRADES APPLY TO TYPE B.



TYPE B - CURB OPENING ALONG A SLOPE

PRIORITY 2
ROADSIDE BIORETENTION
- CURB OPENING

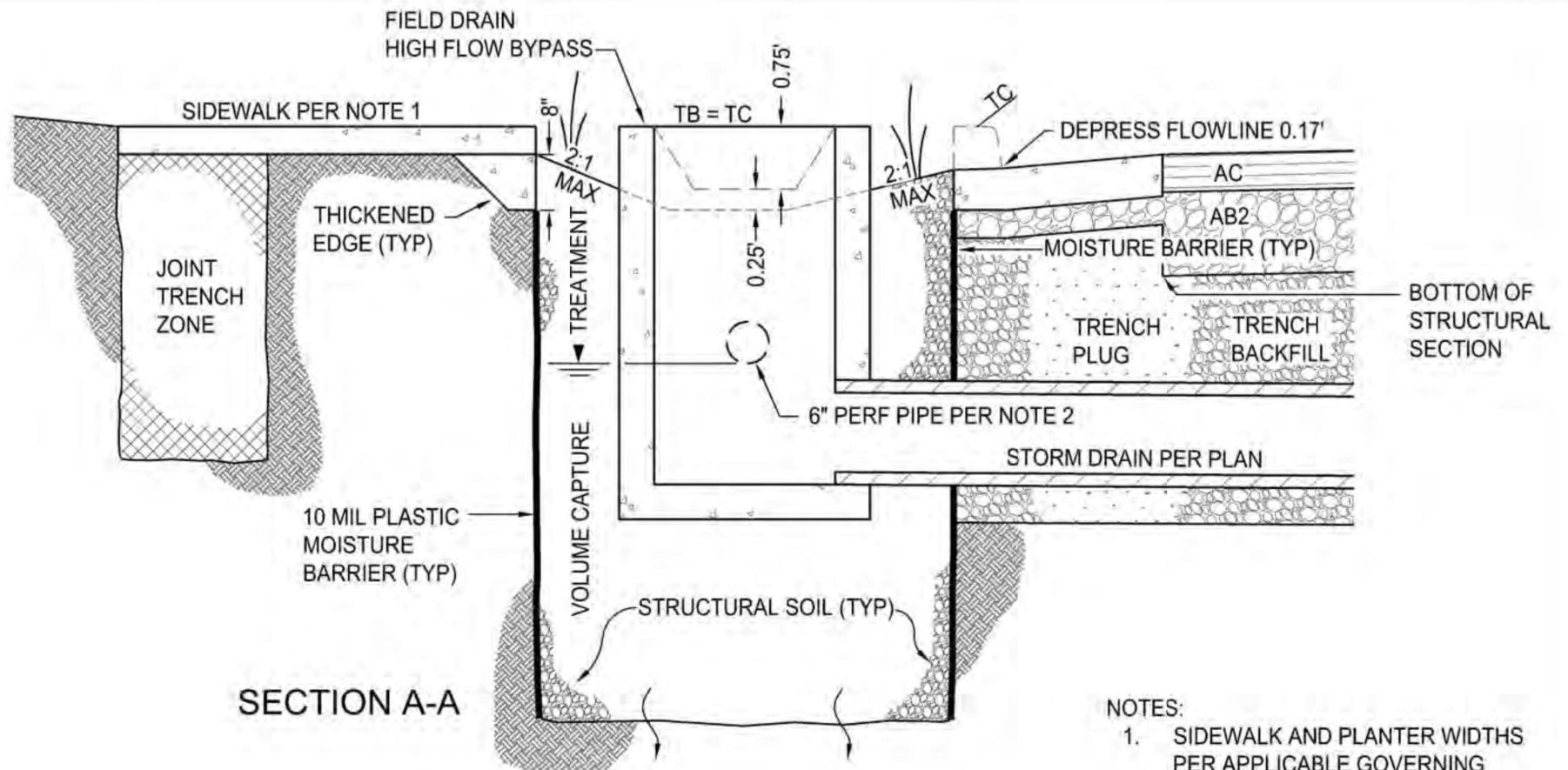
SCALE: NONE DATE: 04/06/17

DWN. D/T
CHK. HM

SHEET 1 of 2

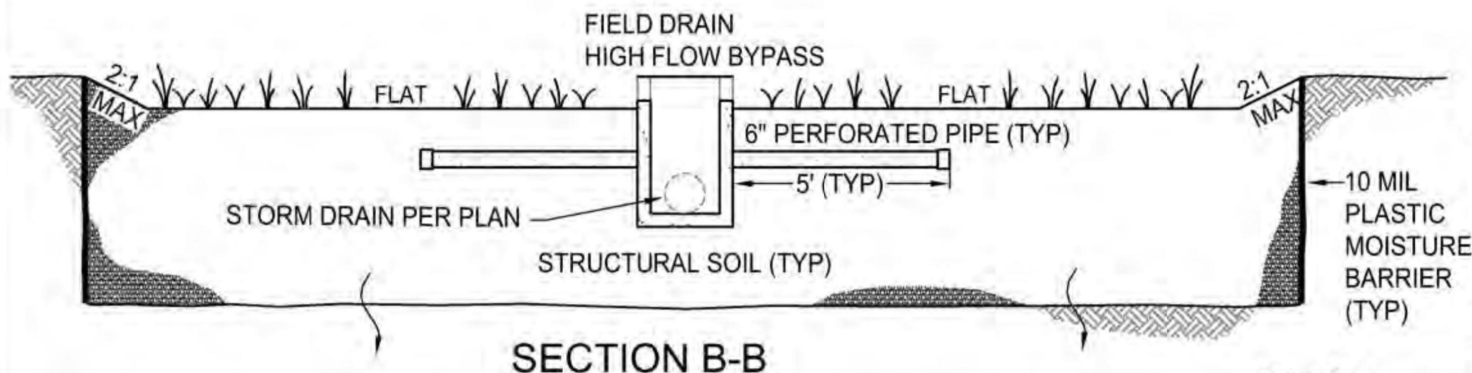
P2-04

Not to Scale



NOTES:

1. SIDEWALK AND PLANTER WIDTHS PER APPLICABLE GOVERNING AGENCY STANDARDS (TYP).
2. TOP OF 6" PERFORATED PIPE TO BE SET 6" BELOW BOTTOM OF ROAD STRUCTURAL SECTION.



Not to Scale

PRIORITY 2
ROADSIDE BIORETENTION
- CURB OPENING
SECTION A-A & B-B

SCALE: NONE

DATE: 04/06/17

DWN. DIT
CHK. HM

SHEET 2 of 2

P2-04



STORM WATER CALCULATOR

LID BMP Summary Page & Site Global Values

Project Information: Project Name: Los Amigos Cottages Address/Location: 263 Arata Lane Designer: Dennis Dalby Date: 10/16/2024	Site Information: Mean Seasonal Precipitation (MSP) of Project Site: 30.00 (inches) K=MSP/3(K= 1.00 Impervious area - pre development: 0.0 ft² Impervious area - post development: 81,800.0 ft²	Based upon the pre and post development impervious area, the post construction BMP requirement is: 100% Capture & Treatment
--	---	---

Summary of Saved BMP Results:

BMP ID:	Tributary Area			Requirements		BMP Design Results						
	Tributary Area (ft².)	Runoff Reduction Measures (Y/N)	Type of Requirement Met			Type of BMP Design	Percent Achieved	Hydromodification Control		Flow Base Treatment		Delta Volume Capture
				Required V _{Hydromod} (ft³)	Achieved (ft³)			Required Q Treatment (cfs)	Achieved (ft³)	Required Vdelta (ft³)	Achieved (ft³)	
1	TRIB 1	12,793	No	Hydromod Volume Capture	Priority 2: P2-04 Roadside Bioretention - Curb Opening	101.0	383.0224	386.6940				
2	TRIB 2	87,578	No	Hydromod Volume Capture	Priority 2: P2-04 Roadside Bioretention - Curb Opening	100.6	2935.6145	2952.0000				
3	TRIB 3	34,072	No	Hydromod Volume Capture	Priority 2: P2-04 Roadside Bioretention - Curb Opening	102.6	1278.3815	1311.0001				
4	TRIB 4	18,321	No	Hydromod Volume Capture	Priority 2: P2-04 Roadside Bioretention - Curb Opening	101.3	687.4039	696.6000				
5												
6												
7												
8												
9												
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STORM WATER CALCULATOR

BMP Tributary Parameters

Project Name: **Los Amigos Cottages**

BMP ID: **TRIB 1**

BMP Design Criteria: **100% Capture & Treatment**

Type of BMP Design: **Priority 2: P2-04 Roadside Bioretention - Curb Opening**

BMP's Physical Tributary Area: **12,793.0** ft²

Description/Notes:

Hydromodification Requirement: 100% Volume Capture; $V_{HYDROMOD}$

$V_{HYDROMOD}$ = **383.02** ft³

Post development hydrologic soil type within tributary area: **D: 0 - 0.05 in/hr infiltration (transmission) rate**

Post development ground cover description: **Residential - 1/8 acre or less (town houses)**

CN_{POST}:

User Composite post development CN: **91.0**

BMP Sizing Tool: Hydromodification Requirement

Percent of Goal Achieved = **100.96** %

BMP Volume Below Ground

Porosity: **0.30**
Depth below perforated pipe if present: **2.17** ft
Width: **0.00** ft
Length: **0.00** ft
Area: **594.00** ft²

Ponded Water Above Ground

Depth: **0.00** ft
Width: **0.00** ft
Length: **0.00** ft
Area: **0.00** ft²



STORM WATER CALCULATOR

BMP Tributary Parameters

Project Name: **Los Amigos Cottages**

BMP ID: **TRIB 2**

BMP Design Criteria: **100% Capture & Treatment**

Type of BMP Design: **Priority 2: P2-04 Roadside Bioretention - Curb Opening**

BMP's Physical Tributary Area: **87,578.0** ft²

Description/Notes:

Hydromodification Requirement: 100% Volume Capture; $V_{HYDROMOD}$

$V_{HYDROMOD}$ = **2,935.61** ft³

Post development hydrologic soil type within tributary area: **D: 0 - 0.05 in/hr infiltration (transmission) rate**

Post development ground cover description: **Residential - 1/8 acre or less (town houses)**

CN_{POST}:

User Composite post development CN: **92.0**

BMP Sizing Tool: Hydromodification Requirement

Percent of Goal Achieved = **100.56** %

BMP Volume Below Ground

Porosity: **0.40**
Depth below perforated pipe if present: **4.00** ft
Width: **0.00** ft
Length: **0.00** ft
Area: **1,845.00** ft²

Ponded Water Above Ground

Depth: **0.00** ft
Width: **0.00** ft
Length: **0.00** ft
Area: **0.00** ft²



STORM WATER CALCULATOR

BMP Tributary Parameters

Project Name: **Los Amigos Cottages**

BMP ID: **TRIB 3**

BMP Design Criteria: **100% Capture & Treatment**

Type of BMP Design: **Priority 2: P2-04 Roadside Bioretention - Curb Opening**

BMP's Physical Tributary Area: **34,072.0** ft²

Description/Notes:

Hydromodification Requirement: 100% Volume Capture; $V_{HYDROMOD}$

$V_{HYDROMOD}$ = **1,278.38** ft³

Post development hydrologic soil type within tributary area: **D: 0 - 0.05 in/hr infiltration (transmission) rate**

Post development ground cover description: **Residential - 1/8 acre or less (town houses)**

CN_{POST}:

User Composite post development CN: **93.0**

BMP Sizing Tool: Hydromodification Requirement

Percent of Goal Achieved = **102.55** %

BMP Volume Below Ground

Porosity: **0.30**
Depth below perforated pipe if present: **2.50** ft
Width: **0.00** ft
Length: **0.00** ft
Area: **1,748.00** ft²

Ponded Water Above Ground

Depth: **0.00** ft
Width: **0.00** ft
Length: **0.00** ft
Area: **0.00** ft²



STORM WATER CALCULATOR

BMP Tributary Parameters

Project Name: **Los Amigos Cottages**

BMP ID: **TRIB 4**

BMP Design Criteria: **100% Capture & Treatment**

Type of BMP Design: **Priority 2: P2-04 Roadside Bioretention - Curb Opening**

BMP's Physical Tributary Area: **18,321.0** ft²

Description/Notes:

Hydromodification Requirement: 100% Volume Capture; $V_{HYDROMOD}$

$V_{HYDROMOD}$ = **687.40** ft³

Post development hydrologic soil type within tributary area: **D: 0 - 0.05 in/hr infiltration (transmission) rate**

Post development ground cover description: **Residential - 1/8 acre or less (town houses)**

CN_{POST}:

User Composite post development CN: **93.0**

BMP Sizing Tool: Hydromodification Requirement

Percent of Goal Achieved = **101.34** %

BMP Volume Below Ground

Porosity: **0.30**
Depth below perforated pipe if present: **3.00** ft
Width: **0.00** ft
Length: **0.00** ft
Area: **774.00** ft²

Ponded Water Above Ground

Depth: **0.00** ft
Width: **0.00** ft
Length: **0.00** ft
Area: **0.00** ft²

Town of Windsor LID Feature Maintenance Checklist



Item	Conditions When Maintenance Is Needed	Typical Maintenance	Results Expected
Trash and Debris	Trash and debris accumulated in basin. Visual evidence of dumping	Trash and debris cleared from feature	No trash or debris in feature to impede flow
Contaminants and Pollution	Any evidence of oil, gasoline, pesticides or other pollutants	Remove contaminants or pollutants. Dispose of properly.	No pollutants in feature
Vegetation	When the planted vegetation becomes excessively tall. When nuisance weeds and other vegetation start to take over. When planted vegetation dies.	Vegetation mowed per specifications of maintenance plan, or nuisance vegetation removed so that flow is not impeded. Vegetation should never be mowed lower than the design flow depth. Remove clippings from the area and dispose of properly. Replace dead/dying vegetation with same or similar species.	Vegetation is healthy and attractive in appearance, not overly mowed, and will not impede flow.
Tree/Brush Growth and Hazard Trees	Growth does not allow maintenance access or interferes with maintenance activity. Dead, diseased, or dying trees are present.	Trees that impede the flow of water should be removed, per Town approval.	Trees are in good health and attractive in appearance. Any replacement trees are planted on edge of features, not in deepest part of features.
Erosion	Eroded over 2 inches deep where cause of damage is still present or where there is potential for continued erosion. Channels have formed around inlets, there are areas of bare soil, and/or other evidence of erosion.	Determine causes of erosion and repair	Obstructions and sediment removed so that water flows freely and disperses over wide area. No soil is left bare and any channels have been filled in.
Mulch	Mulch is missing or patchy in appearance. Areas of bare and exposed earth.	Add mulch to fill in void areas. Ensure mulch is 3 inches deep, replenish as necessary before wet season begins. Do not use bark that can float--tree mulch is best. No mulch in flow line of swales--use rock instead.	All bare earth is covered, except mulch is kept 6 inches away from trunks of trees and shrubs. Mulch is even in appearance and at a depth of 3 inches. Rock is placed along flow line of swales.
Sediment	Accumulated sediment affects inletting or outletting condition of the feature	Remove sediment. Replant/reseed area.	Material is removed so that there is no clogging or blockage. Material is disposed of properly
Damaged Pipes	Any part of the piping that is crushed or deformed more than 20% or any other failure of the piping	Repair or replace pipe	All piping is free of leaks/damage and performs as intended
Rodent Holes	If feature acts as a dam or berm, any evidence of rodent holes, or any evidence of water piping through dam or berm via rodent holes	Repair damage so the intended design is not compromised by holes. Rodent control activities must be in accordance with applicable laws and must not affect any protected species.	No water piping through dam or berm, feature functions as designed
Drainage	Excessive pooling. Water remaining in feature 72 hours after rain stops.	Ensure high infiltration soil is not blocked with sediment or trash. Replace high infiltration soil for maximum filtration, as needed. Improve grade from head to foot of feature, or add underdrains.	There should be no areas of standing water once inflow has ceased (within 72 hours).
Inlet/Outlet Obstructions	Obstructions found upon inspection of pipe inlet/outlet	Remove any obstructions found	Pipe should be clear and free to flow as designed. Area leading to pipe should be lined with rock.

Inspection Instructions--Please Read

1. Using the Town of Windsor LID Feature Maintenance Checklist as a guide, fill out Inspection Forms A-1 and A-2, listing each feature with the Feature ID number, as labeled on the enclosed map of your property. Include the property address, the inspector's name and contact information, and the name of the business, if applicable.

Please complete both inspection sheets; if only one sheet is filled, your inspection will be considered incomplete.

2. Include photos of each LID feature and label photos with corresponding Feature ID number, as shown on the map of your property.

3. If notable repairs or maintenance activities such as plant replacement are conducted, include photos of the LID features before and after maintenance is complete.

4. Return the forms and photos by email to stormwater@townofwindsor.com (preferred) OR call the Storm Water Program Manager, Elizabeth Cargay at 707-838-5385 for a mailing address or to set up drop off time at the Town of Windsor Public Works office.





Property Name: _____
 Property Address: _____
 Inspector Name: _____
 Email/Phone: _____
 Property Manager: _____
 Email/Phone: _____

Status Codes:
Y= Yes
N= No
Q= Questionable
\
= Not Observed

[illegible]

Re-Inspection Required:



Inspection Form A-1
Inspection of LID Features for Routine Maintenance

Inspection Date: _____

Property Name: _____

Comments or Changes

Include date and description of repairs, volume of sediment or trash removal, plant replacements, structural repairs, & improper modifications, if applicable.

Action Items

Site Summary

Attachments: Site Map, Photos

RECORDING REQUESTED BY:
TOWN ENGINEER

WHEN RECORDED RETURN TO:
Town Engineer
Town of Windsor
P. O. Box 100
Windsor, CA 95492-0100

File No: _____

SPACE ABOVE THIS LINE FOR RECORDER'S USE

Project Name: Los Amigos Cottages

Project Address(es)/Lot Number(s): 263 Arata Lane

Original Lot APN(s): 161-020-049

**DECLARATION OF COVENANTS RELATED TO THE MAINTENANCE
OF COMMONLY OWNED STORM WATER LID BMP(S)**

This Declaration of Covenants Related to Maintenance of permanent Storm Water Low Impact Design Best Management Practices (LID BMPs) ("Declaration") is made on this _____ day of _____, 20____, by rata Properties, LLC, (collectively, "Landowners").

RECITALS

- A. Landowner(s) is/are the fee simple owners of certain real property located in the Town of Windsor ("Town"), Sonoma County, California, at the address(es) of: 263 Arata Lane and corresponding APN(s) (161-020-049); more fully described as Lot Number(s) 1- 32 respectively and set forth in Exhibit A to this Declaration ("Property"). The Property is part of a larger development referred to herein as the "Project."
- B. The Town's National Pollutant Discharge Elimination System ("NPDES") Municipal Separate Storm Sewer System ("MS4") Permit, issued by the North Coast Regional Water Quality Control Board, requires the Town to implement and enforce specific requirements for the construction and maintenance of onsite storm water management Low Impact Design best management practices (collectively, the "LID BMPs") for development, redevelopment, and other applicable projects with the goal of mitigating impacts to storm water quality and runoff volume discharges to the Town's storm drain system (MS4) and/or waters of the State of California. Provisions of Town Municipal Code Title IX, Chapter 4 and other applicable sections of the Town Municipal Code shall apply to the construction, inspection, and maintenance of the LID BMPs and the enforcement of MS4 Permit requirements.
- C. Provisions of Title IX, Chapter 4 and other applicable sections of the Town Code shall apply to the construction, inspection, and maintenance of LID BMP(s) on the property and the enforcement of MS4 Permit requirements.
- D. On _____, the Town Engineer approved Improvement Plans titled: Los Amigos Cottages Improvement Plans ("Plans") including a Final Storm Water LID Plan ("F-SWLID") and Maintenance Plan for the Property which requires the construction and maintenance of LID BMP(s) on the Property by the 1 Landowners of the Property. The LID BMP(s) required under the F-SWLID may include both built and landscaping features. The F-SWLID and Maintenance Plan may be inspected, upon appointment, at the Town of Windsor, Public Works Department, 8400 Windsor Road.

- E. The Town's MS4 Permit and/or the F-SWLID requires that all 1_____ Landowners make and execute this Declaration.

DECLARATION OF COVENANTS

NOW, THEREFORE, in consideration of the foregoing recitals, Landowners hereby covenant, agree, and declare as follows:

1. Landowner(s) shall, at the cost and expense of the Landowner(s), construct, inspect, and maintain such common area LID BMP(s) on the Property in perpetuity, all in accordance with the Plans and the F-SWLID and Maintenance Plan. Landowners shall ensure that all common area LID BMP(s) on the Property remain fully functional and that all common area(s) identified in the Plans and F-SWLID for treatment and/or volume capture discharge to the specified common area LID BMP as designed. All Landowners and/or any entity designated in writing by all 1_____ **Landowners and approved by the Town, assume all responsibility for conducting a maintenance inspection of the common area LID BMP on the Property at least annually and shall submit an annual inspection report to the Town no later than September 1st of each year.** The Owner(s) shall ensure that the common area LID BMP(s) will be maintained and fully functional until such time that the responsibility is legally transferred to an entity designated and trained to take over permanent responsibility for common area LID BMP maintenance. Landowners shall be jointly and severally liable under this section.
2. The Landowner(s) each shall keep all records related to annual inspections of the common area LID BMP(s) on the property and all records related to the common area LID BMP maintenance by the Landowner(s) for a period of at least five (5) years. The records shall include all corrections, repairs, and replacements of all common area LID BMP(s) on the Property. The Landowner(s) shall make these records available to the Town upon request.
3. In the event the Landowner(s) fail(s) to maintain the common area LID BMP(s) in good working condition as solely determined by the Town, in the exercise of its reasonable discretion, and fail(s) to repair within thirty (30) days following Town's written notice thereof to Landowners, the Town may enter upon the common area LID BMP(s) and take whatever steps it deems reasonably necessary to maintain and/or place in good working condition such common area LID BMP(s); provided, however, that such notice and opportunity to repair shall not be required when, in the Town's sole determination in the exercise of its reasonable discretion, the Town's immediate entry and repair are required in the interest of the public health, safety and welfare. It is expressly understood that the Town is under no obligation to maintain or repair the common area LID BMP(s) on the property, and in no event shall this Declaration be construed to impose such an obligation on the Town. The Landowner(s) has/have no obligation with respect to performing physical maintenance of any public LID BMP which are annexed into the Town's 1982 Act Benefit Assessment District.
4. In the event that the Town performs work of any nature, or expends any funds in the performance of such work for labor, use of equipment, supplies, materials, or the like, due to failure of the Landowner(s) to perform the maintenance obligations under this Declaration, as solely determined by Town, in the exercise of its reasonable discretion, all 1_____ Landowner(s) (each responsible for 1/1_____ of the costs) shall reimburse the Town within sixty (60) days of receipt of notice for all costs incurred by the Town to undertake such work. Costs shall include, but are not limited to, the actual cost of construction, maintenance and/or repair, and administrative costs directly related to such work. Notwithstanding the above, allocation, Landowners shall be jointly and severally liable for any and all costs.

5. Any violation of the Plans or F-SWLID and Maintenance Plan by the Landowner(s) shall be deemed a public nuisance and the Town shall be entitled to the remedies available to it under Town Municipal Code Title IX, Chapter 4. The remedies identified herein shall be in addition to and cumulative of all other remedies, criminal or civil, which may be pursued by the Town. The Landowner(s) shall be jointly and severally liable for any and all such violations.
6. All 1 Landowner(s) shall indemnify, defend and hold harmless the Town and its employees, officials, and agents, from and against any liability, (including liability for claims, suits, actions, arbitration proceedings, administrative proceedings, regulatory proceedings, losses, related expenses or costs of any kind, whether actual, alleged or threatened, interest, defense costs, and expert witness fees), where the same relates to, or arises out of, the construction, presence, existence, inspection, or maintenance of the common area LID BMP(s) or the performance of the covenants contained in or arising from this Declaration by any of the Landowners, its officers, employees, agents, contractors or subcontractors, excepting only that resulting from the sole, active negligence or intentional misconduct of the Town, its employees, officials, or agents. This indemnification obligation is not restricted in any way by any limitation on amount or type of damages or compensation payable to or for the Landowners or its agents under workers' compensation acts, disability benefits acts or other employees' benefits acts. If any judgment or claim against the Town, its officials, agents, or employees, shall be entered, each Landowner shall pay 1/1 of all costs and expenses in connection therewith, subject to the aforementioned exception for cost resulting from the sole, active negligence or intentional misconduct of the Town. All 1 Landowner(s) shall be jointly and severally liable for any and all costs required under this section.
7. If any provisions of this Declaration shall be held to be invalid, illegal or unenforceable, the validity, legality and enforceability of the remaining provisions shall not in any way be affected or impaired thereby.
8. This Declaration shall be governed according to the laws of the State of California. The parties hereto agree that the forum for the adjudication of any dispute related to this Declaration shall be brought exclusively and solely in Sonoma County, California.
9. The Landowner(s) may not assign this Declaration to a third party without the express prior written consent of the Town and the consent of all the other non-assigning Landowner(s), provided that such consent will not be unreasonably withheld. However, such consent shall not be required for Landowners to sell or lease the adjoining lots to a third party who expressly assumes the obligations of the Landowner(s) hereunder pursuant to an Assignment and Assumption Agreement or similar document between the Landowner(s) and the third party, in a form reasonably acceptable to the Town.
10. The Landowner(s), and each of them, binds himself/themselves, their partner(s), successor(s), legal representative(s) and assign(s) of the Town with respect to all promises and agreements of the Landowner(s) contained herein.
11. This Declaration shall be recorded by each Landowner and shall: (a) constitute a covenant running with the land; (b) be binding upon each Landowner and the Landowners' successors, heirs, and assigns in perpetuity; and (c) benefit the Town of Windsor, its successors, and assigns. Any breach of this Declaration

by the Landowner(s) shall render each Landowner or Landowner's/Landowners' heirs, successors or assigns liable pursuant to the provisions of the Town Municipal Code. Upon a valid transfer of title to the adjoining lots from the Landowner(s) to a third party and Town's approval of an Assignment and Assumption Agreement or similar document between each Landowner and the third party, each Landowner shall be released from all responsibility under this Declaration.

12. Any notice, submittal or communication required or permitted to be served on each Landowner or Town may be served by personal delivery to the person or the office of the person identified below. Service may also be made by mail, by placing first-class postage, and addressed as indicated below, and depositing in the United States mail to:

To Landowner(s): Arata Properties, LLC
Attention: Ben vanZutphen

To Town: Town of Windsor
P.O. Box 100
Windsor, CA 95492-0100
Attention: Town Engineer

Executed as of the day and year first above stated.

LANDOWNER(S):

Name(s)/Title(s): _____

Corresponding Address(es)/Lot Number(s): _____

Signatures of Authorized Persons:

ATTACHMENTS:

- (1) Exhibit A- Legal Property Description
- (2) Exhibit B- Storm Water LID Feature Operation and Maintenance Plan

CALIFORNIA ALL-PURPOSE ACKNOWLEDGMENT

CIVIL CODE § 1189

A notary public or other officer completing this certificate verifies only the identity of the individual who signed the document to which this certificate is attached, and not the truthfulness, accuracy, or validity of that document.

State of California)

County of _____)

On _____ before me, _____,
Date Here Insert Name and Title of the Officer

personally appeared _____
Name(s) of Signer(s)

who proved to me on the basis of satisfactory evidence to be the person(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their authorized capacity(ies), and that by his/her/their signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.

I certify under PENALTY OF PERJURY under the laws of the State of California that the foregoing paragraph is true and correct.

WITNESS my hand and official seal.

Signature _____
Signature of Notary Public

Place Notary Seal Above

OPTIONAL

Though this section is optional, completing this information can deter alteration of the document or fraudulent reattachment of this form to an unintended document.

Description of Attached Document

Title or Type of Document: _____

Document Date: _____ Number of Pages: _____

Signer(s) Other Than Named Above: _____

Capacity(ies) Claimed by Signer(s)

Signer's Name: _____

☐ Corporate Officer — Title(s): _____

☐ Partner — ☐ Limited ☐ General

☐ Individual ☐ Attorney in Fact

☐ Trustee ☐ Guardian or Conservator

☐ Other: _____

Signer Is Representing: _____

Signer's Name: _____

☐ Corporate Officer — Title(s): _____

☐ Partner — ☐ Limited ☐ General

☐ Individual ☐ Attorney in Fact

☐ Trustee ☐ Guardian or Conservator

☐ Other: _____

Signer Is Representing: _____

Exhibit A – Legal Property Description

Revised: 5.31.2022

Declaration of Covenants for Common Area

Town of Windsor Attorney form approved: 7.6.19

Exhibit B –Storm Water LID Feature Operation and Maintenance Plan

Revised: 5.31.2022

Declaration of Covenants for Common Area

Town of Windsor Attorney form approved: 7.6.19

Appendix G

Noise Modeling Results

Construction Noise

	Noise Level @ 50 ft	Newsong Church	Single Family Res to the S	Single Family Res to the E
Distance		130	210	215
Demolition	84	75.701	71.535	71.331
Site Preparation	84	75.701	71.535	71.331
Grading	83	74.701	70.535	70.331
Building Construction	75	66.701	62.535	62.331
Architectural Coating	74	65.701	61.535	61.331
	Noise Level @ 50 ft	Newsong Church	Single Family Res to the S	Single Family Res to the E
Distance		130	65	40
Paving	78	69.701	75.721	79.938

Construction Vibration

	Vibration @ 25 ft	Newsong Church to the W	Single Family Res to the E
Distance		75	90
Large Bulldozer	0.089	0.017	0.013
Loaded Trucks	0.076	0.015	0.011
Static Roller	0.05	0.010	0.007
Small Bulldozer	0.003	0.001	0.000
	Vibration @ 25 ft	Single Family Res to the NW	Single Family Res to the NE
Distance		140	50
Vibratory Roller	0.21	0.016	0.074

Roadway Construction Noise Model (RCNM), Version 1.1

Report date: 02/18/2025
Case Description: Demolition

**** Receptor #1 ****

Description	Land Use	Daytime	Baselines (dBA)	
			Evening	Night
Demolition	Residential	65.0	55.0	50.0

Description	Impact Device	Usage (%)	Equipment		Receptor Distance (feet)	Estimated Shielding (dBA)
			Spec Lmax (dBA)	Actual Lmax (dBA)		
Dozer	No	40		81.7	50.0	0.0
Concrete Saw	No	20		89.6	50.0	0.0
Backhoe	No	40		77.6	50.0	0.0

Results

Noise Limits (dBA)

Noise Limit Exceedance (dBA)

[illegible]

Roadway Construction Noise Model (RCNM), Version 1.1

Report date: 02/18/2025
Case Description: Site Preparation

**** Receptor #1 ****

Description	Land Use	Baselines (dBA)		
		Daytime	Evening	Night
Site Preparation	Residential	65.0	55.0	50.0

Description	Impact Device	Usage (%)	Equipment		Receptor Distance (feet)	Estimated Shielding (dBA)
			Spec	Actual		
			Lmax (dBA)	Lmax (dBA)		
-----	-----	-----	-----	-----	-----	-----
Scraper	No	40		83.6	50.0	0.0
Grader	No	40	85.0		50.0	0.0
Backhoe	No	40		77.6	50.0	0.0

Results

Noise Limit Exceedance (dBA)							Noise Limits (dBA)		
		Calculated (dBA)			Day		Evening		
Night	Day		Evening		Night				
Equipment	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax
Scrapper	N/A	N/A	83.6	79.6	N/A	N/A	N/A	N/A	N/A
Grader	N/A	N/A	85.0	81.0	N/A	N/A	N/A	N/A	N/A
Backhoe	N/A	N/A	77.6	73.6	N/A	N/A	N/A	N/A	N/A
Total	N/A	N/A	85.0	83.8	N/A	N/A	N/A	N/A	N/A

Roadway Construction Noise Model (RCNM), Version 1.1

Report date: 02/18/2025
Case Description: Grading

**** Receptor #1 ****

Description	Land Use	Daytime	Baselines (dBA)	
			Evening	Night
Grading	Residential	65.0	55.0	50.0

Description	Impact Device	Usage (%)	Equipment		Receptor Distance (feet)	Estimated Shielding (dBA)
			Spec Lmax (dBA)	Actual Lmax (dBA)		
Dozer	No	40		81.7	50.0	0.0
Grader	No	40	85.0		50.0	0.0
Backhoe	No	40		77.6	50.0	0.0

Results

Noise Limits (dBA)

Noise Limit Exceedance (dBA)

[illegible]

Roadway Construction Noise Model (RCNM), Version 1.1

Report date: 02/18/2025
Case Description: Building Construction

**** Receptor #1 ****

Description	Land Use	Baselines (dBA)		
		Daytime	Evening	Night
-----	-----	-----	-----	-----
Building Construction	Residential	65.0	55.0	50.0

			Equipment			
			Spec	Actual	Receptor	Estimated
Description	Impact	Usage	Lmax	Lmax	Distance	Shielding
-----	-----	-----	-----	-----	-----	-----
Man Lift	No	20		74.7	50.0	0.0
Man Lift	No	20		74.7	50.0	0.0
Backhoe	No	40		77.6	50.0	0.0

Results

Noise Limits (dBA)

Noise Limit Exceedance (dBA)

Night		Day	Calculated (dBA)		Day Night	Evening			
			Evening						
Equipment	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq
Man Lift	N/A	N/A	74.7	67.7	N/A	N/A	N/A	N/A	N/A
Man Lift	N/A	N/A	74.7	67.7	N/A	N/A	N/A	N/A	N/A
Backhoe	N/A	N/A	77.6	73.6	N/A	N/A	N/A	N/A	N/A
		Total	77.6	75.4	N/A	N/A	N/A	N/A	N/A

Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 02/18/2025
Case Description: Architectural Coating

**** Receptor #1 ****

Description	Land Use	Baselines (dBA)		
		Daytime	Evening	Night
Architectural Coating	Residential	65.0	55.0	50.0

Description	Impact Device	Usage (%)	Equipment			
			Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Compressor (air)	No	40		77.7	50.0	0.0

Results

Noise Limit Exceedance (dBA)					Noise Limits (dBA)				

Roadway Construction Noise Model (RCNM), Version 1.1

Report date: 02/18/2025
Case Description: Paving

**** Receptor #1 ****

Description	Land Use	Daytime	Baselines (dBA)	
			Evening	Night
Paving	Residential	65.0	55.0	50.0

Description	Impact Device	Usage (%)	Equipment		Receptor Distance (feet)	Estimated Shielding (dBA)
			Spec Lmax (dBA)	Actual Lmax (dBA)		
Roller	No	20		80.0	50.0	0.0
Roller	No	20		80.0	50.0	0.0
Paver	No	50		77.2	50.0	0.0

Results

Noise Limits (dBA)

Noise Limit Exceedance (dBA)

[illegible]

Appendix F

FHWA RD-77-108 Results for Los Amigo Road, North of Arata Lane

FHWA RD-77-108 – Traffic Noise Results

Traffic Noise Calculator: FHWA 77-108							Project: 24-15592 - Los Amigos Road, North of Arata Lane																
Output							Inputs														Auto Inputs		
dBA at 50 feet																							
ID	L _{eq} 24hr	L _{dn}	CNEL	70 dBA	65 dBA	60 dBA	Roadway		Segment	ADT	Posted Speed Limit	Grade	% Autos	% Med Trucks	% Heavy Trucks	% Daytime	% Evening	% Night	Number of Lanes	Site Condition	Distance to Receiver	Ground Absorption	Lane Distance
1	56.6	60.3	60.7	6	19	59	Los Amigos Road		North of Arata	2,020	40	0.0%	94.44%	5.6%	0.00%	75.0%	10.0%	15.0%	2	Hard	50	0	20

Appendix H

Addendum to the Transportation Impact Study



December 10, 2025

Ms. Karly Kaufman
Rincon Consultants
449 15th Street, Suite 303
Oakland, CA 94612

Addendum to the Los Amigos Cottages Transportation Impact Study

Dear Ms. Kaufman;

As requested, we have prepared an addendum to the *Transportation Impact Study for the Los Amigos Cottages* (TIS), prepared by W-Trans in July 2025. It is understood that the applicant has revised the proposed 32-unit project to include five deed-restricted low-income affordable units instead of seven affordable units as assessed in the TIS. All other aspects of the project would remain unchanged. The purpose of this addendum is to address the effect this change in the project description would have on the conclusions and recommendations presented in the TIS.

The only transportation-related topic area analyzed in the TIS that would be affected by the modification is related to Vehicle Miles Traveled (VMT). The original analysis included an adjustment to the project's estimated VMT per capita to account for both density and provision of onsite affordable units using methodologies contained in the Sonoma County Transportation and Climate Authorities (SCTCA) VMT Reduction Tool. With respect to affordability adjustments, the calculated VMT reduction of 5.4 percent with the original project would become a reduction of 4.5 percent with the revised project. Combined with reduction associated with density, which remains unchanged, the revised project's VMT per capita would be 10.7 percent below unadjusted levels.

The revised Los Amigos Cottages project with five low-income affordable units is estimated to generate 12.78 VMT per capita. This is slightly higher than the originally-proposed project but remains below the applicable significance threshold of 14.11 VMT per capita. Accordingly, the proposed project would still be considered to have a less-than-significant impact on VMT. A summary of the revised project's VMT findings is shown in Table 1.

Table 1 – Vehicle Miles Traveled Analysis Summary (with Five Affordable Units)

Countywide VMT per Capita		Project VMT per Capita		
Average	Threshold	Unadjusted	Adjusted	Threshold Met?
16.60	14.11	14.30	12.78	Yes

Notes: VMT is measured in VMT per Capita, or the number of daily miles driven per resident; The applicable VMT significance threshold is 15 percent below the existing countywide average; Adjusted values reflect effects of project density and provision of onsite affordable housing

Please contact me with any questions.

Sincerely,

A handwritten signature in blue ink that reads "Zachary Matley".

Zachary Matley, AICP
Principal

JZM/WIN167.L1

Appendix I

Assembly Bill 52 Correspondence



Town of Windsor
9291 Old Redwood Hwy
P.O. Box 100
Windsor, CA 95492

Mayor
Rosa Reynoza

Vice Mayor, District 4
Tanya Potter

Councilmember District 1
Mike Wall

Councilmember District 3
Debora Fudge

Councilmember District 2
Sam Salmon

Town Manager
Jon Davis

Sent via Email
November 12, 2024

Cloverdale Rancheria of Pomo Indians
Patricia Hermosillo, Chairperson
555 S. Cloverdale Blvd., Suite A
Cloverdale, CA 95425
info@cloverdalerancheria.com

**Subject: Tribal Consultation Request (AB52) for the Los Amigos Cottages
Project at 263 Arata Lane, APN 161-020-049 (File No. 23-11)**

Dear Chairperson Hermosillo,

The Town of Windsor has received an application from Ben VanZutphen to subdivide the 2.71-acre parcel located at 263 Arata Lane, APN 161-020-049, into 32 parcels. The project requires Planning Commission approval of a Tentative Subdivision Map.

The Town has not yet determined what level of environmental review is required for this project. An initial environmental study (IS) will be prepared for the project, which will determine the type of environmental review required. The Town of Windsor, as the lead CEQA agency responsible for consulting with California Native American Tribes pursuant to Public Resources Code Section 21080.3.1 and 21080.3.2 (a.k.a. AB52), is sending this letter to initiate the consultation process. This letter provides a brief description of the proposed project, its location, and lead agency contact information.

Project Location and Surrounding Area

The project site is located on the north side of Arata Lane between Highway 101 and Los Amigos Road, immediately east of New Song Church. The site is zoned Community Commercial. The proposed Quail Acres project (approximately 300 homes on 59 acres) is located north and east of the parcel. Low density residential development is located south of the site on land zoned Gateway Commercial and Village Residential. The future realignment of Los Amigos Road is located on the eastern and northern boundaries of the site. The realigned Los Amigos Road would be located in existing Town right-of-way for the road as shown in the enclosed location aerial. There are no wetlands or other waterbodies on the site. There is a drainage ditch on the south side of the project site. There are oak trees on the site, but no oak woodland. All trees, except one on the Arata Lane project frontage, are proposed to be removed.

Project Description

Los Amigos Cottages is a Builders Remedy Application (BRA) that would

subdivide the parcel into 32 lots. As a BRA, 20% of the homes must be affordable to lower income households. The project includes 25 for sale market rate homes and seven for sale homes affordable to lower income households.

Documents Enclosed

The following documents have been included to assist with your review. The biological reports and wetland delineations also include the approximately 59-acre Quail Acres site.

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- Rare Plant Survey dated July 3, 2018
- Wetland Delineation Updated June 21, 2021
- Arborist Report dated March 25, 2024

Contact Information

The Town of Windsor lead contact for AB52 Consultation on this project is:

Kim Jordan
Planner III
9291 Old Redwood Hwy, Building 400
Windsor, CA 95492
kjordan@townofwindsor.com

Request

If the Cloverdale Rancheria of Pomo Indians tribe wishes to consult with the Town regarding the Los Amigos Cottages project, please indicate in writing via email or letter addressed to the lead agency contact provided above within 30 days (on or before December 16, 2024) and provide the name of the tribe's designated lead contact person.

If you have any questions, please feel free to contact me at (707)838-5331 or kjordan@townofwindsor.ca.gov.

Sincerely,

Kim Jordan

Kim Jordan
Planner III



Town of Windsor
9291 Old Redwood Hwy
P.O. Box 100
Windsor, CA 95492

Mayor
Rosa Reynoza

Vice Mayor, District 4
Tanya Potter

Councilmember District 1
Mike Wall

Councilmember District 3
Debora Fudge

Councilmember District 2
Sam Salmon

Town Manager
Jon Davis

Sent via Email
November 12, 2024

Dry Creek Rancheria Band of Pomo Indians
Sherrie Smith-Ferrie, THPO
P.O. Box 607
Geyserville, CA 95441
Sherries@drycreekrancheria.com

**Subject: Tribal Consultation Request (AB52) for the Los Amigos Cottages
Project at 263 Arata Lane, APN 161-020-049 (File No. 23-11)**

Dear Ms. Smith-Ferrie,

The Town of Windsor has received an application from Ben VanZutphen to subdivide the 2.71-acre parcel located at 263 Arata Lane, APN 161-020-049, into 32 parcels. The project requires Planning Commission approval of a Tentative Subdivision Map.

The Town has not yet determined what level of environmental review is required for this project. An initial environmental study (IS) will be prepared for the project, which will determine the type of environmental review required. The Town of Windsor, as the lead CEQA agency responsible for consulting with California Native American Tribes pursuant to Public Resources Code Section 21080.3.1 and 21080.3.2 (a.k.a. AB52), is sending this letter to initiate the consultation process. This letter provides a brief description of the proposed project, its location, and lead agency contact information.

Project Location and Surrounding Area

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Project Description

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Documents Enclosed

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Contact Information

The Town of Windsor lead contact for AB52 Consultation on this project is:

Kim Jordan
Planner III
9291 Old Redwood Hwy, Building 400
Windsor, CA 95492
kjordan@townofwindsor.com

Request

If the Dry Creek Rancheria of Pomo Indians tribe wishes to consult with the Town regarding the Los Amigos Cottages project, please indicate in writing via email or letter addressed to the lead agency contact provided above within 30 days (on or before December 16, 2024) and provide the name of the tribe's designated lead contact person.

If you have any questions, please feel free to contact me at (707)838-5331 or kjordan@townofwindsor.ca.gov.

Sincerely,

Kim Jordan

Kim Jordan
Planner III



Town of Windsor
9291 Old Redwood Hwy
P.O. Box 100
Windsor, CA 95492

Mayor
Rosa Reynoza

Vice Mayor, District 4
Tanya Potter

Councilmember District 1
Mike Wall

Councilmember District 3
Debora Fudge

Councilmember District 2
Sam Salmon

Town Manager
Jon Davis

Sent via Email
November 12, 2024

Dry Creek Rancheria Band of Pomo Indians
Chris Wright, Chairperson
1450 Airport Suite 200A
Santa Rosa, CA 95403
chrisw@drycreekrancheria.com

**Subject: Tribal Consultation Request (AB52) for the Los Amigos Cottages
Project at 263 Arata Lane, APN 161-020-049 (File No. 23-11)**

Dear Chairperson Wright,

The Town of Windsor has received an application from Ben VanZutphen to subdivide the 2.71-acre parcel located at 263 Arata Lane, APN 161-020-049, into 32 parcels. The project requires Planning Commission approval of a Tentative Subdivision Map.

The Town has not yet determined what level of environmental review is required for this project. An initial environmental study (IS) will be prepared for the project, which will determine the type of environmental review required. The Town of Windsor, as the lead CEQA agency responsible for consulting with California Native American Tribes pursuant to Public Resources Code Section 21080.3.1 and 21080.3.2 (a.k.a. AB52), is sending this letter to initiate the consultation process. This letter provides a brief description of the proposed project, its location, and lead agency contact information.

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Project Description

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- Wetland Delineation Updated June 21, 2021
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Contact Information

The Town of Windsor lead contact for AB52 Consultation on this project is:

Kim Jordan
Planner III
9291 Old Redwood Hwy, Building 400
Windsor, CA 95492
kjordan@townofwindsor.com

Request

If the Dry Creek Rancheria of Pomo Indians tribe wishes to consult with the Town regarding the Los Amigos Cottages project, please indicate in writing via email or letter addressed to the lead agency contact provided above within 30 days (on or before December 16, 2024) and provide the name of the tribe's designated lead contact person.

If you have any questions, please feel free to contact me at (707)838-5331 or kjordan@townofwindsor.ca.gov.

Sincerely,

Kim Jordan

Kim Jordan
Planner III



Town of Windsor
9291 Old Redwood Hwy
P.O. Box 100
Windsor, CA 95492

Mayor
Rosa Reynoza

Vice Mayor, District 4
Tanya Potter

Councilmember District 1
Mike Wall

Councilmember District 3
Debora Fudge

Councilmember District 2
Sam Salmon

Town Manager
Jon Davis

Sent via Email
November 12, 2024

Federated Indians Graton Rancheria
Gene Buvelot
6400 Redwood Drive, Suite 300
Rohnert Park, CA 94928
gbuvelot@gratonrancheria.com

Subject: Tribal Consultation Request (AB52) for the Los Amigos Cottages Project at 263 Arata Lane, APN 161-020-049 (File No. 23-11)

Dear Mr. Buvelot,

The Town of Windsor has received an application from Ben VanZutphen to subdivide the 2.71-acre parcel located at 263 Arata Lane, APN 161-020-049, into 32 parcels. The project requires Planning Commission approval of a Tentative Subdivision Map.

The Town has not yet determined what level of environmental review is required for this project. An initial environmental study (IS) will be prepared for the project, which will determine the type of environmental review required. The Town of Windsor, as the lead CEQA agency responsible for consulting with California Native American Tribes pursuant to Public Resources Code Section 21080.3.1 and 21080.3.2 (a.k.a. AB52), is sending this letter to initiate the consultation process. This letter provides a brief description of the proposed project, its location, and lead agency contact information.

Project Location and Surrounding Area

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Project Description

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- Arborist Report dated March 25, 2024

Contact Information

The Town of Windsor lead contact for AB52 Consultation on this project is:

Kim Jordan
Planner III
9291 Old Redwood Hwy, Building 400
Windsor, CA 95492
kjordan@townofwindsor.ca.gov

Request

If the Federated Indians Graton Rancheria wishes to consult with the Town regarding the Los Amigos Cottages project, please indicate in writing via email or letter addressed to the lead agency contact provided above within 30 days (on or before December 16, 2024) and provide the name of the tribe's designated lead contact person.

If you have any questions, please feel free to contact me at (707)838-5331 or kjordan@townofwindsor.ca.gov.

Sincerely,

Kim Jordan

Kim Jordan
Planner III



Town of Windsor
9291 Old Redwood Hwy
P.O. Box 100
Windsor, CA 95492

Mayor
Rosa Reynoza

Vice Mayor, District 4
Tanya Potter

Councilmember District 1
Mike Wall

Councilmember District 3
Debora Fudge

Councilmember District 2
Sam Salmon

Town Manager
Jon Davis

Sent via Email
November 12, 2024

Federated Indians Graton Rancheria
Buffy McQuillen
Tribal Heritage Preservation Office
6400 Redwood Drive, Suite 300
Rohnert Park, CA 94928
BMcQuillen@gratonrancheria.com

Subject: Tribal Consultation Request (AB52) for the Los Amigos Cottages Project at 263 Arata Lane, APN 161-020-049 (File No. 23-11)

Dear Ms. McQuillen,

The Town of Windsor has received an application from Ben VanZutphen to subdivide the 2.71-acre parcel located at 263 Arata Lane, APN 161-020-049, into 32 parcels. The project requires Planning Commission approval of a Tentative Subdivision Map.

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Contact Information

The Town of Windsor lead contact for AB52 Consultation on this project is:

Kim Jordan
Planner III
9291 Old Redwood Hwy, Building 400
Windsor, CA 95492
kjordan@townofwindsor.ca.gov

Request

If the Federated Indians Graton Rancheria wishes to consult with the Town regarding the Los Amigos Cottages project, please indicate in writing via email or letter addressed to the lead agency contact provided above within 30 days (on or before December 16, 2024) and provide the name of the tribe's designated lead contact person.

If you have any questions, please feel free to contact me at (707)838-5331 or kjordan@townofwindsor.ca.gov.

Sincerely,

Kim Jordan

Kim Jordan
Planner III



Town of Windsor
9291 Old Redwood Hwy
P.O. Box 100
Windsor, CA 95492

Mayor
Rosa Reynoza

Vice Mayor, District 4
Tanya Potter

Councilmember District 1
Mike Wall

Councilmember District 3
Debora Fudge

Councilmember District 2
Sam Salmon

Town Manager
Jon Davis

Sent via Email
November 12, 2024

Kashia Band of Stewart's Point (Pomo)
Anthony Macias, THPO
1420 Guerneville Road, Suite 1
Santa Rosa, CA 95403
Anthony@stewartspoint.org

**Subject: Tribal Consultation Request (AB52) for the Los Amigos Cottages
Project at 263 Arata Lane, APN 161-020-049 (File No. 23-11)**

Dear Mr. Macias,

The Town of Windsor has received an application from Ben VanZutphen to subdivide the 2.71-acre parcel located at 263 Arata Lane, APN 161-020-049, into 32 parcels. The project requires Planning Commission approval of a Tentative Subdivision Map.

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Contact Information

The Town of Windsor lead contact for AB52 Consultation on this project is:

Kim Jordan
Planner III
9291 Old Redwood Hwy, Building 400
Windsor, CA 95492
kjordan@townofwindsor.com

Request

If the Kashia Band of Stewart's Point (Pomo) tribe wishes to consult with the Town regarding the Los Amigos Cottages project, please indicate in writing via email or letter addressed to the lead agency contact provided above within 30 days (on or before December 16, 2024) and provide the name of the tribe's designated lead contact person.

If you have any questions, please feel free to contact me at (707)838-5331 or kjordan@townofwindsor.ca.gov.

Sincerely,

Kim Jordan

Kim Jordan
Planner III



Town of Windsor
9291 Old Redwood Hwy
P.O. Box 100
Windsor, CA 95492

Mayor
Rosa Reynoza

Vice Mayor, District 4
Tanya Potter

Councilmember District 1
Mike Wall

Councilmember District 3
Debora Fudge

Councilmember District 2
Sam Salmon

Town Manager
Jon Davis

Sent via Email
November 12, 2024

Lytton Rancheria of CA (Pomo)
Brenda Tomaras, Representative
10755-F Scripps Poway Parkway #281
San Diego, CA 92131
btomoras@mtolaw.com

**Subject: Tribal Consultation Request (AB52) for the Los Amigos Cottages
Project at 263 Arata Lane, APN 161-020-049 (File No. 23-11)**

Dear Ms. Tomaras,

The Town of Windsor has received an application from Ben VanZutphen to subdivide the 2.71-acre parcel located at 263 Arata Lane, APN 161-020-049, into 32 parcels. The project requires Planning Commission approval of a Tentative Subdivision Map.

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Contact Information

The Town of Windsor lead contact for AB52 Consultation on this project is:

Kim Jordan
Planner III
9291 Old Redwood Hwy, Building 400
Windsor, CA 95492
kjordan@townofwindsor.com

Request

If the Lytton Rancheria tribe wishes to consult with the Town regarding the Los Amigos Cottages project, please indicate in writing via email or letter addressed to the lead agency contact provided above within 30 days (on or before December 16, 2024) and provide the name of the tribe's designated lead contact person.

If you have any questions, please feel free to contact me at (707)838-5331 or kjordan@townofwindsor.ca.gov.

Sincerely,

Kim Jordan

Kim Jordan
Planner III



Town of Windsor
9291 Old Redwood Hwy
P.O. Box 100
Windsor, CA 95492

Mayor
Rosa Reynoza

Vice Mayor, District 4
Tanya Potter

Councilmember District 1
Mike Wall

Councilmember District 3
Debora Fudge

Councilmember District 2
Sam Salmon

Town Manager
Jon Davis

Sent via Email
November 12, 2024

Mishewal-Wappo Tribe of Alexander Valley
Scott Gabaldon, Chairperson
2275 Silk Road
Windsor, CA 95492
scottg@mishewalwappotribe.com

**Subject: Tribal Consultation Request (AB52) for the Los Amigos Cottages
Project at 263 Arata Lane, APN 161-020-049 (File No. 23-11)**

Dear Mr. Galbadon,

The Town of Windsor has received an application from Ben VanZutphen to subdivide the 2.71-acre parcel located at 263 Arata Lane, APN 161-020-049, into 32 parcels. The project requires Planning Commission approval of a Tentative Subdivision Map.

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Contact Information

The Town of Windsor lead contact for AB52 Consultation on this project is:

Kim Jordan
Planner III
9291 Old Redwood Hwy, Building 400
Windsor, CA 95492
kjordan@townofwindsor.com

Request

If the Mishewal-Wappo tribe wishes to consult with the Town regarding the Los Amigos Cottages project, please indicate in writing via email or letter addressed to the lead agency contact provided above within 30 days (on or before December 16, 2024) and provide the name of the tribe's designated lead contact person.

If you have any questions, please feel free to contact me at (707)838-5331 or kjordan@townofwindsor.ca.gov.

Sincerely,

Kim Jordan

Kim Jordan
Planner III

Appendix J

Wildfire Impact Analysis

Memorandum

Date: June 25, 2025

To: Ben vanZutphen
Arata Properties, LLC

From: Jason Brandman, Project Director
Yael Marcus, Senior Project Manager

Subject: Wildfire Impact Analysis for the Proposed Los Amigos Cottages Project in the Town of Windsor, California

INTRODUCTION

FirstCarbon Solutions, Inc. (FCS) is pleased to provide this analysis of potential wildfire impacts associated with the proposed Los Amigos Cottages Project (proposed project) located in the Town of Windsor (Town), Sonoma County (County), California. Existing conditions as they relate to wildfire in the project area, as well as the relevant regulatory framework, including the Town's applicable thresholds of significance for evaluating impacts, are provided herein. Based on this information, the potential for impacts related to wildfire that could result from implementation of the proposed project are identified.

Consideration of wildfire-related impacts is consistent with California Environmental Quality Act (CEQA) Appendix G Environmental Checklist Section XX, Wildfire, Impact(a) through (d) and Section IX, Hazards and Hazardous Materials, Impact(f) and (g). Information in this section is based primarily on information provided by the following sources:

- California Department of Forestry and Fire Protection (CAL FIRE) Fire Hazard Severity Zone Viewer (FHSZ Viewer).
- CAL FIRE, Fire Incidents (Sonoma County).
- CAL FIRE, 2018 Strategic Plan for California.
- CAL FIRE, Wildland Hazards and Building Codes.
- California Natural Resources Agency (CNRA), Final Statement of Reason for Regulatory Action, Amendments to the State CEQA Guidelines.
- California Office of Emergency Services (Cal/OES), Coastal Region Operational Area Assignments.

- Cal/OES, Regulations for the Standardized Emergency Management System (SEMS).
- California Public Utilities Commission (CPUC), General Order Number 166.
- Federal Emergency Management Agency (FEMA), Flood Map Service Center.
- International Association of Fire Chiefs (IAFC), Firewise Guide to Landscape and Construction.
- National Oceanic and Atmospheric Administration (NOAA), Monthly Climate Normals (1991-2020)—Santa Rose Sonoma County Airport, California.
- NOAA, U.S. Wind Climatology.
- National Park Service (NPS), Series: Wildland Fire—Learning in Depth, Article 11: Wildland Fire Behavior.
- Northwest Fire science Consortium (NSFC), Fire Facts: What is? Fuel.
- Office of Attorney General, Best Practices for Analyzing and Mitigating Wildfire Impacts of Development Projects under the California Environmental Quality Act.
- Sonoma County Multi-Jurisdictional Hazard Mitigation Plan (Update 2021), Volume 1: Area-Wide Elements.
- *The Press Democrat*, Fire Incident Press Releases.
- Town of Windsor, Capital Improvement Plan.
- Town of Windsor, Climate Resilience Plan.
- Town of Windsor, Communities Organized to Prepare for Emergencies (COPE).
- Town of Winsor, Emergency Preparedness & Resources.
- Town of Windsor 2040 General Plan (2040 General Plan), including the 2023-adopted Public Health and Safety Element (PHS Element).
- Town of Windsor, GIS Viewer (GIS Viewer).
- Town of Windsor, Town of Windsor Emergency Evacuation Zones/Sub-Zones.
- United States Fire Administration (USFA), What is the WUI?
- University of California, Field Operations Manual, Wildland Fire Safety.

Proposed Project

Arata Properties, LLC (applicant) proposes to develop Los Amigos Cottages (proposed project), consisting of 32 new housing units on a 2.72-acre site. The project site is located at 263 Arata Lane in the Town of Windsor, in Sonoma County, California (Exhibit 1). The project site is designated by Assessor's Parcel Number (APN) 161-020-049. Proposed housing types includes 26 single-family detached homes and six attached "duet" homes. Twenty-two percent of the homes would be designated for lower-income households, including all six of the proposed duet units and one of the detached units,

exceeding the Town's inclusionary requirements. The proposed project would also include a 0.04-acre (1,748-square-foot) bioretention area. The site plan is shown in Exhibit 2.

Proposed off-site improvements include partial frontage improvements along the eastern project site boundary. These improvements would extend Los Amigos Road from its intersection with Arata Lane, adjacent to the southeastern corner of the project site, to the project site's northern access point. Improvements would include a two-lane road as well as sidewalk, curb, gutter, bike lane, and street parking on the project frontage. With this proposed partial extension of Los Amigos Road, the project site would have two points of ingress and egress: one on Arata Lane at the southwestern portion of the project site and a second at the northeast part of the project site on the proposed extended section of Los Amigos Road. However, the partial extension of Los Amigos Road leads to Arata Lane and, therefore, cannot be considered a second access point per the Town's Fire Code standards because Arata Lane already serves as an emergency access for the proposed project. Both the proposed extension of Los Amigos Road and the existing Arata Lane would serve as a protective buffer, or "Zone 0,"¹ between adjacent undeveloped and developed lands to the north, south, and east of the project site. Additional off-site improvements would include sidewalk, planter, curb, and gutter in the existing two-lane Arata Lane (west of Los Amigos Road).

Within the project site, internal circulation would be provided by internal private streets linking to Arata Lane and Los Amigos Road, as previously mentioned. Proposed off-site improvements for the proposed project, including right-of-way delineations, buffered bicycle lanes, and sidewalk improvements along both Arata Lane and Los Amigos Road, would increase site connectivity and accessibility. Emergency vehicle ingress and egress would be provided by the proposed project's primary access point on Arata Lane to the site's internal street network. The project site would be accessible from multiple directions via adjacent roadways, including from the east and west via Arata Lane and from the south via Los Amigos Road. The project site is also accessible to multiple evacuation routes, as delineated in Evacuation Zone Maps compiled by the Windsor Police Department² and Figure PHS-3 of the 2040 General Plan,³ included as Exhibit 3.

In accordance with 2040 General Plan Policy PHS-4.9, Priority Undergrounding, all utilities are required to be installed underground. Additionally, construction equipment would be required to use spark arresters thereby reducing the possibility of ignition risk, and appropriate fire suppression equipment would be required on-site as applicable (Public Resources Code [PRC], Chapter 6, Article 2, §§ 4442–4446).

¹ The term "Zone 0" refers to the first five feet from a protected structure to reduce fire risk.

² Town of Windsor. Emergency Preparedness and Resources. Website: <https://www.townofwindsor.ca.gov/1116/Emergency-Preparedness-Resources>. Accessed April 15, 2025.

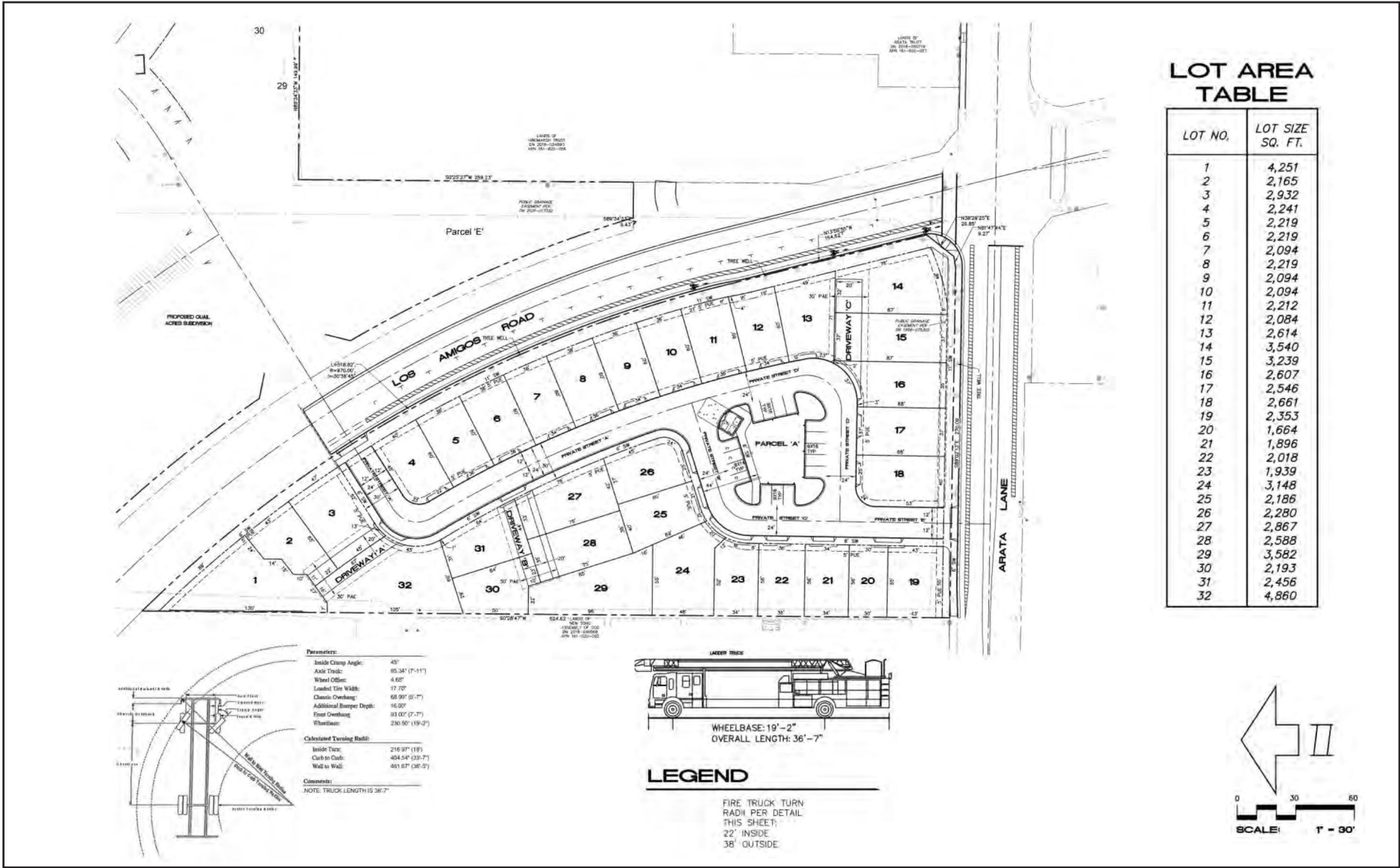
³ Town of Windsor. 2023. 2040 General Plan Public Health and Safety Element. August 16.



Source: Bing Aerial Imagery. County of Sonoma.

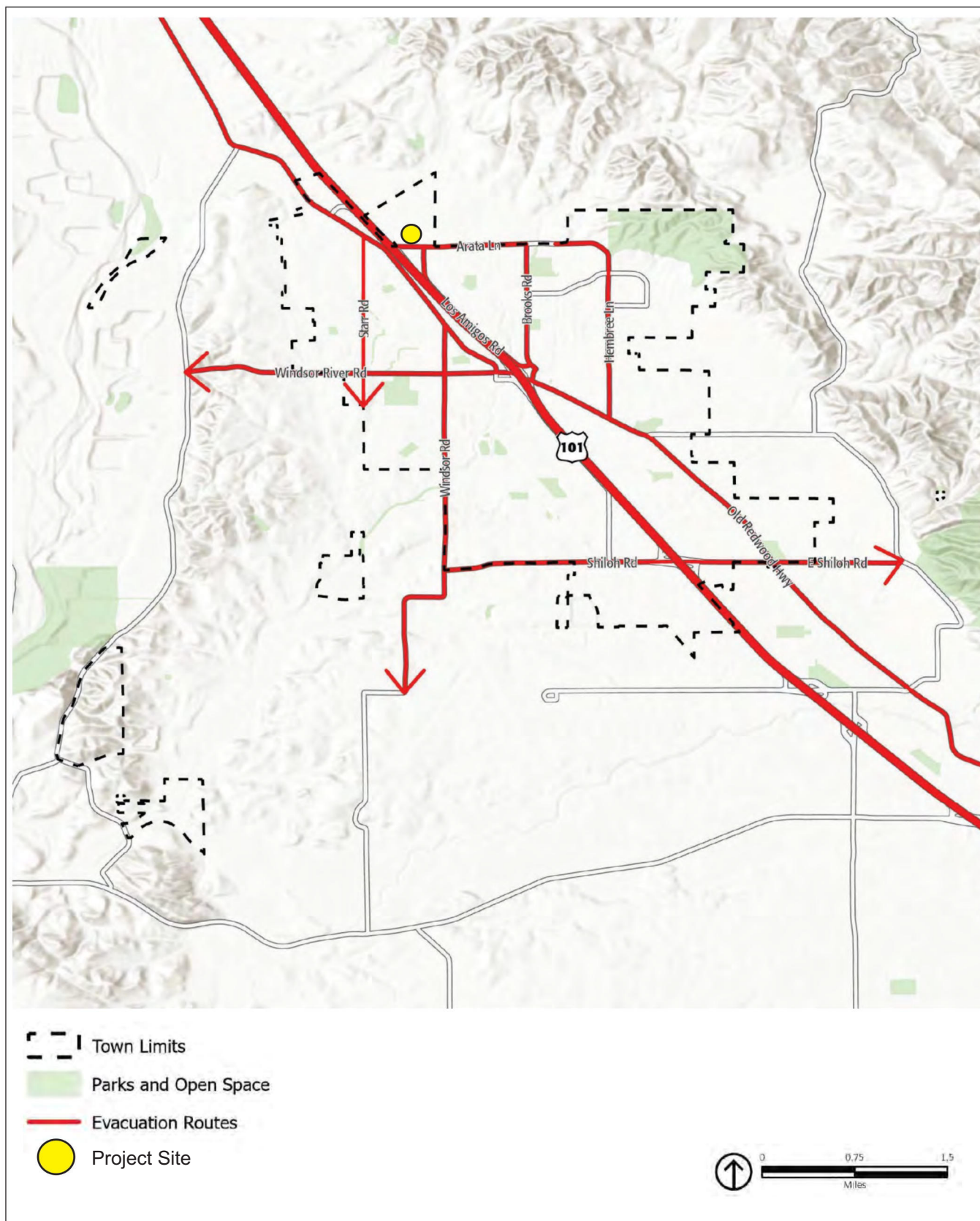


Exhibit 1 Project Location



Source: Civil Design Consultants, Inc. October, 2024.





Source: Town of Windsor.



The proposed project would be consistent with regulations for development in Moderate Fire Hazard Severity Zones as outlined by the California Building Standards Code (CBC) and adopted by Municipal Code Sections 7-2-400 through 7-2-424, including, but not limited to, ignition-resistant construction materials, roofing, vents, exterior coverings, windows, doors, and decking. Specifically, the proposed project would implement the following:

- **Compliance with Building Code Standards.** The Town's Building Code requires use of fire-resistant materials and construction methods for all new home construction within Town limits. Future building permit plans for construction of new homes within the project area will utilize appropriate materials and methods in accordance with the requirements of Town code, including use of fire-resistant attic and crawl space vents, soffits, and fire-resistant materials for exterior siding, porches, and decks. All future building permit applications for construction would be subject to review and approval by the Town to ensure compliance with these standards.
- **Project Construction.** During construction the proposed project would comply with the requirement of Public Resources Code Article 2 (Prohibited Activities), including, but not limited to, the following: Section 4227 (location of flammable materials on burn permit days); Section 4228 (fire suppression equipment); Section 4331 (use of gas-powered tools on burn permit days); and Section 4442 (spark arrestor required).
- **Fire Safe Fencing Materials.** To prevent the spread of fire between parcels and structures, fences and walls attached to and/or within 6 feet of a structure or deck shall be made of non-combustible materials. Examples of non-combustible materials that may be utilized include:
 - Masonry;
 - Steel privacy fencing;
 - Hogwire;
 - Hardiboard; and/or
 - Fire-resistant wood grain vinyl.

Groundwater recharge would be implemented with stormwater Best Management Practices (BMPs) within the site's private roadways, mimicking the storm conditions of the natural environment. Additionally, recycled water would be used to service the project site. Clarifications regarding landscaping materials is provided in the Clarification and Supplemental Information,⁴ included as Attachment A to this memorandum. As described in Attachment A, the proposed landscaping in private yards would include the following:

- **Ground Cover.** To reduce the spread of wildfire due to ember casting, no mulch and/or similar ground cover products will be allowed within 5 feet of any structure. Alternative ground cover materials to be utilized include, but are not limited to, lava rock, river rock, gravel, decomposed granite, or other groundcover materials (subject to approval by the Town).
- **Vegetation Adjacent to Structures.** Trees and shrubs located within 5 feet of any structure shall be planted and maintained at a minimum distance of 5 feet apart.

⁴ Arata Properties, LLC. 2025. Clarifications and Supplemental Information from Arata Properties, LLC for the Los Amigos Cottages Development Application. May 23.

- **Allowed Plant Materials.** New landscaping shall incorporate only the firewise plant materials approved by the Sonoma County Fire District and the California Fire Safe Council. The planting of juniper and manzanita will be prohibited.
- No combustible landscape materials will be used within 5 feet of all structures.

The proposed project design would provide a buffer of 5 feet between vegetation, wood fences, gates, or ornamental landscaping and residences or other structures, creating a defensible space, or Zone 0, intended to slow or stop the spread of wildfire while providing increased protection for residences from embers, direct flame contact, and radiant heat. Private landscaping in Zone 0 between residences would consist of hardscape only and no green space. Fire-resistant landscaping would be installed consistent with CBC requirements.⁵

The proposed project would be served by the Town's public water and sewer systems, which would be supplied to proposed dwelling units for private use as well as for CBC-compliant hydrants for firefighting use. A total of three fire hydrants are proposed on-site, alongside an existing hydrant on the west end of the site's frontage with Arata Lane to enhance fire protection coverage (shown in Sheet TM5 of the Tentative Map submitted for the proposed project). As previously mentioned, all utilities would be constructed underground to reduce the possibility of ignition risk.

According to the 2040 General Plan Land Use Diagram, the project site is designated General Business (GB) (0.0-1.0 floor area ratio [FAR]). This designation allows for a broad range of uses, including office, retail and service activities. Residential uses are not allowed in the GB designation. However, because the proposed project was submitted as a Senate Bill (SB) 330 Builder's Remedy project, the proposed project is entitled to review under the Housing Accountability Act (HAA) and Housing Crisis Act (HCA) processes requiring local agencies to approve certain affordable housing projects that do not strictly comply with General Plan land use designations.⁶

The project site is zoned Community Commercial (CC). The CC zone is applied to areas appropriate for a range of local- and community-serving retail and service land uses, including restaurants, shops, personal, and business services.

Land use designations within the Town surrounding the project site consist of Public/Quasi-Public, Neighborhood Center/Mixed Use, Low Density Residential, and Gateway Commercial designations. Existing land uses surrounding the project site include rural single-family homes and undeveloped/pastureland to the east and north, a church to the west, and single-family homes to the

⁵ National Fire Protection Association (NFPA). International Association of Fire Chiefs (IAFC). 2024. Firewise Guide to Landscape and Construction/ Website: https://www.iafc.org/docs/default-source/1fire-prev/bookletguidetofirewiselandscapelandconstruction.pdf?sfvrsn=badfdd0d_2. Accessed December 20, 2024.

⁶ In 2019, SB 330, or the HCA, revised Government Code Section 65589.5, preventing local governments which have not adopted an updated General Plan Housing Element that is in "substantial compliance" with State law from disapproving housing development projects that meet certain affordability criteria. On September 16, 2021, SB 8 was signed into law, making some clarifications and updating SB 330 and extending the Housing Crisis Act from January 1, 2025, to January 1, 2030. The proposed project is processed under the Builder's Remedy, a commonly applied term that refers to the process established in SB 330 that, under certain conditions outlined in the Government Code, prohibits jurisdictions from rejecting a project for non-compliance with existing land use designations.

south, across Arata Lane, with more dense residential development further south and southeast of the project site. Rural/undeveloped lands are found north of the project site. Per the Town's zoning map, a mixture of Neighborhood Center/Mixed Use (NCMU), Gateway Commercial (GC), Public Institution (PI), and Village Residential (VR) zoning districts, consistent with General Plan land use designations surround the project site.⁷

Environmental Setting

Residential developments in the wildland urban interface (WUI) and other wildfire prone areas can significantly increase the risks of wildfires and the risk to public safety. Factors contributing to increased risk are increased anthropogenic fire sources, adjacency of anthropogenic fire sources to flammable vegetation, and placing people in areas of risk.

Overview of Wildfire

A wildfire is an uncontrolled fire in an extensive area of combustible vegetation. Wildfires differ from other fires in that they take place in areas of grassland, woodlands, brushland, scrubland, peatland, and other wooded areas that act as a source of fuel, or combustible material. Buildings may become involved if wildfire spreads to adjacent communities. The primary factors that increase an area's susceptibility to wildfire include slope and topography, vegetation type and condition, and weather and atmospheric conditions.

The indirect effects of wildfires can be catastrophic. In addition to stripping the land of vegetation and destroying forest resources, large, intense fires can harm the soil, waterways, and overall habitat. Soil exposed to intense heat may lose its capacity to absorb moisture and support life. Exposed soils erode quickly and enhance siltation of rivers and streams, thereby increasing flood potential, harming aquatic life, and degrading water quality. Lands stripped of vegetation are also subject to increased debris flow hazards.

Slope and Aspect

Sloping land increases susceptibility to wildfire because fire typically burns faster up steep slopes and slopes may hinder firefighting efforts.^{8,9} Following severe wildfires, sloping land is also more susceptible to landslide or flooding from increased runoff during substantial precipitation events.

Aspect is the direction that a slope faces, and it determines how much radiated heat the slope will receive from the sun. Slopes facing south to southwest will receive the most solar radiation; thus, they are warmer

⁷ Town of Windsor. 2024. GIS Viewer. Website: <https://maps.srcity.org/Html5Viewer/Index.html?viewer=windsor>. Accessed December 19, 2024.

⁸ National Park Service (NPS). 2017. Series: Wildland Fire – Learning in Depth, Article 11: Wildland Fire Behavior. Website: <https://www.nps.gov/articles/wildland-fire-behavior.htm>. Accessed January 28, 2025.

⁹ University of California 2018. Field Operations Manual, Wildland Fire Safety. Revised November 2018. Website: https://www.ucop.edu/safety-and-loss-prevention/_files/field-research-safety/wildland-fire-safety.pdf. Accessed January 28, 2025.

and the vegetation is drier than on slopes facing a northerly to northeasterly direction, increasing the potential for wildfire ignition and spread.¹⁰

The project site is in an area of relatively flat topography. It does not contain any south or southwest facing slopes.

Vegetation

Vegetation is fuel to wildfire, and it changes over time with seasonal growth and die-back. The relationship between vegetation and wildfire is complex, but generally some vegetation is naturally fire-resistant while other vegetation is extremely flammable. It is worth noting that some plant types in California are fire-resistant while others are fire dependent for their seed germination cycles. Wildfire behavior depends on the type of fuels present, such as ladder fuels, surface fuels, and aerial fuels. Ladder fuels, such as low-lying tree branches or shrubs under the canopy of a large tree, provide a path for a surface fire to climb upward into the crown of trees; surface fuels include grasses, logs, and stumps low to the ground; and aerial fuels include limbs, foliage, and branches not in contact with the ground.¹¹ Weather and climate conditions, including drought cycles, can lead to dry vegetation with low moisture content, increasing flammability.

Vegetation on the project site consists generally of trees, shrubs, and grasses. The site is directly surrounded by rural residences with associated vegetation and pastures, to the north, east, and far west. A church lies to the west of the project site on the adjacent parcel. Hillsides of oak woodland and savanna are approximately 1 mile to the northeast and east. The land to the south and southeast of the project site is developed with single-family residences and contains associated landscaping vegetation. An area of trees lies adjacent to the project site on the north and east.

Weather and Atmospheric Conditions

Wind, temperature, and relative humidity are the most influential weather elements in fire behavior and susceptibility.¹² Fire moves faster under hot, dry, and windy conditions. Wind may also blow embers ahead of a fire (known as “ember cast”), causing its spread. The distance to which embers can spread, and therefore potential risk of spot fire starts, can vary greatly based on conditions. Drought conditions lead to extended periods of excessively dry vegetation, increasing the fuel load and ignition potential.

The NOAA maintains a weather monitoring station in Santa Rosa, approximately 3 miles south of the project site. Most precipitation is received from November through March, with an average annual rainfall of approximately 34 inches.¹³ May through September is the driest time of the year and coincides with

¹⁰ University of California. 2018. Field Operations Manual, Wildland Fire Safety. November. Website: https://www.ucop.edu/safety-and-loss-prevention/_files/field-research-safety/wildland-fire-safety.pdf. Accessed January 28, 2025.

¹¹ Northwest Fire Science Consortium (NFSC). 2017. Fire Facts: What is? Fuel. Website: https://www.nwfirescience.org/sites/default/files/publications/FIREFACTS_FUELS_0.pdf. Accessed January 28, 2025.

¹² National Park Service (NPS). 2017. Series: Wildland Fire—Learning in Depth, Article 11: Wildland Fire Behavior. Website: <https://www.nps.gov/articles/wildland-fire-behavior.htm>. Accessed January 28, 2025.

¹³ National Oceanic and Atmospheric Administration (NOAA). 2021. Monthly Climate Normals (1991-2020)—Santa Rosa Sonoma County Airport, California. Website: <https://weather.gov/wrh/Climate?wfo=mtr>. Accessed January 28, 2025.

what has traditionally been considered the fire season in California. However, increasingly persistent drought and climatic changes in California have resulted in drier winters, and fires during the autumn, winter, and spring months are becoming more common. Prevailing winds in Sonoma County are generally from the northwest to the southeast.¹⁴

Wildfire Hazard Area Designations

CAL FIRE is required by law to map areas of significant fire hazards based on fuels, terrain, weather, and other relevant factors (PRC §§ 4201–4204 and California Government Code §§ 51175–89). As described above, the primary factors that increase an area’s susceptibility to fire hazards include slope, vegetation type and condition, and atmospheric conditions. CAL FIRE maps fire hazard zones, referred to as Fire Hazard Severity Zones (FHSZs). CAL FIRE’s Fire and Resource Assessment Program (FRAP) maps three zones in Local and State Responsibility Areas (SRAs): Moderate, High, and Very High FHSZ. Each of the zone designations influence how people construct buildings and protect property to reduce risk associated with wildfires. Under State regulations, areas within FHSZs must comply with specific building and vegetation management requirements, described under Regulatory Framework, below, intended to reduce property damage and loss of life within these areas.

The mountainous, highly combustible areas in eastern Sonoma County are mostly mapped by CAL FIRE as Very High FHSZs and, therefore, are most susceptible to wildfires. The area immediately east of the Town is characterized as mixture of Moderate and High FHSZs. Very High FHSZs within the SRA are mapped approximately 2.5 miles north, 1.4 miles northeast, and 2.7 miles west of the project site.¹⁵ The nearest SRA is located approximately 0.3 mile to the east, east of Hillview Road, and approximately 0.5 mile to the north, where hilly terrain and vegetative landscapes are present. These areas within the SRA are designated as Moderate FHSZs. The project site is within an Local Responsibility Area (LRA) and is identified as Moderate FHSZ. Exhibit 4 shows the project sites’ FHSZ, and Exhibit 5 shows the project site in relation to Moderate, High, and Very High FHSZs in both LRAs and SRAs.

CAL FIRE FHSZ mapping of Sonoma County was updated in February 2025. As shown in Exhibit 4, the project site is located in an area mapped by CAL FIRE as Moderate FHSZ in a LRA.

The WUI is defined in Municipal Code Section 7-2-317 as “a geographic area identified by the Town of Windsor as a Moderate Fire Hazard Severity Zone in accordance with Public Resources Code Sections 4201 through 4204, and Government Code, Sections 51175 through 51189, or other areas designated by the enforcing agency to be at significant risk from wildfires, or as designated by Fire Severity Risk Maps provided by the Office of the California State Fire Marshall.” Section 7-2-416 further states that the “Town of Windsor shall be designated as a ‘Moderate Fire Hazard Severity Zone’ or as designated by the Office of the California State Fire Marshall.” The Town’s self-designation aligns with CAL FIRE’s updated mapping. Note that CAL FIRE mapping does not address WUI.

¹⁴ National Oceanic and Atmospheric Administration (NOAA). 2023. U.S. Wind Climatology. May 2023. Website: <https://www.ncei.noaa.gov/access/monitoring/wind/>. Accessed January 28, 2025.

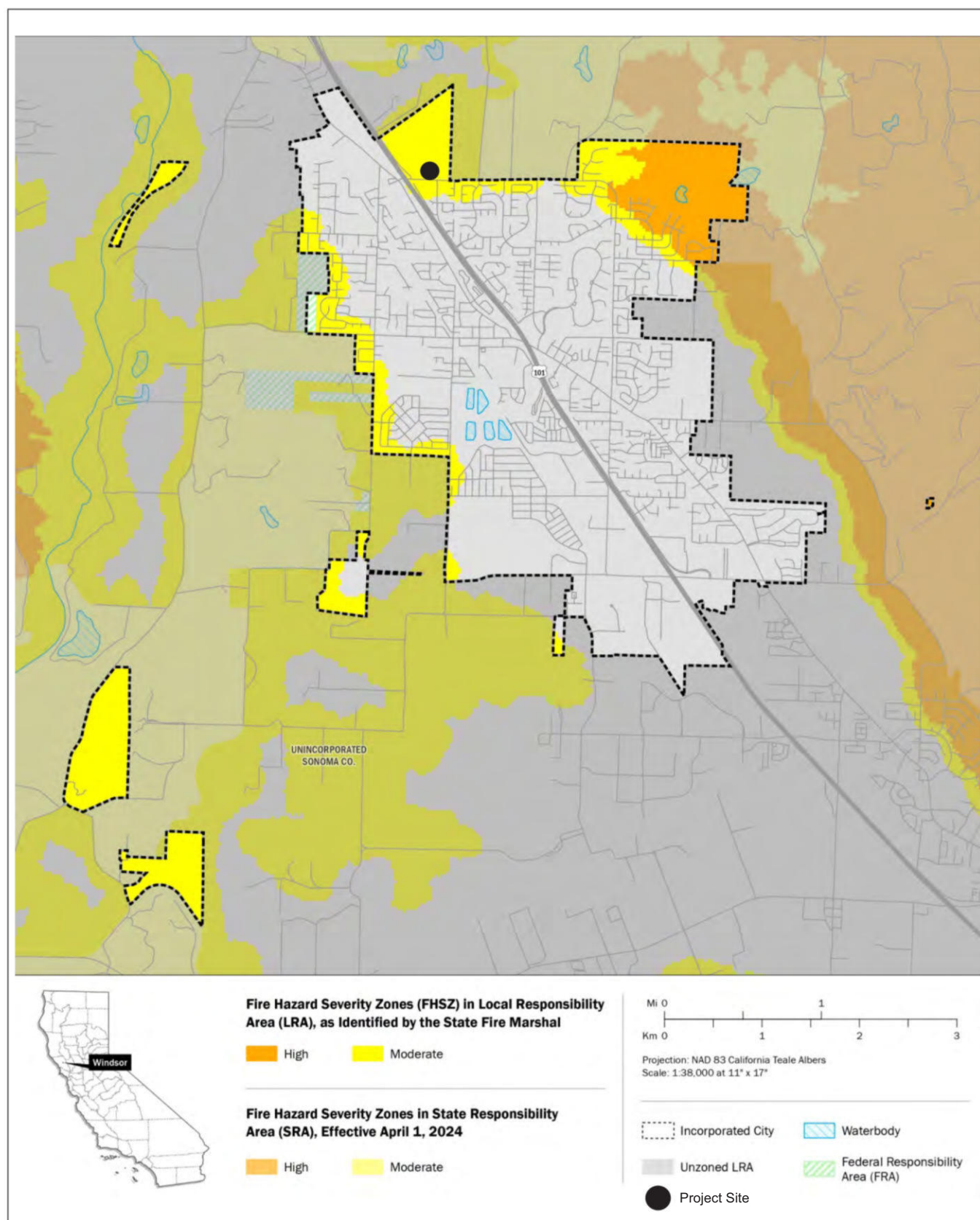
¹⁵ California Department of Forestry and Fire Protection (CAL FIRE). 2023. Fire Hazard Severity Zone Viewer (FHSZ Viewer). Website: <https://fire-hazard-severity-zones-rollout-calfire-forestry.hub.arcgis.com/>. Accessed February 24, 2025.

The WUI is the zone of transition between unoccupied land and human development. It is the line, area, or zone where structures and other human development meet or intermingle with undeveloped wildland or vegetative fuels.¹⁶

The CNRA and the Office of Land Use and Climate Innovation (formerly Office of Planning and Research) have recognized that homes in the WUI are more vulnerable to wildfire, stating that, “although high-density structure-to-structure loss can occur, structures in areas with low- to intermediate-density housing were most likely to burn, potentially due to intermingling with wildland vegetation or difficulty of firefighter access.” Fire frequency also tends to be highest at low to intermediate housing density (rural, very low density of approximately 1–2 dwelling units per acre), at least in regions where humans are the primary cause of ignitions.¹⁷ The proposed project would have a density of 11.7 dwelling units per acre.

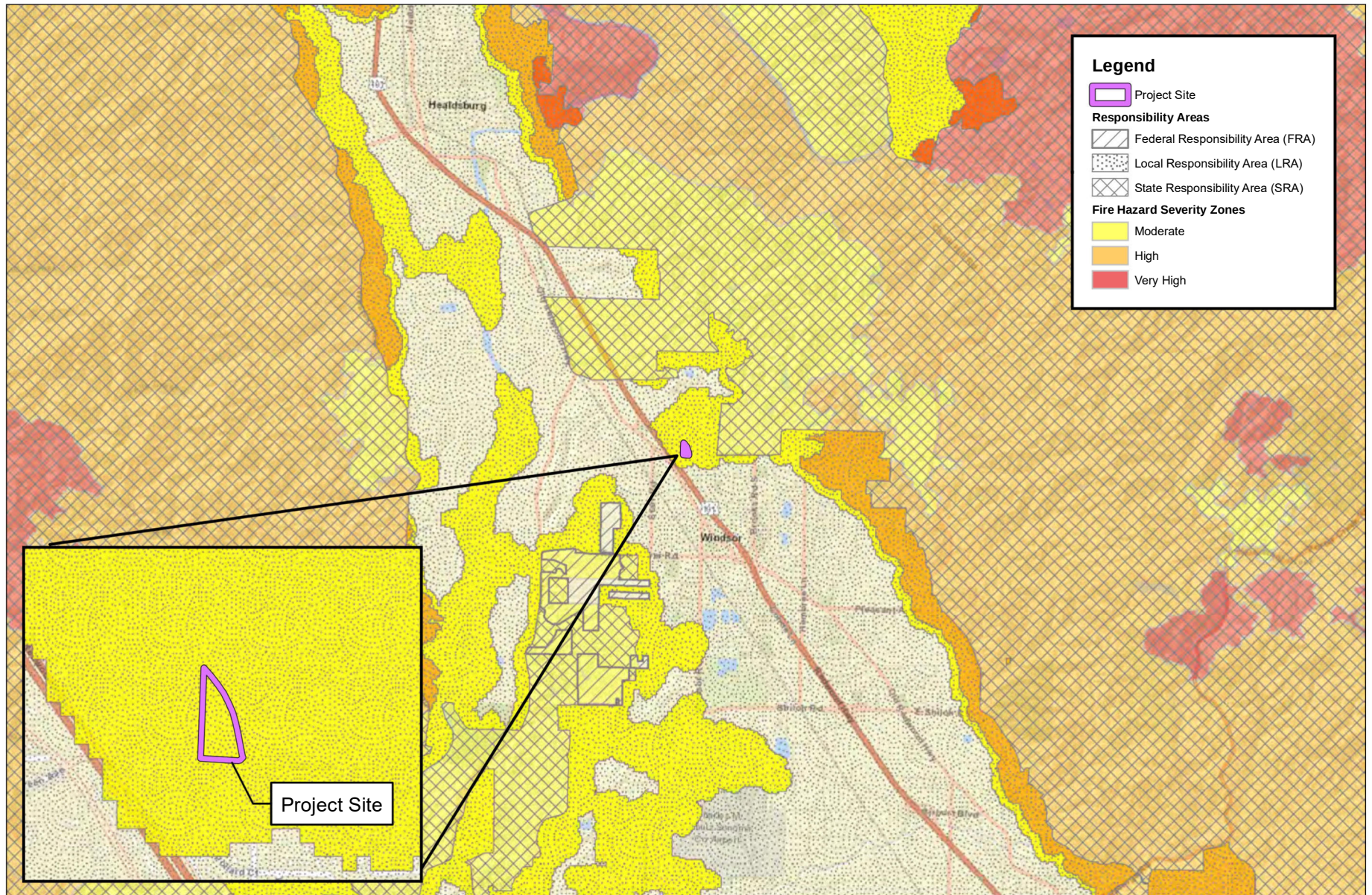
¹⁶ United States Fire Administration. 2023. What is the WUI? Website: <https://www.usfa.fema.gov/wui/what-is-the-wui.html>. Accessed January 28, 2025.

¹⁷ California Natural Resources Agency (CNRA). 2018. Final Statement of Reason for Regulatory Action, Amendments to the State CEQA Guidelines, OAL Notice File No. Z-2018-0116-12.



Source: Town of Windsor.





Source: World Street Map, County of Sonoma, CAL FIRE FRAP.



Recent Wildfires

Between 1964 and 2020, Sonoma County experienced 23 large and/or costly wildfires. Between 2017 and 2020, a series of large and damaging wildfires burned over 300,000 acres, destroyed nearly 7,000 structures, and resulted in fatalities in Sonoma County.¹⁸ Notable fires that occurred between 2017 and 2024 are discussed further, below, and their proximities to the project site are illustrated in Exhibit 6.

- The 2017 Nuns Fire (a part of the 2017 Central LNU Complex) burned 56,566 acres, destroyed 1,355 structures, damaged 172 structures, and caused three fatalities. The Nuns Fire came within approximately 13 miles of the project site.
- The 2017 Tubbs Fire started in northeastern Calistoga, California, approximately 12 miles east of the project site, and burned 36,000 acres over 123 days.¹⁹ The fire destroyed 5,636 structures, damaged an additional 317 structures, and caused 22 deaths.²⁰ The Tubbs Fire came within approximately 4 miles of the project site.
- The 2019 Kincade Fire started near the Geysers geothermal field (northeast of Geyserville, California), approximately 15.6 miles north-northeast of the project site, and burned 77,758 acres over 14 days.²¹ The Kincade Fire posed a significant fire threat to the Town of Windsor, requiring evacuation of all residents, businesses, and governmental offices within Town limits, including the Town's Emergency Operations Center. The fire reached the edge of Town limits and was poised to burn through the Town. Fortunately, the fire was stopped through the aggressive firefighting tactics of local and Statewide firefighting agencies deployed to the area and a shift in weather conditions.
- The 2020 Glass Fire started near Deer Park in Napa County and burned over 67,484 acres in 23 days. The fire destroyed 1,528 structures and damaged an additional 282 structures across both Napa and Sonoma counties.²² The Glass Fire came within approximately 9 miles of the project site.
- The 2020 LNU Lightning Complex fire burned over 363,220 acres across five counties (Napa, Solano, Lake, Sonoma, and Yolo); 57,563 acres burned in Sonoma County and 303 structures were destroyed.²³ The Walbridge portion of the LNU Lightning Complex Fire came within approximately 4 miles of the project site.

¹⁸ Sonoma County. 2021. Sonoma County Multi-Jurisdictional Hazard Mitigation Plan. Update 2021. Volume 1: Area-Wide Elements.

¹⁹ California Department of Forestry and Fire Protection (CAL FIRE). 2019. Tubbs Fire Incident. Website: <https://www.fire.ca.gov/incidents/2017/10/8/tubbs-fire-central-lnu-complex/>. Accessed January 28, 2025.

²⁰ Ibid.

²¹ California Department of Forestry and Fire Protection (CAL FIRE). 2020. Kincade Fire Incident. Website: <https://www.fire.ca.gov/incidents/2019/10/23/kincade-fire/>. Accessed January 28, 2025.

²² California Department of Forestry and Fire Protection (CAL FIRE). 2022. Glass Fire Incident. Website: <https://www.fire.ca.gov/incidents/2020/9/27/glass-fire/>. Accessed January 28, 2025.

²³ California Department of Forestry and Fire Protection (CAL FIRE). 2023. LNU Lightning Complex Incident. Website: <https://www.fire.ca.gov/incidents/2020/8/17/lnu-lightning-complex>. Accessed January 28, 2025.

- The 2022 Roblar Fire started near Roblar Road southwest of Rohnert Park in western Sonoma County, approximately 16 miles south of the project site.²⁴ The fire burned approximately 63 acres and resulted in one fatality, according to the County Sheriff's Office.²⁵
- The 2024 Point Fire started near Geyserville near Lake Sonoma Recreation Area, approximately 14 miles northwest of the project site.²⁶ The fire resulted in the evacuation of approximately 400 residents northwest of Dry Creek Valley, burned approximately 1,207 acres and resulted in the loss of three structures and damage to two structures. One firefighter was injured and 328 people were ordered to evacuate.^{27,28} The Point Fire came within 11 miles of the project site.

²⁴ California Department of Forestry and Fire Protection (CAL FIRE). Roblar Fire. Website: <https://www.fire.ca.gov/incidents/2022/6/27/roblar-fire>. Accessed February 10, 2025.

²⁵ Atagi, C. The Press Democrat. 2022. Fatal Roblar Fire moved quickly, 'looked hot,' neighbor says. Website: <https://www.pressdemocrat.com/article/news/fatal-roblar-fire-moved-quickly-looked-hot-neighbor-says/>. Accessed February 10, 2025.

²⁶ California Department of Forestry and Fire Protection (CAL FIRE). 2024. Point Fire. Website: <https://www.fire.ca.gov/incidents/2024/6/16/point-fire/updates/e14cac15-00ab-4086-b546-e1361bd17611>. Accessed February 2, 2025.

²⁷ Ibid.

²⁸ Callahan, M. The Press Democrat. 2024. Sheriff's Office: Point Fire evacuations lifted, residents advised to use caution as they return. Website: <https://www.pressdemocrat.com/article/news/point-fire-sonoma-evacuations/>. Accessed February 2, 2025.

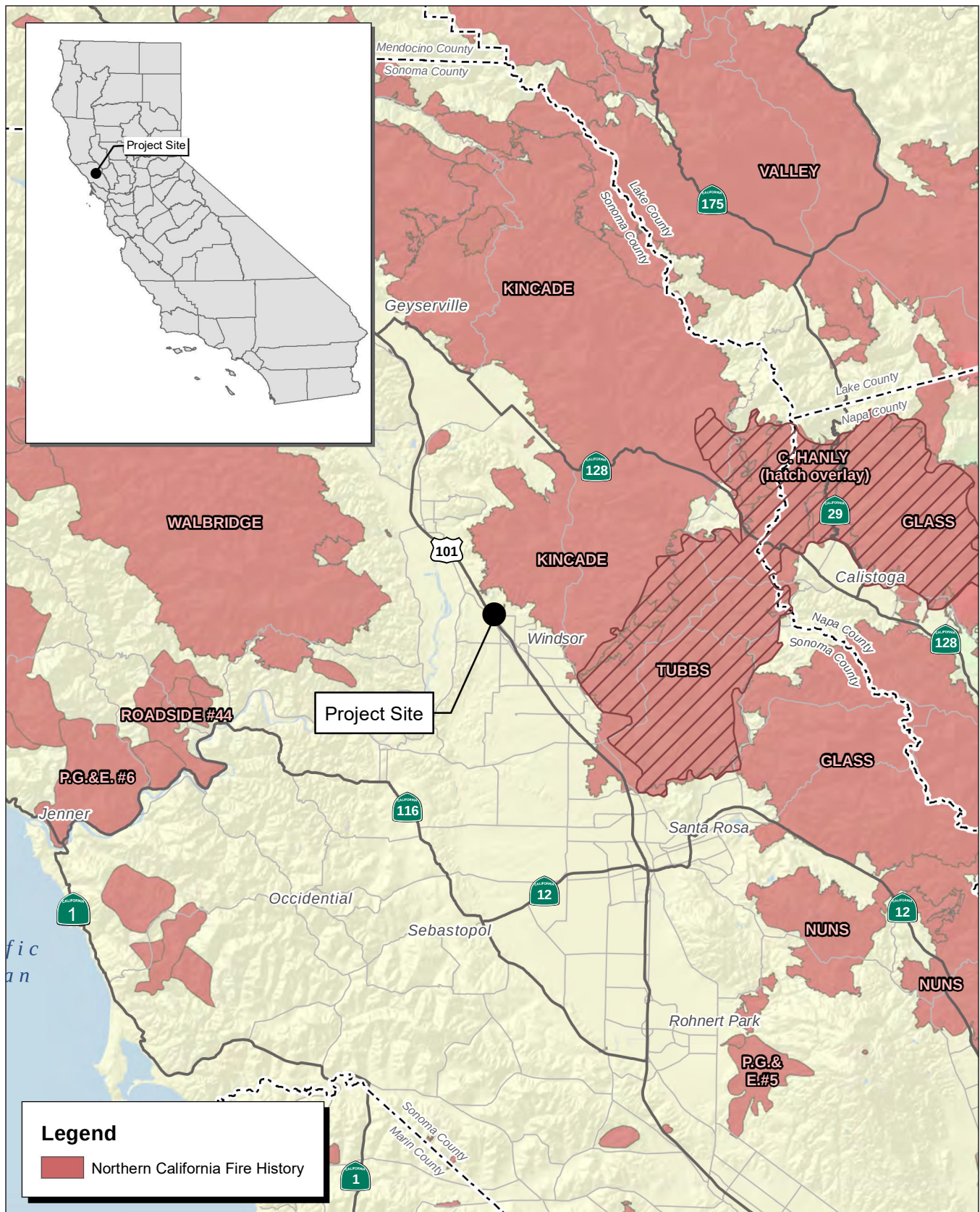


Exhibit 6 Recent Wildfires in Northern California

Wildfire Response

In California, responsibility for wildfire prevention and suppression is shared by federal, State, and local agencies. Federal agencies are responsible for federal lands in Federal Responsibility Areas (FRAs). The State of California has determined that some non-federal lands in unincorporated areas with watershed value are of Statewide interest and has classified those lands as SRAs, which are managed by CAL FIRE. All incorporated areas and other unincorporated lands are classified as LRAs. The project site is within an LRA (see Exhibit 4 and Exhibit 5).

Fire protection services in the Town are provided by Sonoma County Fire District, which has two fire stations in the Town. The closest station to the project site is Sonoma County Fire District Station 3, approximately 1.6 miles south of the project site at 8600 Windsor Road. Station 1, also serving as the Sonoma County Fire District Headquarters, is approximately 2 miles southeast of the project site at 8200 Old Redwood Highway. The Sonoma County Sheriff's Office is contracted by the Town to provide law enforcement services to the Town. Under this contract, the Sonoma County Sheriff's Office would be responsible for executing evacuations.

The Town utilizes Facebook and Nextdoor (both internet communication platforms) to release important information to the community including evacuation alerts. Although the Town also currently uses Nixle, an internet communication platform, the Town will be retiring its account on July 1, 2025. However, Windsor Police Department will retain Nixle as an alerting tool. In addition, Sonoma County uses SoCo Alert to disseminate messages regarding the safety, property, or welfare of Sonoma County residents. Local fire and law enforcement agencies may also use Nixel to disseminate public safety messages.

The Town, in coordination with Sonoma County Emergency Management, Sonoma County Fire District, Sonoma County Sheriff's Office, and other local agencies in the County, has made significant improvements in emergency preparedness, response, and communications since the wildfires that occurred in 2017. Such improvements include use of the aforementioned communication platforms; development of internal preparedness procedures and practices as part of the Sonoma County Multi-Jurisdictional Hazards Mitigation Plan and the Sonoma County Emergency Operations Plan (both discussed under Regulatory Framework, below); establishment of a publicly available web page on how to prepare for and what to do in the event of an emergency;²⁹ development and publication of evacuation maps (as discussed under Evacuation Routes, below); adoption of more stringent building code requirements (as discussed under Town of Windsor Municipal Code, below); and establishment of a neighborhood-focused COPE program.³⁰

²⁹ Town of Windsor. 2023. Emergency Preparedness & Resources. Website: <https://www.townofwindsor.com/1116/Emergency-Preparedness>. Accessed January 28, 2025.

³⁰ Town of Windsor. 2023. Windsor COPE. Website: <https://www.townofwindsor.com/1293/COPE-of-Windsor>. Accessed August 19, 2023.

Evacuation Routes

U.S. Highway 101 (US-101) and Old Redwood Highway are the main north–south routes out of Town during evacuations.^{31,32} As required by the State of California, the recently adopted 2040 General Plan PHS Element, Figure PHS-3 (Evacuation Routes) identifies additional evacuation routes, including Windsor River Road, Starr Road, Windsor Road, Hembree Lane, Brooks Road, Arata Lane, Los Amigos Road, and Shiloh Road, which are suitable for localized evacuations. Evacuation Zone Maps compiled by the Windsor Police Department and The Town of Windsor Climate Resilience Plan split the Town into four Evacuation Zone Areas. The project site is located in Zone WI-B, Subzone WI-B01. Per the Town's Evacuation Map Lookup Tool, Zone WI-B would use Arata Lane to Los Amigos Road, US-101, and Old Redwood Highway to evacuate to the north; Arata Lane to Hembree Lane³³ to Old Redwood Highway and US-101 to the south; and Arata Lane to Old Redwood Highway to Windsor River Road to the west. It is reasonable to assume that evacuation of the project site would primarily use Arata Lane to Old Redwood Highway to US-101.^{34,35} Actual evacuation route may vary depending on the location of the threat causing the need for evacuation.

Arata Lane forms the southern boundary of the project site and US-101 is approximately 840 feet to the west; however, there are no US-101 on-ramps from Arata Lane. Instead, traffic is required to travel west of US-101 to Old Redwood Highway. From the Old Redwood Highway/Arata Lane intersection, a southbound US-101 on-ramp is located approximately 2,100 feet to the north. Access to a northbound US-101 on-ramp requires traffic to turn south from the Old Redwood Highway/Arata Lane intersection and then left on Windsor River Road, a distance of approximately 1.4 miles.

Construction of a US-101 and Arata Lane northbound on-ramp is planned by the Town and is included in the Town's Capital Improvement Program (CIP) for Fiscal Years (FY) 2023–2028; design of the northbound ramp is expected to occur in FY 2026–2027.³⁶ Development, such as the proposed project, contributes to funding these improvements via payment of traffic impact fees. Construction of the Los Amigos Road extension is needed before construction of the on-ramp can begin. Until such construction takes place, the proposed project would include partial extension of Los Amigos Road from its intersection with Arata Lane to the project site's north end (Exhibit 2). While the project site would have two points of ingress and egress, only the Arata Lane entrance could be considered an emergency access point since both points of access return to Arata Lane. Timing for construction of the new US-101 on-ramp and further extension of Los Amigos Road is dependent on funding sources and is unknown at this time.

³¹ Town of Windsor. 2021. Town of Windsor Emergency Evacuation Zones/Sub-Zones. May 2021.

³² Town of Windsor. 2023. 2040 General Plan Public Health and Safety Element. August 16.

³³ The southern route of evacuation for the Zone may vary depending on the location of the threat causing the need for evacuation.

³⁴ Town of Windsor. Emergency Preparedness and Resources. Website: <https://www.townofwindsor.ca.gov/1116/Emergency-Preparedness-Resources>. Accessed April 15, 2025.

³⁵ Town of Windsor. 2022. Climate Resilience Plan. February. Website: <https://windsorready.com/summary>. Accessed January 28, 2025.

³⁶ Town of Windsor. 2023. Capital Improvement Plan FY2023-2028, June 21. Website: <https://www.townofwindsor.ca.gov/DocumentCenter/View/28313/Capital-Improvement-Projects-FY-2023-2028>. Accessed April 15, 2025.

Regulatory Framework

Federal

The Disaster Mitigation Act of 2000

The Disaster Mitigation Act of 2000 requires a State-level mitigation plan as a condition of disaster assistance. There are two different levels of State disaster plans: Standard and Enhanced. States that develop an approved Enhanced State Plan can increase the amount of funding available through the Hazard Mitigation Grant Program. The Act also established new requirements for local mitigation plans.

National Fire Plan

The National Fire Plan was developed in August 2000, following a historic wildfire season. Its intent is to establish plans for active response to severe wildfires and their impacts on communities while ensuring sufficient firefighting capacity. The plan addresses firefighting, rehabilitation, hazardous fuels reduction, community assistance, and accountability.

State

California Board of Forestry

The Board of Forestry maintains fire safe road regulations as part of Title 14 of the California Code of Regulations. This includes requirements for road width, surface treatments, grade, radius, turnarounds, turnouts, structures, driveways, and gate entrances. These regulations are intended to ensure safe access for emergency wildland fire equipment and civilian evacuation.

California Fire and Building Codes (2022)

On September 20, 2005, the California Building Standards Commission approved the Office of the State Fire Marshal's emergency regulations amending the California Code of Regulations Title 24, Part 2, known as the CBC.³⁷ The California Fire Code (Fire Code), is Part 9 of California Code of Regulations Title 24, and it includes provisions for ignition-resistant construction standards in Fire Hazard Severity Zones. It establishes the minimum requirements consistent with nationally recognized best practices to safeguard public health, safety, and general welfare from the hazards of fire, explosion, or dangerous conditions in new and existing buildings, structures, and premises and to provide safety and assistance to firefighters and emergency responders during emergency operations. The Fire Code is the primary means for authorizing and enforcing procedures and mechanisms to ensure the safe handling and storage of any substance that may pose a threat to public health and safety. The Fire Code regulates the use, handling, and storage requirements for hazardous materials at fixed facilities. The Fire Code and the CBC use a hazard classification system to determine what protective measures are required to protect property and life from fire hazards. These measures may include construction standards, separations from property lines, and specialized equipment. To ensure that these safety measures are met, the Fire

³⁷ California Department of Forestry and Fire Protection (CAL FIRE). 2023. Wildland Hazards and Building Codes. Website: <https://osfm.fire.ca.gov/what-we-do/code-development-and-analysis/wildland-hazards-and-building-codes>. Accessed January 30, 2025.

Code employs a permit system based on hazard classification. The provisions of the Fire Code apply to the construction, alternation, movement, enlargement, replacement, repair, equipment, use and occupancy, location, maintenance, removal, and demolition of every building or structure or appurtenances connected or attached to such building structures throughout California.

California Code of Regulations Title 24, Part 9, Chapter 7 of the Fire Code addresses fire-resistance-rated construction; CBC (Part 2), Chapter 7A addresses materials and construction methods for exterior wildfire exposure. Fire Code Chapter 8 addresses fire-related interior finishes; Chapter 9 addresses fire protection systems; and Chapter 10 addresses fire-related means of egress, including fire apparatus access road width requirements.

Per Section 701A.3.2 of Title 24, Part 2, new buildings located in any FHSZ within an SRA, any Very High FHSZ within in LRA, or any WUI Fire Area as designated by the enforcing agency for which an application for a building permit is submitted must comply. The section establishes minimum standards for materials and material assemblies and provides a reasonable level of exterior wildfire exposure protection for buildings located in such designated areas. Such standards include the use of ignition-resistant and non-combustible materials, specific roofing configurations, and ventilation coverings.

Prior to building permit final approval, Fire Code Section 4906 also contains existing regulations for vegetation and fuel management to maintain clearances around all structures. These requirements establish minimum standards to protect buildings located in all FHSZs within SRAs and WUI Fire Areas. The Fire Code includes provisions for ignition-resistant construction standards for new buildings.

The California Fire Plan

The Strategic Fire Plan (Fire Plan) for California is the State's road map for reducing the risk of wildfire. The most recent version of the Fire Plan was finalized in August 2018 and directs each CAL FIRE unit to revise and update its locally specific Fire Management Plan (Management Plan).³⁸ Management Plans assess the fire situation within each of the 21 CAL FIRE units and six contract counties and address wildfire protection areas, initial attack success, assets and infrastructure at risk, pre-fire management strategies, and accountability within their geographical boundaries.

California Office of Emergency Services

The California Office of Emergency Services (Cal/OES) prepares the State of California Multi-Hazard Mitigation Plan (SHMP). The SHMP identifies hazard risks and includes a vulnerability analysis and a hazard mitigation strategy. The SHMP is federally required under the Disaster Mitigation Act of 2000 for the State to receive federal disaster assistance funding.

³⁸ California Department of Forestry and Fire Protection (CAL FIRE). 2018. 2018 Strategic Plan for California. State Board of Forestry and Fire Protection. August.

State Emergency Plan

The foundation of California's emergency planning and response is a Statewide mutual aid system, which is designed to ensure that adequate resources, facilities, and other support are provided to jurisdictions whenever their own resources prove to be inadequate to cope with an emergency situation.

The California Disaster and Civil Defense Master Mutual Aid Agreement (California Government Code §§ 8555–8561) requires signatories to the agreement to prepare operational plans to use within their jurisdiction and outside their area. These operational plans include fire and non-fire emergencies related to natural, technological, and war contingencies. The State of California, all State agencies, all political subdivisions, and all fire districts signed this agreement in 1950.

Section 8568 of the California Government Code, the California Emergency Services Act (Act), states that “the State Emergency Plan shall be in effect in each political subdivision of the State, and the governing body of each political subdivision shall take action as may be necessary to carry out the provisions thereof.” The Act provides the basic authorities for conducting emergency operations following the proclamations of emergencies by the Governor or appropriate local authority, such as a City Manager. The provisions of the Act are further reflected and expanded on by appropriate local emergency ordinances. The Act describes the function and operations of government at all levels during extraordinary emergencies, including war.

All local emergency plans are extensions of the State of California Emergency Plan. The State Emergency Plan conforms to the requirements of California's SEMS, which is the system required by Government Code 8607(a) for managing emergencies involving multiple jurisdictions and agencies.³⁹ The SEMS incorporates the functions and principles of the Incident Command System (ICS), the Master Mutual Aid Agreement, existing mutual aid systems, the operational area concept, and multi-agency or inter-agency coordination. Local governments must use the SEMS to be eligible for funding of their response-related personnel costs under State disaster assistance programs. The SEMS consists of five organizational levels that are activated as necessary, including: field response, local government, operational area, regional, and State. Cal/OES divides the State into several mutual aid regions. The Town is within Mutual Aid Region II, which includes Del Norte, Humboldt, Mendocino, Sonoma, Lake, Napa, Marin, Solano, Contra Costa, San Francisco, San Mateo, Alameda, Santa Clara, Santa Cruz, San Benito, and Monterey counties.⁴⁰

California Public Resources Code

The California Public Resources Code includes fire safety regulations that restrict the use of equipment that may produce a spark, flame, or fire; require the use of spark arrestors⁴¹ on construction equipment that use an internal combustion engine; specify requirements for the safe use of gasoline-powered tools

³⁹ California Office of Emergency Services (Cal/OES). 2010. Regulations for the Standardized Emergency Management System (SEMS). California Emergency Management Agency.

⁴⁰ California Office of Emergency Services (Cal/OES). 2023. Coastal Region Operational Area Assignments. June.

⁴¹ A spark arrester is any device that prevents the emission of flammable debris from a combustion source (i.e., fireplaces, internal combustion engines, and wood-burning stoves).

in fire hazard areas; and stipulate fire suppression equipment that must be provided on-site for various types of work in fire-prone areas.

These regulations include the following:

- Earthmoving and portable equipment with internal combustion engines would be equipped with a spark arrester to reduce the potential for igniting a wildland fire (PRC § 4442);
- Appropriate fire suppression equipment would be maintained during the highest fire danger period—from April 1 to December 1 (PRC § 4428);
- On days when a burning permit is required, flammable materials would be removed to a distance of 10 feet from any equipment that could produce a spark, fire, or flame, and the construction contractor would maintain the appropriate fire suppression equipment (PRC § 4427); and
- On days when a burning permit is required, portable tools powered by gasoline-fueled internal combustion engines would not be used within 25 feet of any flammable materials (PRC § 4431).

Government Code Sections 65302 and 65305.5, Senate Bill 1241 (Kehoe) of 2012

Senate Bill (SB) 124 requires cities and counties to address fire risk in SRAs and Very High FHSZs in the safety element of their general plans. The bill also amended CEQA to direct amendments to the CEQA Guidelines Appendix G Environmental Checklist to include questions related to fire hazard impacts for projects located in or near lands classified as SRAs and Very High FHSZs. In adopting these Guidelines amendments, the California Governor's Office of Planning and Research (OPR) recognized that, generally, low-density leapfrog development may create higher wildfire risks than high-density infill development.

California Public Utilities Commission General Order 166

General Order 166 Standard 1.E requires investor-owned utilities (IOUs) with overhead electric facilities located in the High Fire Threat District to develop a Wildfire Mitigation Plan which describes measures that the electric utility will implement to mitigate the threat of powerline fires generally. Additionally, this standard requires that IOUs outline a plan to mitigate powerline fires when wind conditions exceed the structural design standards of the line during Red Flag Warning in a high fire threat area. Wildfire Mitigation Plans created by IOUs are required to identify specific parts of the utility's service territory where the conditions described above may occur simultaneously. Standard 11 requires that utilities report annually to the CPUC regarding compliance with General Order 166.⁴²

Regional

Association of Bay Area Governments Hazard Mitigation Plan

The Association of Bay Area Governments (ABAG) Multi-Jurisdictional Local Hazard Mitigation Plan (MJHMP) for the San Francisco Bay Area was updated in 2010, in partnership with the Bay Conservation

⁴² California Public Utilities Commission (CPUC). 2021. General Order Number 166. Adopted July 23, 1998. Revised May 20, 2021.

and Development Commission, to include the Adapting to Rising Tides Program, which supports local governments in the regional plan for existing and future hazards of climate change. This detailed 5-year plan identifies potential natural and human-made hazards, assesses their potential risks, and includes mitigation methods to reduce risks. The potential hazards identified in the plan include earthquakes and liquefaction, wildfires, floods, drought, solar storms, dam or levee failure, disease outbreak, freezes, wind, heat, thunder and lightning storms, siltation, tornadoes, hazardous materials, slope failure and mudflows, and other hazards. Similarly, mitigation measures include hazard event planning, emergency preparedness coordination, education, facility upgrades, and monitoring actions.

Local

Sonoma County Multi-Jurisdictional Hazard Mitigation Plan

The Town is included in the Sonoma County Multi-Jurisdictional Hazard Mitigation Plan (Sonoma County MJHMP), which incorporates wildfire hazard mitigation principles and practices into the routine government activities and functions of the County. The Sonoma County MJHMP recommends specific actions that are designed to protect people and community assets from losses to those hazards that pose the greatest risk. Mitigation activities identified in the Sonoma County MJHMP related to wildfire include fuel reduction and vegetation management, creation of defensible spaces, enhancement of building codes, use of fire-resistant materials, and increased education efforts.⁴³

The Town participated in the Sonoma County MJHMP, including the adoption of Windsor's Annex to the MJHMP, which identifies effective and feasible actions to reduce the risks posed by potential natural hazards. With inclusion of the Town's Annex, the MJHMP functions as the Town's local hazard mitigation plan. The Sonoma County MJHMP assesses various risks from hazards such as drought, earthquakes, flood, and wildfire; lists mitigation actions; and describes the process of implementing, monitoring, and evaluating the plan. Wildfire is identified as a high threat that is likely to increase as climate change is exacerbated.

Sonoma County Emergency Operations Plan

The Sonoma County Emergency Operations Plan (EOP) is intended to facilitate coordination between agencies and jurisdictions within Sonoma County prior to, during, and after disasters, including wildfire. The EOP outlines the specific actions that will be carried out when an emergency exceeds or has the potential to exceed the capacity of a single agency or jurisdiction to respond. The EOP identifies the project site's wildfire hazard index primarily as Low relative hazard to Very Low relative hazard. Minor areas of the project site are as identified as Moderate relative hazard. Areas to the north and northwest are identified as Very Low relative hazard, while areas to the east, south, and west are designated in a manner similar to the project site.

Town of Windsor Emergency Operations Plan

The purpose of the Town of Windsor EOP is to ensure the most effective, efficient, and economical allocation of resources for the maximum benefit and protection of the Town in times of emergency. The

⁴³ Sonoma County. 2021. Sonoma County Multi-Jurisdictional Hazard Mitigation Plan Update. October. Website: <https://permitsonoma.org/longrangeplans/adoptedlong-rangeplans/hazardmitigation>. Accessed January 30, 2025.

objective of this plan is to incorporate and coordinate all the personnel and facilities of the Town, the Town's emergency services partners Windsor Police Department and Sonoma County Fire District, and associated agencies and organizations, into an efficient organization capable of responding to the whole community during any emergency. The Town's EOP is an extension of the Sonoma County EOP and the State of California Emergency Plan.

Town of Windsor Climate Resilience Plan

The Town's Climate Resilience Plan identifies and quantifies the Town's potential climate change risks and vulnerabilities. The Climate Resilience Plan also identifies resilience strategies that resonate with the community and can be implemented in the coming years to reduce climate-related risks. The Climate Resilience Plan guides current and future decision-makers in protecting the natural and built environment, residents and visitors, the economic vibrancy of the community, and the overall quality of life within Windsor. Wildfire is identified as a risk within the Town. To address wildfire risks, the Climate Resilience Plan includes goals to enhance vegetation management and defensible space efforts, expand home hardening, and cultivate wildfire-adapted landscape practices. The Climate Resilience Plan also includes a goal to enhance community evacuation planning and evacuation, in accordance with the findings and recommendations for evacuation routes from the Windsor Police Department⁴⁴

Town of Windsor 2040 General Plan

The 2040 General Plan includes goals and policies that convey the Town's long-term vision and guide local decision-making to reach that vision. Goal PHS-1 of the 2040 General Plan PHS Element and associated policies are related to emergency response and preparedness, including emergency vehicle access, and Goal PHS-4 of the 2040 General Plan PHS Element and associated policies are related to fire hazards.

Goal PHS-1 Emergency Response and Preparedness. Maintain a high level of emergency preparedness to respond to natural or human-caused disasters.

Policy PHS-1.3 Emergency Vehicle Access. The Town shall require adequate primary and alternative access for emergency vehicles be provided to all new developments and be maintained for existing development.

Goal PHS-4 Fire Hazards. Minimize the risks to lives and properties due to wildland fire hazards through education and an understanding of the natural environment.

Policy PHS-4.1 Fire Protection Design for New Development. New development adjacent to heavily grassed and semi-arid hillsides shall be designed to minimize fire hazards to life and property, including the use of fire preventive site design (i.e., defensible space), landscaping and building materials, and fire suppression techniques.

⁴⁴ Town of Windsor. Emergency Preparedness and Resources. Website: <https://www.townofwindsor.ca.gov/1116/Emergency-Preparedness-Resources>. Accessed April 15, 2025.

- Policy PHS-4.16 Establish Firebreaks.** Establish firebreaks around subdivisions in the North of Arata area and Jensen Lane area. These firebreaks shall also serve as roadways and access points in the event of an emergency and provide adequate access for fire and emergency vehicles and equipment.
- Policy PHS-4.2 County Fire Hazard Reduction Programs.** In areas beyond the Town limits designated as a High or Very High Fire Hazard Severity Zone by CAL FIRE or in the wildland urban interface, the Town shall encourage the County to undertake or continue programs to minimize fuel buildup around residences and other occupied structures. Such programs should include the establishment and maintenance of a fuel break between fire risk areas and urbanized areas.
- Policy PHS-4.3 Fire Suppression Requirements.** The Town shall require additional mitigation for development projects unable to satisfy minimum fire flow requirements.
- Policy PHS-4.4 Fire Interjurisdictional Coordination.** The Town shall encourage the County to incorporate any measures provided by the fire protection service providers as conditions of project approval for projects in unincorporated areas located within a Moderate, High, or Very High Fire Hazard Severity Zone or in the wildland urban interface.
- Policy PHS-4.5 State Responsibility Lands.** The Town shall generally avoid inclusion of lands within the State Responsibility Area in its Sphere of Influence, since annexation of these areas requires the Fire District to assume responsibility for wildland fire protection.
- Policy PHS-4.6 Project Review for Proposals in Fire Hazard Areas.** The Town shall require that fire hazards be identified during project review by comparing the project site against the fire hazard maps prepared by CAL FIRE. Project sites that lie within the Moderate, High, or Very High Fire Hazard Severity Zones or in the wildland urban interface areas shall be subject to design modifications and conditions to minimize potential exposure to wildland fire and to allow adequate response, including rapid access by emergency responders and sufficient capacity for evacuation.
- Policy PHS-4.7 Weed Abatement.** The Town shall continue to support the Fire District's efforts to maintain and implement a Weed Abatement program to prevent fire hazards created by vegetative growth.
- Policy PHS-4.9 Priority Undergrounding.** Prioritize undergrounding of utilities along emergency access and evacuation routes to make them more reliable and to minimize hazards from fallen power lines.

Town of Windsor Municipal Code

The California Fire Code and Appendices was adopted into the Municipal Code under Title VI, Fire Prevention and Protection, Chapter 1, Article 2. The Town adopted the most recent 2022 California Fire Code under Ordinance No. 2022-369 on December 21, 2022. The California Fire Code is discussed under State Regulations. Section 4903 of the California Fire Code calls for a fire protection plan that addresses water supply, access, building ignition and fire-resistance factors, fire protection systems and equipment, defensible space, and vegetation management for any new residential building within a WUI Fire Area. The property owner shall record a covenant, in a form satisfactory to county counsel, which ensures that the approved plan will be implemented and maintained. Under Municipal Code Section 7.2.317 Section 702A, the entire Town is classified as a Moderate Fire Hazard Severity Zone. (Exhibit 4); thus, the Town's Building Code requiring use of fire-resistant materials and construction methods applies to all properties in Town, regardless of location. As such, compliance with Public Resources Code, Article 2 (Prohibited Activities), including the use of fire suppression equipment (PRC § 4228) and limitations on use of gas-powered tools (PRC § 4331), is required. Additionally, Municipal Code Sections 7-2-400 through 7-2-424 require new projects to incorporate exterior design features such as ignition-resistant construction materials, roofing, exterior coverings, venting, decking, porches and sealing of any gaps around doors, windows, eaves and vents. Municipal Code Section 16-6-300 requires new projects to pay project impact fees to ensure sufficient fire protection services. Furthermore, as stated above, California Code of Regulations Title 24, Part 9, Chapter 7A addresses materials and construction methods for exterior wildfire exposure. Confirmation of the proposed project's compliance with Chapter 7A is provided in Attachment A to this memorandum.

As a part of Ordinance No. 2022-369, among other updates, the Town amended the Municipal Code to repeal and replace Title VII, Building and Housing Code. Title VII includes numerous provisions related to residential development and recognizes the creation of the Division of Fire Protection for Sonoma County Fire District (Section 7-2-308 Section 701A.1 to Section 7-2-321-Section 710A.3) that is responsible for implementation and enforcement of fire-related requirements in the Municipal Code. Additionally, the Town requires compliance with the 2022 California Residential Code and Fire Code Section 4905.4 related to requirements for WUI Fire Areas.

Methodology and Thresholds of Significance

This evaluation focuses on whether the proposed project would result in changes to the physical environment that would cause or exacerbate adverse effects related to wildfires and whether the proposed project would be placed in a location susceptible to wildfire or post-wildfire conditions. The evaluation also includes a determination of whether the changes to the physical environment caused by the proposed project would impair or interfere with emergency response plans, expose people to pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire, expose people/structures to downslope flooding or landslides, or include the installation or maintenance of infrastructure that may exacerbate fire risk.

Although the proposed project is not located in or near SRAs or lands classified as Very High FHSZ, for purposes of this analysis, the questions in the CEQA Guidelines Appendix G Environmental Checklist are

used as a framework to determine whether wildfire impacts would be considered significant from implementation of the proposed project.⁴⁵ The following criteria are from Section XX, Wildfire:

If located in or near State Responsibility Areas or lands classified as Very High Fire Hazard Severity Zones, would the project:

- a) Substantially impair an adopted emergency response plan or emergency evacuation plan?
- b) Due to slope, prevailing winds, and other factors, exacerbate wildfire risks, and thereby expose project occupants to pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire?
- c) Require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, powerlines or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment?
- d) Expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes?

In addition to the above criteria, this analysis includes the following CEQA Guidelines Appendix G Environmental Checklist questions related to wildfire hazard from Section IX, Hazards and Hazardous Materials:

- a) Impair implementation of, or physically interfere with, an adopted emergency response plan or emergency evacuation plan?
- b) Expose people or structures, either directly or indirectly, to a significant risk of loss, injury, or death involving wildland fires?

Project Impacts and Mitigation Measures

This section discusses potential impacts associated with the development of the proposed project and provides mitigation measures where appropriate.

Emergency Response/Evacuation Plan Consistency

Impact WILD-1: The proposed project would not substantially impair an adopted emergency response plan or emergency evacuation plan.

Impact Analysis

Consistent with guidance provided in CEQA Guidelines Appendix G, a significant impact would occur if the proposed project were located in or near SRA lands or lands classified as Very High FHSZ and if construction or operation of the proposed project would substantially impair an adopted emergency response plan or emergency evacuation plan.

⁴⁵ Office of Attorney General. 2022. Best Practices for Analyzing and Mitigating Wildfire Impacts of Development Projects under the California Environmental Quality Act. October.

The project site is located within an LRA, not an SRA. The project site is not located in a Very High or High FHSZ as designated by CAL FIRE and the State Fire Marshall. It is noted that, as indicated by Section 7-2-416 of the Municipal Code, the entire Town shall be considered as a Moderate FHSZ for the purposes of implementing additional regulations per the Fire Code.

The proposed project is subject to the Sonoma County MJHMP (which includes the Town's Annex) and EOP, as well as the Town's EOP.⁴⁶ Construction and operation activities related to the proposed project would not conflict with policies or goals of these plans. These plans are generally applicable and do not identify any specific actions or considerations directly for the project site. The proposed project would comply with general guidance provided by these plans, including those for emergency response and general hazard mitigation measures, through conformance with the requirements of the California Building Standards Code (specifically Chapter 7A as stated in Attachment A) and the 2040 Town of Windsor General Plan's Public and Safety Element).

As shown on Exhibit 3, US-101 and Old Redwood Highway are two main north-south routes utilized by the Town during evacuations and are identified within the local Evacuation Zone maps provided by the Windsor Police Department.⁴⁷ Construction traffic would utilize these roads and Arata Lane to access the project site. Construction traffic would be temporary and would not be expected to significantly block traffic, as construction would be completed in one phase and would involve only minor off-site improvements to Arata Lane, as shown in Sheet TM5 of the Tentative Map for the proposed project. The project would not impact the use of emergency evacuation routes through the modification of existing roadways (either through elimination, reduction in width, or blockage).

Operational traffic would contribute to vehicle trips on these roads and other roads identified as emergency evacuation routes by the Windsor Police Department, as shown in the Town's Evacuation Map Lookup Tool for the WI-B evacuation zone.⁴⁸ An impact could occur related to the physical interference with an emergency evacuation plan if a project's additional traffic would significantly delay or inhibit overall evacuation of an area. The proposed project's is relatively small and vehicular traffic associated with it would not significantly delay an emergency evacuation because evacuation notices are typically given with as much notice as possible and prevent, to the extent feasible, evacuation trips from all occurring at once.

The 2040 General Plan anticipated buildout within the Town's Urban Growth Boundary, as well as transportation infrastructure improvements to which the proposed project would contribute, including the installation of two travel lanes, a parking lane, a buffered bicycle lane, and a contiguous sidewalk as well as planter, curb, and gutter improvements along the Los Amigos Road extension. While the proposed project would increase the number of people in the area, it would also contribute to the Town's transportation infrastructure through payment of traffic impact fees and the construction of a partial

⁴⁶ Town of Windsor. 2024. Emergency Operations Plan. Website: <https://www.townofwindsor.ca.gov/DocumentCenter/View/30400/2024-Town-of-Windsor-Emergency-Operations-Plan->. Accessed April 15, 2025.

⁴⁷ Town of Windsor. Emergency Preparedness and Resources. Website: <https://www.townofwindsor.ca.gov/1116/Emergency-Preparedness-Resources>. Accessed April 15, 2025.

⁴⁸ Town of Windsor. Emergency Preparedness and Resources. Website: <https://www.townofwindsor.ca.gov/1116/Emergency-Preparedness-Resources>. Accessed April 15, 2025.

extension of the Los Amigos Road extension. Future completion of the Los Amigos Road extension will facilitate construction of the US-101 and Arata Lane northbound on-ramp, which would benefit local traffic circulation and lead to improved evacuation efficiency by providing closer US-101 access.

As stated above, the project site would include two ingress and egress points. However, only the one on Arata Lane would be considered as an emergency access point, as the one on the proposed extension of Los Amigos Road also leads to Arata Lane and therefore does not provide an alternate emergency route. The proposed project was reviewed by the Town's Fire Marshal to ensure adequate emergency access in accordance with applicable federal, State, and local regulations. The proposed project would slightly exceed the Fire Marshal's requirements of a 1:30 ratio regarding access points by providing one emergency access point on Arata Lane for the proposed project's 32 units, as illustrated on Exhibit 2.

The applicant is coordinating with Town staff to secure Fire Marshall approval for an exception that would allow one point of access for 32 units. This request is based on the following factors, as shown in the applicant's Project Statement,⁴⁹ provided as Attachment B to this memorandum:

- The project site can be accessed via Arata Lane from the west where the proposed private street intersects with Arata Lane at the southern end of the project site.
- The project site can be accessed from the east via Arata Lane or from the south via Los Amigos Road where the proposed private street intersects with the Los Amigos Road extension at the north end of the project site.
- No more than 32 units would be served by the private street as there is no possibility that the proposed private street could be extended to adjacent properties.

As previously mentioned, the project site would be accessible from multiple directions via adjacent roadways, including Arata Lane from the east and west and Los Amigos Road from the south. The proposed project is also accessible to multiple evacuation routes, as delineated in Figure PHS-3 of the 2040 General Plan⁵⁰ (see Exhibit 3), which would be accessible via the non-emergency access point on Los Amigos Road as well as via the emergency access point on Arata Lane. Furthermore, all utilities would be installed underground in accordance with 2040 General Plan Policy PHS-4.9, Priority Undergrounding, which would minimize hazards from fallen power lines along evacuation and emergency access routes. In addition, no more than 32 units would be served by the proposed project's private street as there is no possibility that the proposed private street could be extended to adjacent properties. Furthermore, the proposed project would pay applicable fire impact fees in accordance with Section 16-6-300 of the Municipal Code to ensure sufficient fire protection services. Therefore, the proposed project would conform to the objectives of 2040 General Plan Goal PHS-1, Emergency Response and Preparedness, specifically 2040 General Plan Policy PHS-1.3, Emergency Vehicle Access, as well as the objectives of 2040 General Plan Goal PHS-4, Fire Hazards.

⁴⁹ Los Amigos Cottages. 2024. Los Amigos Cottages, SB 330 Builders Remedy Application, Windsor CA, Project Statement. November.

⁵⁰ Town of Windsor. 2023. 2040 General Plan Public Health and Safety Element. August 16.

Furthermore, the proposed project would benefit from the anticipated relocation of Los Amigos Road north of Arata Lane, thereby allowing for the construction of a US-101 northbound on-ramp from Arata Lane. This on-ramp is part of the Town's CIP and would enhance circulation and increase evacuation routes in the project's direct vicinity.

Overall, with approval of the Fire Marshal for one emergency access point and because the proposed project is not within an SRA; is not classified as a Very High or High FHSZ by CAL FIRE and the State Fire Marshall; would not interfere with applicable emergency response plans; would not substantially impair emergency evacuation plans; would contribute to increased roadway circulation in the project vicinity; and would be consistent with the CBC, impacts would be less than significant in this regard and no mitigation is necessary.

Construction of up to 30 units and the associated off-site roadway improvements (on Arata Lane and the Los Amigos Road extension) would have less than significant impacts related to emergency access. However, development of the 31st and 32nd residential units would exceed the emergency access to residential unit ratio of 1:30 and, therefore, would have potentially significant impacts. Implementation of Mitigation Measure (MM) WILD-1 would ensure that no more than 30 residential units would be constructed at the project site prior to receipt of the Fire Marshal's approval of an exception to the 1:30 emergency access to residential unit ratio. The Fire Marshal's exception would be based on a conclusion that the proposed project's two ingress-egress access routes sufficiently serve as emergency access for the 32 units (see Attachment B). With the implementation of MM WILD-1, impacts would be less than significant.

Level of Significance Before Mitigation

Potentially significant impact (for the 31st and 32nd residential units only).

Mitigation Measures

- MM WILD-1** Prior to issuance of the building permit for the 31st residential unit, the applicant shall obtain, and submit to the Town of Windsor, Fire Marshal approval of an exception to the 1:30 emergency access route ratio requirement based on the following factors:
- The project site can be accessed via Arata Lane from the west, where the proposed private street intersects with Arata Lane at the southern end of the project site.
 - The project site can be accessed from the east via Arata Lane or from the south via Los Amigos Road where the proposed private street intersects with the Los Amigos Road extension at the north end of the project site.
 - No more than 32 units would be served by the private street as there is no possibility that the proposed private street could be extended to adjacent properties.

Level of Significance After Mitigation

Less than significant impact.

Expose Project Occupants to Pollutant Concentrations from Wildfire

Impact WILD-2: The proposed project would not, due to slope, prevailing winds, and other factors, exacerbate wildfire risks, and thereby expose project occupants to, pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire.

Impact Analysis

Consistent with guidance provided in CEQA Guidelines, Appendix G, a significant impact would occur if the proposed project were located in or near SRA lands or lands classified as Very High FHSZ and contained specific conditions that would exacerbate wildfire risks, including exposure to wildfire-related pollutants or uncontrolled spread of a wildfire.

The project site is not located in an SRA or a Very High or High FHSZ as designated by CAL FIRE and the State Fire Marshal. It is located within a Moderate FHSZ in an LRA (see Exhibit 4). As indicated by Section 7-2-416 of the Municipal Code, the entire Town shall be considered as a Moderate FHSZ. The purpose of the Town self-designating as Moderate FHSZ is to require the implementation of additional fire protection measures per the State Fire Code.

The project site is relatively flat. The proposed project would maintain the existing topography and would not include new or more pronounced slopes. Because of the lack of slopes on and adjacent to the project site, slope would not be expected to present significant risks related to the spread of wildfire.

Prevailing winds in the vicinity of Windsor are generally from the northwest to the southeast and occur at approximately 10 mph.⁵¹ The project site is not located within an area, nor does it include a feature, that experiences significantly different prevailing winds with the potential to exacerbate wildfire-related risk.

The Town and project site are occasionally subject to reduced air quality as a result of wildfire in the surrounding areas. However, the project site is not located in an area where such impacts are situationally increased, nor would the introduction of the proposed project increase the potential for such occurrences. Furthermore, in the event of on-site fire, the project site would not contain any features that would produce quantities or qualities of air pollutants that are substantially beyond what an average residential development would be expected to produce, as the proposed project would be required to incorporate ignition-resistant design features designed to reduce burn potential and fire spread consistent with the Town Building Code and California Public Resources Code, and therefore, would not increase potential project impacts. In addition, the following project design features described above (see Proposed Project), would further reduce fire risk: compliance with building code standards, project construction would utilize specific materials and equipment, and fencing materials would be fire safe.

Construction of the proposed project would use equipment with combustion engines and other activities which are known to create fires. However, applicable regulations, including the California Public Resources Code, would require that construction equipment use spark arrestors and appropriate fire suppression equipment be maintained on-site. Furthermore, the proposed project would comply with

⁵¹ National Oceanic and Atmospheric Administration (NOAA). 2023. U.S. Wind Climatology. May 2023. Website: <https://www.ncei.noaa.gov/access/monitoring/wind/>. Accessed January 28, 2025.

regulations for development in Moderate Fire Hazard Severity Zones as outlined by the CBC and adopted by 2023 Municipal Code Sections 7-2-400 through 7-2-424, including, but not limited to, ignition-resistant construction materials, roofing, vents, exterior coverings, windows, doors, and decking.

The proposed project would increase the population on a non-urbanized site approximately 0.5 mile from forested woodland to the north and east, where the risk of wildfire is greater than in urban areas where fuels are less abundant. As demonstrated by recent wildfires in Sonoma County, areas on the outer edges of urban development are often susceptible to wildfires due to their proximity to abundant wildfire fuels. Vegetation on the project site consists of trees, shrubs, and grasses. The site is surrounded by pastures and vineyards, with hillsides of oak woodland and savanna further north and east. The land to the south of the project site is developed with single-family residences, and lands west of US-101 are a mix of commercial and residential uses. As a part of project implementation, as noted on the updated Landscaping Plan (April 2025) for Zone 0, ground cover in private yards would be non-vegetative, trees and shrubs within 5 feet of any structure would be maintained at a minimum of 5 feet apart, and all new landscaping would incorporate only firewise plants, approved by the Sonoma County Fire District and the California Fire Safe Council. Implementation of these project features would reduce potential for on-site vegetative fuels and fire spread. Furthermore, lands surrounding the project site may act as buffers in the event of a wildfire. Agricultural lands are often irrigated and managed, reducing the available fuel load and providing terrain on which fire suppression efforts can be implemented. Urban lands with denser development have reduced vegetative fuel loads as compared to the hillsides in the vicinity of the project site. Urban street networks provide emergency response access. Overall, the land uses surrounding the project site provide opportunities for fuel breaks and firefighting efforts in the form of existing and proposed roadways (Arata Lane and the proposed Los Amigos Road partial extension). Specifically, Arata Lane at the southern project site boundary would serve as emergency access and fuel breaks, as would Los Amigos Road at the northern and eastern portion of the site, which would be constructed as part of the project. Fire sprinklers would be required in on-site residences pursuant to the Municipal Code. The proposed project would also be required to comply with California Fire Code Section 701A.3 as adopted by the Town. As such, the proposed project would be constructed with appropriate materials and methods for the construction of roofing, exterior coverings, venting, decking, porches and sealing of any gaps around doors, windows, eaves, and vents(see Attachment A). Also, in accordance with the California Fire Code as adopted and amended by the Town of Windsor, the proposed project would be required to provide sufficient fire hydrants and demonstrate the availability of sufficient fire hydrant water (fire flow).

In conclusion, the project site does not contain specific conditions or features that would exacerbate wildfire risks, including exposure to wildfire-related pollutants or uncontrolled spread of a wildfire, nor would the proposed project introduce such conditions or features during construction or operation. Impacts would be less than significant.

Level of Significance Before Mitigation

Less than significant impact.

Mitigation Measures

No mitigation is necessary.

Level of Significance After Mitigation

Less than significant impact.

Infrastructure That Exacerbates Fire Risk

Impact WILD-3: **The proposed project would not require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, powerlines or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment.**

Impact Analysis

Consistent with guidance provided in CEQA Guidelines, Appendix G, a significant impact would occur if the proposed project were located in or near SRA lands or lands classified as Very High FHSZ, and would include a component that may exacerbate fire risk or require a component to reduce fire risk that would result in temporary or ongoing impacts to the environment.

The project site is not located in an SRA or a Very High or High FHSZ, as designated by CAL FIRE and the State Fire Marshal. It is located within a Moderate FHSZ in an LRA (see Exhibit 4). As indicated by Section 7-2-416 of the Municipal Code, the entire Town shall be considered as a Moderate FHSZ.

Construction activities may temporarily increase fire risk due to equipment use and other construction actions on the project site that could be ignition sources. However, compulsory compliance with applicable construction equipment regulations regarding the use of spark arrestors and fire suppression equipment, including compliance with Section 6-2-1003 of the Town's Municipal Code, would reduce construction-related risks. Implementation of regular construction site watering consistent with the proposed project's Storm Water Pollution Prevention Plan (SWPPP) BMPs would also reduce risks associated with wildfire caused by unintentional equipment sparks during grading. Standard construction BMPs, including stipulated by the California Public Resources Code, Article 2 such as the relocation of flammable materials on burn permit days (Section 4227); the use of fire suppression equipment (Section 42228); the avoidance of gas-powered tools on burn permit days (Section 4331); and the use spark arrestors (Section 4442) would also support the suppression of fire sources and guide appropriate response should fire occur during construction activities (see Attachment A). Furthermore, as described above (see Proposed Project), the proposed project would incorporate the following project design features that would further reduce fire risk: compliance with building code standards, project construction would utilize specific materials and equipment, and fencing materials would be fire safe. As such, exacerbation of wildfire risk during construction would be less than significant.

The proposed project does not require the installation or maintenance of infrastructure specifically for the purposes of reducing wildfire risk. The proposed project would include on-site infrastructure including roads, fire hydrants, and utilities similar to the adjacent urban development. The installation and maintenance of such would be completed in a typical manner and would not exhibit unusual characteristics that would exacerbate fire risk or create additional temporary or ongoing impacts to the environment. The proposed project would not require the installation of new aboveground powerline infrastructure and therefore would not exacerbate fire risk on that basis. Any new utilities that would be required would be built underground in accordance with 2040 General Plan Policy PHS-4.9 and the

Municipal Code, which prioritizes the undergrounding of utilities. Furthermore, the electric utility provider serving the project site would be required to develop and implement a Wildfire Mitigation Plan, per CPUC General Order 166, which describes measures that the electric utility will implement to mitigate the threat of powerline fires generally.

Proposed on-site residences would be constructed to current fire and building codes and safety standards which support reduced fire risk. In addition, the proposed project would abide by construction regulations outlined in California Code of Regulations Title 24, Part 9, Chapter 7A (see Attachment A). These regulations include safety measures to minimize the threat of fire, including construction of exterior walls with non-combustible or ignition-resistant material from the surface of the ground to the roof system and sealing any gaps around doors, windows, eaves, and vents to prevent intrusion by flame or embers.

Fire sprinklers would be required in residences pursuant to the Municipal Code, which adopts the California Fire Code. The California Fire Code also calls for the preparation of a fire protection plan in Section 4903. The Board of Forestry, via California Code of Regulations Title 14, sets forth the minimum development standards for emergency access, fuel modification, setback, signage, and water supply, which help prevent loss of structures and life by reducing wildfire hazards. The codes and regulations would reduce the risk of loss, injury, or death from wildfire. This evidence, combined with the reduced fuel load on surrounding urban and agricultural land, indicate that the project site has a lower potential for wildfire risk as compared to surrounding areas.

Overall, because development of the proposed project does not include any features that would exacerbate wildfire risk and would implement design features and applicable regulations that would reduce wildfire risk, impacts would be less than significant.

Level of Significance Before Mitigation

Less than significant impact.

Mitigation Measures

No mitigation is necessary.

Level of Significance After Mitigation

Less than significant impact.

Flooding and Landslide Hazards Due to Post-fire Slope Instability/Drainage Changes

Impact WILD-4:	The proposed project would not expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes.
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Impact Analysis

Consistent with guidance provided in CEQA Guidelines, Appendix G, a significant impact would occur if the proposed project were located in or near SRA lands or lands classified as Very High FHSZ and in an area susceptible to downstream flooding or landslide post-fire event.

The project site is not located in an SRA or a Very High or High FHSZ as designated by CAL FIRE and the State Fire Marshal. It is located within a Moderate FHSZ in an LRA (see Exhibit 4). As indicated by Section 7-2-416 of the Municipal Code, the entire Town shall be considered as a Moderate FHSZ. The purpose of the Town self-designating as Moderate FHSZ is to require the implementation of additional fire protection measures per the State Fire Code.

In areas with steep slopes, vegetation and associated root systems act as a support structure for the soil and slopes while preventing significant erosion. Post-fire slope instability occurs when a fire burns an area with steep slopes and destroys the vegetation. During subsequent rain events, stormwater scours the hillsides and removes topsoil. Without topsoil or mature vegetation, slopes become unstable, which results in risks to human life and property.

During construction and operation, on-site stormwater would be managed in accordance with local, regional, and State regulations to ensure that off-site flow of stormwaters would not increase from current levels. The project site is generally flat and is not located in close proximity to areas of significant slope. The project site is not located in a flood zone.⁵² The project site's flat grade, distance from any hillside, and adequate drainage would prevent exposure of people or residences to downslope landslides and flooding. Therefore, impacts would be less than significant.

Level of Significance Before Mitigation

Less than significant impact.

Mitigation Measures

No mitigation is necessary.

Level of Significance After Mitigation

Less than significant impact.

Emergency Response and Evacuation

Impact HAZ-5:	The proposed project would not impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan.
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Impact Analysis

Similar to CEQA Appendix G Checklist Section XX, Wildfire, Impact(a) (as previously discussed under Impact WILD-1), a significant impact would occur if construction or operation of the proposed project would substantially impair implementation of, or physically interfere with an adopted emergency response plan or emergency evacuation plan. As discussed under Impact WILD-1, the project site is subject to the Sonoma County MJHMP and EOP. Construction and operation activities related to the proposed project would not conflict with policies or goals of these plans. These plans are generally applicable and do not

⁵² Federal Emergency Management Agency (FEMA). 2016. Flood Map Service Center. Website: <https://msc.fema.gov/portal/search?AddressQuery=arata%20lane%2C%20windsor%2C%20ca>. Accessed January 28, 2025.

identify any specific actions or considerations directly for the project site. The proposed project would comply with general guidance provided by the plans.

As discussed in Impact WILD-1, the proposed project would have two ingress and egress points, but only one would be considered an emergency access point, which would not comply with the Town's Fire Code requirement for two access points for single-family development with more than 30 units. Impact WILD-1 discussion further lists the reasons why one emergency access point for the proposed project is sufficient. With Fire Marshal approval of one emergency access point for the proposed project, impacts would be less than significant. However, considering Fire Marshal approval may not be secured, impacts related to emergency evacuation could be potentially significant. MM WILD-1 would ensure that no more than 30 residential units would be constructed at the project site without Fire Marshal approval of a single emergency access point. With implementation of MM WILD-1, impacts would be less than significant.

Level of Significance Before Mitigation

Potentially significant impact.

Mitigation Measures

Implement MM WILD-1.

Level of Significance After Mitigation

Less than significant impact.

Wildland Fires

Impact HAZ-6:	The proposed project would not expose people or structures, either directly or indirectly to a significant risk of loss, injury or death involving wildland fires.
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Impact Analysis

Consistent with guidance provided in CEQA Guidelines Appendix G, a significant impact would occur if construction or operation of the proposed project would expose people or structures, either directly or indirectly, to a significant risk of loss, injury, or death involving wildland fires. As discussed under Impact WILD-2 and -3, the proposed project would not exacerbate wildfire risk, thereby exposing occupants to wildfire-related pollutants, and would not include infrastructure that exacerbates fire risk. The project site is not located in a High or Very High FHSZ as designated by CAL FIRE; it is noted that the Town has adopted the designation of Moderate FHSZ for the purposes of implementing additional regulations per the State Fire Code.

Areas surrounding the project site consist of rural single-family homes and undeveloped/pastureland to the east and north, a church to the west, and single-family homes to the south, across Arata Lane, with more dense residential development further south and southeast of the project site. As discussed above (Impact WILD-2), agricultural lands are often irrigated and managed, reducing the available fuel load and providing terrain on which fire suppression efforts can be implemented. Urban lands with denser development (exceeding 16 dwelling units per acre) have reduced vegetative fuel load as compared to the hillsides in the vicinity of the project site. Urban street networks, including the Town's evacuation routes as illustrated in the 2040 General Plan PHS Element Figure PHS-3, provide sufficient emergency

response access. In addition, as detailed under Impact WILD-1, the proposed project design provides adequate emergency access via the emergency vehicle access point on Arata Lane to serve the project's proposed 32 units. Furthermore, the project site provides adequate evacuation egress across its two access points, by the non-emergency Los Amigos Road access point as well as the emergency access point on Arata Lane. Furthermore, Arata Lane at the southern project site boundary and the anticipated realigned portion of Los Amigos Road at the northeast portion of the site could all serve as fire breaks.

Considering how far embers can travel (depending on conditions), ember cast and potentially resulting spot fires are possible in the project area in the event of a wildland fire. However, the proposed project would include design features that would reduce the risk of fire. It would be required by the Municipal Code to implement fire-resistance factors, such as fire protection systems and equipment, defensible space, and vegetation management, as would for all future construction which will require review and submittal of building permit applications to the Town for review and approval to ensure compliance with applicable fire-related standards and code requirements. In accordance with the CBC (which was adopted by the Town), the proposed project would use ignition-resistant construction materials, roofing, vents, exterior coverings, windows, doors, and decking in accordance with 2040 Municipal Code Sections 7-2-400 through 7-2-424. Project design, as noted within the updated Landscaping Plan (April 2025), would include vegetation and landscaping feature that would reduce fire risk, including a Zone 0, or a buffer of 5 feet between vegetation, wood fences, gates, or ornamental landscaping and residences or other structures, intended to slow or stop the spread of wildfire while providing increased protection for residences from embers, direct flame contact, and radiant heat. These measures would also incorporate the use of fire-resistant vegetation for proposed and all new landscaping, as approved by the Sonoma County Fire District and the California Fire Safety Council, and would require the avoidance of combustible materials within 6 feet of a structure or deck. Lots with limited side yard area would have no vegetative landscaping but would be landscaped with non-plant materials such as gravel. These include Lots 4-18 and 20-23. Note that of these lots with limited side yard areas, Lots 4, 13, 14, and 18 would have opposite side yards adjacent to public streets, private streets, or private driveway, and those side yards may be landscaped with vegetation. Compliance with the Town's requirements and the requirements set forth in the CBC, as well as implementation of these design features, would reduce fire risk.

The project site does not include and is not located adjacent to or near areas of significant slope, prevailing winds, or vegetation fuel load. This evidence, combined with the distance to High FHSZs, surrounding urban and agricultural land, and the design features discussed above, indicate that the proposed project would not have a significant wildfire risk. As previously discussed, the proposed project would include several features that would ensure the reduction of wildfire risk on-site and comply with applicable construction fire risk regulations, including, but not limited to fire-resistant vegetation; 5-foot buffers between residences and vegetation and other combustible features; and compliance with California Code of Regulations Title 24 Part 9, Chapter 7a, Materials and Construction Methods for Exterior Wildfire Exposure, as stated in Attachment A. In addition, consistent with the California Fire Code as adopted by the Town of Windsor, the proposed project would be required to meet minimum fire flow requirements for residential structures, thereby ensuring sufficient water for firefighting purposes. For these reasons, the proposed project would not be exposed to undue wildland fire risks. Impacts would be less than significant.

Level of Significance Before Mitigation

Less than significant impact.

Mitigation Measures

No mitigation is necessary.

Level of Significance After Mitigation

Less than significant impact.

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Attachment A:

Clarifications and Supplemental Information

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CLARIFICATIONS AND SUPPLEMENTAL INFORMATION
FROM ARATA PROPERTIES, LLC
FOR THE LOS AMIGOS COTTAGES DEVELOPMENT APPLICATION
MAY 23, 2025

The Los Amigos Cottages development application was submitted to the Town on December 7, 2023, and determined to be complete on May 1, 2024. Over the course of its review of the development application, the Town has asked that the applicant clarify several aspects of the project. The purpose of this statement is to provide clarifications and/or supplemental information on application materials submitted as part of the Los Amigos Cottages development application in response to the items identified by the Town below.

Item 1: Clarification on Landscaping Materials. At the request of Town Staff, the following clarification is provided on landscaping materials to be utilized by the project to address potential risks associated with wildfire. The project proposes to utilize the following landscaping materials and methods.

- Ground Cover. To reduce the spread of wildfire due to ember casting, mulch and similar ground cover products are prohibited within five feet of all structures. Alternative ground cover materials include, but are not limited to, lava rock, river rock, gravel, decomposed granite or other materials approved by the Fire Marshal. The use of “gorilla fur” type groundcover is prohibited in all areas.
- Vegetation Adjacent to Structures. Trees and shrubs located within five feet of any structure shall be planted and maintained at a minimum distance of five feet apart.
- Allowed Plant Materials. New landscaping shall incorporate only the fire-wise plant materials approved by the Sonoma County Fire District and the California Fire Safe Council. The planting of juniper and manzanita will be prohibited.
- Fire Safe Fencing Materials. To prevent the spread of fire between parcels and structures, fences and walls attached to a structure or deck shall be made of noncombustible materials within six feet of the connection to the structure. Fire Safe Fencing Materials. Firesafe fencing materials include Steel privacy fencing, hogwire, hardiboard, and fire-resistant wood grain vinyl.

An updated Landscape Plan with specific notes reflecting these materials was submitted to the Town on April 3, 2025.

Item 2: Confirmation of Compliance with Building Code Chapter 7A and Public Resources Code Article 2 Standards for Construction. At the request of Town Staff, the applicant confirms that future building permit plans for construction of new homes within the project area will utilize appropriate materials and methods in accordance with applicable requirements of Chapter 7A of the Town's Building Code, including those addressing roofing, exterior coverings, venting, decking, porches and sealing of any gaps around doors, windows, eaves, and vents to prevent intrusion by flame or embers.

During project construction, the project will comply with applicable requirements of Public Resources Code, Article 2 (Prohibited Activities), including but not limited to, the following: Section 4227 (location of flammable materials on burn permit days); Section 4228 (fire suppression equipment); Section 4331 (use of gas-powered tools on burn permit days); and Section 4442 (spark arrestor required).

Attachment B:

Project Statement

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PROJECT STATEMENT

INTRODUCTION

Arata Properties, LLC is pleased to present The Los Amigos Cottages – SB 330 Builders Remedy Project, a new community of charming cottage homes located at 263 Arata Lane, near the northwest corner of Arata Lane and the future realigned Los Amigos Road that will be constructed by the Qual Acres project. The Los Amigos Cottages - SB 330 Builders Remedy Project proposes to subdivide the subject 2.72 acre site into 32 residential lots, comprised of twenty six (26) detached single-family homes and six (6) “duet” single-family attached homes. All six (6) of the proposed duet units and one of the detached units (22% of the total units in the Project) will be designated for-sale units for lower income households, exceeding the Town’s inclusionary requirements. The project is a “housing development project” under the Housing Crisis Act (“SB 330”) and the Housing Accountability Act (“HAA”), and housing “for very low, low-, or moderate-income households” under the HAA. See Gov. Code §§ 65589.5(h)(2) and (3); and see also §§ 65905.5(b)(3); 65913.10(b)(2); 65941.1(a); 66300(a)(6).

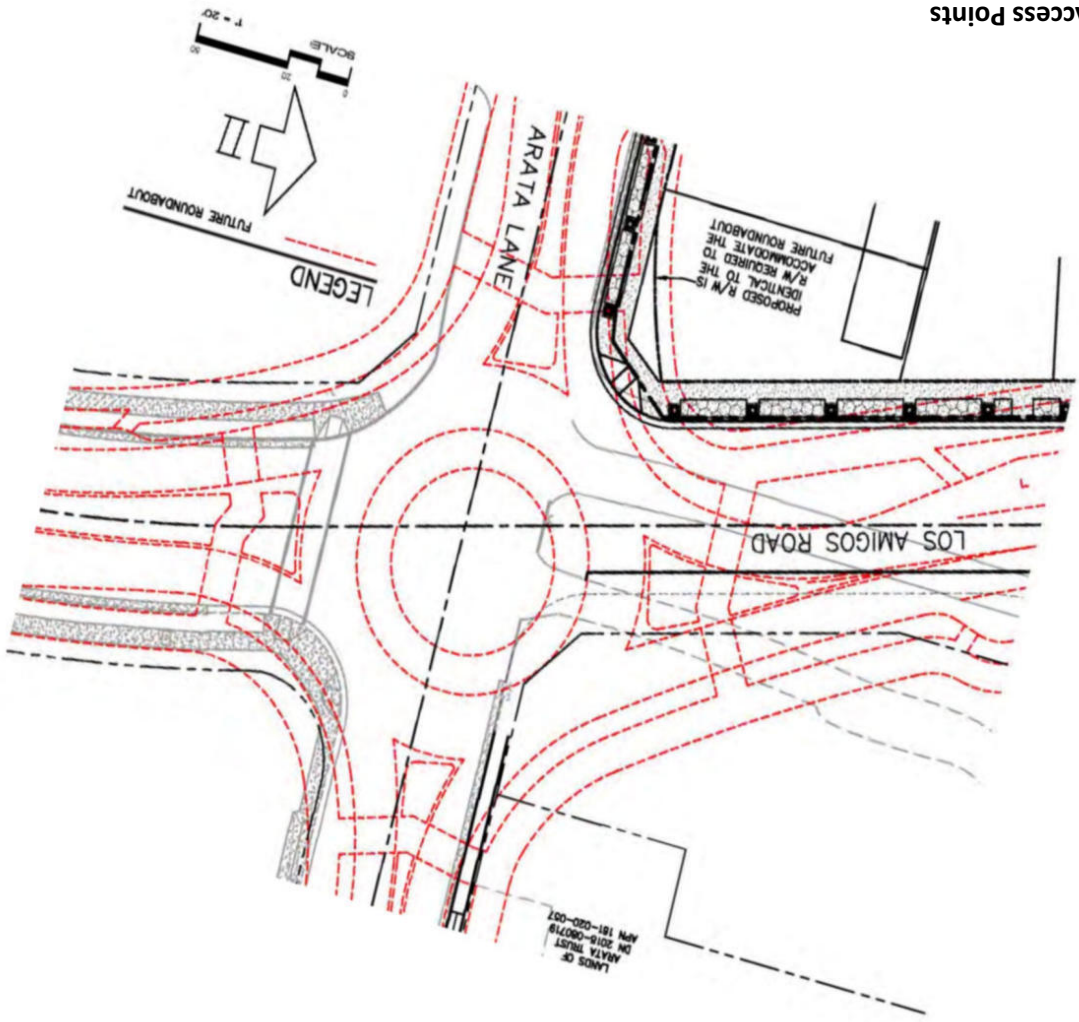
SB 330 and Housing Accountability Act “Builder’s Remedy”

The HAA prohibits actions by local jurisdictions that reject or make infeasible housing developments that contribute to regional housing needs without making certain findings regarding the economic, social and environmental effects of the action. Additionally, as a development project that is “housing for very low, low- or moderate-income households” as defined by the HAA, the Project is therefore entitled to the benefits provided by the HAA under Government Code Section 65589.5, subdivision (d), which limit the bases to lawfully disapprove or impose conditions of approval that render the Project infeasible, to either finding (a) specific, adverse public health or safety impacts, (b) non-compliance with specific state or federal law, or (c) that the land is zoned for agriculture or resource preservation and surrounded by such uses or no adequate water or wastewater facilities. Furthermore, under the HAA (Gov. Code § 65589.5(h)(5) and (o)), once a housing development project complies with the SB 330 Preliminary Application requirements at Government Code Section 65941.1(a), with some exceptions not relevant here, the Project is subsequently subject only to the ordinances, policies, and standard adopted and in effect when the 65941.1(a) preliminary application information was submitted.

On August 10, 2023, Project Applicant submitted an SB 330 Preliminary Application and associated fee to the Town and obtained vested rights to develop a housing development project in accordance with the applicable ordinances, policies and standards in effect when the SB 330 Preliminary Application was submitted, including the Town’s Housing Element compliance status. As of submittal of the Project’s SB 330 Preliminary Application on August 10, 2023, the Town’s Housing Element was out of substantial compliance with State Housing Element Law. Accordingly, the Town may not rely on Government Code Section 65589.5, subdivision (d)(5), to lawfully disapprove or conditionally approve the Project. Specifically, under the HAA, the Town may not disapprove or conditionally approve a housing development project “for very low, low-, or moderate-income households” because the project is inconsistent with the Town’s zoning ordinance and general plan land use designation.

As required by SB 330 Government Section 65941.1(d), on December 7, 2023, Project Applicant submitted the application for development of the Project addressing all of the information identified by the Town as required to process this development application consistent with Government Code Sections 65940, 65941 and 65941.5. On January 5, 2024, the Town issued an Application Incomplete Letter. On March 28, 2024, Project Applicant provided a response to the Town’s application incomplete determination and a supplemental submittal. On May 1, 2024, the Town

Arata Lane and Los Amigos Road. This design accommodation is based on the Town's current roundabout design plan.



Emergency Vehicle Access Points

The applicant requests consideration of allowing 32 units to be served from a single point of access (Arata Lane). Factors in support of this request include:

- The site can be accessed via Arata Lane from the west where the proposed private street intersects with Arata Lane at the southern end of the project site.
- The site can be accessed from the east via Arata Lane or from the south via Los Amigos Road where the proposed private street intersects with the Los Amigos Road extension at the north end of the project site.
- No more than 32 units will be served from the private street as there is no possibility that the proposed private street can be extended to adjacent properties.

Extension Project Specific Infrastructure:

Project specific infrastructure and circulation improvements are expected with the construction of the Los Amigos Cottages project. The infrastructure and circulation improvements within the development will be constructed as a single phase.