

HCAOG

2026 REGIONAL TRANSPORTATION IMPROVEMENT PROGRAM (RTIP) – PROJECT CANDIDATE FORM

RTIP programming background:

If the project is on a State Highway, a Project Study Report (PSR) is required. If not, a PSR equivalent is required. The PSR equivalent at a minimum must be adequate to define and justify the project scope, cost and schedule. The PSR or PSR equivalent must be submitted with this programming request.

Applicant Agency: **City of Fortuna**
Brian Issa, Public Works Director

Project Title: **Kenmar/Ross Hill Road (KRH) Intersection Improvements**

Project Purpose: What transportation deficiency will this project address (safety, congestion, operations, plan implementation, etc.)? If a safety project, will the project reduce fatalities or number and severity of injuries?

- **The intersection is currently operating below a LOS of C/D (below Fortuna's minimum standard). Analysis shows that currently there is not enough storage to meet the peak hour demands on multiple legs of the intersection. In the AM peak hour, the northbound left turn lane has 95th percentile queues that exceed the available storage. In the PM peak hour, the eastbound right turn and the southbound left turn have 95th percentile queues that exceed the available storage. The poor level of service and intersection congestion may be contributing to the relatively high number of rear end collisions occurring at the intersection. Construction of a roundabout is expected to eliminate these failure conditions under virtually all future development scenarios**
- **Potential to facilitate development of southern portion of the Mill District Specific Plan by alleviating access constraints. The south end of the Mill site currently has an access off of Kenmar that will be limited to R in R out with development of the interchange. Potential may exist to coordinate access into the property via KRH**
- **Provide Bike/Ped connectivity across 101 in conjunction with the interchange project, connecting residential and commercial areas of the City that do not currently have dedicated bike/ped connectivity**
- **Ensure that related Kenmar/101 interchange project provides expected benefits which could be hampered by existing congestion at KRH**
- **Accommodate future development pursuant to the City's Mill District Specific Development Plan and state regional housing allocation targets**
- **Support economic development by removing transportation constraints to adjacent sites and increasing the overall throughput of the transportation network between Hwy 101 and the core of Fortuna**

Project Location (community name, corridor, street name, etc.):
Fortuna, Intersection of Kenmar Road and Ross Hill Road

Project Description:

Since the 2010 General Plan, the City has been working towards identifying improvements for key transportation infrastructure in the City of Fortuna. Most notably, the City's focus has been on improving the interchanges with Highway 101 at 12th Street and Kenmar, with a preliminary alternative analysis being completed in 2016, and initial project phase funding being secured for the projects in 2018, 2022 and 2024. After the City secured funding for the 12th Street Preliminary Design phase in 2022, staff shifted some focus to the City's Kenmar and Ross Hill Road intersection, which also has issues with traffic level of service, vehicle queueing, non-motorized connectivity, safety and the ability to handle traffic volumes as the City continues to develop.

A major concern for the City is that the constraints at the KRH intersection, if not addressed, could blunt the effectiveness of improvements at the Kenmar/101 interchange due to the proximity to KRH which lies less than 1000ft east of the interchange.

In 2022, using nearly \$50K in city funds, staff worked with the City's on-call traffic engineer, GHD, to develop a scope and budget for a Project Study Report (PSR) for the Kenmar and Ross Hill Road Interchange. The PSR (attached) was adopted by the City Council on April 7th 2025 and a preferred design alternative was selected by Council on September 15th, 2025. The preferred alternative includes development of a roundabout which will provide an acceptable level of service across all potential future development scenarios.

Now with the Kenmar Interchange Project proceeding toward 60% design, and the Mill District Specific Plan having been approved, the City is ready to take the redevelopment of KRH intersection to the next stage, not only to ensure that the KRH intersection functions in its own right, but to ensure planned improvements to the Kenmar/101 interchange are not rendered ineffective by downstream constraints.

The City is requesting funds for the PA&ED phase of the project based on a preliminary estimate provided by GHD in the attached PSR and updated on 8/22/25. Requested funds will be used to complete the PA&ED phase of the project including NEPA environmental review to position the project to obtain federal grant funds if available.

Is the project in the 2022 RTP? **Yes**

Are you requesting State only funding? **Yes**

What community engagement activities have been conducted for this project so far? **The KRH project has been on the City's radar for many years and has been part of long-range planning discussions including the 2010 General Plan Update and the development of the Mill District Specific Development Plan, both of which underwent extensive public consultation. In addition, the project has been in front of the City Council and open for public review and comment on at least three occasions in the last two years.**

To the maximum extent feasible, have complete streets elements been included in the project? Explain. **Yes, one of the major deficiencies of the current intersection that the project seeks to remedy is the lack of bike/ped facilities. The roundabout alternative includes pedestrian crossings on each leg of the intersection connecting to existing facilities to help close the gap in pedestrian facilities. Bicycle ramps and paths are also proposed for each leg of the roundabout allowing cyclists to travel through the intersection without entering the roundabout if they feel more comfortable being physically separated from the cars.**

Does your project funding request include uncommitted funds? Explain. **No. The PA&ED phase of the project will be entirely funded by this request.**

If a rehabilitation project, is it located on a federal-aid eligible road (higher than a local or minor collector road)? Link to Caltrans maps: http://www.dot.ca.gov/hq/tsip/hseb/crs_maps **Yes. The project lies at the intersection of Kenmar Road (West=principal arterial, East=major collector), Fortuna Blvd (principal arterial) and Ross Hill Road (minor arterial)**

Provide Project Component funding needs:

| Project Component | Cost Estimate | STIP Funding Request | Other fund contribution | Allocation Schedule |
|-----------------------------------|---------------|----------------------|-------------------------|---------------------|
| Environmental Studies & Permits | \$550,000 | \$550,000 | \$ | Immediately |
| Plans, Specifications & Estimates | \$ | \$ | \$ | |
| Right of Way | \$ | \$ | \$ | |
| Construction | \$ | \$ | \$ | |
| Total | \$550,000 | \$550,000 | \$ | |

Please describe any other relevant information about this project you feel will be useful in project selection. Additional attachments (i.e. maps, photos) may also be included with the submittal.

Project Study Report-Project Development Support (PSR-PDS)

Kenmar Road and S. Fortuna Boulevard/Ross Hill Road Intersection



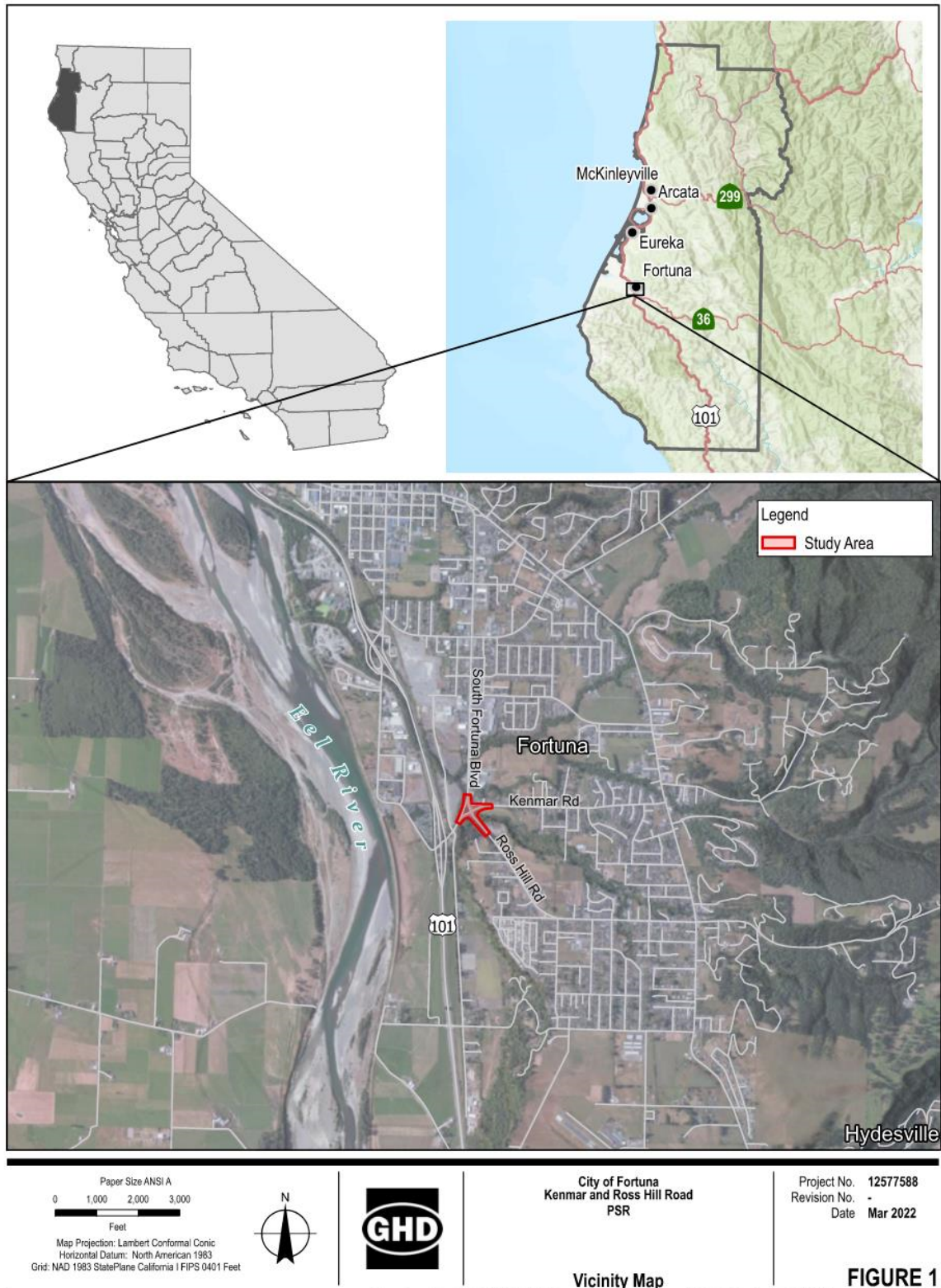
APPROVED:

Brendan E. Byrd
City Engineer
City of Fortuna

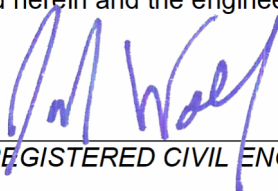
09/23/2025

Date

Vicinity Map



This project study report-project development support has been prepared under the direction of the following registered civil engineer. The registered civil engineer attests to the technical information contained herein and the engineering data upon which recommendations, conclusions, and decisions are based.



REGISTERED CIVIL ENGINEER

2/29/24

DATE



Table of Contents

| | | |
|-----|--|----|
| 1. | INTRODUCTION..... | 5 |
| 2. | BACKGROUND..... | 5 |
| 3. | PURPOSE AND NEED..... | 7 |
| 4. | TRAFFIC ENGINEERING PERFORMANCE ASSESSMENT | 7 |
| 5. | DEFICIENCIES | 13 |
| 6. | CORRIDOR AND SYSTEM COORDINATION | 13 |
| 7. | ALTERNATIVES..... | 14 |
| 8. | RIGHT-OF-WAY | 16 |
| 9. | STAKEHOLDER INVOLVEMENT..... | 17 |
| 10. | ENVIRONMENTAL COMPLIANCE..... | 17 |
| 11. | FUNDING | 19 |
| 12. | DELIVERY SCHEDULE..... | 20 |
| 13. | RISKS..... | 20 |
| 14. | EXTERNAL AGENCY COORDINATION | 21 |
| 15. | PROJECT REVIEWS..... | 21 |
| 16. | PROJECT PERSONNEL | 21 |
| 17. | ATTACHMENTS | 21 |

Attachments

- A. Location Map
- B. Conceptual Design Drawings
- C. Assessor Parcel Maps
- D. Environmental Constraints Map
- E. Environmental Database Search Results
- F. Cost Estimates

1. INTRODUCTION

Project Description

The project proposes to improve traffic, pedestrian, and bicycle operations at the intersection of Kenmar Road and S. Fortuna Boulevard/Ross Hill Road in Fortuna in Humboldt County, California. The existing intersection controls, roadway geometry, and the high volumes of local and regional traffic result in poor traffic operation at and near the intersection. Proposed project components include a roundabout at the intersection as well as crosswalks and sidewalks for pedestrians. Refer to Figure 1 and **Attachment A** for a location map.

The full closure of the Drake Hill Road intersection with US 101 in 2010 resulted in an increase in traffic volume to the US 101-Kenmar Road interchange and the Kenmar Road and S. Fortuna Boulevard/Ross Hill Road Intersection. The additional traffic volume contributed operational issues and safety concerns at the intersection.

Improvements to the Kenmar Road and S. Fortuna Boulevard/Ross Hill Road intersection were identified as a priority project in the City of Fortunas 2021 Local Road Safety Plan (LRSP).

Table 1: Project Summary

| | |
|--|--|
| Project Limits | Kenmar Road – between Eel River Drive and Renee Avenue S. Fortuna Boulevard – to 400 feet north of Kenmar Road Ross Hill Road – to 700 feet south of Kenmar Road |
| Number of Alternatives | 2 |
| Escalated Outlay Support Cost | \$2.6M |
| Escalated Capital Outlay Cost | \$6.1M |
| Funding Source | TBD (Federal Funding is Assumed) |
| Type of Facility | Kenmar Road east of Ross Hill Road: Major Collector Kenmar Road west of Ross Hill Road: Other Principal Arterial S. Fortuna Boulevard: Other Principal Arterial Ross Hill Road: Minor Arterial |
| Number of Structures | 0 |
| Anticipated Environmental Determination or Document | CEQA Mitigated Negative Declaration NEPA CE |
| Legal Description | On Kenmar Road between Eel River Drive and Renee Avenue; on S. Fortuna Boulevard from Kenmar Road to 400 feet north of Kenmar Road; and on Ross Hill Road from Kenmar Road to 700 feet south of Kenmar Road; |

2. BACKGROUND

Existing Conditions

The project study area is focused on the intersection of Kenmar Road and S. Fortuna Boulevard/Ross Hill Road. Along Kenmar Road from Eel River Drive and Renee Avenue and along S. Fortuna Boulevard/Ross Hill Road from 400 feet north of the intersection to 700 feet south of the intersection. Refer to **Figure 2** for the existing intersection configuration, control and traffic counts.

Kenmar Road is 100 feet wide on the west side of the intersection with an eastbound through-left lane, and a right turn lane. On the east side of the intersection, Kenmar Road is the same configuration with a westbound through-left lane, and a right turn lane. West of the intersection Kenmar Road is listed as an Other Principal Arterial per the California Road System (CRS) – Functional Classification. East of the intersection Kenmar Road is a major collector.

Ross Hill Road is the south leg of the intersection and is 55 feet wide at the intersection with a northbound left turn lane, a through lane, and a through-right lane. S. Fortuna Boulevard is the north leg of the intersection and is 55 feet wide at the intersection with a southbound left turn lane, two through lanes, and a right turn slip-lane that begins approximately 250 feet north of the intersection. Per the CRS, Ross Hill Road is classified as a Minor Arterial and S. Fortuna Boulevard is classified as an Other Principal Arterial.

Also, according to CRS, S. Fortuna Boulevard, and Kenmar Road east of the intersection, are both part of the National Highway System (NHS).

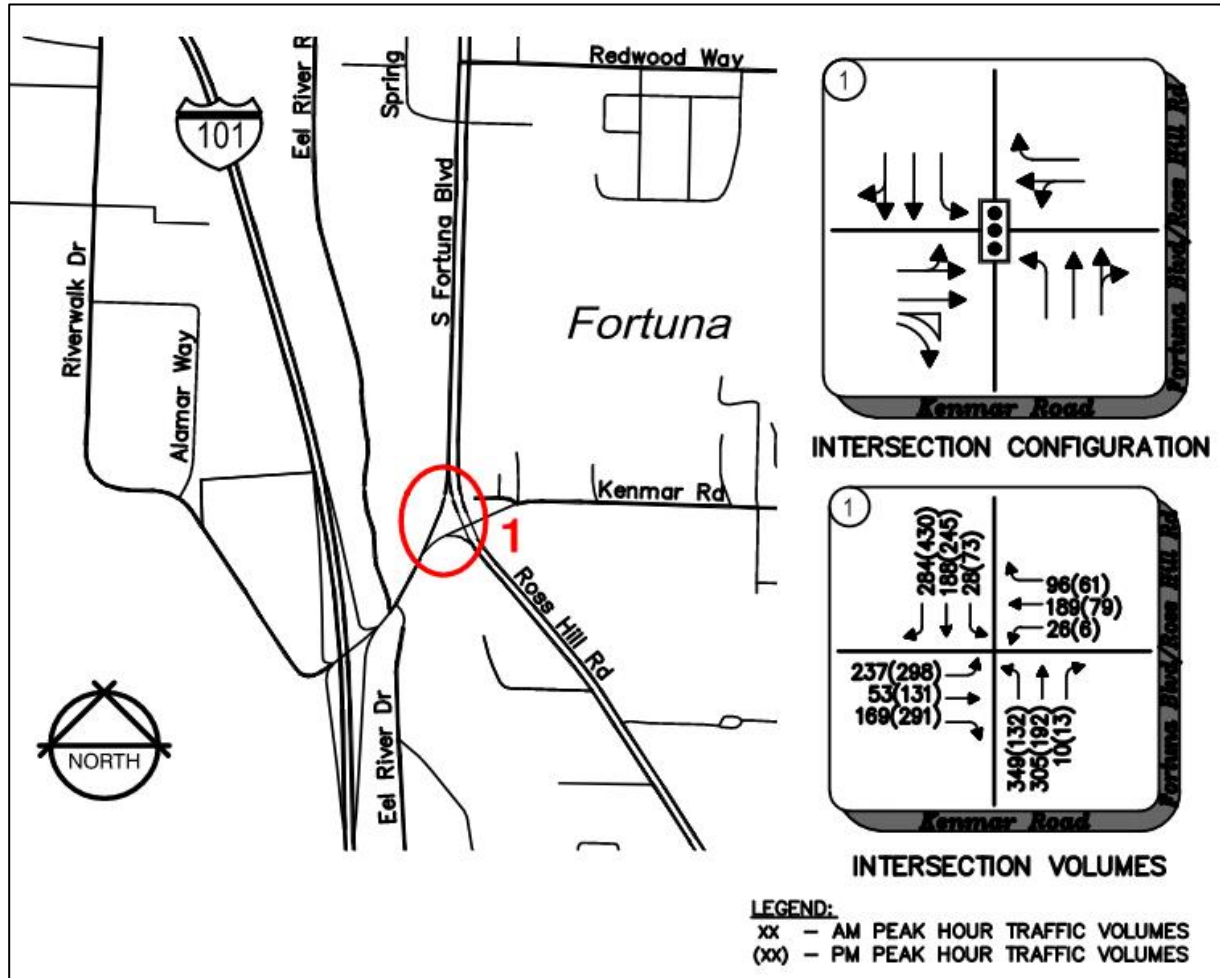


Figure 2 – Existing Intersection Configuration, Control and Traffic Counts (2016)

3. PURPOSE AND NEED

Purpose:

- Simplify and improve navigation and traffic operations through the Kenmar Road and S. Fortuna Boulevard/Ross Hill Road intersection;
- Improve operations, reduce congestion, and minimize conflicts intersection;
- Improve intersection safety; and
- Improve bicycle and pedestrian facilities through the intersection.

Need:

- Poor traffic operations and safety concerns resulting from high volumes and insufficient storage; and
- Limited bicycle and pedestrian facilities resulting in a barrier to bicycle and pedestrian circulation and connectivity.

4. TRAFFIC ENGINEERING PERFORMANCE ASSESSMENT

This section provides the results of the operations analysis for the intersection of Kenmar Road and S. Fortuna Boulevard/Ross Hill Road & Kenmar Road. The term project as used in this section refers to the intersection improvements being proposed for the study intersection.

Traffic Operations

A traffic operations analysis was prepared by GHD Inc. to analyze the existing and future performance of the Kenmar Road and S. Fortuna Boulevard/Ross Hill Road intersection. The operational analysis used the traffic counts that were collected in March 2016 for the Highway 101, Fortuna Downtown and Riverwalk Area Complete Streets and Connectivity Planning Study. These counts were adjusted upwards utilizing growth factors to reflect Year 2022, 2025, and 2045 traffic volumes. Year 2022 represents existing conditions that are experienced in the AM and PM peak hour. Year 2025 volumes represent Opening Year conditions after the stated improvements are expected to be built. Year 2045 volumes represent the design year approximately 20 years in the future after intersection improvements are completed.

The growth rate applied to Year 2016 counts to develop Year 2022, 2025, and 2045 volumes was provided by the City of Fortuna General Plan. The growth rate was identified as 1.6% per year. Applying this growth rate over a 6-, 9-, and 29-year period yields growth rates of 10%, 15%, and 47%, respectively.

The operations analysis utilized the following technical parameters:

- Peak Hour Factor (PHF) comes from traffic counts. Based on information obtained from traffic counts, the PHF was determined to be 0.84 for AM and 0.99 for the PM peak hours.
- The environmental factor in SIDRA was based on the guidelines provided by Caltrans memorandum titled *SIDRA Settings and Related Parameters for US HCM and SIDRA Roundabout Capacity Model (Dec 20, 2017)*. Based on the guidelines, environmental factors have been set for 1.05 for design year conditions.
- A peak hour truck percentage for the study intersection was estimated to be 2% for the AM and PM peak hours.
- Signal analysis was performed in Synchro 11 for the LOS and SimTraffic for the queues.
- Roundabout analysis was performed in Sidra 9 for both the LOS and Queues.

The following three alternatives were analyzed in the operations analysis:

- Existing Conditions (No Project).
- Signal Alternative (including Minimum Build, opening year 2025).
- Roundabout Alternative.

Existing Conditions (No Project)

Existing conditions quantify the current traffic operations at the study intersection. For the purposes of this analysis, Existing Conditions is considered Year 2022. Existing Conditions establishes the baseline traffic conditions. **Tables 1 and 2** present the Existing level of service and 95th percentile queues.

Table 1 – Existing Intersection Operations

| Intersection | Control Type | AM Peak Hour | | PM Peak Hour | |
|---|--------------|--------------|------------------|--------------|------------------|
| | | Delay | LOS ¹ | Delay | LOS ¹ |
| Kenmar Rd & Ross Hill Rd/S Fortuna Blvd | Signal | 45.5 | D | 25.2 | C |
| Eastbound | | 40.4 | D | 21.5 | C |
| Westbound | | 41.9 | D | 34.0 | C |
| Northbound | | 51.2 | D | 27.7 | C |
| Southbound | | 40.2 | D | 27.1 | C |

1. LOS = Delay based on average of all approaches for Signal

Table 2 – Existing Intersection 95th Percentile Queues

| Intersection | Control Type | AM Peak Hour | | PM Peak Hour | |
|---|--------------|-----------------------|-------------------|-----------------------|-------------------|
| | | 95th Percentile Queue | Available Storage | 95th Percentile Queue | Available Storage |
| Kenmar Rd & Ross Hill Rd/S Fortuna Blvd | Signal | - | - | - | - |
| Eastbound Through | | 276 | 500 | 482 | 500 |
| Eastbound Right | | 143 | 180 | 282 | 180 |
| Westbound Through | | 218 | - | 100 | - |
| Westbound Right | | 123 | 95 | 41 | 95 |
| Northbound Left | | 633 | 475 | 134 | 475 |
| Northbound Through | | 645 | 1200 | 103 | - |
| Southbound Left | | 53 | 90 | 89 | 90 |
| Southbound Through | | 126 | - | 138 | - |
| Southbound Right | | 66 | 100 | 49 | 100 |

Note: Values in red indicate queue exceeds available storage length

As indicated in the table above, the intersection currently operates at LOS D in the AM peak hour and LOS C in the PM peak hour. LOS D indicates that traffic conditions are approaching an unstable flow with high delays. As the LOS is currently a mid-D, it will worsen to an LOS E in the future. Additionally, the intersection has the following movements that have current 95th percentile queues that exceed available storage (as indicated by the red text in the **Table 2**):

- AM Peak Hour
 - Northbound Left
- PM Peak Hour
 - Eastbound Right

Full Build Conditions

The full build conditions refer to an analysis scenario in which the identified improvement(s) were built. Two different improvements were analyzed in this scenario. The first improvement was to improve the existing signal with additional lane channelization's, turn pocket extensions to provide improved operations. The second improvement was to convert the signalized intersection to a roundabout controlled intersection.

Signal Alternative (including Minimum Build)

The signal alternative analyzed the current signalized intersection with the addition of key improvements that would provide improved conditions over “No Build” for the AM and PM peak hours.

Opening Year 2025 (Minimum Build)

Under Year 2025 conditions, an additional eastbound left turn pocket of 300 feet was added, converting the existing left/through lane to a through only, and the westbound approach was re-stripped to convert the left/through lane and right turn pocket to a left turn pocket and through/right lane. This lane addition and restriping allows for an update to the signal timing plan that provides full phasing for the eastbound and westbound approaches instead of the existing split phases. To keep within the existing paved footprint and not extend into the creek for the extra lane, eliminating the southbound right slip lane may be necessary. The signal would then need to be modified to have a southbound right at the intersection.

Tables 3 and 4 present the Opening Year level of service and 95th percentile queues for the AM and PM peak hours.

Table 3 – Opening Year 2025 Intersection Operations – Signal Alternative (Minimum Build)

| Intersection | Control Type | AM Peak Hour | | PM Peak Hour | |
|---|--------------|--------------|------------------|--------------|------------------|
| | | Delay | LOS ¹ | Delay | LOS ¹ |
| Kenmar Rd & Ross Hill Rd/S Fortuna Blvd | Signal | 44.9 | D | 24.6 | C |
| Eastbound | | 47.6 | D | 22.1 | C |
| Westbound | | 53.9 | D | 29.5 | C |
| Northbound | | 37.9 | D | 26.0 | C |
| Southbound | | 49.5 | D | 25.4 | C |

1. LOS = Delay based on average of all approaches for Signal

Table 4 – Opening Year 2025 95th Percentile Queues – Signal Alternative (Minimum Build)

| Intersection | Control Type | AM Peak Hour | | PM Peak Hour | |
|---|--------------|-----------------------|-------------------|-----------------------|-------------------|
| | | 95th Percentile Queue | Available Storage | 95th Percentile Queue | Available Storage |
| Kenmar Rd & Ross Hill Rd/S Fortuna Blvd | Signal | - | - | - | - |
| Eastbound Left | | 272 | 300 | 241 | 300 |
| Eastbound Through | | 114 | 500 | 108 | 500 |
| Eastbound Right | | 70 | 180 | 90 | 180 |
| Westbound Through | | 95 | 95 | 44 | 95 |
| Westbound Right | | 377 | - | 146 | - |
| Northbound Left | | 369 | 475 | 147 | 475 |
| Northbound Through | | 214 | - | 118 | - |
| Southbound Left | | 66 | 90 | 100 | 90 |
| Southbound Through | | 170 | - | 139 | - |
| Southbound Right | | 155 | 100 | 98 | 100 |

Notes: Values in red indicate queue exceeds available storage length

As presented in the tables above with the addition of a second eastbound left turn pocket, the intersection is projected to operate at LOS D for the AM and LOS C for the PM peak hours. This build alternative also greatly reduces the eastbound queue lengths compared to the existing condition. The 95th percentile queues for the following turning movement is projected to exceed the available storage:

- Southbound Left
- Southbound Right

The eastbound and northbound queues are projected to be within the available storage.

Design Year 2045 (Full Build)

Year 2045 refers to an analysis scenario approximately 23 years in the future as is known as the Design Year. The improvements identified to provide stable intersection operations are the following:

- A second northbound left turn pocket. This will require a receiving (second) lane on the west side of the intersection.
- Provide a 300-foot protected left turn pocket, a through lane and a 100-foot right lane for Eastbound approach, same as the 2025 minimum build scenario.
- Provide a 100-foot left turn pocket, a through lane and a 100-foot right lane for Westbound approach.
- Convert split phase to protected left turn phasing for Eastbound and Westbound approaches, same as in the 2025 minimum build scenario.
- Extend the left turn pocket for the southbound approach to 120-feet.
- Remove the Channelization from the southbound right pocket and extend the storage length to 200 feet.

Tables 5 and 6 present the Design Year level of service and 95th percentile queues for the AM and PM peak hours.

Table 5 – Design Year 2045 Intersection Operations – Signal Alternative (Full Build)

| Intersection | Control Type | AM Peak Hour | | PM Peak Hour | |
|---|--------------|--------------|------------------|--------------|------------------|
| | | Delay | LOS ¹ | Delay | LOS ¹ |
| Kenmar Rd & Ross Hill Rd/S Fortuna Blvd | Signal | 33.9 | C | 25.6 | C |
| Eastbound | | 34.8 | C | 24.2 | C |
| Westbound | | 40.9 | D | 31.8 | C |
| Northbound | | 30.6 | C | 25.0 | C |
| Southbound | | 34.9 | C | 26.6 | C |

1. LOS = Delay based on average of all approaches for Signal

Table 6 – Design Year 2045 95th Percentile Queues – Signal Alternative (Full Build)

| Intersection | Control Type | AM Peak Hour | | PM Peak Hour | |
|---|--------------|-----------------------|-------------------|-----------------------|-------------------|
| | | 95th Percentile Queue | Available Storage | 95th Percentile Queue | Available Storage |
| Kenmar Rd & Ross Hill Rd/S Fortuna Blvd | Signal | - | - | - | - |
| Eastbound Left | | 267 | 300 | 262 | 300 |
| Eastbound Through | | 116 | 540 | 149 | 540 |
| Eastbound Right | | 64 | 100 | 114 | 130 |
| Westbound Left | | 96 | 100 | 38 | 100 |
| Westbound Through | | 285 | - | 121 | - |
| Westbound Right | | 167 | 100 | 60 | 100 |
| Northbound Left | | 256 | 475 | 114 | 475 |
| Northbound Through | | 194 | - | 122 | - |
| Southbound Left | | 74 | 100 | 106 | 120 |
| Southbound Through | | 145 | - | 141 | - |
| Southbound Right | | 180 | 200 | 209 | 200 |

As presented in the tables on the previous page with the identified improvements, the intersection is projected to operate at LOS C for the AM and PM peak hours. As it operates acceptably in the design year, it would also operate acceptably in the opening year if it were constructed in place of the 2025 minimum build. The 95th percentile queues for the following turning movement are projected to exceed the available storage:

- Westbound Right
- Southbound Right

The eastbound and northbound queues are projected to be well within the available storage.

Roundabout Alternative

The roundabout alternative would convert the signalized intersection to a four-legged roundabout intersection.

Opening Year 2025

Table 7 presents the Opening Year level of service and 95th percentile queues for the AM and PM peak hours.

Table 7 – Opening Year 2025 Intersection Operations – Roundabout Alternative

| Intersection | Control Type ¹ | AM Peak Hour | | | PM Peak Hour | | |
|---|---------------------------|--------------|------------------|-----------------------|--------------|------------------|-----------------------|
| | | Delay | LOS ² | 95th Percentile Queue | Delay | LOS ² | 95th Percentile Queue |
| Kenmar Rd & Ross Hill Rd/S Fortuna Blvd | RNDBT | 8.0 | A | - | 6.1 | A | - |
| Northbound | | 8.6 | A | - | 6.6 | A | - |
| Lane 1 | | 8.2 | A | 79.2 | 6.9 | A | 29.2 |
| Lane 2 | | 9.1 | A | 78.6 | 6.4 | A | 40.8 |
| Westbound | | 9.8 | A | - | 5.1 | A | - |
| Lane 1 | | 11.4 | B | 62.3 | 5.3 | A | 12.8 |
| Lane 2 | | 6.4 | A | 21.9 | 4.8 | A | 9.5 |
| Southbound | | 8.4 | A | - | 5.7 | A | - |
| Lane 1 | | 7.8 | A | 59.1 | 5.2 | A | 44.0 |
| Lane 2 | | 8.9 | A | 77.3 | 6.0 | A | 61.9 |
| Eastbound | | 5.5 | A | - | 6.4 | A | - |
| Lane 1 | | 6.1 | A | 55.9 | 7.2 | A | 72.9 |
| Lane 2 | | 4.6 | A | 28.7 | 5.2 | A | 40.6 |

1. RNDBT = Roundabout

2. LOS = Delay based on average of all approaches for RNBT

As presented in **Table 7**, the roundabout alternative is projected to operate at LOS A overall for the AM and PM peak hours. The projected 95th percentile queues are expected to be less than five vehicles.

Design Year 2045

Table 8 presents the Design Year level of service and 95th percentile queues for the AM and PM peak hours.

Table 8 – Design Year 2045 Intersection Operations – Roundabout Alternative

| Intersection | Control Type ¹ | AM Peak Hour | | | PM Peak Hour | | |
|---|---------------------------|--------------|------------------|-----------------------|--------------|------------------|-----------------------|
| | | Delay | LOS ² | 95th Percentile Queue | Delay | LOS ² | 95th Percentile Queue |
| Kenmar Rd & Ross Hill Rd/S Fortuna Blvd | RNDBT | 10.5 | B | - | 8.1 | A | - |
| Northbound | | 10.8 | B | - | 9.5 | A | - |
| Lane 1 | | 10.1 | B | 118.3 | 9.8 | A | 50.2 |
| Lane 2 | | 11.6 | B | 12.9 | 9.2 | A | 70.1 |
| Westbound | | 13.7 | B | - | 6.3 | A | - |
| Lane 1 | | 16.3 | B | 99.6 | 6.6 | A | 19.9 |
| Lane 2 | | 7.8 | A | 32.7 | 5.9 | A | 15.9 |
| Southbound | | 11.7 | B | - | 7.4 | A | - |
| Lane 1 | | 10.6 | B | 90.5 | 6.5 | A | 64.8 |
| Lane 2 | | 12.5 | B | 135.7 | 8.0 | A | 95.1 |
| Eastbound | | 6.5 | A | - | 8.7 | A | - |
| Lane 1 | | 7.3 | A | 75.4 | 10.2 | B | 137.2 |
| Lane 2 | | 5.1 | A | 36.9 | 6.5 | A | 61.1 |

1. RNDBT = Roundabout

2. LOS = Delay based on average of all approaches for RNBT

As presented in **Table 8**, the roundabout alternative is projected to operate at LOS B overall for the AM and LOS A for the PM peak hours. Additionally, the projected 95th percentile queues are expected to be less than seven vehicles. The roundabout site layout utilized to analyze 2025 and 2045 conditions is provided in **Figure 3**.

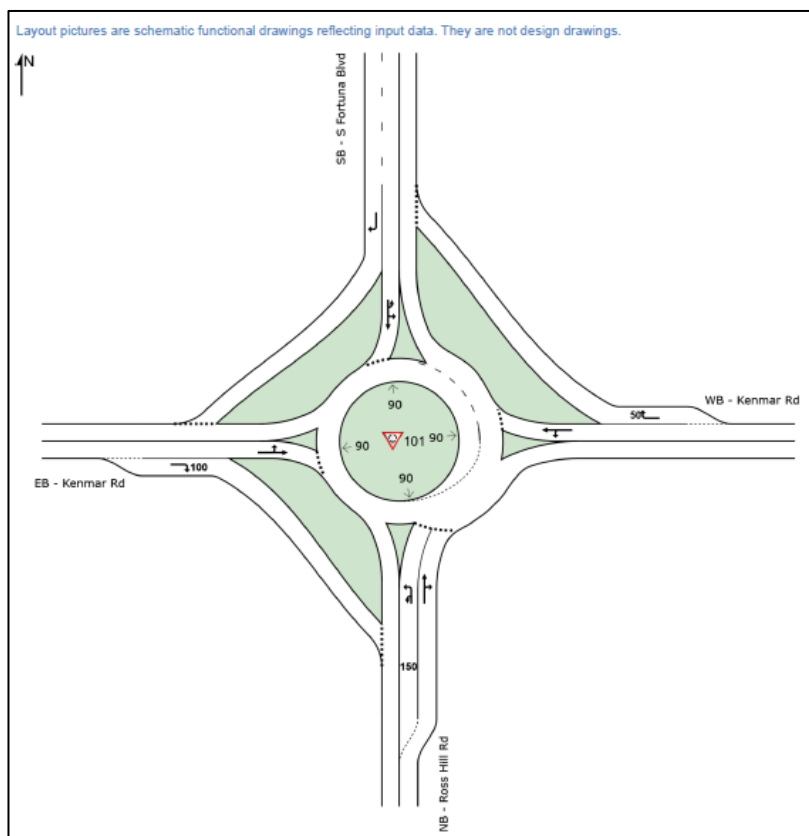


Figure 3 – Roundabout site layout

Traffic Collision Analysis

Collision data for the City of Fortuna was gathered using the Statewide Integrated Traffic Records System (SWITRS), Transportation Injury Mapping System (TIMS), and collision data from the Fortuna Police Department. Each data set was analyzed, crosschecked, and compiled into one complete comprehensive data set. This process was done to ensure that all reported collisions occurring at the project location are accounted for and to provide additional information that one system may not have captured. The data set analyzed contains collisions between January 1, 2015, and December 31, 2019 (5 years).

During this period, a total of 14 collisions were reported. Many of these collisions were rear ends and low severity. Intersection congestion can increase the likelihood of rear end collisions as there are more vehicles operating in a specific area. A summary of the collisions is shown in **Table 9** below.

Table 9 – Intersection Collisions between 2015 and 2019

| Severity | | | | | Type | | | | | | | | | | Year | | | | | EPDO | Total |
|----------|-----------------|------------------------|----------------------------|----------------------|---------|-----------|----------|-----------|------------|-----------|---------------------|------------------|---|---|------|------|------|------|------|------|-------|
| Fatal | Injury (Severe) | Injury (Other Visible) | Injury (Complaint of Pain) | Property Damage Only | Head-on | Sideswipe | Rear End | Broadside | Hit Object | Overtaken | Vehicle/ Pedestrian | Other/Not Listed | | | 2015 | 2016 | 2017 | 2018 | 2019 | | |
| 0 | 0 | 0 | 2 | 12 | 1 | 1 | 10 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 4 | 3 | 3 | 3 | 1 | 24 | 14 |

5. DEFICIENCIES

The existing conditions analysis shows that the intersection is operating below a LOS of C (below Fortuna's minimum standard). The tables above also show that currently there is not enough storage to meet the peak hour demands on multiple legs of the intersection. In the AM peak hour, the northbound left turn lane has 95th percentile queues that exceed the available storage. In the PM peak hour, the eastbound right turn and the southbound left turn have 95th percentile queues that exceed the available storage.

The poor level of service and intersection congestion may be contributing to the number of rear end collisions occurring at the intersection.

The existing intersection also lacks adequate pedestrian and bicycle facilities.

6. CORRIDOR AND SYSTEM COORDINATION

The following discussion highlights the state, regional and local planning considerations for the proposed project improvements.

State Planning

Complete Streets

Caltrans Director Policy 37 (DP-37) requires in locations with current and/or future pedestrian, bicycle, or transit needs, all transportation projects funded or overseen by Caltrans to provide comfortable, convenient, and connected complete streets facilities for people walking, biking, and taking transit or passenger rail unless an exception is documented and approved.

Regional Planning

The City of Fortuna plans to add the project to the next update of the Humboldt County Associations of Governments (HCAOG) Regional Transportation Plan (RTP).

Local Planning

General Plan

The City of Fortuna General Plan 2030 (General Plan) formalizes a long-term vision for the City's physical development. The Kenmar Road and S. Fortuna Boulevard/Ross Hill Road intersection improvements would fulfill many policies set forth in the General Plan, including the policies are detailed below.

Roadways and Highways

Policy TC-1.1 Reducing Mode Conflicts – The City shall seek to minimize conflicts between pedestrians, automobiles, and bicycles.

Policy TC-1.2 New Roadway Improvements – The City shall design and phase roadway improvements so that a level of service (LOS) C or better is maintained on all City streets, except that LOS D or better shall be maintained on Main Street.

Policy TC-1.3 Balanced Transportation System – The City shall strive to meet the level of service standard through a balanced transportation system that provides alternatives to the automobile and by promoting pedestrian, bicycle, and transit connections between employment areas and major residential and commercial areas.

Policy TC-1.4 Improved LOS – The City shall identify economic, design, and planning solutions to improve levels of service currently below LOS C. Where physical mitigation is infeasible, the City shall consider developing programs that enhance alternative access or otherwise reduce automobile travel demand.

Bicycle and Trail Facilities

Policy TC-5.2 Bicycle System – The City shall develop and maintain a safe, convenient, and effective bicycle system that encourages increased bicycle use.

Pedestrian Facilities

Policy TC-4.2 New Developments – The City shall continue to require new development to finance and install sidewalks and pedestrian pathways connecting them to existing sidewalks or widening the right-of-way fronting the development to accommodate new sidewalks.

Policy TC-4.3 Specific Plans – The City shall encourage specific development plans to include design continuity of pedestrian access that enables residents to walk from their homes to places of work, recreation, and shopping.

Local Road Safety Plan

Improvements to the Kenmar Road and S. Fortuna Boulevard/Ross Hill Road intersection were identified as a priority project in the City of Fortuna's 2021 LRSP.

7. ALTERNATIVES

Unless noted otherwise, the alternatives identified below address the purpose and need of the project.

The "No Build" Alternative

This is the "No Build" condition, where the study intersections would remain unaltered with respect to intersection geometrics and stop control. This alternative does not meet the purpose and need.

Signal (including Minimum Build) Alternative

As a supplement to the adjacent on-going US101/Kenmar Road interchange project to the west of this intersection, it may become necessary to support potential queuing going eastbound into the intersection. As such, a minimum build signal alternative that provides an extended left turn lane and new right turn lane with a bike lane has been provided. This alternative could potentially be further modified to eliminate the existing southbound slip right, dependent on timing of improvements and availability of funding. See

Attachment B for conceptual drawings of the minimum build signal alternative with and without the current adjacent interchange geometrics for context.

The full build signal alternative would add a second left turn lane heading north on Ross Hill Road. This would reduce wait times and provide more storage for cars turning left. The west leg of Kenmar Road would be widened to add another receiving lane for the two left turn lanes on Ross Hill Road. The East leg of Kenmar Road would also be widened to provide for a bike lane. The bike lane addition would change the lane configuration at the intersection separating the right turn lane from the through lane with the bike lane. This alternative also includes bicycle facilities for all legs of the intersections providing connectivity to cyclists in the area. See **Attachment B** for conceptual drawings of the full build signal alternative with and without the current adjacent interchange geometrics for context.

Although the full build signal alternative does offer several operational and safety improvements compared to the no build, the full build signal alternative would provide inferior intersection operations compared to the roundabout alternative and would require substantial geometric changes to accommodate and provide improved operations for Year 2025 and 2045 conditions.

Note that in order to accommodate the required lane configurations on Kenmar Road, west of the intersection, the existing box culvert on Mill Creek would need to be extended or replaced, and approximately 250 feet of the Mill Creek channel north of Kenmar Road would need to be relocated. These required culvert and channel modifications would likely face significant regulatory challenges, including the need to provide for fish passage through the culvert crossing. Before advancing with the alternative, consultation with regulatory agencies should occur to ensure that work would be allowable.

Roundabout Alternative

The roundabout alternative would provide increased safety and circulation for the intersection. Roundabouts reduce speed at intersections which reduces the impact intensity of collisions that occur; they also reduce the number of potential conflict/collision points at the intersection. With the roundabout alternative, the available movements at the intersection have been maintained, while the number of lanes has been reduced. The roundabout alternative includes pedestrian crossings on each leg of the intersection providing connectivity to existing facilities to help close the gap in pedestrian facilities. Bicycle ramps and paths are also proposed for each leg of the roundabout allowing cyclists to travel through the intersection without entering the roundabout if they feel more comfortable being physically separated from the cars. See **Attachment B** for conceptual drawings of the roundabout alternative.

The roundabout alternative would provide better intersection operations compared to the signal alternative, as well as acceptable 95th percentile queues through Design Year 2045. The roundabout alternative would provide a single lane approach in the southbound, eastbound, and westbound directions with dedicated right turn pockets. The northbound approach would require a dedicated left turn lane with a through-right lane due to the heavy demand to the US 101 highway interchange to the west.

Cost Estimates

Capital, support, and total estimated costs for each alternative are summarized in **Table 10 on the following page**. The costs presented are escalated to the expected year of expenditure. The total capital costs include traffic control, mobilization, right-of-way, utility relocation, and contingencies. The total support costs include costs for environmental clearance, plans, specifications, and estimates (PS&E), right-of-way engineering and acquisitions, and construction support and management. Costs for the Minimum Build signal differ from the alternative shown in **Attachment B** and are based on the smallest potential footprint for the alternative, which would not include a realigned southbound slip lane, but rather a new southbound right that would be added as part of the westbound thru realignment/widening. Refer to **Attachment F** for detailed costs estimates for each alternative.

Table 10: Cost Estimate Summary

| Alternative | Total Capital Cost | Total Support Cost | Total Estimated Cost (Rounded) |
|------------------------|--------------------|--------------------|--------------------------------|
| Signal (Minimum Build) | \$2.1M | \$0.8M | \$2.9M |
| Signal (Full Build) | \$8.9M | \$3.7M | \$12.6M |
| Roundabout | \$6.1M | \$2.6M | \$8.7M |

8. RIGHT-OF-WAY

Right-of-Way

The initial conceptual design relied on assessor parcel lines to approximate the public right-of-way and property lines as existing survey-level right-of-way information was not available at the time of this study. Refer to **Attachment C** for copies of the assessor parcel maps for the project area.

Based on the assessor parcel lines, it appears that both the signal and roundabout alternatives can be constructed entirely within the existing City right of way with the exception of one discrete location northeast of the project intersection (APN # 202-021-004).

If the project advances, research should be conducted to determine accurate right-of-way widths, property lines, parcel ownerships, and maintenance responsibilities. Right-of-Way Data Sheets will need to be prepared during the right-of-way phase of the project.

In addition to permanent acquisitions, temporary permissions/easements and/or encroachment permits will need to be obtained during the Right-of-Way phase of the project.

Utilities

Existing underground and above ground utilities in the vicinity of the project may need to be modified or relocated to accommodate the proposed improvements. The relocation of non-City owned utilities is not expected to be required. During the Project Approval and Environmental Document (PA&ED) phase the City should request utility mapping from the utility companies identified in **Table 11** and identify potential conflicts with the proposed work.

Table 11: Utilities in Project Vicinity

| Utility | Owner |
|------------------|------------------------|
| Storm Drain | City of Fortuna |
| Cable Television | Optimum |
| Telephone | AT&T |
| Electrical | Pacific Gas & Electric |
| Natural Gas | Pacific Gas & Electric |
| Water | City of Fortuna |

Railroad

A railroad corridor owned by the Great Redwood Trail Agency (formerly North Coast Railroad Authority) roughly parallels the east side of US 101 and crosses through Kenmar Road East of the project area. At the time of this study the railroad corridor was in the process of being railbanked, allowing the corridor to be utilized for a trail system until rail operation become viable. There are no railroad facilities in the project area.

9. STAKEHOLDER INVOLVEMENT

As part of the outreach conducted to support the development of the City of Fortuna's 2021 LRSP, the City solicited public input on road safety concerns through an online interactive map and a survey. The Kenmar Road and S. Fortuna Boulevard/Ross Hill Road intersection received some of the most comments on the City's online interactive map. The common comment theme for the project intersection were as follows:

- Merging onto Kenmar Road from S. Fortuna Boulevard
- Red light running

According to the results of the public survey, the primary safety concern in the City of Fortuna is intersections, followed by a lack of infrastructure (sidewalks, bike lanes, turn lanes, etc.). Refer to **Figure 4** below for a chart of all responses provided. Both of these items have been identified as specific needs for this project.

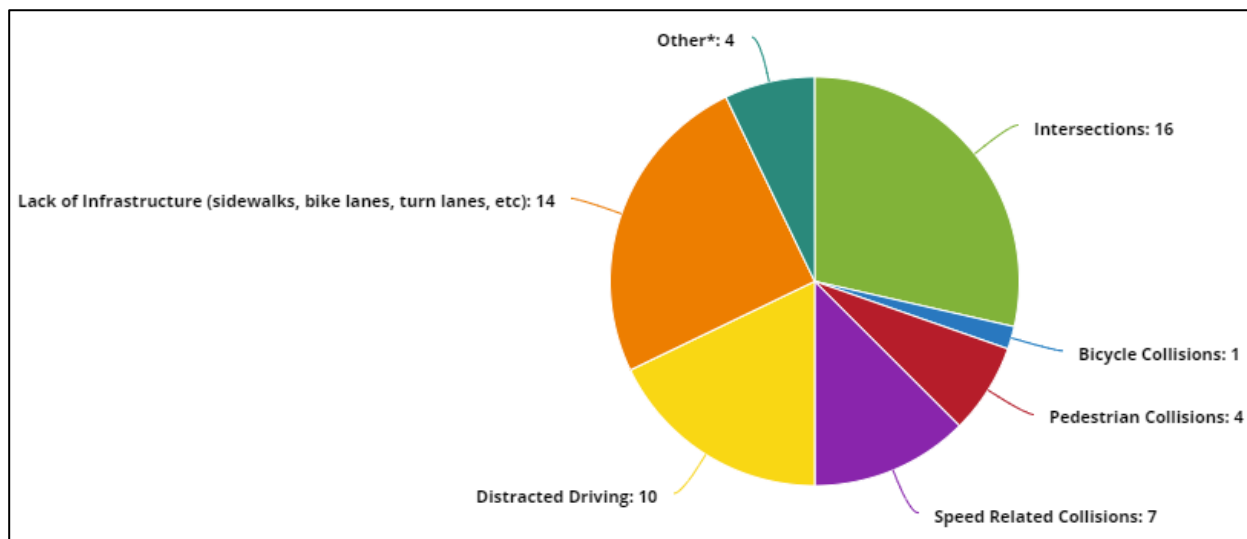


Figure 4 – Public-Identified Roadway Safety Issues (Fortuna LRSP, 2011)

10. ENVIRONMENTAL COMPLIANCE

Preliminary Environmental Analysis

In 2022, an initial environmental evaluation of the project and alternatives was conducted to help anticipate potential environmental constraints that may affect project design, alternatives, cost, schedule, and delivery. The evaluation included a reconnaissance-level site investigation of existing conditions in the project area to identify the presence or potential presence of biological resources listed under the Federal Endangered Species Act (ESA), the presence of wetlands and Waters of the US as regulated by the US Army Corps of Engineers (USACE), the presence or potential presence of species listed as endangered or threatened under the California Endangered Species Act (CESA) or considered a species of special concern (SSC) by the California Department of Fish and Wildlife (CDFW), or the potential for special-status plant species having a rare plant ranking as determined by the California Native Plant Society (CNPS) rare plant inventory, and to present the potential of sensitive habitats as listed by the CDFW. A map of the potential environmental constraints is included in **Attachments D**.

NEPA, CEQA and Permitting

During the PA&ED phase, the project will need to be evaluated for potential impacts on the environment in compliance with the California Environmental Quality Act (CEQA) and National Environmental Policy Act (NEPA). Feasible opportunities to avoid or reduce impacts will need to be pursued and mitigation

measures developed to reduce potentially significant impacts as appropriate. The draft CEQA document would be made available to the public for review and comment.

Based on the information currently available, the expected compliance pathways are a Mitigated Negative Declaration of environmental impact for CEQA and a Categorical Exclusion for NEPA in conformance with the Federal Highways Administration/Caltrans programmatic process.

During the initial environmental evaluation, potential riparian habitat was identified along the Kenmar Road, South Fortuna Road, and Ross Hill Road margins. This potential riparian habitat is largely associated with Mill Creek, which crosses under Ross Hill Road via a 72 inch culvert and under Kenmar Road via a ten foot by five foot box culvert. Potential wetlands were identified in the upland ditch island between Kenmar Road and South Fortuna Boulevard, along with a ditch on the south side of Kenmar Road.

Mill Creek is an anadromous waterway. Replacement or alteration of the two Mill Creek culverts could affect special status anadromous salmonids and other aquatic organisms. Sediment and erosion control Best Management Practices would need to be implemented during construction to reduce the likelihood of impacts to Mill Creek and aquatic organisms.

The wetland and riparian habitats in the project area have a moderate to high likelihood of supporting listed reptile, frog and fish species including Western Pond Turtle *Emys (Actinymys) marmorata*, Northern Red-legged Frog *Rana aurora*, and Foothill Yellow-legged Frog *Rana boylei*, along with other special status species. Several sensitive plant species and Sensitive Natural Communities also have a moderate likelihood of occurring in the study area. The following database searches are included in **Attachment E**:

- California Natural Diversity Database
- Fortuna California Native Plant Society Database
- National Marine Fisheries Service Species List
- United States Fish and Wildlife Service Species List

Subsequent environmental investigations, including a wetland delineation, will be needed to be completed to identify any sensitive species and habitats in the project area, and to identify any necessary protection and minimization measures. Additionally, a variety of permits and related environmental review will be necessary for project planning and design.

Anticipated Environmental Permitting and Compliance Requirements are presented in **Table 12**.

Table 12. Anticipated Environmental Permitting and Compliance Requirements

| Law/Regulation | Permit/Approval | Authority |
|--|---|--|
| CEQA | Mitigated Negative Declaration | Lead Agency |
| NEPA | Categorical Exclusion | Caltrans on behalf of Federal Highways Administration |
| Clean Water Act Section 404 | Nationwide Permit | US Army Corps of Engineers |
| Porter-Cologne/Clean Water Act Section 401 | 401 Certification and/or Waste Discharge Requirements (WDR) | North Coast Regional Water Quality Control Board |
| National Historic Preservation Act Section 106 | Letter of Concurrence | State Historic Preservation Office & Tribal Historic Preservation Office |

A Preliminary Environmental Study (PES) Form will need to be prepared during the PA&ED phase of the project to identify the required technical studies. The following technical studies and plans are anticipated to be required based on available information:

- Natural Environmental Study (NES) of Biological Resources
- Wetland Delineation and Special Status Botanical Resources Survey
- Initial Site Assessment (ISA)
- Visual Impact Assessment (VIA), Minor VIA, or Visual Technical Memorandum
- Floodplain Evaluation & Location Hydraulic Study
- Geotechnical Investigation
- Historic Property Survey Report (HPSR) and Archaeological Survey Report (ASR)
- Preliminary Hydraulics/Hydrology Study

Note that if the project does not include federal funds, several of the special studies noted above would not be required.

11. FUNDING

Funding to advance the project has not yet been programmed, however the City of Fortuna intends to request funding to advance the PA&ED phase of the project utilizing the funding from the State Transportation Improvement Program (STIP), the Active Transportation Program (ATP), the federal RAISE program, local funds, or an alternative funding source.

Because of the likely cost of the project, a portion of funding would likely be in the form of federal funds. It has been determined that this project is eligible for Federal-aid funding.

Capital Outlay Cost Estimate

Table 13 presents a summary of the escalated capital outlay estimates for the proposed alternatives. Detailed estimates for the two alternatives are presented in **Attachment F**.

Table 13: Summary of Capital Outlay Estimate

| Alternative | Estimated Capital Cost | | |
|------------------------|------------------------|--------------|-----------|
| | Construction | Right-of-Way | Utilities |
| Signal (Minimum Build) | \$2.03M | None | TBD |
| Signal (Full Build) | \$8.80M | \$60K | TBD |
| Roundabout | \$6.03M | \$30K | TBD |

Note: The above costs are escalated to the anticipated year of expenditure.

The level of detail available to develop these capital outlay project estimates is useful for long-range planning purposes only. The potential cost of utility relocation work is not known at this time. The capital outlay project estimates should not be used to program or commit capital outlay funds.

Outlay Support Cost Estimate

Estimated escalated outlay support for programming PA&ED for the preferred project (Roundabout Alternative) for this project is \$521,000. Estimated support costs for other phases of work is presented in **Table 14**.

Table 14: Summary of Outlay Support Estimate

| Alternative | Estimated Support Cost | | | |
|------------------------|------------------------|--------------|----------------------|----------------------|
| | PA&ED Support | PS&E Support | Right-of-Way Support | Construction Support |
| Signal (Minimum Build) | \$209K | \$260k | None | \$350K |
| Signal (Full Build) | \$782K | \$1,146K | \$217K | \$1,527K |
| Roundabout | \$521K | \$782K | \$163K | \$1,075K |

Note: The above costs are escalated to the anticipated year of expenditure.

The level of detail available to develop outlay support cost estimates for the PS&E, right-of-way, and construction is useful for long-range planning purposes only.

12. DELIVERY SCHEDULE

The potential delivery schedule for the proposed alternative is outlined below in **Table 15**. Once project funding has been identified, the delivery schedule should be reviewed and updated as appropriate.

Table 15: Project Delivery Schedule

| Project Milestones | Scheduled Delivery Date |
|--|-------------------------|
| Program Project | December 2023 |
| Begin Environmental (PA&ED) Phase | July 2024 |
| Circulate Draft Environmental Document | February 2025 |
| Draft Project Report | February 2025 |
| End Environmental Milestone | July 2025 |

The anticipated funding fiscal year for construction is 2025/26.

13. RISKS

A risk register and risk analysis will be completed for the project during the PA&ED phase of the project.

14. EXTERNAL AGENCY COORDINATION

This project does not anticipate needing coordination with the Federal Highway Administration (FHWA). Coordination between the City of Fortuna and Caltrans will be required throughout all phases of this project as Caltrans will likely be the lead agency under NEPA and could be responsible for overseeing the funding, depending on the source. In addition, the project will require the following coordination:

US Army Corps of Engineers

Department of the Army Permit for:
Clean Water Act Section 404

California Department of Fish and Wildlife

California Fish and Game Code Section 1602
Lake or Streambed Alteration Agreement

Regional Water Quality Control Board

Clean Water Act Section 401
Water Quality Certification

15. PROJECT REVIEWS

| | | |
|--|---------------------|------------|
| City of Fortuna Engineering/Public Works | <u>Brendan Byrd</u> | Date _____ |
| City of Fortuna General Services | <u>Bob Natt</u> | Date _____ |

Since the project is not on the State Highway System, review and approval by Caltrans is not required.

16. PROJECT PERSONNEL

City of Fortuna

Brendan Byrd, City Engineer, 707-725-1469

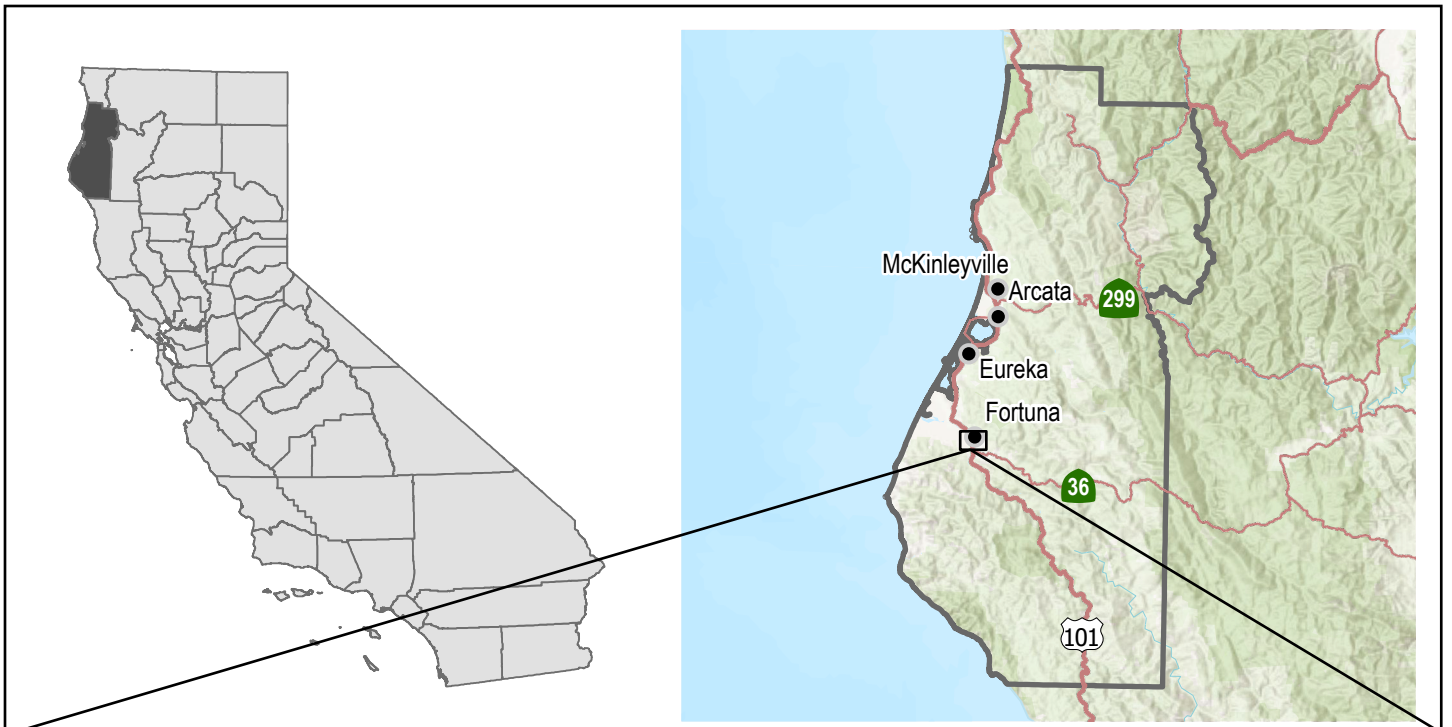
GHD (Consultant)

Erin Gibbs, Staff Engineer, 949-648-5247
Andrea Hilton, Environmental Planner, 707-443-8326
Heather Anderson, Civil Engineer, 916-256-2685
Misha Schwarz, Environmental Scientist, 707-443-8326
Josh Wolf, PE, Project Manager/Civil Engineer, 707-443-8326

17. ATTACHMENTS (Number of Pages)

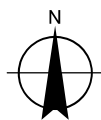
- A. Location Map (1)
- B. Conceptual Design Drawings (6)
- C. Assessor Parcel Maps (3)
- D. Environmental Constraints Map (1)
- E. Environmental Database Search Results (76)
 - 1. California Natural Diversity Database
 - 2. Fortuna California Native Plant Society Database
 - 3. National Marine Fisheries Service Species List
 - 4. United States Fish and Wildlife Service Species List
- F. Cost Estimates (33)

Attachment A - Location map



Paper Size ANSI A
0 1,000 2,000 3,000
Feet

Map Projection: Lambert Conformal Conic
Horizontal Datum: North American 1983
Grid: NAD 1983 StatePlane California 1 FIPS 0401 Feet

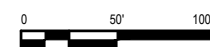
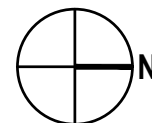
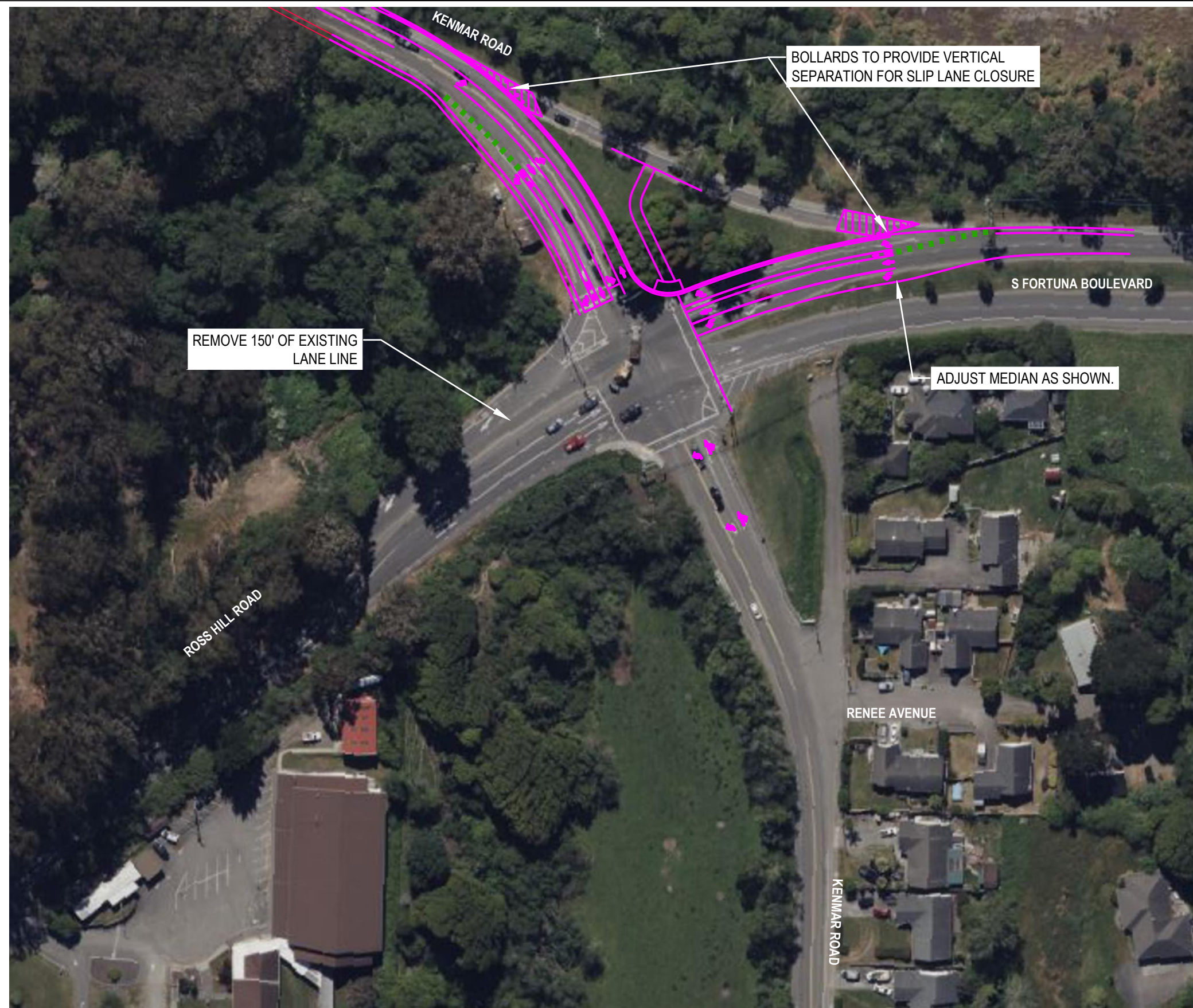


City of Fortuna
Kenmar and Ross Hill Road
PSR

Project No. 12577588
Revision No. -
Date Mar 2022

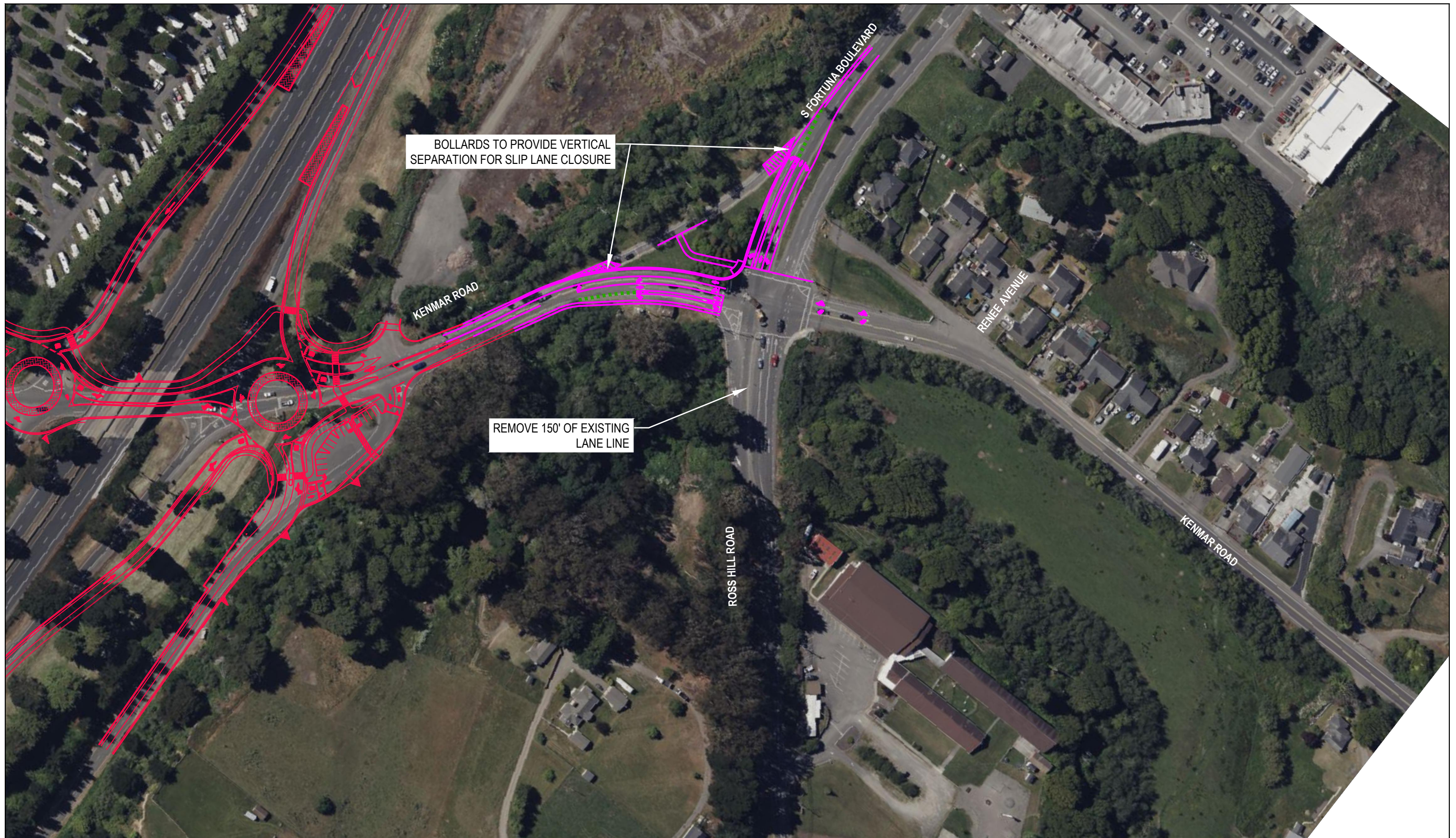
Vicinity Map

Attachment B - Conceptual Design Drawings



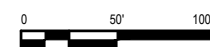
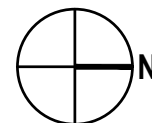
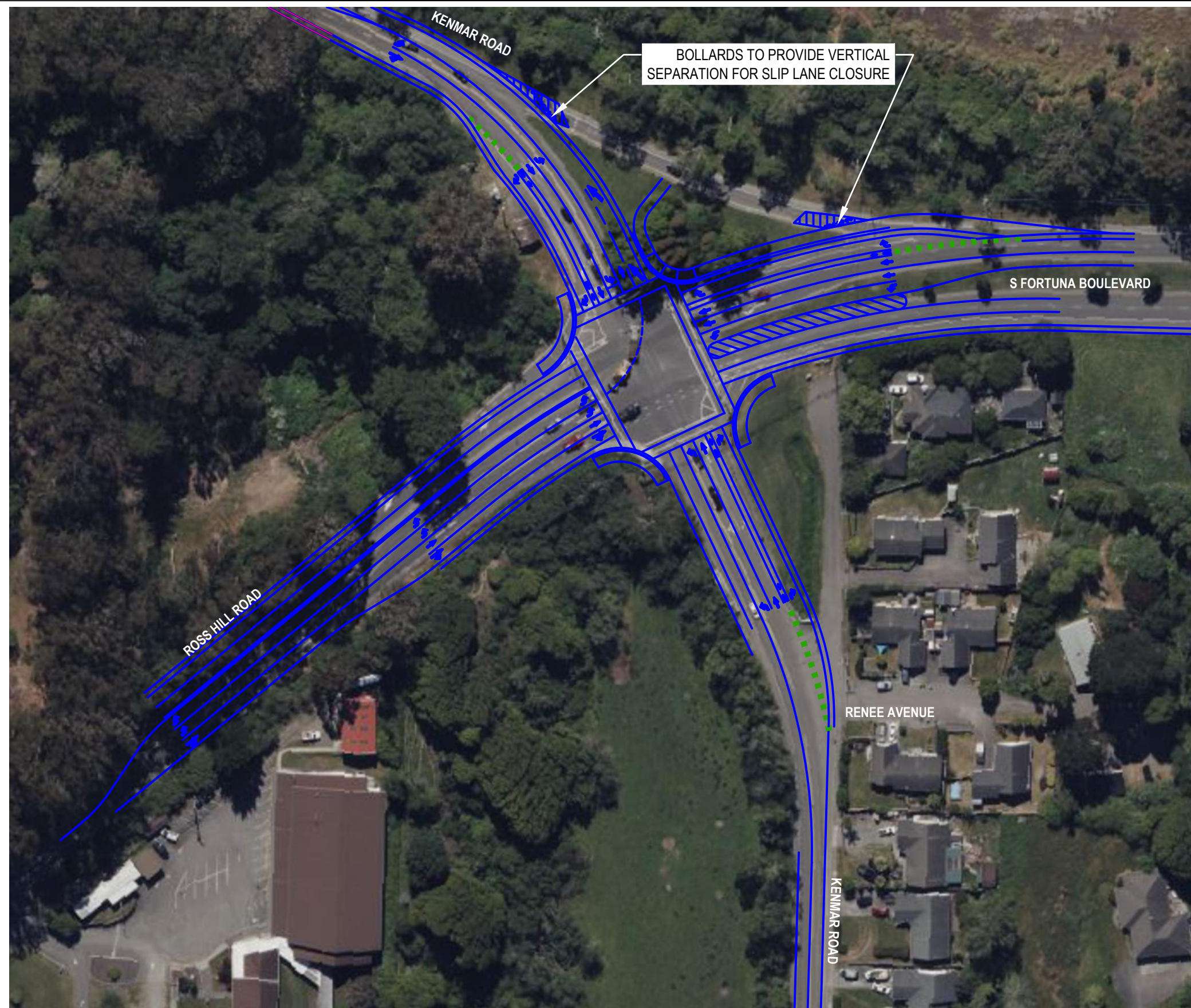
City of Fortuna
Kenmar Rd and Ross Hill Rd
INTERIM CONDITION-
SIGNAL ALTERNATIVE

Project No. 12577588
Date March 2025



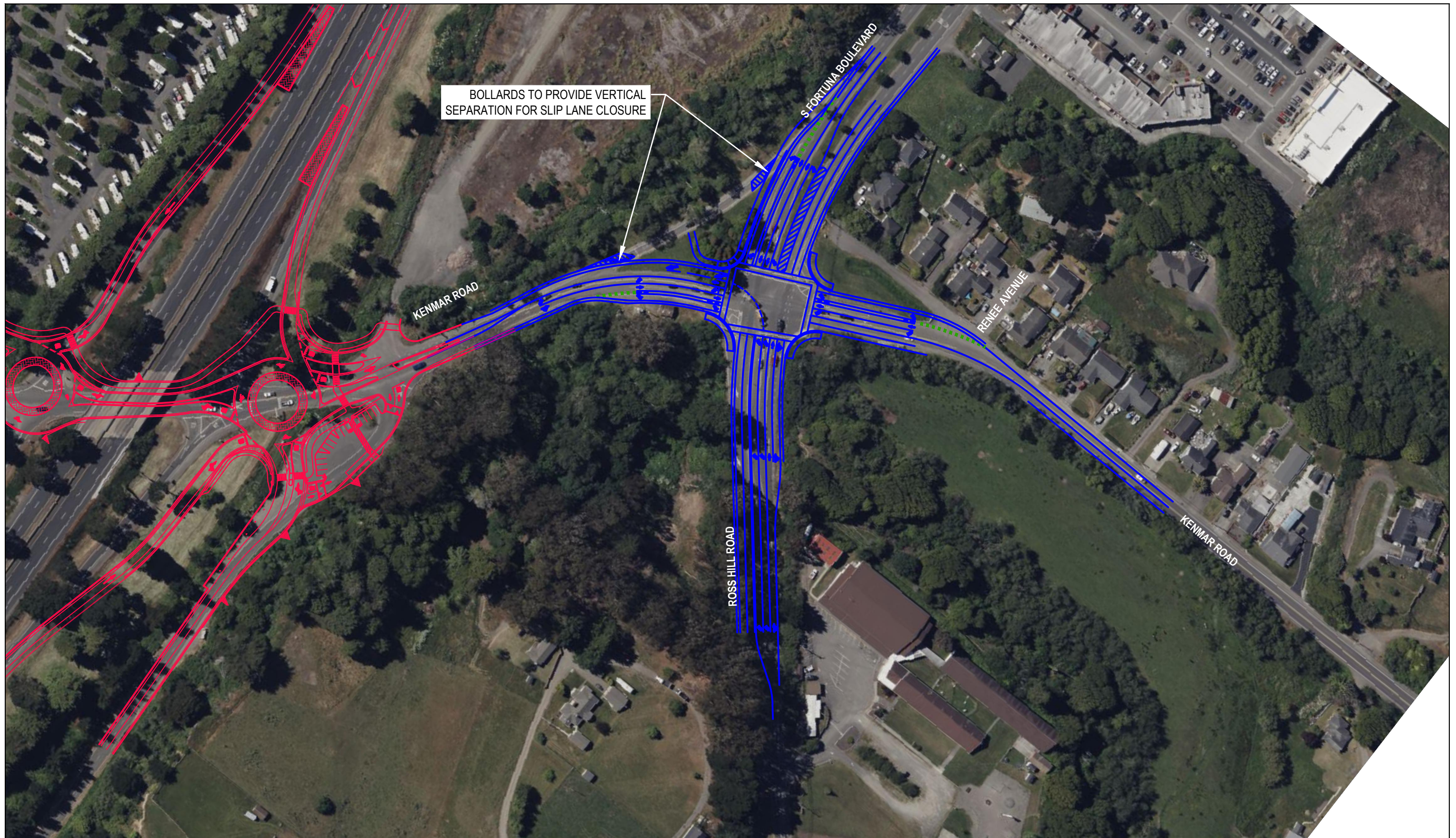
City of Fortuna
Kenmar Rd and Ross Hill Rd
INTERIM CONDITION-
SIGNAL ALTERNATIVE

Project No. 12577588
Date March 2025



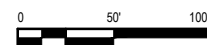
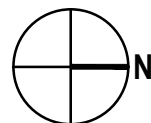
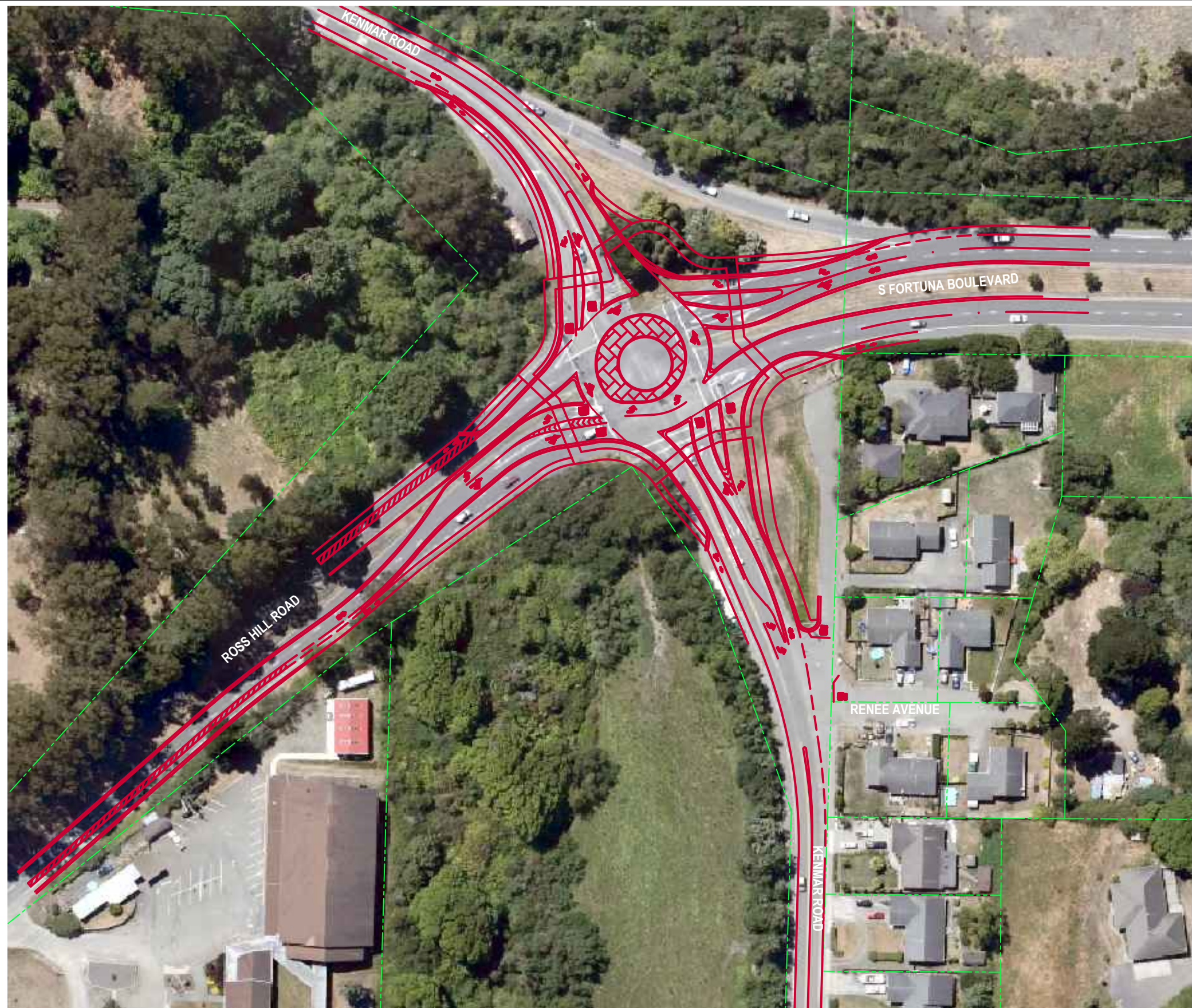
City of Fortuna
Kenmar Rd and Ross Hill Rd
FULL BUILD OUT-
SIGNAL ALTERNATIVE

Project No. 12577588
Date March 2025



City of Fortuna
Kenmar Rd and Ross Hill Rd
FULL BUILD OUT-
SIGNAL ALTERNATIVE

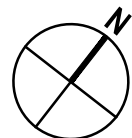
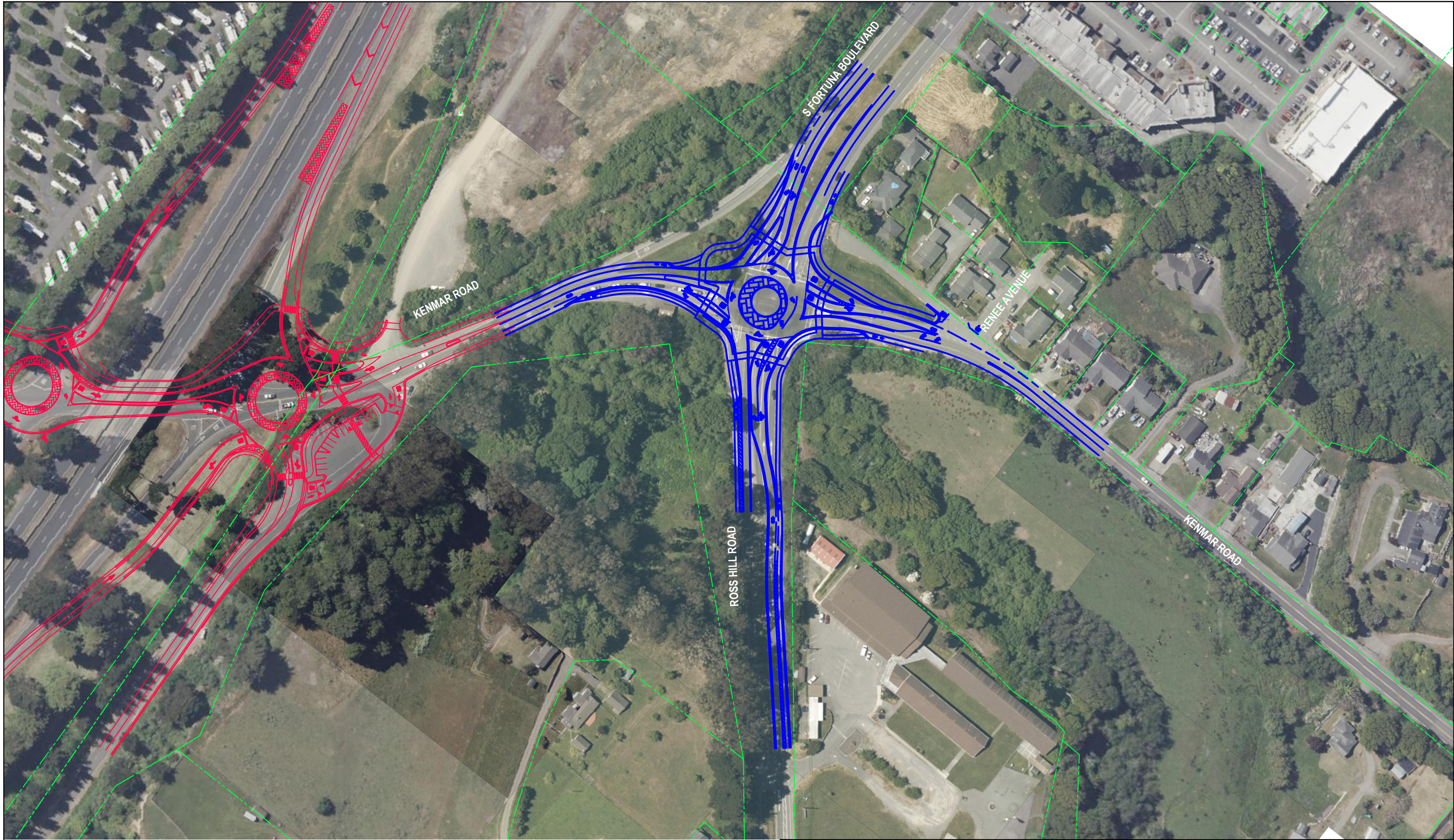
Project No. 12577588
Date March 2025



City of Fortuna
Kenmar Rd and Ross Hill Rd
ROUNDABOUT
ALTERNATIVE

Project No. 12577588
Date October 2022

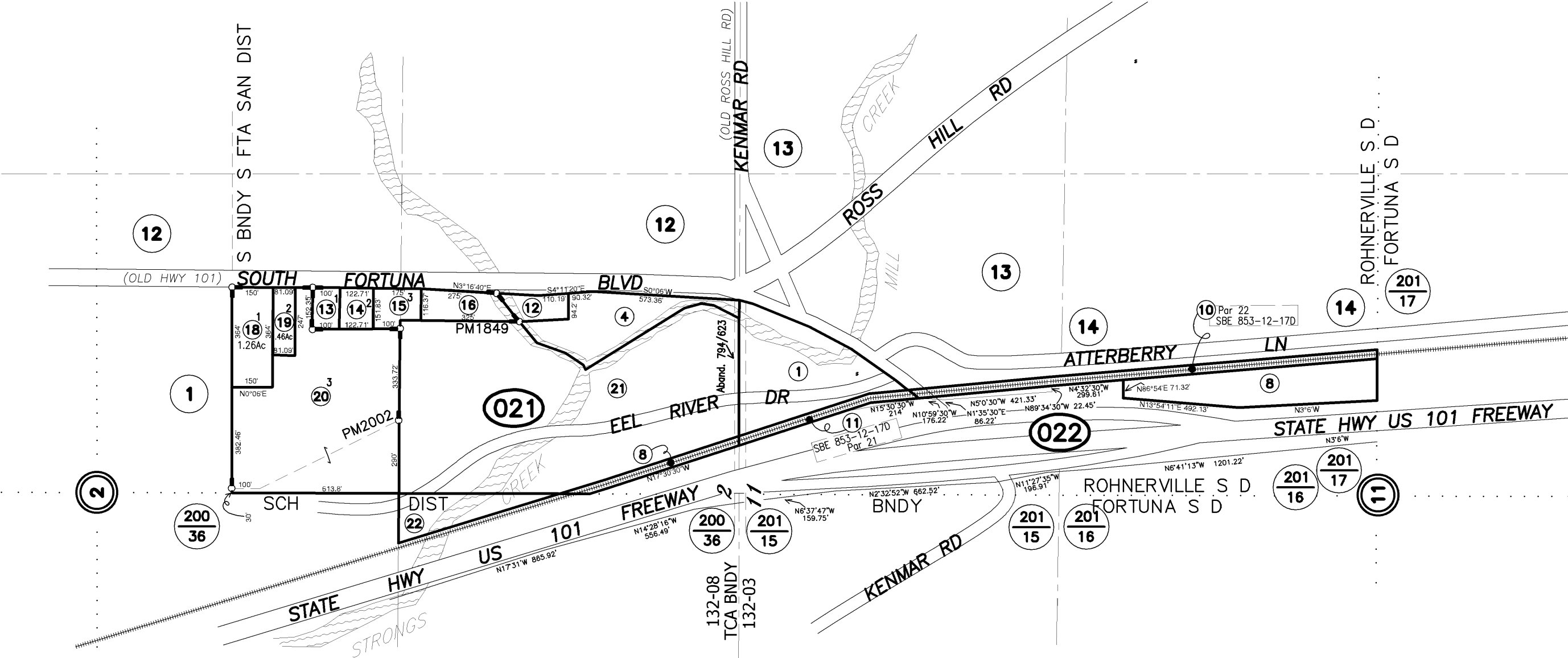
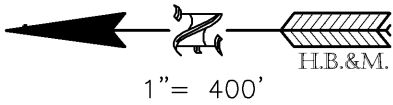
PRELIMINARY - SUBJECT TO CHANGE



City of Fortuna
Kenmar Rd and Ross Hill Rd
ROUNDBOUT
ALTERNATIVE

Project No. 12577588
Date February 2024

Attachment C - Assessor Parcel Maps

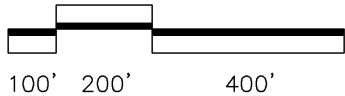


ASSESSOR'S PARCEL MAP

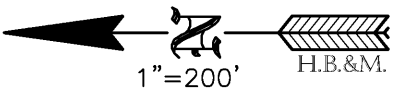
1. THIS MAP WAS PREPARED FOR ASSESSMENT PURPOSES ONLY.
2. NO LIABILITY IS ASSUMED FOR THE ACCURACY OF THE DATA SHOWN.
3. ASSESSOR'S PARCELS MAY NOT COMPLY WITH LOCAL LOT-SPLIT OR BUILDING SITE ORDINANCES.

PM 1849 BK.16 OF PARCEL MAPS, PG 53
PM 2002 BK.17 OF PARCEL MAPS, PG 118

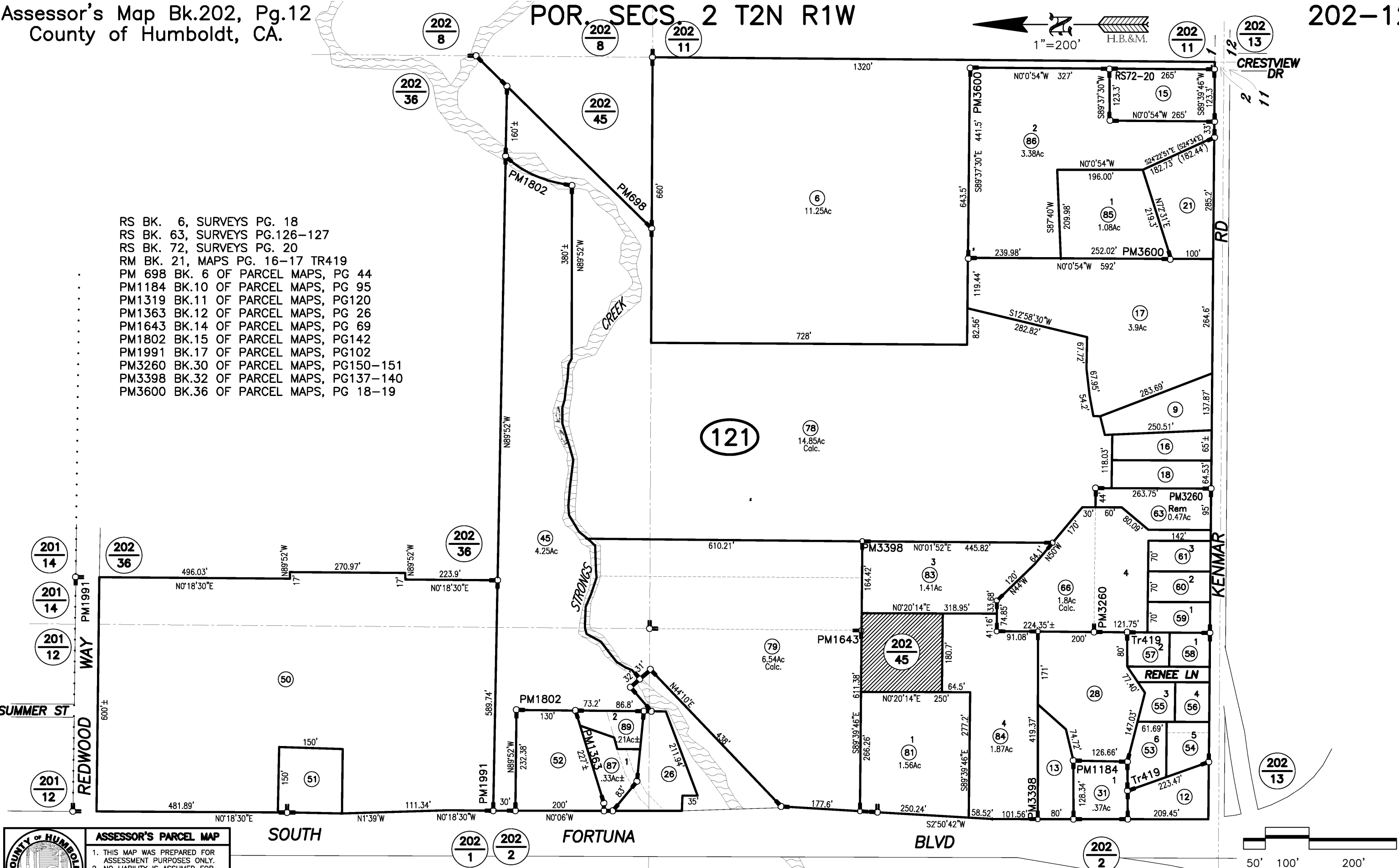
NOTE - Assessor's Block Numbers Shown in Ellipses
Assessor's Parcel Numbers Shown in Circles.

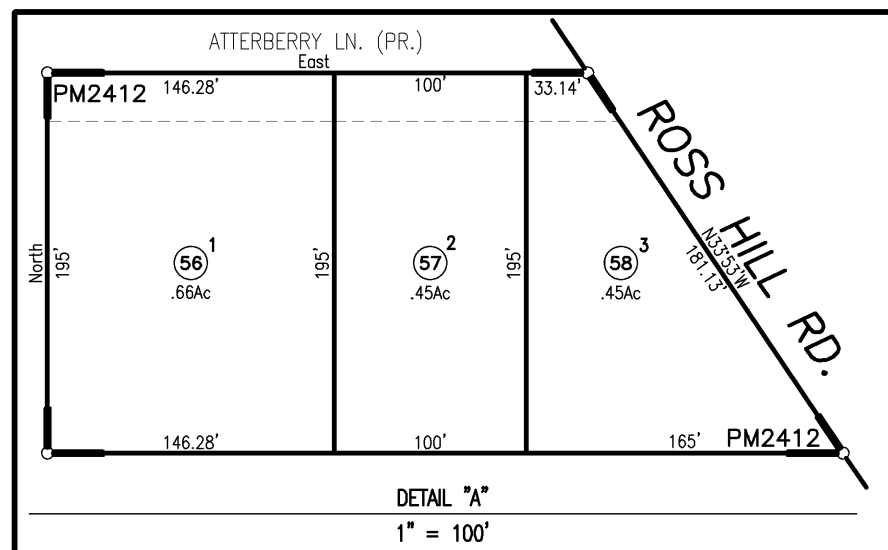


Feb. 20, 2020
JASON THISSELL

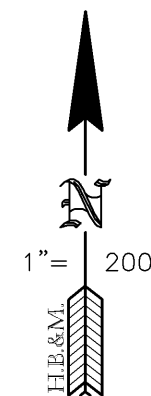


- RS BK. 6, SURVEYS PG. 18
RS BK. 63, SURVEYS PG.126-127
RS BK. 72, SURVEYS PG. 20
RM BK. 21, MAPS PG. 16-17 TR419
PM 698 BK. 6 OF PARCEL MAPS, PG 44
PM1184 BK.10 OF PARCEL MAPS, PG 95
PM1319 BK.11 OF PARCEL MAPS, PG120
PM1363 BK.12 OF PARCEL MAPS, PG 26
PM1643 BK.14 OF PARCEL MAPS, PG 69
PM1802 BK.15 OF PARCEL MAPS, PG142
PM1991 BK.17 OF PARCEL MAPS, PG102
PM3260 BK.30 OF PARCEL MAPS, PG150-151
PM3398 BK.32 OF PARCEL MAPS, PG137-140
PM3600 BK.36 OF PARCEL MAPS, PG 18-19





NOTE: COUNTY TOOK R/W ONLY FOR NEW ROSS HILL RD.



U.S. 101

EEL RIVER DR.

ROSS HILL

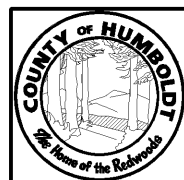
KENMAR RD. 207 T.C.A. BNDY.

CRESTVIEW DRIVE

TRACT NO.8 KENMAR SUB.

P.G & E R/W

PRESUMABLY FOR R/W
NOT ASSESSED OWNER ATTERBERRY

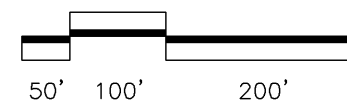


ASSESSOR'S PARCEL MAP

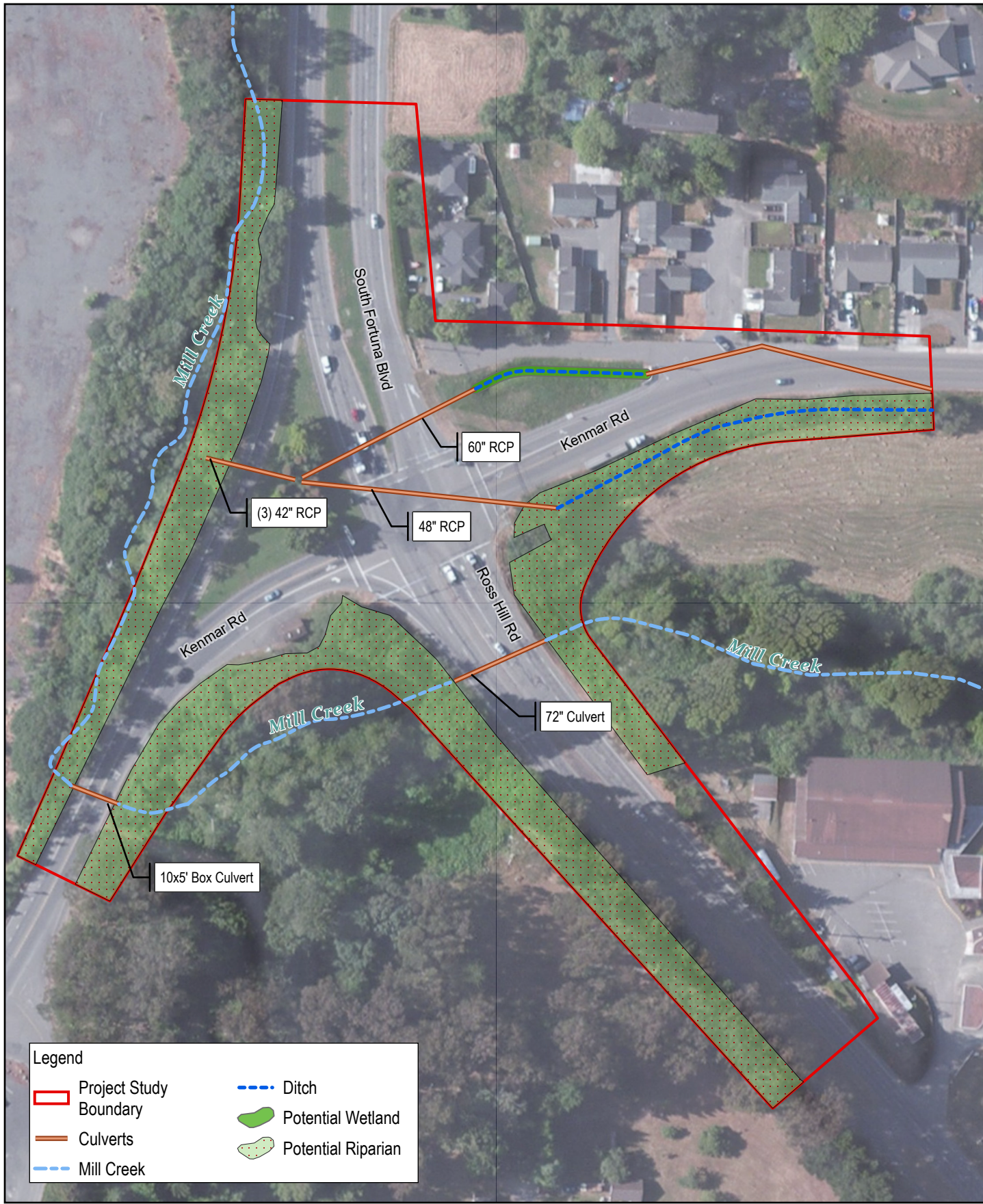
1. THIS MAP WAS PREPARED FOR ASSESSMENT PURPOSES ONLY.
2. NO LIABILITY IS ASSUMED FOR THE ACCURACY OF THE DATA SHOWN.
3. ASSESSOR'S PARCELS MAY NOT COMPLY WITH LOCAL LOT-SPLIT OR BUILDING SITE ORDINANCES.

RS. BK. 18, SURVEYS PG. 52
RM. BK. 13, MAPS PG. 131 (NO.8 KENMAR)
PM 1404 BK.12 OF PARCEL MAPS, PG 74
PM 2412 BK.21 OF PARCEL MAPS, PG 86

NOTE - Assessor's Block Numbers Shown in Ellipses
Assessor's Parcel Numbers Shown in Circles.



Attachment D - Environmental Constraints Map



Legend

Project Study Boundary

Culverts

Mill Creek

Ditch

Potential Wetland

Potential Riparian

Map Projection: Lambert Conformal Conic
Horizontal Datum: North American 1983
Grid: NAD 1983 StatePlane California I FIPS 0401 Feet

City of Fortuna
Kenmar Road and Ross Hill Road
Project Study Report

Project No. 12577588
Revision No. -
Date Apr 2022

Environmental Constraints

\\ghdnet\ghd\US\Eureka\Projects\5611\12577588\GIS\Maps\Deliverables\12577588_Project_Description\12577588_Project_Description.aprx
Print date: 15 Apr 2022 - 09:33

Data source: World Imagery (Clarity): This work is licensed under the Esri Master License Agreement. View Summary | View Terms of Use. Export: This layer is not intended to be used to export tiles for offline. Data Collection and Editing: This layer may be used in various ArcGIS apps to support data collection and editing, with the results used internally or shared with others, as described for these use cases.
World Hillshade: Sources: Esri, Airbus DS, USGS, NGA, NASA, CGIAR, N Robinson, NCEAS, NLS, OS, NIMA, Geodatastyreisen, Rijkswaterstaat, GSA, Geoland, FEMA, Intermap and the GIS user community. Created by: jlopez4

Attachment E – Environmental Database Search Results

| SciName | ComName | FedList | CalList | GRank | SRank | CRPR | Othr Status | Habitats | GenHab | MicroHab |
|---|-------------------|---------|---------|--------|-------|------|---|---|--|---|
| <i>Abronia umbellata</i> var. <i>breviflora</i> | pink sand-verbena | None | None | G4G5T2 | S2 | 1B.1 | BLM_S-Sensitive SB_CalBG/RSA BG-California/ Rancho Santa Ana Botanic Garden | Coastal dunes | Coastal dunes and coastal strand. | Foredunes and interdunes with sparse cover. A. umbellata var. breviflora is usually the plant closest to the ocean. 0-75 m. |
| <i>Accipiter cooperii</i> | Cooper's hawk | None | None | G5 | S4 | | CDFW_WL-Watch List IUCN_LC-Least Concern | Cismontane woodland Riparian forest Riparian woodland Upper montane coniferous forest | Woodland, chiefly of open, interrupted or marginal type. | Nest sites mainly in riparian growths of deciduous trees, as in canyon bottoms on river flood-plains; also, live oaks. |

| | | | | | | | | | | |
|------------------------------|--------------------|------------|------|----|----|--|--|---|--|---|
| <i>Accipiter striatus</i> | sharp-shinned hawk | None | None | G5 | S4 | | CDFW_WL-Watch List IUCN_LC-Least Concern | Cismontane woodland Lower montane coniferous forest Riparian forest Riparian woodland | Ponderosa pine, black oak, riparian deciduous, mixed conifer, and Jeffrey pine habitats. Prefers riparian areas. | North-facing slopes with plucking perches are critical requirements. Nests usually within 275 ft of water. |
| <i>Acipenser medirostris</i> | green sturgeon | Threatened | None | G3 | S2 | | AFS_VU-Vulnerable CDFW_SSC-Species of Special Concern IUCN_NT-Near Threatened NMFS_SC-Species of Concern | Aquatic Klamath/North coast flowing waters Sacramento/San Joaquin flowing waters | These are the most marine species of sturgeon. Abundance increases northward of Point Conception. Spawns in the Sacramento, Klamath, & Trinity Rivers. | Spawns at temps between 8-14 C. Preferred spawning substrate is large cobble, but can range from clean sand to bedrock. |

| | | | | | | | | | | |
|------------------------------|----------------------|------|------------|------|------|--|---|--|--|---|
| <i>Agelaius tricolor</i> | tricolored blackbird | None | Threatened | G1G2 | S1S2 | | BLM_S-Sensitive CDFW_SSC-Species of Special Concern IUCN_EN-Endangered NABCI_RWL-Red Watch List USFWS_BCC-Birds of Conservation Concern | Freshwater marsh Marsh & swamp Swamp Wetland | Highly colonial species, most numerous in Central Valley & vicinity. Largely endemic to California. | Requires open water, protected nesting substrate, and foraging area with insect prey within a few km of the colony. |
| <i>Ammodramus savannarum</i> | grasshopper sparrow | None | None | G5 | S3 | | CDFW_SSC-Species of Special Concern IUCN_LC-Least Concern | Valley & foothill grassland | Dense grasslands on rolling hills, lowland plains, in valleys and on hillsides on lower mountain slopes. | Favors native grasslands with a mix of grasses, forbs and scattered shrubs. Loosely colonial when nesting. |

| | | | | | | | | | | |
|--------------------------------|---------------------|------|------|-----|-----|-----|------------------|---|--|---|
| <i>Anodonta californiensis</i> | California floater | None | None | G3Q | S2? | | USFS_S-Sensitive | Aquatic | Freshwater lakes and slow-moving streams and rivers. Taxonomy under review by specialists. | Generally in shallow water. |
| <i>Anomobryum julaceum</i> | slender silver moss | None | None | G5? | S2 | 4.2 | | Broadleaved upland forest Lower montane coniferous forest North coast coniferous forest | Broadleafed upland forest, lower montane coniferous forest, north coast coniferous forest. | Moss which grows on damp rocks and soil; acidic substrates. Usually seen on roadcuts. 100-1000 m. |

| | | | | | | | | | | |
|-------------------------------------|--------------------------|------|------|-------|-----|--|---|--|--|--|
| <i>Antrozous pallidus</i> | pallid bat | None | None | G4 | S3 | | BLM_S-Sensitive CDFW_SSC-Species of Special Concern IUCN_LC-Least Concern USFS_S-Sensitive WBWG_H-High Priority | Chaparral Coastal scrub Desert wash Great Basin grassland Great Basin scrub Mojavean desert scrub Riparian woodland Sonoran desert scrub Upper montane coniferous forest Valley & foothill grassland | Deserts, grasslands, shrublands, woodlands and forests. Most common in open, dry habitats with rocky areas for roosting. | Roosts must protect bats from high temperatures. Very sensitive to disturbance of roosting sites. |
| <i>Aplodontia rufa humboldtiana</i> | Humboldt mountain beaver | None | None | G5TNR | SNR | | | Coastal scrub Redwood Riparian forest | Coast Range in southwestern Del Norte County and northwestern Humboldt County. | Variety of coastal habitats, including coastal scrub, riparian forests, typically with open canopy and thickly vegetated understory. |

| | | | | | | | | | | |
|--------------------------|--------------|------|------|----|----|--|---|---|--|---|
| <i>Aquila chrysaetos</i> | golden eagle | None | None | G5 | S3 | | BLM_S-Sensitive CDF_S-Sensitive CDFW_FP-Fully Protected CDFW_WL-Watch List IUCN_LC-Least Concern USFWS_BCC-Birds of Conservation Concern | Broadleaved upland forest Cismontane woodland Coastal prairie Great Basin grassland Great Basin scrub Lower montane coniferous forest Pinon & juniper woodlands Upper montane coniferous forest Valley & foothill grassland | Rolling foothills, mountain areas, sage-juniper flats, and desert. | Cliff-walled canyons provide nesting habitat in most parts of range; also, large trees in open areas. |
|--------------------------|--------------|------|------|----|----|--|---|---|--|---|

| | | | | | | | | | | |
|-----------------------|------------------|------|------|----|----|--|---|---|---|---|
| <i>Arborimus pomo</i> | Sonoma tree vole | None | None | G3 | S3 | | CDFW_SSC-Species of Special Concern IUCN_NT-Near Threatened | North coast coniferous forest Oldgrowth Redwood | North coast fog belt from Oregon border to Sonoma County. In Douglas-fir, redwood & montane hardwood-conifer forests. | Feeds almost exclusively on Douglas-fir needles. Will occasionally take needles of grand fir, hemlock or spruce. |
| <i>Ardea alba</i> | great egret | None | None | G5 | S4 | | CDF_S-Sensitive IUCN_LC-Least Concern | Brackish marsh Estuary Freshwater marsh Marsh & swamp Riparian forest Wetland | Colonial nester in large trees. | Rookery sites located near marshes, tide-flats, irrigated pastures, and margins of rivers and lakes. |
| <i>Ardea herodias</i> | great blue heron | None | None | G5 | S4 | | CDF_S-Sensitive IUCN_LC-Least Concern | Brackish marsh Estuary Freshwater marsh Marsh & swamp Riparian forest Wetland | Colonial nester in tall trees, cliffsides, and sequestered spots on marshes. | Rookery sites in close proximity to foraging areas: marshes, lake margins, tide-flats, rivers and streams, wet meadows. |

| | | | | | | | | | | |
|--|-----------------------------|------|------|------|------|------|---|---|---|--|
| <i>Ascaphus truei</i> | Pacific tailed frog | None | None | G4 | S3S4 | | CDFW_SSC- Species of Special Concern IUCN_LC-Least Concern | Aquatic Klamath/North coast flowing waters Lower montane coniferous forest North coast coniferous forest Redwood Riparian forest | Occurs in montane hardwood- conifer, redwood, Douglas-fir & ponderosa pine habitats. | Restricted to perennial montane streams. Tadpoles require water below 15 degrees C. |
| <i>Astragalus pycnostachyus var. pycnostachyus</i> | coastal marsh milk-vetch | None | None | G2T2 | S2 | 1B.2 | BLM_S- Sensitive SB_CalBG/RSA BG- California/Ranc ho Santa Ana Botanic Garden SB_SBBG- Santa Barbara Botanic Garden SB_UCBG-UC Botanical | Coastal dunes Coastal scrub Marsh & swamp Wetland | Coastal dunes,marsh es and swamps, coastal scrub. | Mesic sites in dunes or along streams or coastal salt marshes. 0-155 m. |

| | | | | | | | | | | |
|---------------------------------|--------------------|------------|----------------------|------|------|--|---|---|--|--|
| <i>Bombus caliginosus</i> | obscure bumble bee | None | None | G4? | S1S2 | | IUCN_VU-Vulnerable | | Coastal areas from Santa Barabara county to north to Washington state. | Food plant genera include Baccharis, Cirsium, Lupinus, Lotus, Grindelia and Phacelia. |
| <i>Bombus occidentalis</i> | western bumble bee | None | Candidate Endangered | G2G3 | S1 | | USFS_S-Sensitive | | Once common & widespread, species has declined precipitously from central CA to southern B.C., perhaps from disease. | |
| <i>Brachyramphus marmoratus</i> | marbled murrelet | Threatened | Endangered | G3 | S2 | | CDF_S-Sensitive IUCN_EN-Endangered NABCI_RWL-Red Watch List | Lower montane coniferous forest Oldgrowth Redwood | Feeds near-shore; nests inland along coast from Eureka to Oregon border and from Half Moon Bay to Santa Cruz. | Nests in old-growth redwood-dominated forests, up to six miles inland, often in Douglas-fir. |

| | | | | | | | | | | |
|--|---------------------------|------|------|------|----|------|-----------------|---|---|---|
| <i>Cardamine angulata</i> | seaside bittercress | None | None | G4G5 | S3 | 2B.1 | | Lower montane coniferous forest North coast coniferous forest Wetland | North coast coniferous forest, lower montane coniferous forest. | Wet areas, streambanks. 5-515 m. |
| <i>Carex leptalea</i> | bristle-stalked sedge | None | None | G5 | S1 | 2B.2 | | Bog & fen Freshwater marsh Marsh & swamp Meadow & seep Wetland | Bogs and fens, meadows and seeps, marshes and swamps. | Mostly known from bogs and wet meadows. 3-1395 m. |
| <i>Carex lyngbyei</i> | Lyngbye's sedge | None | None | G5 | S3 | 2B.2 | | Marsh & swamp Wetland | Marshes and swamps (brackish or freshwater). | 0-200 m. |
| <i>Castilleja ambigua</i> var. <i>humboldtiensis</i> | Humboldt Bay owl's-clover | None | None | G4T2 | S2 | 1B.2 | BLM_S-Sensitive | Marsh & swamp Salt marsh Wetland | Marshes and swamps. | In coastal saltmarsh with <i>Spartina</i> , <i>Distichlis</i> , <i>Salicornia</i> , <i>Jaumea</i> . 0-20 m. |

| | | | | | | | | | | |
|-----------------------------------|-------------------------|------------|------|------|------|------|--|---|---|--|
| <i>Castilleja litoralis</i> | Oregon coast paintbrush | None | None | G3 | S3 | 2B.2 | | Coastal bluff scrub Coastal dunes Coastal scrub | Coastal bluff scrub, coastal dunes, coastal scrub. | Sandy sites. 5-255 m. |
| <i>Charadrius montanus</i> | mountain plover | None | None | G3 | S2S3 | | BLM_S-Sensitive CDFW_SSC-Species of Special Concern IUCN_NT-Near Threatened NABCI_RWL-Red Watch List USFWS_BCC-Birds of Conservation Concern | Chenopod scrub Valley & foothill grassland | Short grasslands, freshly plowed fields, newly sprouting grain fields, & sometimes sod farms. | Short vegetation, bare ground, and flat topography. Prefers grazed areas and areas with burrowing rodents. |
| <i>Charadrius nivosus nivosus</i> | western snowy plover | Threatened | None | G3T3 | S2 | | CDFW_SSC-Species of Special Concern NABCI_RWL-Red Watch List USFWS_BCC-Birds of Conservation Concern | Great Basin standing waters Sand shore Wetland | Sandy beaches, salt pond levees & shores of large alkali lakes. | Needs sandy, gravelly or friable soils for nesting. |

| | | | | | | | | | | |
|--|--------------------------------------|------------|------------|--------|------|------|--|---|---|---|
| <i>Chloropyron maritimum ssp. palustre</i> | Point Reyes salty bird's- beak | None | None | G4?T2 | S2 | 1B.2 | BLM_S- Sensitive | Marsh & swamp Salt marsh Wetland | Coastal salt marsh. | Usually in coastal salt marsh with Salicornia, Distichlis, Jaumea, Spartina, etc. 0- 115 m. |
| <i>Clarkia amoena ssp. whitneyi</i> | Whitney's farewell-to- spring | None | None | G5T1 | S1 | 1B.1 | SB_CalBG/RSA BG-California/ Rancho Santa Ana Botanic Garden SB_UCBG-UC Botanical Garden at Berkeley | Coastal bluff scrub Coastal scrub | Coastal bluff scrub, coastal scrub. | 5-125 m. |
| <i>Coastal Terrace Prairie</i> | Coastal Terrace Prairie | None | None | G2 | S2.1 | | | Coastal prairie | | |
| <i>Coccyzus americanus occidentalis</i> | western yellow- billed cuckoo | Threatened | Endangered | G5T2T3 | S1 | | BLM_S- Sensitive NABCI_RWL- Red Watch List USFS_S- Sensitive USFWS_BCC- Birds of Conservation Concern | Riparian forest | Riparian forest nester, along the broad, lower flood- bottoms of larger river systems. | Nests in riparian jungles of willow, often mixed with cottonwoods, with lower story of blackberry, nettles, or wild grape. |

| | | | | | | | | | | |
|--------------------------------|--------------------------|------|------|----|----|--|---|--|--|---|
| <i>Corynorhinus townsendii</i> | Townsend's big-eared bat | None | None | G4 | S2 | | BLM_S-Sensitive CDFW_SSC-Species of Special Concern IUCN_LC-Least Concern USFS_S-Sensitive WBWG_H-High Priority | Broadleaved upland forest Chaparral Chenopod scrub Great Basin grassland Great Basin scrub Joshua tree woodland Lower montane coniferous forest Meadow & seep Mojavean desert scrub Riparian forest Riparian woodland Sonoran desert scrub Sonoran thorn woodland Upper montane coniferous forest Valley | Throughout California in a wide variety of habitats. Most common in mesic sites. | Roosts in the open, hanging from walls and ceilings. Roosting sites limiting. Extremely sensitive to human disturbance. |
|--------------------------------|--------------------------|------|------|----|----|--|---|--|--|---|

| | | | | | | | | | | |
|-----------------------------------|-------------------|------|------|----|------|------|---|---|---|---|
| <i>Coturnicops noveboracensis</i> | yellow rail | None | None | G4 | S1S2 | | CDFW_SSC-Species of Special Concern IUCN_LC-Least Concern NABCI_RWL-Red Watch List USFS_S-Sensitive USFWS_BCC-Birds of Conservation Concern | Freshwater marsh Meadow & seep | Summer resident in eastern Sierra Nevada in Mono County. | Freshwater marshlands. |
| <i>Downingia willamettensis</i> | Cascade downingia | None | None | G4 | S2 | 2B.2 | | Cismontane woodland Valley & foothill grassland Vernal pool | Cismontane woodland, valley and foothill grasslands, vernal pools. | Lake margins. 15-1110 m. |
| <i>Egretta thula</i> | snowy egret | None | None | G5 | S4 | | IUCN_LC-Least Concern | Marsh & swamp Meadow & seep Riparian forest Riparian woodland Wetland | Colonial nester, with nest sites situated in protected beds of dense tules. | Rookery sites situated close to foraging areas: marshes, tidal-flats, streams, wet meadows, and borders of lakes. |

| | | | | | | | | | | |
|-----------------------|---------------------|------|------|------|----|--|---|--|--|---|
| <i>Emys marmorata</i> | western pond turtle | None | None | G3G4 | S3 | | BLM_S-Sensitive CDFW_SSC-Species of Special Concern IUCN_VU-Vulnerable USFS_S-Sensitive | Aquatic Artificial flowing waters Klamath/North coast flowing waters Klamath/North coast standing waters Marsh & swamp Sacramento/San Joaquin flowing waters Sacramento/San Joaquin standing waters South coast flowing waters South coast standing waters Wetland | A thoroughly aquatic turtle of ponds, marshes, rivers, streams and irrigation ditches, usually with aquatic vegetation, below 6000 ft elevation. | Needs basking sites and suitable (sandy banks or grassy open fields) upland habitat up to 0.5 km from water for egg-laying. |
|-----------------------|---------------------|------|------|------|----|--|---|--|--|---|

| | | | | | | | | | | |
|--------------------------------|--------------------------|------|------|----|----|--|--|---|--|--|
| <i>Entosphenus tridentatus</i> | Pacific lamprey | None | None | G4 | S4 | | AFS_VU-Vulnerable BLM_S-Sensitive CDFW_SSC-Species of Special Concern USFS_S-Sensitive | Aquatic Klamath/North coast flowing waters Sacramento/San Joaquin flowing waters South coast flowing waters | Found in Pacific Coast streams north of San Luis Obispo County, however regular runs in Santa Clara River. Size of runs is declining. | Swift-current gravel-bottomed areas for spawning with water temps between 12-18 C. Ammocoetes need soft sand or mud. |
| <i>Erethizon dorsatum</i> | North American porcupine | None | None | G5 | S3 | | IUCN_LC-Least Concern | Broadleaved upland forest Cismontane woodland Closed-cone coniferous forest Lower montane coniferous forest North coast coniferous forest Upper montane coniferous forest | Forested habitats in the Sierra Nevada, Cascade, and Coast ranges, with scattered observations from forested areas in the Transverse Ranges. | Wide variety of coniferous and mixed woodland habitat. |

| | | | | | | | | | | |
|------------------------------|---------------------|------------|------------|------|----|------|---|---|--|---|
| <i>Erysimum menziesii</i> | Menzies' wallflower | Endangered | Endangered | G1 | S1 | 1B.1 | SB_CalBG/RSA BG-California/Rancho Santa Ana Botanic Garden SB_UCBG-UC Botanical Garden at | Coastal dunes | Coastal dunes. | Localized on dunes and coastal strand. 1-25 m. |
| <i>Erythronium oregonum</i> | giant fawn lily | None | None | G4G5 | S2 | 2B.2 | | Cismontane woodland Meadow & seep Ultramafic | Cismontane woodland, meadows and seeps. | Openings. Sometimes on serpentine; rocky sites. 300-1435 m. |
| <i>Erythronium revolutum</i> | coast fawn lily | None | None | G4G5 | S3 | 2B.2 | | Bog & fen Broadleaved upland forest North coast coniferous forest Wetland | Bogs and fens, broadleaved upland forest, north coast coniferous forest. | Mesic sites; streambanks. 60-1405 m. |

| | | | | | | | | | | |
|---|-----------------------|------------|------|------|----|------|---|--|---|---|
| <i>Eucyclogobius newberryi</i> | tidewater goby | Endangered | None | G3 | S3 | | AFS_EN- Endangered IUCN_VU- Vulnerable | Aquatic Klamath/North coast flowing waters Sacramento/Sa n Joaquin flowing waters South coast flowing waters | Brackish water habitats along the California coast from Agua Hedionda Lagoon, San Diego County to the mouth of the Smith River. | Found in shallow lagoons and lower stream reaches, they need fairly still but not stagnant water and high oxygen levels. |
| <i>Fissidens pauperculus</i> | minute pocket moss | None | None | G3? | S2 | 1B.2 | USFS_S- Sensitive | North coast coniferous forest Redwood | North coast coniferous forest. | Moss growing on damp soil along the coast. In dry streambeds and on stream banks. 30-1025 m. |
| <i>Gilia capitata</i> <i>ssp. pacifica</i> | Pacific gilia | None | None | G5T3 | S2 | 1B.2 | | Chaparral Coastal bluff scrub Coastal prairie Valley & foothill grassland | Coastal bluff scrub, chaparral, coastal prairie, valley and foothill grassland. | 5-1345 m. |
| <i>Gilia millefoliata</i> | dark-eyed gilia | None | None | G2 | S2 | 1B.2 | BLM_S- Sensitive | Coastal dunes | Coastal dunes. | 1-60 m. |

| | | | | | | | | | | |
|--|-----------------------|----------|------------|------|------|------|--|---|--|---|
| <i>Gonidea angulata</i> | western ridged mussel | None | None | G3 | S1S2 | | | Aquatic | Primarily creeks & rivers & less often lakes. Originally in most of state, now extirpated from Central & Southern Calif. | |
| <i>Haliaeetus leucocephalus</i> | bald eagle | Delisted | Endangered | G5 | S3 | | BLM_S-Sensitive CDF_S-Sensitive CDFW_FP-Fully Protected IUCN_LC-Least Concern USFS_S-Sensitive USFWS_BCC-Birds of Conservation Concern | Lower montane coniferous forest Oldgrowth | Ocean shore, lake margins, and rivers for both nesting and wintering. Most nests within 1 mile of water. | Nests in large, old-growth, or dominant live tree with open branches, especially ponderosa pine. Roosts communally in winter. |
| <i>Hesperovax sparsiflora</i> var. <i>brevifolia</i> | short-leaved evax | None | None | G4T3 | S3 | 1B.2 | BLM_S-Sensitive | Coastal bluff scrub Coastal dunes Coastal prairie | Coastal bluff scrub, coastal dunes, coastal prairie. | Sandy bluffs and flats. 0-640 m. |

| | | | | | | | | | | |
|-----------------------------|-----------------------|------------|------------|------|------|------|--|---|---|---|
| <i>Lampetra richardsoni</i> | western brook lamprey | None | None | G4G5 | S3S4 | | CDFW_SSC-Species of Special Concern USFS_S-Sensitive | | | |
| <i>Lasiurus cinereus</i> | hoary bat | None | None | G3G4 | S4 | | IUCN_LC-Least Concern WBWG_M-Medium Priority | Broadleaved upland forest Cismontane woodland Lower montane coniferous forest North coast coniferous forest | Prefers open habitats or habitat mosaics, with access to trees for cover and open areas or habitat edges for feeding. | Roosts in dense foliage of medium to large trees. Feeds primarily on moths. Requires water. |
| <i>Layia carnosa</i> | beach layia | Endangered | Endangered | G2 | S2 | 1B.1 | SB_CalBG/RSA BG-California/Rancho Santa Ana Botanic Garden SB_SBBG-Santa Barbara Botanic | Coastal dunes Coastal scrub | Coastal dunes, coastal scrub. | On sparsely vegetated, semi-stabilized dunes, usually behind foredunes. 3-30 m. |

| | | | | | | | | | | |
|------------------------------|--------------------|------------|------------|------|------|------|----------------------------|--|--|--|
| <i>Lilium occidentale</i> | western lily | Endangered | Endangered | G1 | S1 | 1B.1 | SB_BerrySB-Berry Seed Bank | Bog & fen Coastal bluff scrub Coastal prairie Coastal scrub Freshwater marsh Marsh & swamp North coast coniferous forest Wetland | Coastal scrub, freshwater marsh, bogs and fens, coastal bluff scrub, coastal prairie, north coast coniferous forest, marshes and swamps. | Well-drained, old beach washes overlain with wind-blown alluvium and organic topsoil; usually near margins of Sitka spruce. 3-110 m. |
| <i>Lycopodium clavatum</i> | running-pine | None | None | G5 | S3 | 4.1 | | Lower montane coniferous forest Marsh & swamp North coast coniferous forest Wetland | Lower montane coniferous forest, north coast coniferous forest, marshes and swamps. | Forest understory, edges, openings, roadsides; mesic sites with partial shade and light. 45-1225 m. |
| <i>Margaritifera falcata</i> | western pearlshell | None | None | G4G5 | S1S2 | | | Aquatic | Aquatic. | Prefers lower velocity waters. |

| | | | | | | | | | | |
|-------------------------------------|-----------------------------|---------------------|------------|--------|------|------|---|---|---|---|
| <i>Martes caurina humboldtensis</i> | Humboldt marten | Proposed Threatened | Endangered | G4G5T1 | S1 | | CDFW_SSC-Species of Special Concern USFS_S-Sensitive | North coast coniferous forest Oldgrowth Redwood | Occurs only in the coastal redwood zone from the Oregon border south to Sonoma County. | Associated with late-successional coniferous forests, prefer forests with low, overhead cover. |
| <i>Montia howellii</i> | Howell's montia | None | None | G3G4 | S2 | 2B.2 | | Meadow & seep North coast coniferous forest Vernal pool Wetland | Meadows and seeps, north coast coniferous forest, vernal pools. | Vernally wet sites; often on compacted soil. 10-1215 m. |
| <i>Myotis yumanensis</i> | Yuma myotis | None | None | G5 | S4 | | BLM_S-Sensitive IUCN_LC-Least Concern WBWG_LM-Low-Medium Priority | Lower montane coniferous forest Riparian forest Riparian woodland Upper montane coniferous forest | Optimal habitats are open forests and woodlands with sources of water over which to feed. | Distribution is closely tied to bodies of water. Maternity colonies in caves, mines, buildings or crevices. |
| <i>Northern Coastal Salt Marsh</i> | Northern Coastal Salt Marsh | None | None | G3 | S3.2 | | | Marsh & swamp Wetland | | |

| | | | | | | | | | | |
|-------------------------------------|---------------------------|------|------|------|----|------|--|---|---|--|
| <i>Nycticorax nycticorax</i> | black-crowned night heron | None | None | G5 | S4 | | IUCN_LC-Least Concern | Marsh & swamp Riparian forest Riparian woodland Wetland | Colonial nester, usually in trees, occasionally in tule patches. | Rookery sites located adjacent to foraging areas: lake margins, mud-bordered bays, marshy spots. |
| <i>Oenothera wolfii</i> | Wolf's evening-primrose | None | None | G2 | S1 | 1B.1 | SB_BerrySB-Berry Seed Bank | Coastal bluff scrub Coastal dunes Coastal prairie | Coastal bluff scrub, coastal dunes, coastal prairie, lower montane coniferous forest. | Sandy substrates; usually mesic sites. 0-125 m. |
| <i>Oncorhynchus clarkii clarkii</i> | coast cutthroat trout | None | None | G5T4 | S3 | | AFS_VU-Vulnerable CDFW_SSC-Species of Special Concern USFS_S-Sensitive | Aquatic Klamath/North coast flowing waters | Small coastal streams from the Eel River to the Oregon border. | Small, low gradient coastal streams and estuaries. Needs shaded streams with water temperatures <18C, and small gravel for spawning. |

| | | | | | | | | | | |
|--|---|------------|------------|---------|------|------|-----------------------|--|---|--|
| <i>Oncorhynchus kisutch</i> pop. 2 | coho salmon - southern Oregon / northern California ESU | Threatened | Threatened | G5T2Q | S2 | | AFS_TH- Threatened | Aquatic Klamath/North coast flowing waters Sacramento/San Joaquin flowing waters | Federal listing refers to populations between Cape Blanco, Oregon and Punta Gorda, Humboldt County, California. | State listing refers to populations between the Oregon border and Punta Gorda, California. |
| <i>Oncorhynchus mykiss irideus</i> pop. 16 | steelhead - northern California DPS | Threatened | None | G5T2T3Q | S2S3 | | AFS_TH- Threatened | Aquatic Sacramento/San Joaquin flowing waters | Coastal basins from Redwood Creek south to the Gualala River, inclusive. Does not include summer-run steelhead. | |
| <i>Packera bolanderi</i> var. <i>bolanderi</i> | seacoast ragwort | None | None | G4T4 | S2S3 | 2B.2 | | Coastal scrub North coast coniferous forest | Coastal scrub, north coast coniferous forest. | Sometimes along roadsides. 30-915 m. |

| | | | | | | | | | | |
|--------------------------|----------------------------|------|------|----|------|------|--|--|--|--|
| <i>Pandion haliaetus</i> | osprey | None | None | G5 | S4 | | CDF_S-Sensitive CDFW_WL-Watch List IUCN_LC-Least Concern | Riparian forest | Ocean shore, bays, freshwater lakes, and larger streams. | Large nests built in tree-tops within 15 miles of a good fish-producing body of water. |
| <i>Pekania pennanti</i> | Fisher | None | None | G5 | S2S3 | | BLM_S-Sensitive CDFW_SSC-Species of Special Concern USFS_S-Sensitive | North coast coniferous forest Oldgrowth Riparian forest | 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. |
| <i>Piperia candida</i> | white-flowered rein orchid | None | None | G3 | S3 | 1B.2 | | Broadleaved upland forest Lower montane coniferous forest North coast coniferous forest Ultramafic | North Coast coniferous forest, lower montane coniferous forest, broadleafed upland forest. | Sometimes on serpentine. Forest duff, mossy banks, rock outcrops, and muskeg. 20-1615 m. |

| | | | | | | | | | | |
|---------------------------|--------------------------|------|------|------|----|------|--|--|--|---|
| <i>Polemonium carneum</i> | Oregon polemonium | None | None | G3G4 | S2 | 2B.2 | | Coastal prairie Coastal scrub Lower montane coniferous forest | Coastal prairie, coastal scrub, lower montane coniferous forest. | 15-1525 m. |
| <i>Puccinellia pumila</i> | dwarf alkali grass | None | None | G4? | SH | 2B.2 | | Marsh & swamp Wetland | Marshes and swamps. | Mineral spring meadows and coastal salt marshes. 1-10 m. |
| <i>Rana aurora</i> | northern red-legged frog | None | None | G4 | S3 | | CDFW_SSC-Species of Special Concern IUCN_LC-Least Concern USFS_S-Sensitive | Klamath/North coast flowing waters Riparian forest Riparian woodland | Humid forests, woodlands, grasslands, and streamsides in northwestern California, usually near dense riparian cover. | Generally near permanent water, but can be found far from water, in damp woods and meadows, during non-breeding season. |

| | | | | | | | | | | |
|--------------------|-----------------------------|------|------------|----|----|--|--|--|---|---|
| <i>Rana boylei</i> | foothill yellow-legged frog | None | Endangered | G3 | S3 | | BLM_S-Sensitive CDFW_SSC-Species of Special Concern IUCN_NT-Near Threatened USFS_S-Sensitive | Aquatic Chaparral Cismontane woodland Coastal scrub Klamath/North coast flowing waters Lower montane coniferous forest Meadow & seep Riparian forest Riparian woodland Sacramento/San Joaquin flowing waters | Partly-shaded, shallow streams and riffles with a rocky substrate in a variety of habitats. | Needs at least some cobble-sized substrate for egg-laying. Needs at least 15 weeks to attain metamorphosis. |
|--------------------|-----------------------------|------|------------|----|----|--|--|--|---|---|

| | | | | | | | | | | |
|--------------------------------|-----------------------------|------|------------|------|------|--|--|---|--|---|
| <i>Rhyacotriton variegatus</i> | southern torrent salamander | None | None | G3G4 | S2S3 | | CDFW_SSC-Species of Special Concern IUCN_LC-Least Concern USFS_S-Sensitive | Lower montane coniferous forest Oldgrowth Redwood Riparian forest | Coastal redwood, Douglas-fir, mixed conifer, montane riparian, and montane hardwood-conifer habitats. Old growth forest. | Cold, well-shaded, permanent streams and seepages, or within splash zone or on moss-covered rocks within trickling water. |
| <i>Riparia riparia</i> | bank swallow | None | Threatened | G5 | S2 | | BLM_S-Sensitive IUCN_LC-Least Concern | Riparian scrub Riparian woodland | Colonial nester; nests primarily in riparian and other lowland habitats west of the desert. | Requires vertical banks/cliffs with fine-textured/sandy soils near streams, rivers, lakes, ocean to dig nesting hole. |

| | | | | | | | | | | |
|--|-----------------------------|------|------|------|----|------|--|---|--|--|
| <i>Sidalcea malachroides</i> | maple-leaved checkerbloom | None | None | G3 | S3 | 4.2 | | Broadleaved upland forest Coastal prairie Coastal scrub North coast coniferous forest Riparian forest | Broadleafed upland forest, coastal prairie, coastal scrub, north coast coniferous forest, riparian forest. | Woodlands and clearings near coast; often in disturbed areas. 4-765 m. |
| <i>Sidalcea malviflora ssp. patula</i> | Siskiyou checkerbloom | None | None | G5T2 | S2 | 1B.2 | | Coastal bluff scrub Coastal prairie North coast coniferous forest | Coastal bluff scrub, coastal prairie, north coast coniferous forest. | Open coastal forest; roadcuts. 5-1255 m. |
| <i>Sidalcea oregana ssp. eximia</i> | coast checkerbloom | None | None | G5T1 | S1 | 1B.2 | | Lower montane coniferous forest Meadow & seep North coast coniferous forest Wetland | Meadows and seeps, north coast coniferous forest, lower montane coniferous forest. | Near meadows, in gravelly soil. 5-1805 m. |
| <i>Sisyrinchium hitchcockii</i> | Hitchcock's blue-eyed grass | None | None | G2 | S1 | 1B.1 | | Cismontane woodland Valley & foothill grassland | Cismontane woodland, valley and foothill grassland. | Openings in woodland or in grassland. 305 m in California. |

| | | | | | | | | | | |
|---|----------------------|------------|------------|------|------|------|--|--|---|---|
| <i>Sitka Spruce Forest</i> | Sitka Spruce Forest | None | None | G1 | S1.1 | | | | | |
| <i>Spergularia canadensis var. occidentalis</i> | western sand-spurrey | None | None | G5T4 | S1 | 2B.1 | | Marsh & swamp Wetland | Marshes and swamps (coastal salt marshes). | 0-3 m. |
| <i>Spirinchus thaleichthys</i> | longfin smelt | Candidate | Threatened | G5 | S1 | | | Aquatic Estuary | Euryhaline, nektonic & anadromous. Found in open waters of estuaries, mostly in middle or bottom of water column. | Prefer salinities of 15-30 ppt, but can be found in completely freshwater to almost pure seawater. |
| <i>Thaleichthys pacificus</i> | eulachon | Threatened | None | G5 | S2 | | | Aquatic Klamath/North coast flowing waters | Found in Klamath River, Mad River, Redwood Creek, and in small numbers in Smith River and Humboldt Bay tributaries. | Spawn in lower reaches of coastal rivers with moderate water velocities and bottom of pea-sized gravel, sand, and woody debris. |

| | | | | | | | | | | |
|-------------------------|---------------------------|------|------|----|----|-----|-----------------|---|---|---|
| <i>Usnea longissima</i> | Methuselah's beard lichen | None | None | G4 | S4 | 4.2 | BLM_S-Sensitive | Broadleaved upland forest North coast coniferous forest Oldgrowth Redwood | North coast coniferous forest, broadleafed upland forest. | Grows in the "redwood zone" on tree branches of a variety of trees, including big leaf maple, oaks, ash, Douglas-fir, and bay. 45-1465 m in California. |
|-------------------------|---------------------------|------|------|----|----|-----|-----------------|---|---|---|

| Scientific Name | Common Name | Family | Lifeform | CRPR | GRank | SRank | CESA | FESA | Blooming Period | Habitat | Micro Habitat |
|---|---------------------------|---------------|--------------------------------|------|--------|-------|------|------|-----------------|--|---------------|
| <i>Abronia umbellata</i> var. <i>breviflora</i> | pink sand-verbena | Nyctaginaceae | perennial herb | 1B.1 | G4G5T2 | S2 | None | None | Jun-Oct | Coastal dunes | |
| <i>Astragalus pycnostachyus</i> var. <i>pycnostachyus</i> | coastal marsh milk-vetch | Fabaceae | perennial herb | 1B.2 | G2T2 | S2 | None | None | (Apr)Jun-Oct | Coastal dunes (mesic), Coastal scrub, Marshes and swamps (coastal salt, streamsides) | |
| <i>Carex leptalea</i> | bristle-stalked sedge | Cyperaceae | perennial rhizomatous herb | 2B.2 | G5 | S1 | None | None | Mar-Jul | Bogs and fens, Meadows and seeps (mesic), Marshes and swamps | |
| <i>Carex lyngbyei</i> | Lyngbye's sedge | Cyperaceae | perennial rhizomatous herb | 2B.2 | G5 | S3 | None | None | Apr-Aug | Marshes and swamps (brackish or freshwater) | |
| <i>Castilleja ambigua</i> var. <i>humboldtiensis</i> | Humboldt Bay owl's-clover | Orobanchaceae | annual herb (hemiparasitic) | 1B.2 | G4T2 | S2 | None | None | Apr-Aug | Marshes and swamps (coastal salt) | |
| <i>Castilleja litoralis</i> | Oregon coast paintbrush | Orobanchaceae | perennial herb (hemiparasitic) | 2B.2 | G3 | S3 | None | None | Jun-Jul | Coastal bluff scrub, Coastal dunes, Coastal scrub | sandy |
| <i>Chloropyron maritimum</i> ssp. <i>palustre</i> | Point Reyes bird's-beak | Orobanchaceae | annual herb (hemiparasitic) | 1B.2 | G4?T2 | S2 | None | None | Jun-Oct | Marshes and swamps (coastal salt) | |

| | | | | | | | | | | | |
|---|-------------------------------------|----------------|----------------------------------|------|------|----|------|------|------------------|--|--|
| <i>Clarkia amoena</i> <i>ssp. whitneyi</i> | Whitney's farewell-to- spring | Onagraceae | annual herb | 1B.1 | G5T1 | S1 | None | None | Jun-Aug | Coastal bluff scrub, Coastal scrub | |
| <i>Downingia</i> <i>willamettensis</i> | Cascade downingia | Campanulaceae | annual herb | 2B.2 | G4 | S2 | None | None | Jun- Jul(Sep) | Cismontane woodland (lake margins), Valley and foothill grassland (lake margins), Vernal pools | |
| <i>Erysimum</i> <i>menziesii</i> | Menzies? wallflower | Brassicaceae | perennial herb | 1B.1 | G1 | S1 | CE | FE | Mar-Sep | Coastal dunes | |
| <i>Erythronium</i> <i>oregonum</i> | giant fawn lily | Liliaceae | perennial bulbiferous herb | 2B.2 | G4G5 | S2 | None | None | Mar- Jun(Jul) | Cismontane woodland, Meadows and seeps | sometimes serpentine, rocky, openings |
| <i>Erythronium</i> <i>revolutum</i> | coast fawn lily | Liliaceae | perennial bulbiferous herb | 2B.2 | G4G5 | S3 | None | None | Mar- Jul(Aug) | Bogs and fens, Broadleafed upland forest, North Coast coniferous forest | Mesic, streambanks |
| <i>Fissidens</i> <i>pauperculus</i> | minute pocket moss | Fissidentaceae | moss | 1B.2 | G3? | S2 | None | None | | North Coast coniferous forest (damp coastal soil) | |

| | | | | | | | | | | | |
|---|------------------------|---------------|-------------|------|------|------|------|------|---------|---|----------------------|
| <i>Gilia capitata</i> ssp. <i>pacifica</i> | Pacific gilia | Polemoniaceae | annual herb | 1B.2 | G5T3 | S2 | None | None | Apr-Aug | Coastal bluff scrub, Chaparral (openings), Coastal prairie, Valley and foothill grassland | |
| <i>Gilia millefoliata</i> | dark-eyed gilia | Polemoniaceae | annual herb | 1B.2 | G2 | S2 | None | None | Apr-Jul | Coastal dunes | |
| <i>Hesperervax sparsiflora</i> var. <i>brevifolia</i> | short-leaved evax | Asteraceae | annual herb | 1B.2 | G4T3 | S2 | None | None | Mar-Jun | Coastal bluff scrub (sandy), Coastal dunes, Coastal prairie | |
| <i>Hesperolinon adenophyllum</i> | glandular western flax | Linaceae | annual herb | 1B.2 | G2G3 | S2S3 | None | None | May-Aug | Chaparral, Cismontane woodland, Valley and foothill grassland | usually serpentinite |
| <i>Layia carnosa</i> | beach layia | Asteraceae | annual herb | 1B.1 | G2 | S2 | CE | FE | Mar-Jul | Coastal dunes, Coastal scrub (sandy) | |

| | | | | | | | | | | | |
|---|--------------------------------|------------|----------------------------------|------|------|------|------|------|-------------------------------|---|--|
| <i>Lilium occidentale</i> | western lily | Liliaceae | perennial bulbiferous herb | 1B.1 | G1 | S1 | CE | FE | Jun-Jul | Bogs and fens, Coastal bluff scrub, Coastal prairie, Coastal scrub, Marshes and swamps (freshwater), North Coast coniferous forest (openings) | |
| <i>Montia howellii</i> | Howell's montia | Montiaceae | annual herb | 2B.2 | G3G4 | S2 | None | None | (Jan- Feb)Mar- May | Meadows and seeps, North Coast coniferous forest, Vernal pools | vernally mesic, sometimes roadsides |
| <i>Oenothera wolfii</i> | Wolf's evening- primrose | Onagraceae | perennial herb | 1B.1 | G2 | S1 | None | None | May-Oct | Coastal bluff scrub, Coastal dunes, Coastal prairie, Lower montane coniferous forest | sandy, usually mesic |
| <i>Packera bolanderi</i> var. <i>bolanderi</i> | seacoast ragwort | Asteraceae | perennial rhizomatous herb | 2B.2 | G4T4 | S2S3 | None | None | (Jan- Apr)May- Jul(Aug) | Coastal scrub, North Coast coniferous forest | Sometimes roadsides |

| | | | | | | | | | | | |
|---|----------------------------|---------------|----------------------------|------|------|----|------|------|--------------|---|------------------------|
| <i>Piperia candida</i> | white-flowered rein orchid | Orchidaceae | perennial herb | 1B.2 | G3 | S3 | None | None | (Mar)May-Sep | Broadleafed upland forest, Lower montane coniferous forest, North Coast coniferous forest | sometimes serpentinite |
| <i>Polemonium carneum</i> | Oregon polemonium | Polemoniaceae | perennial herb | 2B.2 | G3G4 | S2 | None | None | Apr-Sep | Coastal prairie, Coastal scrub, Lower montane coniferous forest | |
| <i>Puccinellia pumila</i> | dwarf alkali grass | Poaceae | perennial herb | 2B.2 | G4? | SH | None | None | Jul | Marshes and swamps (coastal salt) | |
| <i>Sidalcea malviflora</i> ssp. <i>patula</i> | Siskiyou checkerbloom | Malvaceae | perennial rhizomatous herb | 1B.2 | G5T2 | S2 | None | None | (Apr)May-Aug | Coastal bluff scrub, Coastal prairie, North Coast coniferous forest | often roadcuts |
| <i>Sidalcea oregana</i> ssp. <i>eximia</i> | coast checkerbloom | Malvaceae | perennial herb | 1B.2 | G5T1 | S1 | None | None | Jun-Aug | Lower montane coniferous forest, Meadows and seeps, North Coast coniferous forest | |

| | | | | | | | | | | | |
|--|-----------------------------|-----------------|----------------------------|------|------|----|------|------|---------|---|--|
| <i>Sisyrinchium hitchcockii</i> | Hitchcock's blue-eyed grass | Iridaceae | perennial rhizomatous herb | 1B.1 | G2 | S1 | None | None | Jun | Cismontane woodland (openings), Valley and foothill grassland | |
| <i>Spergularia canadensis</i> var. <i>occidentalis</i> | western sand-spurrey | Caryophyllaceae | annual herb | 2B.1 | G5T4 | S1 | None | None | Jun-Aug | Marshes and swamps (coastal salt) | |

Quad Name **Fortuna**
Quad Number **40124-E2**

1. ESA Anadromous Fish

SONCC Coho ESU (T) - **X**
CCC Coho ESU (E) -
CC Chinook Salmon ESU (T) - **X**
CVSR Chinook Salmon ESU (T) -
SRWR Chinook Salmon ESU (E) -
NC Steelhead DPS (T) - **X**
CCC Steelhead DPS (T) -
SCCC Steelhead DPS (T) -
SC Steelhead DPS (E) -
CCV Steelhead DPS (T) -
Eulachon (T) -
sDPS Green Sturgeon (T) -

2. ESA Anadromous Fish Critical Habitat

SONCC Coho Critical Habitat - **X**
CCC Coho Critical Habitat -
CC Chinook Salmon Critical Habitat - **X**
CVSR Chinook Salmon Critical Habitat -
SRWR Chinook Salmon Critical Habitat -
NC Steelhead Critical Habitat - **X**
CCC Steelhead Critical Habitat -
SCCC Steelhead Critical Habitat -
SC Steelhead Critical Habitat -
CCV Steelhead Critical Habitat -
Eulachon Critical Habitat -
sDPS Green Sturgeon Critical Habitat -

3. ESA Marine Invertebrates

Range Black Abalone (E) -
Range White Abalone (E) -

4. ESA Marine Invertebrates Critical Habitat

Black Abalone Critical Habitat -

5. ESA Sea Turtles

East Pacific Green Sea Turtle (T) -
Olive Ridley Sea Turtle (T/E) -
Leatherback Sea Turtle (E) -
North Pacific Loggerhead Sea Turtle (E) -

6. ESA Whales

Blue Whale (E) -
Fin Whale (E) -
Humpback Whale (E) -
Southern Resident Killer Whale (E) -
North Pacific Right Whale (E) -
Sei Whale (E) -
Sperm Whale (E) -

7. ESA Pinnipeds

Guadalupe Fur Seal (T) -
Steller Sea Lion Critical Habitat -

8. Essential Fish Habitat

Coho EFH - **X**
Chinook Salmon EFH - **X**
Groundfish EFH - **X**
Coastal Pelagics EFH - **X**
Highly Migratory Species EFH -

9. MMPA Species (See list at left)

10. ESA and MMPA Cetaceans/Pinnipeds

**See list at left and consult the NMFS
Long Beach office
562-980-4000**

MMPA Cetaceans -
MMPA Pinnipeds -

Quad Name **Cannibal Island**

Quad Number **40124-F3**

11. ESA Anadromous Fish

SONCC Coho ESU (T) - **X**
CCC Coho ESU (E) -
CC Chinook Salmon ESU (T) - **X**
CVSR Chinook Salmon ESU (T) -
SRWR Chinook Salmon ESU (E) -
NC Steelhead DPS (T) - **X**
CCC Steelhead DPS (T) -
SCCC Steelhead DPS (T) -
SC Steelhead DPS (E) -
CCV Steelhead DPS (T) -
Eulachon (T) -
sDPS Green Sturgeon (T) - **X**

12. ESA Anadromous Fish Critical Habitat

SONCC Coho Critical Habitat - **X**
CCC Coho Critical Habitat -
CC Chinook Salmon Critical Habitat - **X**
CVSR Chinook Salmon Critical Habitat -
SRWR Chinook Salmon Critical Habitat -
NC Steelhead Critical Habitat - **X**
CCC Steelhead Critical Habitat -
SCCC Steelhead Critical Habitat -
SC Steelhead Critical Habitat -
CCV Steelhead Critical Habitat -
Eulachon Critical Habitat -
sDPS Green Sturgeon Critical Habitat - **X**

13. ESA Marine Invertebrates

Range Black Abalone (E) -
Range White Abalone (E) -

14. ESA Marine Invertebrates Critical Habitat

Black Abalone Critical Habitat -

15. ESA Sea Turtles

East Pacific Green Sea Turtle (T) - **X**
Olive Ridley Sea Turtle (T/E) - **X**
Leatherback Sea Turtle (E) - **X**
North Pacific Loggerhead Sea Turtle (E) -

16. ESA Whales

Blue Whale (E) - **X**
Fin Whale (E) - **X**
Humpback Whale (E) - **X**
Southern Resident Killer Whale (E) - **X**
North Pacific Right Whale (E) - **X**
Sei Whale (E) - **X**
Sperm Whale (E) - **X**

17. ESA Pinnipeds

Guadalupe Fur Seal (T) -
Steller Sea Lion Critical Habitat -

18. Essential Fish Habitat

Coho EFH - **X**
Chinook Salmon EFH - **X**
Groundfish EFH - **X**
Coastal Pelagics EFH - **X**
Highly Migratory Species EFH -

19. MMPA Species (See list at left)

20. ESA and MMPA Cetaceans/Pinnipeds

See list at left and consult the NMFS
Long Beach office
562-980-4000

MMPA Cetaceans - **X**
MMPA Pinnipeds - **X**

Quad Name **Fields Landing**

Quad Number **40124-F2**

21. ESA Anadromous Fish

SONCC Coho ESU (T) - **X**
CCC Coho ESU (E) -
CC Chinook Salmon ESU (T) - **X**
CVSR Chinook Salmon ESU (T) -
SRWR Chinook Salmon ESU (E) -
NC Steelhead DPS (T) - **X**
CCC Steelhead DPS (T) -
SCCC Steelhead DPS (T) -
SC Steelhead DPS (E) -
CCV Steelhead DPS (T) -
Eulachon (T) -
sDPS Green Sturgeon (T) - **X**

22. ESA Anadromous Fish Critical Habitat

SONCC Coho Critical Habitat - **X**
CCC Coho Critical Habitat -
CC Chinook Salmon Critical Habitat - **X**
CVSR Chinook Salmon Critical Habitat -
SRWR Chinook Salmon Critical Habitat -
NC Steelhead Critical Habitat - **X**
CCC Steelhead Critical Habitat -
SCCC Steelhead Critical Habitat -
SC Steelhead Critical Habitat -
CCV Steelhead Critical Habitat -
Eulachon Critical Habitat -
sDPS Green Sturgeon Critical Habitat - **X**

23. ESA Marine Invertebrates

Range Black Abalone (E) -
Range White Abalone (E) -

24. ESA Marine Invertebrates Critical Habitat

Black Abalone Critical Habitat -

25. ESA Sea Turtles

East Pacific Green Sea Turtle (T) - **X**
Olive Ridley Sea Turtle (T/E) - **X**
Leatherback Sea Turtle (E) - **X**
North Pacific Loggerhead Sea Turtle (E) -

26. ESA Whales

Blue Whale (E) - **X**
Fin Whale (E) - **X**
Humpback Whale (E) - **X**
Southern Resident Killer Whale (E) - **X**
North Pacific Right Whale (E) - **X**
Sei Whale (E) - **X**
Sperm Whale (E) - **X**

27. ESA Pinnipeds

Guadalupe Fur Seal (T) -
Steller Sea Lion Critical Habitat -

28. Essential Fish Habitat

Coho EFH - **X**
Chinook Salmon EFH - **X**
Groundfish EFH - **X**
Coastal Pelagics EFH - **X**
Highly Migratory Species EFH -

29. MMPA Species (See list at left)

30. ESA and MMPA Cetaceans/Pinnipeds

See list at left and consult the NMFS
Long Beach office
562-980-4000

MMPA Cetaceans - **X**
MMPA Pinnipeds - **X**

Quad Name **McWhinney Creek**

Quad Number **40124-F1**

31. ESA Anadromous Fish

SONCC Coho ESU (T) - **X**
CCC Coho ESU (E) -
CC Chinook Salmon ESU (T) - **X**
CVSR Chinook Salmon ESU (T) -
SRWR Chinook Salmon ESU (E) -
NC Steelhead DPS (T) - **X**
CCC Steelhead DPS (T) -
SCCC Steelhead DPS (T) -
SC Steelhead DPS (E) -
CCV Steelhead DPS (T) -
Eulachon (T) -
sDPS Green Sturgeon (T) -

32. ESA Anadromous Fish Critical Habitat

SONCC Coho Critical Habitat - **X**
CCC Coho Critical Habitat -
CC Chinook Salmon Critical Habitat - **X**
CVSR Chinook Salmon Critical Habitat -
SRWR Chinook Salmon Critical Habitat -
NC Steelhead Critical Habitat - **X**
CCC Steelhead Critical Habitat -
SCCC Steelhead Critical Habitat -
SC Steelhead Critical Habitat -
CCV Steelhead Critical Habitat -
Eulachon Critical Habitat -
sDPS Green Sturgeon Critical Habitat -

33. ESA Marine Invertebrates

Range Black Abalone (E) -
Range White Abalone (E) -

34. ESA Marine Invertebrates Critical Habitat

Black Abalone Critical Habitat -

35. ESA Sea Turtles

East Pacific Green Sea Turtle (T) -
Olive Ridley Sea Turtle (T/E) -
Leatherback Sea Turtle (E) -
North Pacific Loggerhead Sea Turtle (E) -

36. ESA Whales

Blue Whale (E) -
Fin Whale (E) -
Humpback Whale (E) -
Southern Resident Killer Whale (E) -
North Pacific Right Whale (E) -
Sei Whale (E) -
Sperm Whale (E) -

37. ESA Pinnipeds

Guadalupe Fur Seal (T) -
Steller Sea Lion Critical Habitat -

38. Essential Fish Habitat

Coho EFH - **X**
Chinook Salmon EFH - **X**
Groundfish EFH -
Coastal Pelagics EFH -
Highly Migratory Species EFH -

39. MMPA Species (See list at left)

40. ESA and MMPA Cetaceans/Pinnipeds

**See list at left and consult the NMFS
Long Beach office
562-980-4000**

MMPA Cetaceans -
MMPA Pinnipeds -

Quad Name **Ferndale**
Quad Number **40124-E3**

41. ESA Anadromous Fish

SONCC Coho ESU (T) - **X**
CCC Coho ESU (E) -
CC Chinook Salmon ESU (T) - **X**
CVSR Chinook Salmon ESU (T) -
SRWR Chinook Salmon ESU (E) -
NC Steelhead DPS (T) - **X**
CCC Steelhead DPS (T) -
SCCC Steelhead DPS (T) -
SC Steelhead DPS (E) -
CCV Steelhead DPS (T) -
Eulachon (T) -
sDPS Green Sturgeon (T) - **X**

42. ESA Anadromous Fish Critical Habitat

SONCC Coho Critical Habitat - **X**
CCC Coho Critical Habitat -
CC Chinook Salmon Critical Habitat - **X**
CVSR Chinook Salmon Critical Habitat -
SRWR Chinook Salmon Critical Habitat -
NC Steelhead Critical Habitat - **X**
CCC Steelhead Critical Habitat -
SCCC Steelhead Critical Habitat -
SC Steelhead Critical Habitat -
CCV Steelhead Critical Habitat -
Eulachon Critical Habitat -
sDPS Green Sturgeon Critical Habitat - **X**

43. ESA Marine Invertebrates

Range Black Abalone (E) -
Range White Abalone (E) -

44. ESA Marine Invertebrates Critical Habitat

Black Abalone Critical Habitat -

45. ESA Sea Turtles

East Pacific Green Sea Turtle (T) - **X**
Olive Ridley Sea Turtle (T/E) - **X**
Leatherback Sea Turtle (E) - **X**
North Pacific Loggerhead Sea Turtle (E) -

46. ESA Whales

Blue Whale (E) - **X**
Fin Whale (E) - **X**
Humpback Whale (E) - **X**
Southern Resident Killer Whale (E) - **X**
North Pacific Right Whale (E) - **X**
Sei Whale (E) - **X**
Sperm Whale (E) - **X**

47. ESA Pinnipeds

Guadalupe Fur Seal (T) -
Steller Sea Lion Critical Habitat -

48. Essential Fish Habitat

Coho EFH - **X**
Chinook Salmon EFH - **X**
Groundfish EFH - **X**
Coastal Pelagics EFH - **X**
Highly Migratory Species EFH -

49. MMPA Species (See list at left)

50. ESA and MMPA Cetaceans/Pinnipeds

See list at left and consult the NMFS
Long Beach office
562-980-4000

MMPA Cetaceans - **X**
MMPA Pinnipeds - **X**

Quad Name **Hydesville**

Quad Number **40124-E1**

51. ESA Anadromous Fish

SONCC Coho ESU (T) - **X**
CCC Coho ESU (E) -
CC Chinook Salmon ESU (T) - **X**
CVSR Chinook Salmon ESU (T) -
SRWR Chinook Salmon ESU (E) -
NC Steelhead DPS (T) - **X**
CCC Steelhead DPS (T) -
SCCC Steelhead DPS (T) -
SC Steelhead DPS (E) -
CCV Steelhead DPS (T) -
Eulachon (T) -
sDPS Green Sturgeon (T) -

52. ESA Anadromous Fish Critical Habitat

SONCC Coho Critical Habitat - **X**
CCC Coho Critical Habitat -
CC Chinook Salmon Critical Habitat - **X**
CVSR Chinook Salmon Critical Habitat -
SRWR Chinook Salmon Critical Habitat -
NC Steelhead Critical Habitat - **X**
CCC Steelhead Critical Habitat -
SCCC Steelhead Critical Habitat -
SC Steelhead Critical Habitat -
CCV Steelhead Critical Habitat -
Eulachon Critical Habitat -
sDPS Green Sturgeon Critical Habitat -

53. ESA Marine Invertebrates

Range Black Abalone (E) -
Range White Abalone (E) -

54. ESA Marine Invertebrates Critical Habitat

Black Abalone Critical Habitat -

55. ESA Sea Turtles

East Pacific Green Sea Turtle (T) -
Olive Ridley Sea Turtle (T/E) -
Leatherback Sea Turtle (E) -
North Pacific Loggerhead Sea Turtle (E) -

56. ESA Whales

Blue Whale (E) -
Fin Whale (E) -
Humpback Whale (E) -
Southern Resident Killer Whale (E) -
North Pacific Right Whale (E) -
Sei Whale (E) -
Sperm Whale (E) -

57. ESA Pinnipeds

Guadalupe Fur Seal (T) -
Steller Sea Lion Critical Habitat -

58. Essential Fish Habitat

Coho EFH - **X**
Chinook Salmon EFH - **X**
Groundfish EFH - **X**
Coastal Pelagics EFH - **X**
Highly Migratory Species EFH -

59. MMPA Species (See list at left)

60. ESA and MMPA Cetaceans/Pinnipeds

See list at left and consult the NMFS
Long Beach office
562-980-4000

MMPA Cetaceans -
MMPA Pinnipeds -

Quad Name **Capetown**

Quad Number **40124-D3**

61. ESA Anadromous Fish

SONCC Coho ESU (T) - **X**
CCC Coho ESU (E) -
CC Chinook Salmon ESU (T) - **X**
CVSR Chinook Salmon ESU (T) -
SRWR Chinook Salmon ESU (E) -
NC Steelhead DPS (T) - **X**
CCC Steelhead DPS (T) -
SCCC Steelhead DPS (T) -
SC Steelhead DPS (E) -
CCV Steelhead DPS (T) -
Eulachon (T) -
sDPS Green Sturgeon (T) - **X**

62. ESA Anadromous Fish Critical Habitat

SONCC Coho Critical Habitat - **X**
CCC Coho Critical Habitat -
CC Chinook Salmon Critical Habitat - **X**
CVSR Chinook Salmon Critical Habitat -
SRWR Chinook Salmon Critical Habitat -
NC Steelhead Critical Habitat - **X**
CCC Steelhead Critical Habitat -
SCCC Steelhead Critical Habitat -
SC Steelhead Critical Habitat -
CCV Steelhead Critical Habitat -
Eulachon Critical Habitat -
sDPS Green Sturgeon Critical Habitat - **X**

63. ESA Marine Invertebrates

Range Black Abalone (E) -
Range White Abalone (E) -

64. ESA Marine Invertebrates Critical Habitat

Black Abalone Critical Habitat -

65. ESA Sea Turtles

East Pacific Green Sea Turtle (T) - **X**
Olive Ridley Sea Turtle (T/E) - **X**
Leatherback Sea Turtle (E) - **X**
North Pacific Loggerhead Sea Turtle (E) -

66. ESA Whales

Blue Whale (E) - **X**
Fin Whale (E) - **X**
Humpback Whale (E) - **X**
Southern Resident Killer Whale (E) - **X**
North Pacific Right Whale (E) - **X**
Sei Whale (E) - **X**
Sperm Whale (E) - **X**

67. ESA Pinnipeds

Guadalupe Fur Seal (T) -
Steller Sea Lion Critical Habitat -

68. Essential Fish Habitat

Coho EFH - **X**
Chinook Salmon EFH - **X**
Groundfish EFH - **X**
Coastal Pelagics EFH - **X**
Highly Migratory Species EFH -

69. MMPA Species (See list at left)

70. ESA and MMPA Cetaceans/Pinnipeds

See list at left and consult the NMFS
Long Beach office
562-980-4000

MMPA Cetaceans - **X**
MMPA Pinnipeds - **X**

Quad Name **Taylor Peak**

Quad Number **40124-D2**

71. ESA Anadromous Fish

SONCC Coho ESU (T) - **X**
CCC Coho ESU (E) -
CC Chinook Salmon ESU (T) - **X**
CVSR Chinook Salmon ESU (T) -
SRWR Chinook Salmon ESU (E) -
NC Steelhead DPS (T) - **X**
CCC Steelhead DPS (T) -
SCCC Steelhead DPS (T) -
SC Steelhead DPS (E) -
CCV Steelhead DPS (T) -
Eulachon (T) -
sDPS Green Sturgeon (T) -

72. ESA Anadromous Fish Critical Habitat

SONCC Coho Critical Habitat - **X**
CCC Coho Critical Habitat -
CC Chinook Salmon Critical Habitat - **X**
CVSR Chinook Salmon Critical Habitat -
SRWR Chinook Salmon Critical Habitat -
NC Steelhead Critical Habitat - **X**
CCC Steelhead Critical Habitat -
SCCC Steelhead Critical Habitat -
SC Steelhead Critical Habitat -
CCV Steelhead Critical Habitat -
Eulachon Critical Habitat -
sDPS Green Sturgeon Critical Habitat -

73. ESA Marine Invertebrates

Range Black Abalone (E) -
Range White Abalone (E) -

74. ESA Marine Invertebrates Critical Habitat

Black Abalone Critical Habitat -

75. ESA Sea Turtles

East Pacific Green Sea Turtle (T) -
Olive Ridley Sea Turtle (T/E) -
Leatherback Sea Turtle (E) -
North Pacific Loggerhead Sea Turtle (E) -

76. ESA Whales

Blue Whale (E) -
Fin Whale (E) -
Humpback Whale (E) -
Southern Resident Killer Whale (E) -
North Pacific Right Whale (E) -
Sei Whale (E) -
Sperm Whale (E) -

77. ESA Pinnipeds

Guadalupe Fur Seal (T) -
Steller Sea Lion Critical Habitat -

78. Essential Fish Habitat

Coho EFH - **X**
Chinook Salmon EFH - **X**
Groundfish EFH -
Coastal Pelagics EFH -
Highly Migratory Species EFH -

79. MMPA Species (See list at left)

80. ESA and MMPA Cetaceans/Pinnipeds

**See list at left and consult the NMFS
Long Beach office
562-980-4000**

MMPA Cetaceans -
MMPA Pinnipeds -

Quad Name **Scotia**
Quad Number **40124-D1**

81. ESA Anadromous Fish

SONCC Coho ESU (T) - **X**
CCC Coho ESU (E) -
CC Chinook Salmon ESU (T) - **X**
CVSR Chinook Salmon ESU (T) -
SRWR Chinook Salmon ESU (E) -
NC Steelhead DPS (T) - **X**
CCC Steelhead DPS (T) -
SCCC Steelhead DPS (T) -
SC Steelhead DPS (E) -
CCV Steelhead DPS (T) -
Eulachon (T) -
sDPS Green Sturgeon (T) -

82. ESA Anadromous Fish Critical Habitat

SONCC Coho Critical Habitat - **X**
CCC Coho Critical Habitat -
CC Chinook Salmon Critical Habitat - **X**
CVSR Chinook Salmon Critical Habitat -
SRWR Chinook Salmon Critical Habitat -
NC Steelhead Critical Habitat - **X**
CCC Steelhead Critical Habitat -
SCCC Steelhead Critical Habitat -
SC Steelhead Critical Habitat -
CCV Steelhead Critical Habitat -
Eulachon Critical Habitat -
sDPS Green Sturgeon Critical Habitat -

83. ESA Marine Invertebrates

Range Black Abalone (E) -
Range White Abalone (E) -

84. ESA Marine Invertebrates Critical Habitat

Black Abalone Critical Habitat -

85. ESA Sea Turtles

East Pacific Green Sea Turtle (T) -
Olive Ridley Sea Turtle (T/E) -
Leatherback Sea Turtle (E) -
North Pacific Loggerhead Sea Turtle (E) -

86. ESA Whales

Blue Whale (E) -
Fin Whale (E) -
Humpback Whale (E) -
Southern Resident Killer Whale (E) -
North Pacific Right Whale (E) -
Sei Whale (E) -
Sperm Whale (E) -

87. ESA Pinnipeds

Guadalupe Fur Seal (T) -
Steller Sea Lion Critical Habitat -

88. Essential Fish Habitat

Coho EFH - **X**
Chinook Salmon EFH - **X**
Groundfish EFH - **X**
Coastal Pelagics EFH -
Highly Migratory Species EFH -

89. MMPA Species (See list at left)

90. ESA and MMPA Cetaceans/Pinnipeds

See list at left and consult the NMFS
Long Beach office
562-980-4000

MMPA Cetaceans -
MMPA Pinnipeds -



United States Department of the Interior

FISH AND WILDLIFE SERVICE

Arcata Fish And Wildlife Office
1655 Heindon Road
Arcata, CA 95521-4573
Phone: (707) 822-7201 Fax: (707) 822-8411



In Reply Refer To:

March 30, 2022

Project Code: 2022-0026242

Project Name: Kenmar Road and Highway 101 Interchange Project

Subject: List of threatened and endangered species that may occur in your proposed project location or may be affected by your proposed project

To Whom It May Concern:

The enclosed species list identifies threatened, endangered, proposed and candidate species, as well as proposed and final designated critical habitat, that may occur within the boundary of your proposed project and/or may be affected by your proposed project. The species list fulfills the requirements of the U.S. Fish and Wildlife Service (Service) under section 7(c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 *et seq.*).

New information based on updated surveys, changes in the abundance and distribution of species, changed habitat conditions, or other factors could change this list. Please feel free to contact us if you need more current information or assistance regarding the potential impacts to federally proposed, listed, and candidate species and federally designated and proposed critical habitat. Please note that under 50 CFR 402.12(e) of the regulations implementing section 7 of the Act, the accuracy of this species list should be verified after 90 days. This verification can be completed formally or informally as desired. The Service recommends that verification be completed by visiting the ECOS-IPaC website at regular intervals during project planning and implementation for updates to species lists and information. An updated list may be requested through the ECOS-IPaC system by completing the same process used to receive the enclosed list.

The purpose of the Act is to provide a means whereby threatened and endangered species and the ecosystems upon which they depend may be conserved. Under sections 7(a)(1) and 7(a)(2) of the Act and its implementing regulations (50 CFR 402 *et seq.*), Federal agencies are required to utilize their authorities to carry out programs for the conservation of threatened and endangered species and to determine whether projects may affect threatened and endangered species and/or designated critical habitat.

A Biological Assessment is required for construction projects (or other undertakings having similar physical impacts) that are major Federal actions significantly affecting the quality of the human environment as defined in the National Environmental Policy Act (42 U.S.C. 4332(2)(c)). For projects other than major construction activities, the Service suggests that a biological

evaluation similar to a Biological Assessment be prepared to determine whether the project may affect listed or proposed species and/or designated or proposed critical habitat. Recommended contents of a Biological Assessment are described at 50 CFR 402.12.

If a Federal agency determines, based on the Biological Assessment or biological evaluation, that listed species and/or designated critical habitat may be affected by the proposed project, the agency is required to consult with the Service pursuant to 50 CFR 402. In addition, the Service recommends that candidate species, proposed species and proposed critical habitat be addressed within the consultation. More information on the regulations and procedures for section 7 consultation, including the role of permit or license applicants, can be found in the "Endangered Species Consultation Handbook" at:

<http://www.fws.gov/endangered/esa-library/pdf/TOC-GLOS.PDF>

Migratory Birds: In addition to responsibilities to protect threatened and endangered species under the Endangered Species Act (ESA), there are additional responsibilities under the Migratory Bird Treaty Act (MBTA) and the Bald and Golden Eagle Protection Act (BGEPA) to protect native birds from project-related impacts. Any activity, intentional or unintentional, resulting in take of migratory birds, including eagles, is prohibited unless otherwise permitted by the U.S. Fish and Wildlife Service (50 C.F.R. Sec. 10.12 and 16 U.S.C. Sec. 668(a)). For more information regarding these Acts see <https://www.fws.gov/birds/policies-and-regulations.php>.

The MBTA has no provision for allowing take of migratory birds that may be unintentionally killed or injured by otherwise lawful activities. It is the responsibility of the project proponent to comply with these Acts by identifying potential impacts to migratory birds and eagles within applicable NEPA documents (when there is a federal nexus) or a Bird/Eagle Conservation Plan (when there is no federal nexus). Proponents should implement conservation measures to avoid or minimize the production of project-related stressors or minimize the exposure of birds and their resources to the project-related stressors. For more information on avian stressors and recommended conservation measures see <https://www.fws.gov/birds/bird-enthusiasts/threats-to-birds.php>.

In addition to MBTA and BGEPA, Executive Order 13186: *Responsibilities of Federal Agencies to Protect Migratory Birds*, obligates all Federal agencies that engage in or authorize activities that might affect migratory birds, to minimize those effects and encourage conservation measures that will improve bird populations. Executive Order 13186 provides for the protection of both migratory birds and migratory bird habitat. For information regarding the implementation of Executive Order 13186, please visit <https://www.fws.gov/birds/policies-and-regulations/executive-orders/e0-13186.php>.

We appreciate your concern for threatened and endangered species. The Service encourages Federal agencies to include conservation of threatened and endangered species into their project planning to further the purposes of the Act. Please include the Consultation Code in the header of this letter with any request for consultation or correspondence about your project that you submit to our office.

Attachment(s):

- Official Species List
- USFWS National Wildlife Refuges and Fish Hatcheries
- Migratory Birds
- Wetlands

Official Species List

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

This species list is provided by:

Arcata Fish And Wildlife Office

1655 Heindon Road
Arcata, CA 95521-4573
(707) 822-7201

Project Summary

Project Code: 2022-0026242

Event Code: None

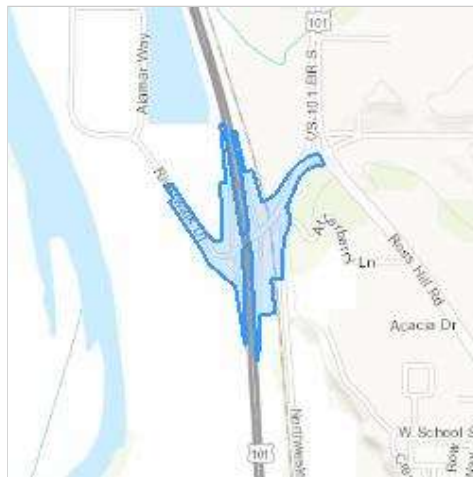
Project Name: Kenmar Road and Highway 101 Interchange Project

Project Type: Road/Hwy - Maintenance/Modification

Project Description: The Kenmar Road and Highway 101 Interchange project (project) proposes to improve traffic, pedestrian, and bicycle operations at the Kenmar Road interchange with US 101 in Fortuna in Humboldt County. The existing intersection controls, roadway geometry, and the high volumes of local and regional traffic on Kenmar Road result in poor traffic operation at and near the interchange. Proposed project components intersections with the US 101 interchange, modifications to the US 101 on-ramps and off-ramps, and the realignment of Eel River Drive. In addition to the proposed roadway improvements, the project includes a segment of Class I bike path through the project area in addition to other at-grade pedestrian and bicycle improvements to enhance pedestrian connections and promote regional bicycle network continuity. The project will simplify and improve navigation and traffic operations on Kenmar Road and Eel River Drive, including the Kenmar Road/US 101 interchange. The project will also improve operations, reduce congestion, and minimize conflicts at the Kenmar Road intersections to improve safety.

Project Location:

Approximate location of the project can be viewed in Google Maps: <https://www.google.com/maps/@40.574861049999996,-124.14977938033243,14z>



Counties: Humboldt County, California

Endangered Species Act Species

There is a total of 7 threatened, endangered, or candidate species on this species list.

Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species.

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries¹, as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

-
1. [NOAA Fisheries](#), also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

Mammals

| NAME | STATUS |
|---|------------|
| Pacific Marten, Coastal Distinct Population Segment <i>Martes caurina</i> There is proposed critical habitat for this species. The location of the critical habitat is not available. Species profile: https://ecos.fws.gov/ecp/species/9081 | Threatened |

Birds

| NAME | STATUS |
|---|------------|
| Marbled Murrelet <i>Brachyramphus marmoratus</i> Population: U.S.A. (CA, OR, WA) There is final critical habitat for this species. The location of the critical habitat is not available. Species profile: https://ecos.fws.gov/ecp/species/4467 | Threatened |
| Northern Spotted Owl <i>Strix occidentalis caurina</i> There is final critical habitat for this species. The location of the critical habitat is not available. Species profile: https://ecos.fws.gov/ecp/species/1123 | Threatened |
| Western Snowy Plover <i>Charadrius nivosus nivosus</i> Population: Pacific Coast population DPS-U.S.A. (CA, OR, WA), Mexico (within 50 miles of Pacific coast) There is final critical habitat for this species. The location of the critical habitat is not available. Species profile: https://ecos.fws.gov/ecp/species/8035 | Threatened |
| Yellow-billed Cuckoo <i>Coccyzus americanus</i> Population: Western U.S. DPS There is final critical habitat for this species. The location of the critical habitat is not available. Species profile: https://ecos.fws.gov/ecp/species/3911 | Threatened |

Insects

| NAME | STATUS |
|---|-----------|
| Monarch Butterfly <i>Danaus plexippus</i> No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/9743 | Candidate |

Flowering Plants

| NAME | STATUS |
|--|------------|
| Western Lily <i>Lilium occidentale</i> No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/998 | Endangered |

Critical habitats

THERE ARE NO CRITICAL HABITATS WITHIN YOUR PROJECT AREA UNDER THIS OFFICE'S JURISDICTION.

USFWS National Wildlife Refuge Lands And Fish Hatcheries

Any activity proposed on lands managed by the [National Wildlife Refuge](#) system must undergo a 'Compatibility Determination' conducted by the Refuge. Please contact the individual Refuges to discuss any questions or concerns.

THERE ARE NO REFUGE LANDS OR FISH HATCHERIES WITHIN YOUR PROJECT AREA.

Migratory Birds

Certain birds are protected under the Migratory Bird Treaty Act¹ and the Bald and Golden Eagle Protection Act².

Any person or organization who plans or conducts activities that may result in impacts to migratory birds, eagles, and their habitats should follow appropriate regulations and consider implementing appropriate conservation measures, as described [below](#).

-
1. The [Migratory Birds Treaty Act](#) of 1918.
 2. The [Bald and Golden Eagle Protection Act](#) of 1940.
 3. 50 C.F.R. Sec. 10.12 and 16 U.S.C. Sec. 668(a)

The birds listed below are birds of particular concern either because they occur on the [USFWS Birds of Conservation Concern](#) (BCC) list or warrant special attention in your project location. To learn more about the levels of concern for birds on your list and how this list is generated, see the FAQ [below](#). This is not a list of every bird you may find in this location, nor a guarantee that every bird on this list will be found in your project area. To see exact locations of where birders and the general public have sighted birds in and around your project area, visit the [E-bird data mapping tool](#) (Tip: enter your location, desired date range and a species on your list). For projects that occur off the Atlantic Coast, additional maps and models detailing the relative occurrence and abundance of bird species on your list are available. Links to additional information about Atlantic Coast birds, and other important information about your migratory bird list, including how to properly interpret and use your migratory bird report, can be found [below](#).

For guidance on when to schedule activities or implement avoidance and minimization measures to reduce impacts to migratory birds on your list, click on the PROBABILITY OF PRESENCE SUMMARY at the top of your list to see when these birds are most likely to be present and breeding in your project area.

| NAME | BREEDING SEASON |
|---|------------------------|
| Allen's Hummingbird <i>Selasphorus sasin</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9637 | Breeds Feb 1 to Jul 15 |
| Bald Eagle <i>Haliaeetus leucocephalus</i> This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities. https://ecos.fws.gov/ecp/species/1626 | Breeds Jan 1 to Sep 30 |

| NAME | BREEDING SEASON |
|--|-------------------------|
| Olive-sided Flycatcher <i>Contopus cooperi</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/3914 | Breeds May 20 to Aug 31 |
| Wrentit <i>Chamaea fasciata</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. | Breeds Mar 15 to Aug 10 |

Probability Of Presence Summary

The graphs below provide our best understanding of when birds of concern are most likely to be present in your project area. This information can be used to tailor and schedule your project activities to avoid or minimize impacts to birds. Please make sure you read and understand the FAQ "Proper Interpretation and Use of Your Migratory Bird Report" before using or attempting to interpret this report.

Probability of Presence (■)

Each green bar represents the bird's relative probability of presence in the 10km grid cell(s) your project overlaps during a particular week of the year. (A year is represented as 12 4-week months.) A taller bar indicates a higher probability of species presence. The survey effort (see below) can be used to establish a level of confidence in the presence score. One can have higher confidence in the presence score if the corresponding survey effort is also high.

How is the probability of presence score calculated? The calculation is done in three steps:

1. The probability of presence for each week is calculated as the number of survey events in the week where the species was detected divided by the total number of survey events for that week. For example, if in week 12 there were 20 survey events and the Spotted Towhee was found in 5 of them, the probability of presence of the Spotted Towhee in week 12 is 0.25.
2. To properly present the pattern of presence across the year, the relative probability of presence is calculated. This is the probability of presence divided by the maximum probability of presence across all weeks. For example, imagine the probability of presence in week 20 for the Spotted Towhee is 0.05, and that the probability of presence at week 12 (0.25) is the maximum of any week of the year. The relative probability of presence on week 12 is $0.25/0.25 = 1$; at week 20 it is $0.05/0.25 = 0.2$.
3. The relative probability of presence calculated in the previous step undergoes a statistical conversion so that all possible values fall between 0 and 10, inclusive. This is the probability of presence score.

Breeding Season (■)

Yellow bars denote a very liberal estimate of the time-frame inside which the bird breeds across its entire range. If there are no yellow bars shown for a bird, it does not breed in your project area.

Survey Effort (!)

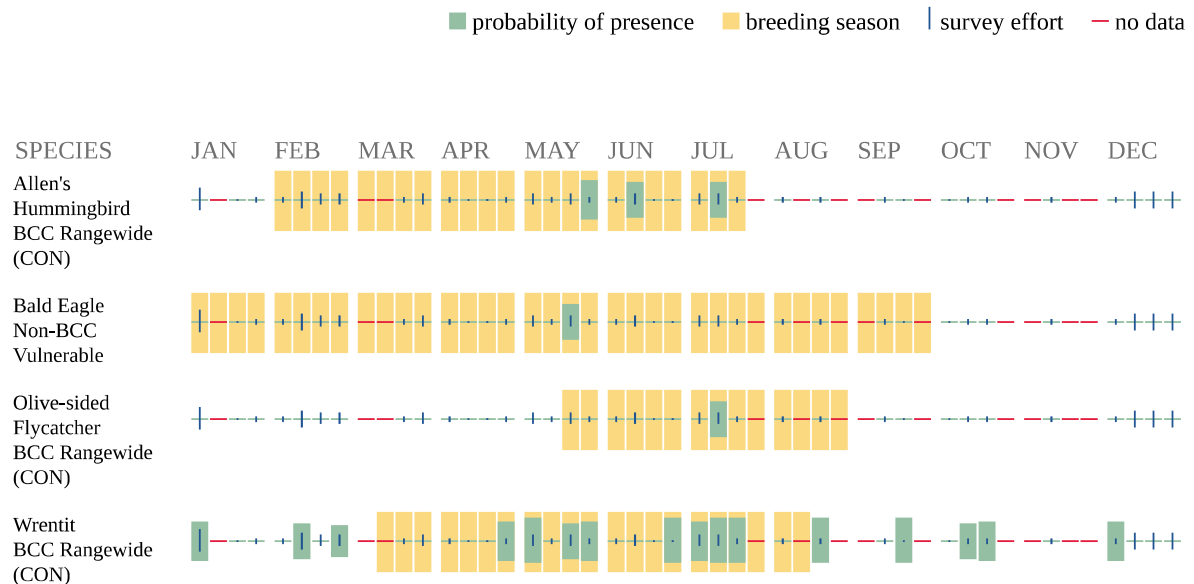
Vertical black lines superimposed on probability of presence bars indicate the number of surveys performed for that species in the 10km grid cell(s) your project area overlaps. The number of surveys is expressed as a range, for example, 33 to 64 surveys.

No Data (—)

A week is marked as having no data if there were no survey events for that week.

Survey Timeframe

Surveys from only the last 10 years are used in order to ensure delivery of currently relevant information. The exception to this is areas off the Atlantic coast, where bird returns are based on all years of available data, since data in these areas is currently much more sparse.



Additional information can be found using the following links:

- Birds of Conservation Concern <http://www.fws.gov/birds/management/managed-species/birds-of-conservation-concern.php>
- Measures for avoiding and minimizing impacts to birds <http://www.fws.gov/birds/management/project-assessment-tools-and-guidance/conservation-measures.php>
- Nationwide conservation measures for birds <http://www.fws.gov/migratorybirds/pdf/management/nationwidestandardconservationmeasures.pdf>

Migratory Birds FAQ

Tell me more about conservation measures I can implement to avoid or minimize impacts to migratory birds.

[Nationwide Conservation Measures](#) describes measures that can help avoid and minimize impacts to all birds at any location year round. Implementation of these measures is particularly important when birds are most likely to occur in the project area. When birds may be breeding in the area, identifying the locations of any active nests and avoiding their destruction is a very helpful impact minimization measure. To see when birds are most likely to occur and be breeding in your project area, view the Probability of Presence Summary. [Additional measures](#) or [permits](#) may be advisable depending on the type of activity you are conducting and the type of infrastructure or bird species present on your project site.

What does IPaC use to generate the migratory birds potentially occurring in my specified location?

The Migratory Bird Resource List is comprised of USFWS [Birds of Conservation Concern \(BCC\)](#) and other species that may warrant special attention in your project location.

The migratory bird list generated for your project is derived from data provided by the [Avian Knowledge Network \(AKN\)](#). The AKN data is based on a growing collection of [survey, banding, and citizen science datasets](#) and is queried and filtered to return a list of those birds reported as occurring in the 10km grid cell(s) which your project intersects, and that have been identified as warranting special attention because they are a BCC species in that area, an eagle ([Eagle Act](#) requirements may apply), or a species that has a particular vulnerability to offshore activities or development.

Again, the Migratory Bird Resource list includes only a subset of birds that may occur in your project area. It is not representative of all birds that may occur in your project area. To get a list of all birds potentially present in your project area, please visit the [AKN Phenology Tool](#).

What does IPaC use to generate the probability of presence graphs for the migratory birds potentially occurring in my specified location?

The probability of presence graphs associated with your migratory bird list are based on data provided by the [Avian Knowledge Network \(AKN\)](#). This data is derived from a growing collection of [survey, banding, and citizen science datasets](#).

Probability of presence data is continuously being updated as new and better information becomes available. To learn more about how the probability of presence graphs are produced and how to interpret them, go the Probability of Presence Summary and then click on the "Tell me about these graphs" link.

How do I know if a bird is breeding, wintering, migrating or present year-round in my project area?

To see what part of a particular bird's range your project area falls within (i.e. breeding, wintering, migrating or year-round), you may refer to the following resources: [The Cornell Lab of Ornithology All About Birds Bird Guide](#), or (if you are unsuccessful in locating the bird of interest there), the [Cornell Lab of Ornithology Neotropical Birds guide](#). If a bird on your migratory bird species list has a breeding season associated with it, if that bird does occur in your project area, there may be nests present at some point within the timeframe specified. If "Breeds elsewhere" is indicated, then the bird likely does not breed in your project area.

What are the levels of concern for migratory birds?

Migratory birds delivered through IPaC fall into the following distinct categories of concern:

1. "BCC Rangewide" birds are [Birds of Conservation Concern](#) (BCC) that are of concern throughout their range anywhere within the USA (including Hawaii, the Pacific Islands, Puerto Rico, and the Virgin Islands);
2. "BCC - BCR" birds are BCCs that are of concern only in particular Bird Conservation Regions (BCRs) in the continental USA; and
3. "Non-BCC - Vulnerable" birds are not BCC species in your project area, but appear on your list either because of the [Eagle Act](#) requirements (for eagles) or (for non-eagles) potential susceptibilities in offshore areas from certain types of development or activities (e.g. offshore energy development or longline fishing).

Although it is important to try to avoid and minimize impacts to all birds, efforts should be made, in particular, to avoid and minimize impacts to the birds on this list, especially eagles and BCC species of rangewide concern. For more information on conservation measures you can implement to help avoid and minimize migratory bird impacts and requirements for eagles, please see the FAQs for these topics.

Details about birds that are potentially affected by offshore projects

For additional details about the relative occurrence and abundance of both individual bird species and groups of bird species within your project area off the Atlantic Coast, please visit the [Northeast Ocean Data Portal](#). The Portal also offers data and information about other taxa besides birds that may be helpful to you in your project review. Alternately, you may download the bird model results files underlying the portal maps through the [NOAA NCCOS Integrative Statistical Modeling and Predictive Mapping of Marine Bird Distributions and Abundance on the Atlantic Outer Continental Shelf](#) project webpage.

Bird tracking data can also provide additional details about occurrence and habitat use throughout the year, including migration. Models relying on survey data may not include this information. For additional information on marine bird tracking data, see the [Diving Bird Study](#) and the [nanotag studies](#) or contact [Caleb Spiegel](#) or [Pam Loring](#).

What if I have eagles on my list?

If your project has the potential to disturb or kill eagles, you may need to [obtain a permit](#) to avoid violating the Eagle Act should such impacts occur.

Proper Interpretation and Use of Your Migratory Bird Report

The migratory bird list generated is not a list of all birds in your project area, only a subset of birds of priority concern. To learn more about how your list is generated, and see options for identifying what other birds may be in your project area, please see the FAQ "What does IPaC use to generate the migratory birds potentially occurring in my specified location". Please be aware this report provides the "probability of presence" of birds within the 10 km grid cell(s) that overlap your project; not your exact project footprint. On the graphs provided, please also look carefully at the survey effort (indicated by the black vertical bar) and for the existence of the "no data" indicator (a red horizontal bar). A high survey effort is the key component. If the survey effort is high, then the probability of presence score can be viewed as more dependable. In contrast, a low survey effort bar or no data bar means a lack of data and, therefore, a lack of

certainty about presence of the species. This list is not perfect; it is simply a starting point for identifying what birds of concern have the potential to be in your project area, when they might be there, and if they might be breeding (which means nests might be present). The list helps you know what to look for to confirm presence, and helps guide you in knowing when to implement conservation measures to avoid or minimize potential impacts from your project activities, should presence be confirmed. To learn more about conservation measures, visit the FAQ "Tell me about conservation measures I can implement to avoid or minimize impacts to migratory birds" at the bottom of your migratory bird trust resources page.

Wetlands

Impacts to [NWI wetlands](#) and other aquatic habitats may be subject to regulation under Section 404 of the Clean Water Act, or other State/Federal statutes.

For more information please contact the Regulatory Program of the local [U.S. Army Corps of Engineers District](#).

Please note that the NWI data being shown may be out of date. We are currently working to update our NWI data set. We recommend you verify these results with a site visit to determine the actual extent of wetlands on site.

FRESHWATER EMERGENT WETLAND

- [PEM1C](#)
-

IPaC User Contact Information

Agency: California Department of Transportation

Name: Elizabeth Meisman

Address: 718 Third Street

City: Eureka

State: CA

Zip: 95503

Email: elizabeth.meisman@ghd.com

Phone: 7072672217

Lead Agency Contact Information

Lead Agency: Department of Transportation

IPaC resource list

This report is an automatically generated list of species and other resources such as critical habitat (collectively referred to as *trust resources*) under the U.S. Fish and Wildlife Service's (USFWS) jurisdiction that are known or expected to be on or near the project area referenced below. The list may also include trust resources that occur outside of the project area, but that could potentially be directly or indirectly affected by activities in the project area. However, determining the likelihood and extent of effects a project may have on trust resources typically requires gathering additional site-specific (e.g., vegetation/species surveys) and project-specific (e.g., magnitude and timing of proposed activities) information.

Below is a summary of the project information you provided and contact information for the USFWS office(s) with jurisdiction in the defined project area. Please read the introduction to each section that follows (Endangered Species, Migratory Birds, USFWS Facilities, and NWI Wetlands) for additional information applicable to the trust resources addressed in that section.

Location


Humboldt County, California



Local office

Arcata Fish And Wildlife Office

☎ (707) 822-7201

 (707) 822-8411

1655 Heindon Road
Arcata, CA 95521-4573

NOT FOR CONSULTATION

Endangered species

This resource list is for informational purposes only and does not constitute an analysis of project level impacts.

The primary information used to generate this list is the known or expected range of each species. Additional areas of influence (AOI) for species are also considered. An AOI includes areas outside of the species range if the species could be indirectly affected by activities in that area (e.g., placing a dam upstream of a fish population even if that fish does not occur at the dam site, may indirectly impact the species by reducing or eliminating water flow downstream). Because species can move, and site conditions can change, the species on this list are not guaranteed to be found on or near the project area. To fully determine any potential effects to species, additional site-specific and project-specific information is often required.

Section 7 of the Endangered Species Act **requires** Federal agencies to "request of the Secretary information whether any species which is listed or proposed to be listed may be present in the area of such proposed action" for any project that is conducted, permitted, funded, or licensed by any Federal agency. A letter from the local office and a species list which fulfills this requirement can **only** be obtained by requesting an official species list from either the Regulatory Review section in IPaC (see directions below) or from the local field office directly.

For project evaluations that require USFWS concurrence/review, please return to the IPaC website and request an official species list by doing the following:

1. Draw the project location and click CONTINUE.
2. Click DEFINE PROJECT.
3. Log in (if directed to do so).
4. Provide a name and description for your project.
5. Click REQUEST SPECIES LIST.

Listed species¹ and their critical habitats are managed by the [Ecological Services Program](#) of the U.S. Fish and Wildlife Service (USFWS) and the fisheries division of the National Oceanic and Atmospheric Administration (NOAA Fisheries²).

Species and critical habitats under the sole responsibility of NOAA Fisheries are **not** shown on this list. Please contact [NOAA Fisheries](#) for [species under their jurisdiction](#).

-
1. Species listed under the Endangered Species Act are threatened or endangered; IPaC also shows species that are candidates, or proposed, for listing. See the [listing status page](#) for more information. IPaC only shows species that are regulated by USFWS (see FAQ).
 2. [NOAA Fisheries](#), also known as the National Marine Fisheries Service (NMFS), is an

office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

The following species are potentially affected by activities in this location:

Mammals

| NAME | STATUS |
|---|------------|
| Pacific Marten, Coastal Distinct Population Segment <i>Martes caurina</i> Wherever found There is proposed critical habitat for this species. The location of the critical habitat is not available. https://ecos.fws.gov/ecp/species/9081 | Threatened |

Birds

| NAME | STATUS |
|--|------------|
| Marbled Murrelet <i>Brachyramphus marmoratus</i> There is final critical habitat for this species. The location of the critical habitat is not available. https://ecos.fws.gov/ecp/species/4467 | Threatened |
| Northern Spotted Owl <i>Strix occidentalis caurina</i> Wherever found There is final critical habitat for this species. The location of the critical habitat is not available. https://ecos.fws.gov/ecp/species/1123 | Threatened |
| Western Snowy Plover <i>Charadrius nivosus nivosus</i> There is final critical habitat for this species. The location of the critical habitat is not available. https://ecos.fws.gov/ecp/species/8035 | Threatened |
| Yellow-billed Cuckoo <i>Coccyzus americanus</i> There is final critical habitat for this species. The location of the critical habitat is not available. https://ecos.fws.gov/ecp/species/3911 | Threatened |

Insects

| NAME | STATUS |
|------|--------|
|------|--------|

Monarch Butterfly *Danaus plexippus*

Candidate

Wherever found

No critical habitat has been designated for this species.

<https://ecos.fws.gov/ecp/species/9743>

Flowering Plants

NAME

STATUS

Western Lily *Lilium occidentale*

Endangered

Wherever found

No critical habitat has been designated for this species.

<https://ecos.fws.gov/ecp/species/998>

Critical habitats

Potential effects to critical habitat(s) in this location must be analyzed along with the endangered species themselves.

THERE ARE NO CRITICAL HABITATS AT THIS LOCATION.

Migratory birds

Certain birds are protected under the Migratory Bird Treaty Act¹ and the Bald and Golden Eagle Protection Act².

Any person or organization who plans or conducts activities that may result in impacts to migratory birds, eagles, and their habitats should follow appropriate regulations and consider implementing appropriate conservation measures, as described [below](#).

1. The [Migratory Birds Treaty Act](#) of 1918.
2. The [Bald and Golden Eagle Protection Act](#) of 1940.

Additional information can be found using the following links:

- Birds of Conservation Concern <https://www.fws.gov/program/migratory-birds/species>
- Measures for avoiding and minimizing impacts to birds <https://www.fws.gov/library/collections/avoiding-and-minimizing-incidental-take-migratory-birds>
- Nationwide conservation measures for birds <https://www.fws.gov/sites/default/files/documents/nationwide-standard-conservation-measures.pdf>

The birds listed below are birds of particular concern either because they occur on the [USFWS Birds of Conservation Concern \(BCC\)](#) list or warrant special attention in your project location. To learn more about the levels of concern for birds on your list and how this list is generated, see the FAQ [below](#). This is not a list of every bird you may find in this location, nor a guarantee that every bird on this list will be found in your project area. To see exact locations of where birders and the general public have sighted birds in and around your project area, visit the [E-bird data mapping tool](#) (Tip: enter your location, desired date range and a species on your list). For projects that occur off the Atlantic Coast, additional maps and models detailing the relative occurrence and abundance of bird species on your list are available. Links to additional information about Atlantic Coast birds, and other important information about your migratory bird list, including how to properly interpret and use your migratory bird report, can be found [below](#).

For guidance on when to schedule activities or implement avoidance and minimization measures to reduce impacts to migratory birds on your list, click on the PROBABILITY OF PRESENCE SUMMARY at the top of your list to see when these birds are most likely to be present and breeding in your project area.

NAME

BREEDING SEASON (IF A BREEDING SEASON IS INDICATED FOR A BIRD ON YOUR LIST, THE BIRD MAY BREED IN YOUR PROJECT AREA SOMETIME WITHIN THE TIMEFRAME SPECIFIED, WHICH IS A VERY LIBERAL ESTIMATE OF THE DATES INSIDE WHICH THE BIRD BREEDS ACROSS ITS ENTIRE RANGE. "BREEDS ELSEWHERE" INDICATES THAT THE BIRD DOES NOT LIKELY BREED IN YOUR PROJECT AREA.)

Allen's Hummingbird *Selasphorus sasin*

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

<https://ecos.fws.gov/ecp/species/9637>

Breeds Feb 1 to Jul 15

Bald Eagle *Haliaeetus leucocephalus*

This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities.

Breeds Jan 1 to Sep 30

Olive-sided Flycatcher *Contopus cooperi*

Breeds May 20 to Aug 31

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

<https://ecos.fws.gov/ecp/species/3914>

Wrentit *Chamaea fasciata*

Breeds Mar 15 to Aug 10

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

NOT FOR CONSULTATION

Probability of Presence Summary

The graphs below provide our best understanding of when birds of concern are most likely to be present in your project area. This information can be used to tailor and schedule your project activities to avoid or minimize impacts to birds. Please make sure you read and understand the FAQ "Proper Interpretation and Use of Your Migratory Bird Report" before using or attempting to interpret this report.

Probability of Presence (■)

Each green bar represents the bird's relative probability of presence in the 10km grid cell(s) your project overlaps during a particular week of the year. (A year is represented as 12 4-week months.) A taller bar indicates a higher probability of species presence. The survey effort (see below) can be used to establish a level of confidence in the presence score. One can have higher confidence in the presence score if the corresponding survey effort is also high.

How is the probability of presence score calculated? The calculation is done in three steps:

1. The probability of presence for each week is calculated as the number of survey events in the week where the species was detected divided by the total number of survey events for that week. For example, if in week 12 there were 20 survey events and the Spotted Towhee was found in 5 of them, the probability of presence of the Spotted Towhee in week 12 is 0.25.
2. To properly present the pattern of presence across the year, the relative probability of presence is calculated. This is the probability of presence divided by the maximum probability of presence across all weeks. For example, imagine the probability of presence in week 20 for the Spotted Towhee is 0.05, and that the probability of presence at week 12 (0.25) is the maximum of any week of the year. The relative probability of presence on week 12 is $0.25/0.25 = 1$; at week 20 it is $0.05/0.25 = 0.2$.
3. The relative probability of presence calculated in the previous step undergoes a statistical conversion so that all possible values fall between 0 and 10, inclusive. This is the probability of presence score.

To see a bar's probability of presence score, simply hover your mouse cursor over the bar.

Breeding Season (■)

Yellow bars denote a very liberal estimate of the time-frame inside which the bird breeds across its entire range. If there are no yellow bars shown for a bird, it does not breed in your project area.

Survey Effort (|)

Vertical black lines superimposed on probability of presence bars indicate the number of surveys performed for that species in the 10km grid cell(s) your project area overlaps. The number of surveys is expressed as a range, for example, 33 to 64 surveys.

To see a bar's survey effort range, simply hover your mouse cursor over the bar.

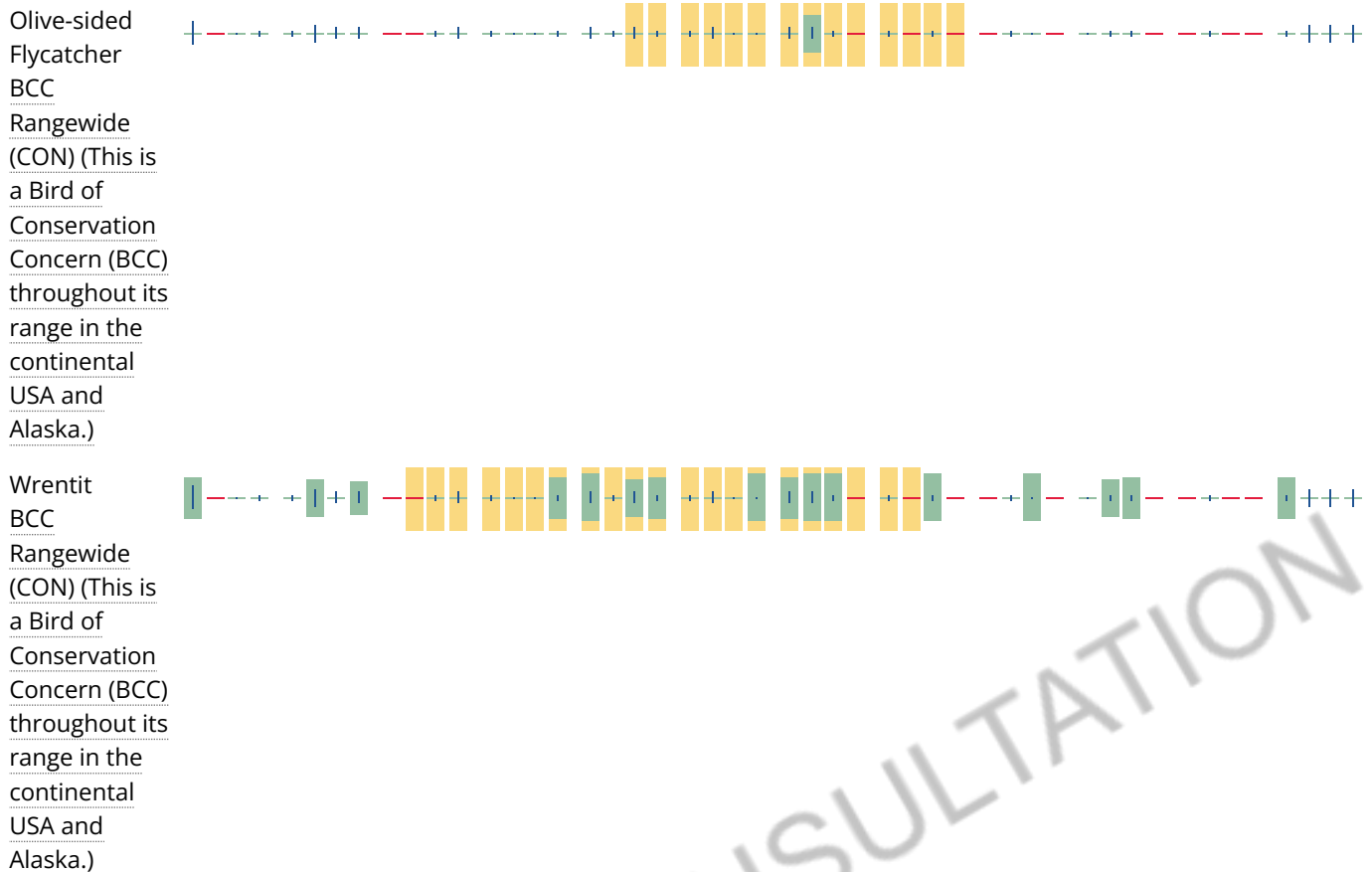
No Data (—)

A week is marked as having no data if there were no survey events for that week.

Survey Timeframe

Surveys from only the last 10 years are used in order to ensure delivery of currently relevant information. The exception to this is areas off the Atlantic coast, where bird returns are based on all years of available data, since data in these areas is currently much more sparse.





Tell me more about conservation measures I can implement to avoid or minimize impacts to migratory birds.

[Nationwide Conservation Measures](#) describes measures that can help avoid and minimize impacts to all birds at any location year round. Implementation of these measures is particularly important when birds are most likely to occur in the project area. When birds may be breeding in the area, identifying the locations of any active nests and avoiding their destruction is a very helpful impact minimization measure. To see when birds are most likely to occur and be breeding in your project area, view the Probability of Presence Summary. [Additional measures](#) or [permits](#) may be advisable depending on the type of activity you are conducting and the type of infrastructure or bird species present on your project site.

What does IPaC use to generate the migratory birds potentially occurring in my specified location?

The Migratory Bird Resource List is comprised of USFWS [Birds of Conservation Concern \(BCC\)](#) and other species that may warrant special attention in your project location.

The migratory bird list generated for your project is derived from data provided by the [Avian Knowledge Network \(AKN\)](#). The AKN data is based on a growing collection of [survey, banding, and citizen science datasets](#) and is queried and filtered to return a list of those birds reported as occurring in the 10km grid cell(s) which your project intersects, and that have been identified as warranting special attention because they are a BCC species in that area, an eagle ([Eagle Act](#) requirements may apply), or a species that has a particular vulnerability to offshore activities or development.

Again, the Migratory Bird Resource list includes only a subset of birds that may occur in your project area. It is not representative of all birds that may occur in your project area. To get a list of all birds

potentially present in your project area, please visit the [AKN Phenology Tool](#).

What does IPaC use to generate the probability of presence graphs for the migratory birds potentially occurring in my specified location?

The probability of presence graphs associated with your migratory bird list are based on data provided by the [Avian Knowledge Network \(AKN\)](#). This data is derived from a growing collection of [survey, banding, and citizen science datasets](#).

Probability of presence data is continuously being updated as new and better information becomes available. To learn more about how the probability of presence graphs are produced and how to interpret them, go to the Probability of Presence Summary and then click on the "Tell me about these graphs" link.

How do I know if a bird is breeding, wintering, migrating or present year-round in my project area?

To see what part of a particular bird's range your project area falls within (i.e. breeding, wintering, migrating or year-round), you may refer to the following resources: [The Cornell Lab of Ornithology All About Birds Bird Guide](#), or (if you are unsuccessful in locating the bird of interest there), the [Cornell Lab of Ornithology Neotropical Birds guide](#). If a bird on your migratory bird species list has a breeding season associated with it, if that bird does occur in your project area, there may be nests present at some point within the timeframe specified. If "Breeds elsewhere" is indicated, then the bird likely does not breed in your project area.

What are the levels of concern for migratory birds?

Migratory birds delivered through IPaC fall into the following distinct categories of concern:

1. "BCC Rangewide" birds are [Birds of Conservation Concern](#) (BCC) that are of concern throughout their range anywhere within the USA (including Hawaii, the Pacific Islands, Puerto Rico, and the Virgin Islands);
2. "BCC - BCR" birds are BCCs that are of concern only in particular Bird Conservation Regions (BCRs) in the continental USA; and
3. "Non-BCC - Vulnerable" birds are not BCC species in your project area, but appear on your list either because of the [Eagle Act](#) requirements (for eagles) or (for non-eagles) potential susceptibilities in offshore areas from certain types of development or activities (e.g. offshore energy development or longline fishing).

Although it is important to try to avoid and minimize impacts to all birds, efforts should be made, in particular, to avoid and minimize impacts to the birds on this list, especially eagles and BCC species of rangewide concern. For more information on conservation measures you can implement to help avoid and minimize migratory bird impacts and requirements for eagles, please see the FAQs for these topics.

Details about birds that are potentially affected by offshore projects

For additional details about the relative occurrence and abundance of both individual bird species and groups of bird species within your project area off the Atlantic Coast, please visit the [Northeast Ocean Data Portal](#). The Portal also offers data and information about other taxa besides birds that may be helpful to you in your project review. Alternately, you may download the bird model results files

underlying the portal maps through the [NOAA NCCOS Integrative Statistical Modeling and Predictive Mapping of Marine Bird Distributions and Abundance on the Atlantic Outer Continental Shelf](#) project webpage.

Bird tracking data can also provide additional details about occurrence and habitat use throughout the year, including migration. Models relying on survey data may not include this information. For additional information on marine bird tracking data, see the [Diving Bird Study](#) and the [nanotag studies](#) or contact [Caleb Spiegel](#) or [Pam Loring](#).

What if I have eagles on my list?

If your project has the potential to disturb or kill eagles, you may need to [obtain a permit](#) to avoid violating the Eagle Act should such impacts occur.

Proper Interpretation and Use of Your Migratory Bird Report

The migratory bird list generated is not a list of all birds in your project area, only a subset of birds of priority concern. To learn more about how your list is generated, and see options for identifying what other birds may be in your project area, please see the FAQ "What does IPaC use to generate the migratory birds potentially occurring in my specified location". Please be aware this report provides the "probability of presence" of birds within the 10 km grid cell(s) that overlap your project; not your exact project footprint. On the graphs provided, please also look carefully at the survey effort (indicated by the black vertical bar) and for the existence of the "no data" indicator (a red horizontal bar). A high survey effort is the key component. If the survey effort is high, then the probability of presence score can be viewed as more dependable. In contrast, a low survey effort bar or no data bar means a lack of data and, therefore, a lack of certainty about presence of the species. This list is not perfect; it is simply a starting point for identifying what birds of concern have the potential to be in your project area, when they might be there, and if they might be breeding (which means nests might be present). The list helps you know what to look for to confirm presence, and helps guide you in knowing when to implement conservation measures to avoid or minimize potential impacts from your project activities, should presence be confirmed. To learn more about conservation measures, visit the FAQ "Tell me about conservation measures I can implement to avoid or minimize impacts to migratory birds" at the bottom of your migratory bird trust resources page.

Coastal Barrier Resources System

Projects within the [John H. Chafee Coastal Barrier Resources System](#) (CBRS) may be subject to the restrictions on federal expenditures and financial assistance and the consultation requirements of the Coastal Barrier Resources Act (CBRA) (16 U.S.C. 3501 et seq.). For more information, please contact the local [Ecological Services Field Office](#) or visit the [CBRA Consultations website](#). The CBRA website provides tools such as a flow chart to help determine whether consultation is required and a template to facilitate the consultation process.

THERE ARE NO KNOWN COASTAL BARRIERS AT THIS LOCATION.

Data limitations

The CBRS boundaries used in IPaC are representations of the controlling boundaries, which are depicted on the [official CBRS maps](#). The boundaries depicted in this layer are not to be considered authoritative for in/out determinations close to a CBRS boundary (i.e., within the "CBRS Buffer Zone" that appears as a hatched area on either side of the boundary). For projects that are very close to a CBRS boundary but do not clearly intersect a unit, you may contact the Service for an official determination by following the instructions here: <https://www.fws.gov/service/coastal-barrier-resources-system-property-documentation>

Data exclusions

CBRS units extend seaward out to either the 20- or 30-foot bathymetric contour (depending on the location of the unit). The true seaward extent of the units is not shown in the CBRS data, therefore projects in the offshore areas of units (e.g., dredging, breakwaters, offshore wind energy or oil and gas projects) may be subject to CBRA even if they do not intersect the CBRS data. For additional information, please contact CBRA@fws.gov.

Facilities

National Wildlife Refuge lands

Any activity proposed on lands managed by the [National Wildlife Refuge](#) system must undergo a 'Compatibility Determination' conducted by the Refuge. Please contact the individual Refuges to discuss any questions or concerns.

THERE ARE NO REFUGE LANDS AT THIS LOCATION.

Fish hatcheries

THERE ARE NO FISH HATCHERIES AT THIS LOCATION.

Wetlands in the National Wetlands Inventory

Impacts to [NWI wetlands](#) and other aquatic habitats may be subject to regulation under Section 404 of the Clean Water Act, or other State/Federal statutes.

For more information please contact the Regulatory Program of the local [U.S. Army Corps of Engineers District](#).

WETLAND INFORMATION IS NOT AVAILABLE AT THIS TIME

This can happen when the National Wetlands Inventory (NWI) map service is unavailable, or for very large projects that intersect many wetland areas. Try again, or visit the [NWI map](#) to view wetlands at this location.

Data limitations

The Service's objective of mapping wetlands and deepwater habitats is to produce reconnaissance level information on the location, type and size of these resources. The maps are prepared from the analysis of high altitude imagery. Wetlands are identified based on vegetation, visible hydrology and geography. A margin of error is inherent in the use of imagery; thus, detailed on-the-ground inspection of any particular site may result in revision of the wetland boundaries or classification established through image analysis.

The accuracy of image interpretation depends on the quality of the imagery, the experience of the image analysts, the amount and quality of the collateral data and the amount of ground truth verification work conducted. Metadata should be consulted to determine the date of the source imagery used and any mapping problems.

Wetlands or other mapped features may have changed since the date of the imagery or field work. There may be occasional differences in polygon boundaries or classifications between the information depicted on the map and the actual conditions on site.

Data exclusions

Certain wetland habitats are excluded from the National mapping program because of the limitations of aerial imagery as the primary data source used to detect wetlands. These habitats include seagrasses or submerged aquatic vegetation that are found in the intertidal and subtidal zones of estuaries and nearshore coastal waters. Some deepwater reef communities (coral or tubercid worm reefs) have also been excluded from the inventory. These habitats, because of their depth, go undetected by aerial imagery.

Data precautions

Federal, state, and local regulatory agencies with jurisdiction over wetlands may define and describe wetlands in a different manner than that used in this inventory. There is no attempt, in either the design or products of this inventory, to define the limits of proprietary jurisdiction of any Federal, state, or local government or to establish the geographical scope of the regulatory programs of government agencies. Persons intending to engage in activities involving modifications within or adjacent to wetland areas should seek the advice of appropriate federal, state, or local agencies concerning specified agency regulatory programs and proprietary jurisdictions that may affect such activities.

Attachment F - Cost Estimates

PROJECT
PLANNING COST ESTIMATE ©

EA: N/A

EA: N/A PID: N/A

PID: N/A

District-County-Route: 01-HUM-Kenmar

PM: N/A

Type of Estimate : Planning Level Estimate

Program Code : N/A

Project Limits : The intersection of Kenmar Rd and Ross Hill Road

Project Description: Fortuna Kenmar and Ross Hill Road PSR

Scope : Signal Alternative - Min

Alternative : 1

SUMMARY OF PROJECT COST ESTIMATE

| | Current Year Cost | Escalated Cost |
|----------------------------|-------------------|----------------|
| TOTAL ROADWAY COST | \$ 1,722,200 | \$ 2,030,273 |
| TOTAL STRUCTURES COST | \$ - | \$ - |
| SUBTOTAL CONSTRUCTION COST | \$ 1,722,200 | \$ 2,030,273 |
| TOTAL RIGHT OF WAY COST | \$ - | \$ - |
| TOTAL CAPITAL OUTLAY COSTS | \$ 1,723,000 | \$ 2,031,000 |
| PA/ED SUPPORT | \$ 200,000 | \$ 208,400 |
| PS&E SUPPORT | \$ 250,000 | \$ 260,500 |
| RIGHT OF WAY SUPPORT | \$ - | \$ - |
| CONSTRUCTION SUPPORT | \$ 350,000 | \$ 395,978 |
| TOTAL SUPPORT COST | \$ 800,000 | \$ 865,000 |

| | | |
|---------------------------|---------------------|---------------------|
| TOTAL PROJECT COST | \$ 2,530,000 | \$ 2,900,000 |
|---------------------------|---------------------|---------------------|

Programmed Amount

Date of Estimate (Month/Year) Month / Year
7 / 2022

Estimated Construction Start (Month/Year) 2 / 2025

Number of Working Days = 100

Estimated Mid-Point of Construction (Month/Year) _____ /

Estimated Construction End (Month/Year) _____ /

Number of Plant Establishment Days

Estimated Project Schedule

PID Approval

PA/ED Approval

PS&E

RTL

Begin Construction

Approved by Project Manager Josh Wolf

2/29/2024

(707) 267-2264

Project Manager

Date

Phone

PROJECT COST ESTIMATE

EA: N/A PID: N/A

I. ROADWAY ITEMS SUMMARY

| | Section | Cost |
|----------------------------|-----------------------------|---------------------|
| 1 | Earthwork | \$ 20,000 |
| 2 | Pavement Structural Section | \$ 768,200 |
| 3 | Drainage | \$ 40,000 |
| 4 | Specialty Items | \$ 25,000 |
| 5 | Environmental | \$ 75,800 |
| 6 | Traffic Items | \$ 143,000 |
| 7 | Detours | \$ - |
| 8 | Minor Items | \$ 107,200 |
| 9 | Roadway Mobilization | \$ 118,000 |
| 10 | Supplemental Work | \$ 59,000 |
| 11 | State Furnished | \$ 21,500 |
| 12 | Time-Related Overhead | \$ - |
| 13 | Roadway Contingency | \$ 344,500 |
| TOTAL ROADWAY ITEMS | | \$ 1,722,200 |

Estimate Prepared By : Erin Gibbs 7/22/2022 (916) 865-0932
 Name and Title Date Phone

Estimate Reviewed By : Daniel Kehrer 7/22/2022 (916) 918-0614
 Name and Title Date Phone

By signing this estimate you are attesting that you have discussed your project with all functional units and have incorporated all their comments or have discussed with them why they will not be incorporated.

SECTION 1: EARTHWORK

| Item code | Unit | Quantity | Unit Price (\$) | Cost |
|---------------------------|------|----------|-----------------|--------|
| 190101 Roadway Excavation | CY | 200 x | 100.00 = \$ | 20,000 |

| | |
|--------------------------------------|------------------|
| TOTAL EARTHWORK SECTION ITEMS | \$ 20,000 |
|--------------------------------------|------------------|

SECTION 2: PAVEMENT STRUCTURAL SECTION

| Item code | Unit | Quantity | Unit Price (\$) | Cost |
|---|------|----------|-----------------|---------|
| 390132 Hot Mix Asphalt (Type A) | TON | 1,685 x | 145.00 = \$ | 244,325 |
| 26020X Class 2 Aggregate Base | CY | 305 x | 110.00 = \$ | 33,550 |
| 397005 Tack Coat | TON | 5 x | 1,265.00 = \$ | 6,325 |
| 390100 Prime Coat | TON | 3 x | 1,565.00 = \$ | 4,695 |
| 371623 Minor Concrete (Curb Ramp) | CY | 54 x | 1,580.00 = \$ | 85,320 |
| 731504 Minor Concrete (Curb and Gutter) | CY | 11 x | 1,085.00 = \$ | 11,935 |
| 731521 Minor Concrete (Sidewalk) | CY | 34 x | 1,015.00 = \$ | 34,510 |
| 730020 Minor Concrete (Curb) | CY | 100 x | 2,200.00 = \$ | 220,000 |
| 398200 Cold Plane Asphalt Concrete Pavement | SQYD | 7,500 x | 17.00 = \$ | 127,500 |

| | |
|--|-------------------|
| TOTAL PAVEMENT STRUCTURAL SECTION ITEMS | \$ 768,200 |
|--|-------------------|

SECTION 3: DRAINAGE

| Item code | Unit | Quantity | Unit Price (\$) | Cost |
|----------------------------|------|----------|------------------|-----------|
| XXXXXX Additional Drainage | LS | 1 | x 40,000.00 = \$ | 40,000 |
| TOTAL DRAINAGE ITEMS | | | | \$ 40,000 |

SECTION 4: SPECIALTY ITEMS

| Item code | Unit | Quantity | Unit Price (\$) | Cost |
|---|------|----------|------------------|-----------|
| XXXXXX Reconstruct City of Fortuna Sign | LS | 1 | x 25,000.00 = \$ | 25,000 |
| TOTAL SPECIALTY ITEMS | | | | \$ 25,000 |

SECTION 5: ENVIRONMENTAL**5A - ENVIRONMENTAL MITIGATION**

| Item code | Unit | Quantity | | Unit Price (\$) | | Cost |
|--|------|----------|---|-----------------|------|----------|
| 160110 Temporary High Visibility Fence | LF | 250 | x | 13.00 | = \$ | 3,250 |
| <i>Subtotal Environmental Mitigation</i> | | | | | | \$ 3,250 |

5B - LANDSCAPE AND IRRIGATION

| Item code | Unit | Quantity | | Unit Price (\$) | | Cost |
|--|------|----------|--|-----------------|--|------|
| <i>Subtotal Landscape and Irrigation</i> | | | | | | \$ - |

5C - EROSION CONTROL

| Item code | Unit | Quantity | | Unit Price (\$) | | Cost |
|---|------|----------|---|-----------------|------|-----------|
| 210010 Move In/Move Out (Erosion Control) | EA | \$ 1 | x | 20000 | = \$ | 20,000 |
| <i>Subtotal Erosion Control</i> | | | | | | \$ 20,000 |

5D - NPDES

| Item code | Unit | Quantity | | Unit Price (\$) | | Cost |
|--|------|----------|---|-----------------|------|-----------|
| 130300 Prepare SWPPP | LS | 1 | x | 3,000.00 | = \$ | 3,000 |
| 130100 Job Site Management | LS | 1 | x | 20,000.00 | = \$ | 20,000 |
| 130330 Storm Water Annual Report | EA | 1 | x | 2,000.00 | = \$ | 2,000 |
| 130310 Rain Event Action Plan (REAP) | EA | 10 | x | 500.00 | = \$ | 5,000 |
| 130320 Storm Water Sampling and Analysis Day | EA | 5 | x | 500.00 | = \$ | 2,500 |
| XXXXXX Temporary Erosion Control | LS | 1 | x | 20,000.00 | = \$ | 20,000 |
| <i>Subtotal NPDES</i> | | | | | | \$ 52,500 |

| | |
|----------------------------|------------------|
| TOTAL ENVIRONMENTAL | \$ 75,800 |
|----------------------------|------------------|

*Applies to all SWPPPs and those WPCPs with sediment control or soil stabilization BMPs.

**Applies to both SWPPPs and WPCP projects.

*** Applies only to project with SWPPPs.

SECTION 6: TRAFFIC ITEMS**6A - Traffic Electrical**

| Item code | Unit | Quantity | | Unit Price (\$) | | Cost |
|------------------------------------|------|----------|---|-----------------|------|------------------|
| 860201 Signal and Lighting | LS | 1 | x | 50,000.00 | = \$ | 50,000 |
| <i>Subtotal Traffic Electrical</i> | | | | | | <i>\$ 50,000</i> |

6B - Traffic Signing and Striping

| Item code | Unit | Quantity | | Unit Price (\$) | | Cost |
|---|------|----------|---|-----------------|------|------------------|
| 820480 Roadside Sign - One Post | EA | 10 | x | 500.00 | = \$ | 5,000 |
| 820250 Remove Roadside Sign | EA | 10 | x | 200.00 | = \$ | 2,000 |
| 840502 Thermoplastic Traffic Stripe (Enhanced Wet Night | LF | 4,000 | x | 2.00 | = \$ | 8,000 |
| 846012 Thermoplastic Crosswalk and Pavement Marking (| SQFT | 800 | x | 10.00 | = \$ | 8,000 |
| 120090 Construction Area Signs | LS | 1 | x | 5,000.00 | = \$ | 5,000 |
| 027072 Bollards | EA | 10 | x | 500.00 | = \$ | 5,000 |
| <i>Subtotal Traffic Signing and Striping</i> | | | | | | <i>\$ 33,000</i> |

6C - Traffic Management Plan

| Item code | Unit | Quantity | | Unit Price (\$) | | Cost |
|--|------|----------|---|-----------------|------|------------------|
| 12865X Portable Changeable Message Signs | LS | 1 | x | \$ 10,000 | = \$ | 10,000 |
| <i>Subtotal Traffic Management Plan</i> | | | | | | <i>\$ 10,000</i> |

6C - Stage Construction and Traffic Handling

| Item code | Unit | Quantity | | Unit Price (\$) | | Cost |
|---|------|----------|---|-----------------|------|------------------|
| 120100 Traffic Control System | LS | 1 | x | 50,000.00 | = \$ | 50,000 |
| <i>Subtotal Stage Construction and Traffic Handling</i> | | | | | | <i>\$ 50,000</i> |

| | |
|----------------------------|-------------------|
| TOTAL TRAFFIC ITEMS | \$ 143,000 |
|----------------------------|-------------------|

SECTION 7: DETOURS

Includes constructing, maintaining, and removal

| Item code | Unit | Quantity | Unit Price (\$) | Cost |
|---|------|----------|--------------------------------------|---------------------|
| * Includes constructing, maintaining, and removal | | | TOTAL DETOURS | \$ - |
| | | | SUBTOTAL SECTIONS 1 through 7 | \$ 1,072,000 |

SECTION 8: MINOR ITEMS**8A - Americans with Disabilities Act Items**

ADA Items

5.0% \$ 53,600

8B - Bike Path Items

Bike Path Items

0.0% \$ -

8C - Other Minor Items

Other Minor Items

5.0% \$ 53,600

Total of Section 1-7 \$ 1,072,000 x 10.0% = \$ 107,200

TOTAL MINOR ITEMS \$ 107,200**SECTIONS 9: ROADWAY MOBILIZATION**

Item code

999990

Total Section 1-8 \$ 1,179,200 x 10% = \$ 117,920

TOTAL ROADWAY MOBILIZATION \$ 118,000**SECTION 10: SUPPLEMENTAL WORK**

Item code

Total Section 1-8 \$ 1,179,200 5% = \$ 58,960

TOTAL SUPPLEMENTAL WORK \$ 59,000

SECTION 11: STATE FURNISHED MATERIALS AND EXPENSES

| Item code | Unit | Quantity | | Unit Price (\$) | | Cost |
|---|------|--------------|----|-----------------|----|----------|
| 066901 Water Expenses | LS | 1 | x | 1,000.00 | = | \$1,000 |
| XXXXXX Agency Permit Fee | LS | 1 | x | 20,000.00 | = | \$20,000 |
| 066916 Annual Construction General Permit Fee | LS | 1 | x | 500.00 | = | \$500 |
| Total Section 1-8 | | \$ 1,179,200 | 0% | = | \$ | - |

| | |
|------------------------------|-----------------|
| TOTAL STATE FURNISHED | \$21,500 |
|------------------------------|-----------------|

SECTION 12: TIME-RELATED OVERHEAD

| | |
|---|--|
| Total of Roadway and Structures Contract Items excluding Mobilization | \$1,179,200 (used to calculate TRO) |
| Total Construction Cost (excluding TRO and Contingency) | \$1,377,700 (used to check if project is greater than \$5 million excluding contingency) |

Estimated Time-Related Overhead (TRO) Percentage (0% to 10%) =

| Item code | Unit | Quantity | | Unit Price (\$) | | Cost |
|-----------|------|----------|--|-----------------|--|------|
|-----------|------|----------|--|-----------------|--|------|

| | |
|------------------------------------|------------|
| TOTAL TIME-RELATED OVERHEAD | \$0 |
|------------------------------------|------------|

SECTION 13: ROADWAY CONTINGENCY

| | | | | | | |
|--------------------|----|-----------|---|-----|---|-----------|
| Total Section 1-12 | \$ | 1,377,700 | x | 25% | = | \$344,425 |
|--------------------|----|-----------|---|-----|---|-----------|

| | |
|--------------------------|------------------|
| TOTAL CONTINGENCY | \$344,500 |
|--------------------------|------------------|

PROJECT PLANNING COST ESTIMATE ©

EA: N/A

EA: N/A PID: N/A

PID: N/A

District-County-Route: 01-HUM-Kenmar

PM: N/A

Type of Estimate : Planning Level Estimate

Program Code : N/A

Project Limits : The intersection of Kenmar Rd and Ross Hill Road

Project Description: Fortuna Kenmar and Ross Hill Road PSR

Scope : Signal Alternative

Alternative : 1

SUMMARY OF PROJECT COST ESTIMATE

| | Current Year Cost | Escalated Cost |
|-----------------------------------|----------------------|----------------------|
| TOTAL ROADWAY COST | \$ 7,466,700 | \$ 8,802,369 |
| TOTAL STRUCTURES COST | \$ - | \$ - |
| SUBTOTAL CONSTRUCTION COST | \$ 7,466,700 | \$ 8,802,369 |
| TOTAL RIGHT OF WAY COST | \$ 50,000 | \$ 60,000 |
| TOTAL CAPITAL OUTLAY COSTS | \$ 7,517,000 | \$ 8,863,000 |
| PA/ED SUPPORT | \$ 750,000 | \$ 781,500 |
| PS&E SUPPORT | \$ 1,100,000 | \$ 1,146,200 |
| RIGHT OF WAY SUPPORT | \$ 200,000 | \$ 217,153 |
| CONSTRUCTION SUPPORT | \$ 1,350,000 | \$ 1,527,344 |
| TOTAL SUPPORT COST | \$ 3,400,000 | \$ 3,673,000 |
| TOTAL PROJECT COST | \$ 10,950,000 | \$ 12,550,000 |

Programmed Amount

Month / Year

Date of Estimate (Month/Year) 7 / 2022

Estimated Construction Start (Month/Year) 2 / 2025

Number of Working Days = 100

Estimated Mid-Point of Construction (Month/Year) _____ /

Estimated Construction End (Month/Year) _____ /

Number of Plant Establishment Days

Estimated Project Schedule

PID Approval
PA/ED Approval
PS&E
RTL
Begin Construction

Approved by Project Manager Josh Wolf

10/14/2022

(707) 267-2264

Project Manager

Date

Phone

PROJECT COST ESTIMATE

EA: N/A PID: N/A

I. ROADWAY ITEMS SUMMARY

| | Section | Cost |
|----------------------------|-----------------------------|---------------------|
| 1 | Earthwork | \$ 28,000 |
| 2 | Pavement Structural Section | \$ 1,056,900 |
| 3 | Drainage | \$ 3,140,000 |
| 4 | Specialty Items | \$ 25,000 |
| 5 | Environmental | \$ 100,800 |
| 6 | Traffic Items | \$ 354,200 |
| 7 | Detours | \$ - |
| 8 | Minor Items | \$ 470,500 |
| 9 | Roadway Mobilization | \$ 517,600 |
| 10 | Supplemental Work | \$ 258,800 |
| 11 | State Furnished | \$ 21,500 |
| 12 | Time-Related Overhead | \$ - |
| 13 | Roadway Contingency | \$ 1,493,400 |
| TOTAL ROADWAY ITEMS | | \$ 7,466,700 |

Estimate Prepared By : Erin Gibbs 7/22/2022 (916) 865-0932
 Name and Title Date Phone

Estimate Reviewed By : Daniel Kehrer 7/22/2022 (916) 918-0614
 Name and Title Date Phone

By signing this estimate you are attesting that you have discussed your project with all functional units and have incorporated all their comments or have discussed with them why they will not be incorporated.

SECTION 1: EARTHWORK

| Item code | Unit | Quantity | Unit Price (\$) | Cost |
|---------------------------|------|----------|-----------------|--------|
| 190101 Roadway Excavation | CY | 350 x | 80.00 = \$ | 28,000 |

| |
|--------------------------------------|
| TOTAL EARTHWORK SECTION ITEMS |
|--------------------------------------|

| |
|------------------|
| \$ 28,000 |
|------------------|

SECTION 2: PAVEMENT STRUCTURAL SECTION

| Item code | Unit | Quantity | Unit Price (\$) | Cost |
|---|------|----------|-----------------|---------|
| 390132 Hot Mix Asphalt (Type A) | TON | 3,300 x | 145.00 = \$ | 478,500 |
| 26020X Class 2 Aggregate Base | CY | 335 x | 110.00 = \$ | 36,850 |
| 397005 Tack Coat | TON | 5 x | 1,265.00 = \$ | 6,325 |
| 371623 Minor Concrete (Curb Ramp) | CY | 50 x | 1,580.00 = \$ | 79,000 |
| 731521 Minor Concrete (Sidewalk) | CY | 20 x | 1,015.00 = \$ | 20,300 |
| 730020 Minor Concrete (Curb) | CY | 100 x | 2,200.00 = \$ | 220,000 |
| 398200 Cold Plane Asphalt Concrete Pavement | SQYD | 12,700 x | 17.00 = \$ | 215,900 |

| |
|--|
| TOTAL PAVEMENT STRUCTURAL SECTION ITEMS |
|--|

| |
|---------------------|
| \$ 1,056,900 |
|---------------------|

SECTION 3: DRAINAGE

| Item code | Unit | Quantity | Unit Price (\$) | Cost |
|----------------------------|------|----------|---------------------|-----------|
| 15080X Remove Culvert | LS | 1 | x 100,000.00 = \$ | 100,000 |
| XXXXXX Box Culvert | LS | 1 | x 2,500,000.00 = \$ | 2,500,000 |
| XXXXXX Channel Relocation | LS | 1 | x 500,000 = \$ | 500,000 |
| XXXXXX Additional Drainage | LS | 1 | x 40,000.00 = \$ | 40,000 |

| | | |
|-----------------------------|-----------|------------------|
| TOTAL DRAINAGE ITEMS | \$ | 3,140,000 |
|-----------------------------|-----------|------------------|

SECTION 4: SPECIALTY ITEMS

| Item code | Unit | Quantity | Unit Price (\$) | Cost |
|---|------|----------|------------------|--------|
| XXXXXX Reconstruct City of Fortuna Sign | LS | 1 | x 25,000.00 = \$ | 25,000 |

| | | |
|------------------------------|-----------|---------------|
| TOTAL SPECIALTY ITEMS | \$ | 25,000 |
|------------------------------|-----------|---------------|

SECTION 5: ENVIRONMENTAL**5A - ENVIRONMENTAL MITIGATION**

| Item code | Unit | Quantity | | Unit Price (\$) | | Cost |
|--|------|----------|---|-----------------|------|-----------|
| XXXXXX Biological Mitigation | LS | 1 | x | 25,000.00 | = \$ | 25,000 |
| 160110 Temporary High Visibility Fence | LF | 250 | x | 13.00 | = \$ | 3,250 |
| <i>Subtotal Environmental Mitigation</i> | | | | | | \$ 28,250 |

5B - LANDSCAPE AND IRRIGATION

| Item code | Unit | Quantity | | Unit Price (\$) | | Cost |
|--|------|----------|--|-----------------|--|------|
| <i>Subtotal Landscape and Irrigation</i> | | | | | | \$ - |

5C - EROSION CONTROL

| Item code | Unit | Quantity | | Unit Price (\$) | | Cost |
|---|------|----------|---|-----------------|------|-----------|
| 210010 Move In/Move Out (Erosion Control) | EA | \$ 1 | x | 20000 | = \$ | 20,000 |
| <i>Subtotal Erosion Control</i> | | | | | | \$ 20,000 |

5D - NPDES

| Item code | Unit | Quantity | | Unit Price (\$) | | Cost |
|--|------|----------|---|-----------------|------|-----------|
| 130300 Prepare SWPPP | LS | 1 | x | 3,000.00 | = \$ | 3,000 |
| 130100 Job Site Management | LS | 1 | x | 20,000.00 | = \$ | 20,000 |
| 130330 Storm Water Annual Report | EA | 1 | x | 2,000.00 | = \$ | 2,000 |
| 130310 Rain Event Action Plan (REAP) | EA | 10 | x | 500.00 | = \$ | 5,000 |
| 130320 Storm Water Sampling and Analysis Day | EA | 5 | x | 500.00 | = \$ | 2,500 |
| XXXXXX Temporary Erosion Control | LS | 1 | x | 20,000.00 | = \$ | 20,000 |
| <i>Subtotal NPDES</i> | | | | | | \$ 52,500 |

| | | |
|----------------------------|-----------|----------------|
| TOTAL ENVIRONMENTAL | \$ | 100,800 |
|----------------------------|-----------|----------------|

*Applies to all SWPPPs and those WPCPs with sediment control or soil stabilization BMPs.

**Applies to both SWPPPs and WPCP projects.

*** Applies only to project with SWPPPs.

SECTION 6: TRAFFIC ITEMS**6A - Traffic Electrical**

| Item code | Unit | Quantity | | Unit Price (\$) | | Cost |
|------------------------------------|------|----------|---|-----------------|------|-------------------|
| 860201 Signal and Lighting | LS | 1 | x | 200,000.00 | = \$ | 200,000 |
| <i>Subtotal Traffic Electrical</i> | | | | | | <i>\$ 200,000</i> |

6B - Traffic Signing and Striping

| Item code | Unit | Quantity | | Unit Price (\$) | | Cost |
|---|------|----------|---|-----------------|------|------------------|
| 820480 Roadside Sign - One Post | EA | 20 | x | 500.00 | = \$ | 10,000 |
| 820250 Remove Roadside Sign | EA | 20 | x | 200.00 | = \$ | 4,000 |
| 840502 Thermoplastic Traffic Stripe (Enhanced Wet Night \ | LF | 9,185 | x | 2.00 | = \$ | 18,370 |
| 846012 Thermoplastic Crosswalk and Pavement Marking (I | SQFT | 1,679 | x | 10.00 | = \$ | 16,790 |
| 120090 Construction Area Signs | LS | 1 | x | 5,000.00 | = \$ | 5,000 |
| <i>Subtotal Traffic Signing and Striping</i> | | | | | | <i>\$ 54,160</i> |

6C - Traffic Management Plan

| Item code | Unit | Quantity | | Unit Price (\$) | | Cost |
|--|------|----------|---|-----------------|------|------------------|
| 12865X Portable Changeable Message Signs | LS | 1 | x | \$ 10,000 | = \$ | 10,000 |
| <i>Subtotal Traffic Management Plan</i> | | | | | | <i>\$ 10,000</i> |

6C - Stage Construction and Traffic Handling

| Item code | Unit | Quantity | | Unit Price (\$) | | Cost |
|---|------|----------|---|-----------------|------|------------------|
| 120100 Traffic Control System | LS | 1 | x | 90,000.00 | = \$ | 90,000 |
| <i>Subtotal Stage Construction and Traffic Handling</i> | | | | | | <i>\$ 90,000</i> |

| | |
|----------------------------|-------------------|
| TOTAL TRAFFIC ITEMS | \$ 354,200 |
|----------------------------|-------------------|

SECTION 7: DETOURS

Includes constructing, maintaining, and removal

| Item code | Unit | Quantity | Unit Price (\$) | Cost |
|---|------|----------|--------------------------------------|---------------------|
| * Includes constructing, maintaining, and removal | | | TOTAL DETOURS | \$ - |
| | | | SUBTOTAL SECTIONS 1 through 7 | \$ 4,704,900 |

SECTION 8: MINOR ITEMS**8A - Americans with Disabilities Act Items**

ADA Items

5.0% \$ 235,245

8B - Bike Path Items

Bike Path Items

0.0% \$ -

8C - Other Minor Items

Other Minor Items

5.0% \$ 235,245

Total of Section 1-7 \$ 4,704,900 x 10.0% = \$ 470,490

| | |
|--------------------------|-------------------|
| TOTAL MINOR ITEMS | \$ 470,500 |
|--------------------------|-------------------|

SECTIONS 9: ROADWAY MOBILIZATION

Item code

999990

Total Section 1-8 \$ 5,175,400 x 10% = \$ 517,540

| | |
|-----------------------------------|-------------------|
| TOTAL ROADWAY MOBILIZATION | \$ 517,600 |
|-----------------------------------|-------------------|

SECTION 10: SUPPLEMENTAL WORK

Item code

Total Section 1-8 \$ 5,175,400 5% = \$ 258,770

| | |
|--------------------------------|-------------------|
| TOTAL SUPPLEMENTAL WORK | \$ 258,800 |
|--------------------------------|-------------------|

SECTION 11: STATE FURNISHED MATERIALS AND EXPENSES

| Item code | | Unit | Quantity | | Unit Price (\$) | | Cost |
|-------------------|--|------|-----------|---|-----------------|------|----------|
| 066901 | Water Expenses | LS | 1 | x | 1,000.00 | = | \$1,000 |
| XXXXXX | Agency Permit Fee | LS | 1 | x | 20,000.00 | = | \$20,000 |
| 066916 | Annual Construction General Permit Fee | LS | 1 | x | 500.00 | = | \$500 |
| Total Section 1-8 | | \$ | 5,175,400 | | 0% | = \$ | - |

TOTAL STATE FURNISHED**\$21,500****SECTION 12: TIME-RELATED OVERHEAD**

Total of Roadway and Structures Contract Items excluding Mobilization \$5,175,400 (used to calculate TRO)
 Total Construction Cost (excluding TRO and Contingency) \$5,973,300 (used to check if project is greater than \$5 million excluding contingency)

Estimated Time-Related Overhead (TRO) Percentage (0% to 10%) = **0%**

| Item code | Unit | Quantity | Unit Price (\$) | Cost |
|-----------|------|----------|-----------------|------|
|-----------|------|----------|-----------------|------|

TOTAL TIME-RELATED OVERHEAD**\$0****SECTION 13: ROADWAY CONTINGENCY**

Total Section 1-12 \$ 5,973,300 x **25%** = \$1,493,325

TOTAL CONTINGENCY**\$1,493,400**

II. STRUCTURE ITEMS

| | | | | | |
|-------------------------------|----------------------|--|----------------------|--|----------------------|
| DATE OF ESTIMATE | 00/00/00 | | 00/00/00 | | 00/00/00 |
| Name | XXXXXXXXXXXXXXXXXXXX | | XXXXXXXXXXXXXXXXXXXX | | XXXXXXXXXXXXXXXXXXXX |
| Bridge Number | 57-XXX | | 57-XXX | | 57-XXX |
| Structure Type | XXXXXXXXXXXXXXXXXXXX | | XXXXXXXXXXXXXXXXXXXX | | XXXXXXXXXXXXXXXXXXXX |
| Width (Feet) [out to out] | 0 LF | | 0 LF | | 0 LF |
| Total Length (Feet) | 0 LF | | 0 LF | | 0 LF |
| Total Area (Square Feet) | 0 SQFT | | 0 SQFT | | 0 SQFT |
| Structure Depth (Feet) | 0 LF | | 0 LF | | 0 LF |
| Footing Type (pile or spread) | XXXXXXXXXXXXXXXXXXXX | | XXXXXXXXXXXXXXXXXXXX | | XXXXXXXXXXXXXXXXXXXX |
| Cost Per Square Foot | \$0 | | \$0 | | \$0 |
| COST OF EACH | \$0 | | \$0 | | \$0 |

| | |
|------------------------------|------------|
| TOTAL COST OF BRIDGES | \$0 |
|------------------------------|------------|

| | |
|--------------------------------|------------|
| TOTAL COST OF BUILDINGS | \$0 |
|--------------------------------|------------|

| | | |
|--------------------------------|-----|------------|
| STRUCTURES MOBILIZATION | 10% | \$0 |
|--------------------------------|-----|------------|

Recommended Contingency: (Pre-PSR 30%-50%, PSR 25%, Draft PR 20%, PR 15%, after PR approval 10%, Final PS&E 5%)

Total recommended percentages includes any quantified risk based contingency from the risk register.

| | | |
|-------------------------------|-----|------------|
| STRUCTURES CONTINGENCY | 10% | \$0 |
|-------------------------------|-----|------------|

| | |
|---------------------------------|------------|
| TOTAL COST OF STRUCTURES | \$0 |
|---------------------------------|------------|

Estimate Prepared By: _____
 XXXXXXXXXXXXXXXXXXXX ----- Division of Structures

 Date

III. RIGHT OF WAY

Fill in all of the available information from the Right of Way Data Sheet.

| | | | | |
|----|-----|--|----|--------|
| A) | A1) | Acquisition, including Excess Land Purchases, Damages & Goodwill, Fees | \$ | 50,000 |
| | A2) | SB-1210 | \$ | 0 |
| B) | | Acquisition of Offsite Mitigation | \$ | 0 |
| C) | C1) | Utility Relocation (State Share) | \$ | 0 |
| | C2) | Potholing (Design Phase) | \$ | 0 |
| D) | | Railroad Acquisition | \$ | 0 |
| E) | | Clearance / Demolition | \$ | 0 |
| F) | | Relocation Assistance (RAP and/or Last Resort Housing Costs) | \$ | 0 |
| G) | | Title and Escrow | \$ | 0 |
| H) | | Environmental Review | \$ | 0 |
| I) | | Condemnation Settlements <u>0%</u> | \$ | 0 |
| J) | | Design Appreciation Factor <u>0%</u> | \$ | 0 |
| K) | | Utility Relocation (Construction Cost) | \$ | 0 |

| | | |
|----|------------------------------------|-----------------|
| L) | TOTAL RIGHT OF WAY ESTIMATE | \$50,000 |
|----|------------------------------------|-----------------|

| | | |
|----|--------------------------------------|-----------------|
| M) | TOTAL R/W ESTIMATE: Escalated | \$60,000 |
|----|--------------------------------------|-----------------|

| | | |
|----|-----------------------------|------------------|
| N) | RIGHT OF WAY SUPPORT | \$217,153 |
|----|-----------------------------|------------------|

Support Cost Estimate
Prepared By _____ Project Coordinator¹ _____ Phone _____

Utility Estimate Prepared
By _____ Utility Coordinator² _____ Phone _____

R/W Acquisition Estimate
Prepared By _____ Right of Way Estimator³ _____ Phone _____

Note: Items G & H applied to items A + B

¹ When estimate has Support Costs only² When estimate has Utility Relocation³ When R/W Acquisition is required

PROJECT PLANNING COST ESTIMATE ©

EA: N/A

EA: N/A PID: N/A

PID: N/A

District-County-Route: 01-HUM-Kenmar

PM: N/A

Type of Estimate : Planning Level Estimate

Program Code : N/A

Project Limits : The intersection of Kenmar Rd and Ross Hill Road

Project Description: Fortuna Kenmar and Ross Hill Road PSR

Scope : Roundabout Alternative

Alternative : 2

SUMMARY OF PROJECT COST ESTIMATE

| | Current Year Cost | Escalated Cost |
|-----------------------------------|---------------------|---------------------|
| TOTAL ROADWAY COST | \$ 5,117,500 | \$ 6,032,936 |
| TOTAL STRUCTURES COST | \$ - | \$ - |
| SUBTOTAL CONSTRUCTION COST | \$ 5,117,500 | \$ 6,032,936 |
| TOTAL RIGHT OF WAY COST | \$ 25,000 | \$ 30,000 |
| TOTAL CAPITAL OUTLAY COSTS | \$ 5,143,000 | \$ 6,063,000 |
| PA/ED SUPPORT | \$ 500,000 | \$ 521,000 |
| PS&E SUPPORT | \$ 750,000 | \$ 781,500 |
| RIGHT OF WAY SUPPORT | \$ 150,000 | \$ 162,865 |
| CONSTRUCTION SUPPORT | \$ 950,000 | \$ 1,074,798 |
| TOTAL SUPPORT COST | \$ 2,350,000 | \$ 2,541,000 |
| TOTAL PROJECT COST | \$ 7,500,000 | \$ 8,650,000 |

Programmed Amount

Month / Year

Date of Estimate (Month/Year) 7 / 2022

Estimated Construction Start (Month/Year) 2 / 2025

Number of Working Days = 180

Estimated Mid-Point of Construction (Month/Year) /

Estimated Construction End (Month/Year) /

Number of Plant Establishment Days

Estimated Project Schedule

PID Approval
PA/ED Approval
PS&E
RTL
Begin Construction

Approved by Project Manager Josh Wolf

10/14/2022

(707) 267-2264

Project Manager

Date

Phone

PROJECT COST ESTIMATE

EA: N/A PID: N/A

I. ROADWAY ITEMS SUMMARY

| | Section | Cost |
|----------------------------|-----------------------------|---------------------|
| 1 | Earthwork | \$ 720,000 |
| 2 | Pavement Structural Section | \$ 1,135,400 |
| 3 | Drainage | \$ 200,000 |
| 4 | Specialty Items | \$ 25,000 |
| 5 | Environmental | \$ 289,300 |
| 6 | Traffic Items | \$ 731,400 |
| 7 | Detours | \$ 50,000 |
| 8 | Minor Items | \$ 346,700 |
| 9 | Roadway Mobilization | \$ 349,800 |
| 10 | Supplemental Work | \$ 174,900 |
| 11 | State Furnished | \$ 71,500 |
| 12 | Time-Related Overhead | \$ - |
| 13 | Roadway Contingency | \$ 1,023,500 |
| TOTAL ROADWAY ITEMS | | \$ 5,117,500 |

Estimate Prepared By : Erin Gibbs 7/22/2022 (916) 865-0932
 Name and Title Date Phone

Estimate Reviewed By : Daniel Kehrer 7/22/2022 (916) 918-0614
 Name and Title Date Phone

By signing this estimate you are attesting that you have discussed your project with all functional units and have incorporated all their comments or have discussed with them why they will not be incorporated.

SECTION 1: EARTHWORK

| Item code | | Unit | Quantity | | Unit Price (\$) | | Cost |
|-----------|------------------------|------|----------|---|-----------------|------|---------|
| 190101 | Roadway Excavation | CY | 8,000 | x | 80.00 | = \$ | 640,000 |
| 170101 | Develop Water Supply | LS | 1 | x | 20,000.00 | = \$ | 20,000 |
| XXXXXX | Remove/ Salvage Signal | LS | 1 | x | 60,000 | = \$ | 60,000 |

| | |
|--------------------------------------|-------------------|
| TOTAL EARTHWORK SECTION ITEMS | \$ 720,000 |
|--------------------------------------|-------------------|

SECTION 2: PAVEMENT STRUCTURAL SECTION

| Item code | | Unit | Quantity | | Unit Price (\$) | | Cost |
|-----------|---|------|----------|---|-----------------|------|---------|
| 390132 | Hot Mix Asphalt (Type A) | TON | 2,300 | x | 145.00 | = \$ | 333,500 |
| 26020X | Class 2 Aggregate Base | CY | 650 | x | 110.00 | = \$ | 71,500 |
| 397005 | Tack Coat | TON | 4 | x | 1,265.00 | = \$ | 5,060 |
| 731521 | Minor Concrete (Sidewalk) | CY | 130 | x | 1,015.00 | = \$ | 131,950 |
| 012891 | Minor Concrete (Roundabout Truck Apron) | CY | 50 | x | 1,500.00 | = \$ | 75,000 |
| 731504 | Minor Concrete (Curb and Gutter) | CY | 100 | x | 1,085.00 | = \$ | 108,500 |
| 730020 | Minor Concrete (Curb) | CY | 100 | x | 2,200.00 | = \$ | 220,000 |
| 398200 | Cold Plane Asphalt Concrete Pavement | SQYD | 10,050 | x | 17.00 | = \$ | 170,850 |
| 750001 | Miscellaneous Iron and Steel | LB | 3,900 | x | 4.88 | = \$ | 19,032 |

| | |
|--|---------------------|
| TOTAL PAVEMENT STRUCTURAL SECTION ITEMS | \$ 1,135,400 |
|--|---------------------|

SECTION 3: DRAINAGE

| Item code | Unit | Quantity | Unit Price (\$) | Cost |
|----------------------------|------|----------|-------------------|---------|
| XXXXXX Additional Drainage | LS | 1 | x 200,000.00 = \$ | 200,000 |

| | | |
|----------------------|----|---------|
| TOTAL DRAINAGE ITEMS | \$ | 200,000 |
|----------------------|----|---------|

SECTION 4: SPECIALTY ITEMS

| Item code | Unit | Quantity | Unit Price (\$) | Cost |
|---|------|----------|------------------|--------|
| XXXXXX Specialty Item (OH Signs/Fortuna Sign) | EA | 1 | x 25,000.00 = \$ | 25,000 |

| | | |
|-----------------------|----|--------|
| TOTAL SPECIALTY ITEMS | \$ | 25,000 |
|-----------------------|----|--------|

SECTION 5: ENVIRONMENTAL**5A - ENVIRONMENTAL MITIGATION**

| Item code | Unit | Quantity | | Unit Price (\$) | | Cost |
|--|------|----------|---|-----------------|------|------------------|
| Biological Mitigation | LS | 1 | x | 25,000.00 | = \$ | 25,000 |
| 160110 Temporary High Visibility Fence | LF | 250 | x | 13.00 | = \$ | 3,250 |
| <i>Subtotal Environmental Mitigation</i> | | | | | | <i>\$ 28,250</i> |

5B - LANDSCAPE AND IRRIGATION

| Item code | Unit | Quantity | | Unit Price (\$) | | Cost |
|--|------|----------|---|-----------------|------|-------------------|
| XXXXXX Landscaping Costs | LS | 1 | x | 150,000.00 | = \$ | 150,000 |
| <i>Subtotal Landscape and Irrigation</i> | | | | | | <i>\$ 150,000</i> |

5C - EROSION CONTROL

| Item code | Unit | Quantity | | Unit Price (\$) | | Cost |
|---|------|----------|---|-----------------|------|------------------|
| 210010 Move In/Move Out (Erosion Control) | LS | 1 | x | 20000 | = \$ | 20,000 |
| <i>Subtotal Erosion Control</i> | | | | | | <i>\$ 20,000</i> |

5D - NPDES

| Item code | Unit | Quantity | | Unit Price (\$) | | Cost |
|--|------|----------|---|-----------------|------|------------------|
| 130300 Prepare SWPPP | LS | 1 | x | 4,000.00 | = \$ | 4,000 |
| 130100 Job Site Management | LS | 1 | x | 20,000.00 | = \$ | 20,000 |
| 130330 Storm Water Annual Report | EA | 1 | x | 2,000.00 | = \$ | 2,000 |
| 130310 Rain Event Action Plan (REAP) | EA | 20 | x | 500.00 | = \$ | 10,000 |
| 130320 Storm Water Sampling and Analysis Day | EA | 10 | x | 500.00 | = \$ | 5,000 |
| XXXXXX Temporary Erosion Control | LS | 1 | x | 50,000.00 | = \$ | 50,000 |
| <i>Subtotal NPDES</i> | | | | | | <i>\$ 91,000</i> |

| | |
|----------------------------|-------------------|
| TOTAL ENVIRONMENTAL | \$ 289,300 |
|----------------------------|-------------------|

*Applies to all SWPPPs and those WPCPs with sediment control or soil stabilization BMPs.

**Applies to both SWPPPs and WPCP projects.

*** Applies only to project with SWPPPs.

SECTION 6: TRAFFIC ITEMS**6A - Traffic Electrical**

| Item code | Unit | Quantity | | Unit Price (\$) | | Cost |
|------------------------------------|------|----------|---|-----------------|------|-------------------|
| XXXXX Street Lighting Systems | LS | 1 | x | 400,000.00 | = \$ | 400,000 |
| <i>Subtotal Traffic Electrical</i> | | | | | | <i>\$ 400,000</i> |

6B - Traffic Signing and Striping

| Item code | Unit | Quantity | | Unit Price (\$) | | Cost |
|---|------|----------|---|-----------------|------|------------------|
| 820480 Roadside Sign - One Post | EA | 20 | x | 500.00 | = \$ | 10,000 |
| 820250 Remove Roadside Sign | EA | 20 | x | 200.00 | = \$ | 4,000 |
| 840502 Thermoplastic Traffic Stripe (Enhanced Wet Night \ | LF | 9,700 | x | 2.00 | = \$ | 19,400 |
| 846012 Thermoplastic Crosswalk and Pavement Marking (I | SQFT | 1,800 | x | 10.00 | = \$ | 18,000 |
| 120090 Construction Area Signs | LS | 1 | x | 10,000.00 | = \$ | 10,000 |
| <i>Subtotal Traffic Signing and Striping</i> | | | | | | <i>\$ 61,400</i> |

6C - Traffic Management Plan

| Item code | Unit | Quantity | | Unit Price (\$) | | Cost |
|--|------|----------|---|-----------------|------|------------------|
| 12865X Portable Changeable Message Signs | LS | 1 | x | \$ 20,000 | = \$ | 20,000 |
| <i>Subtotal Traffic Management Plan</i> | | | | | | <i>\$ 20,000</i> |

6C - Stage Construction and Traffic Handling

| Item code | Unit | Quantity | | Unit Price (\$) | | Cost |
|---|------|----------|---|-----------------|------|-------------------|
| 120100 Traffic Control System | LS | 1 | x | 250,000.00 | = \$ | 250,000 |
| <i>Subtotal Stage Construction and Traffic Handling</i> | | | | | | <i>\$ 250,000</i> |

| | |
|----------------------------|-------------------|
| TOTAL TRAFFIC ITEMS | \$ 731,400 |
|----------------------------|-------------------|

SECTION 7: DETOURS

Includes constructing, maintaining, and removal

| Item code | Unit | Quantity | Unit Price (\$) | Cost |
|-------------------------------|------|----------|-----------------|--------|
| XXXXXX Temporary Detour Route | LS | 1 | x 50,000 = \$ | 50,000 |

* Includes constructing, maintaining, and removal

| | |
|----------------------|------------------|
| TOTAL DETOURS | \$ 50,000 |
|----------------------|------------------|

| | |
|--------------------------------------|---------------------|
| SUBTOTAL SECTIONS 1 through 7 | \$ 3,151,100 |
|--------------------------------------|---------------------|

SECTION 8: MINOR ITEMS**8A - Americans with Disabilities Act Items**

ADA Items

5.0% \$ 157,555

8B - Bike Path Items

Bike Path Items

1.0% \$ 31,511

8C - Other Minor Items

Other Minor Items

5.0% \$ 157,555

Total of Section 1-7 \$ 3,151,100 x 11.0% = \$ 346,621

| | |
|--------------------------|-------------------|
| TOTAL MINOR ITEMS | \$ 346,700 |
|--------------------------|-------------------|

SECTIONS 9: ROADWAY MOBILIZATION

| Item code | Unit | Quantity | Unit Price (\$) | Cost |
|--------------------------|------|--------------|-----------------|---------|
| 999990 Total Section 1-8 | | \$ 3,497,800 | x 10% = \$ | 349,780 |

| | |
|-----------------------------------|-------------------|
| TOTAL ROADWAY MOBILIZATION | \$ 349,800 |
|-----------------------------------|-------------------|

SECTION 10: SUPPLEMENTAL WORK

| Item code | Unit | Quantity | Unit Price (\$) | Cost |
|-------------------|------|--------------|-----------------|---------|
| Total Section 1-8 | | \$ 3,497,800 | 5% = \$ | 174,890 |

| | |
|--------------------------------|-------------------|
| TOTAL SUPPLEMENTAL WORK | \$ 174,900 |
|--------------------------------|-------------------|

SECTION 11: STATE FURNISHED MATERIALS AND EXPENSES

| Item code | | Unit | Quantity | | Unit Price (\$) | | Cost |
|-------------------|--|------|--------------|---|-----------------|------|---------|
| 066901 | Water Expenses | LS | 1 | x | 1,000.00 | = | \$1,000 |
| 066916 | Annual Construction General Permit Fee | LS | 1 | x | 500.00 | = | \$500 |
| Total Section 1-8 | | | \$ 3,497,800 | | 2% | = \$ | 69,956 |

| | |
|------------------------------|-----------------|
| TOTAL STATE FURNISHED | \$71,500 |
|------------------------------|-----------------|

SECTION 12: TIME-RELATED OVERHEAD

Total of Roadway and Structures Contract Items excluding Mobilization \$3,497,800 (used to calculate TRO)
Total Construction Cost (excluding TRO and Contingency) \$4,094,000 (used to check if project is greater than \$5 million excluding contingency)

Estimated Time-Related Overhead (TRO) Percentage (0% to 10%) = 0%

| Item code | Unit | Quantity | Unit Price (\$) | Cost |
|-----------|------|----------|-----------------|------|
|-----------|------|----------|-----------------|------|

| | |
|------------------------------------|------------|
| TOTAL TIME-RELATED OVERHEAD | \$0 |
|------------------------------------|------------|

SECTION 13: ROADWAY CONTINGENCY

Total Section 1-12 \$ 4,094,000 x **25%** = \$1,023,500

| | |
|--------------------------|--------------------|
| TOTAL CONTINGENCY | \$1,023,500 |
|--------------------------|--------------------|

II. STRUCTURE ITEMS

| | | | | | |
|-------------------------------|----------------------|--|----------------------|--|----------------------|
| DATE OF ESTIMATE | 00/00/00 | | 00/00/00 | | 00/00/00 |
| Name | XXXXXXXXXXXXXXXXXXXX | | XXXXXXXXXXXXXXXXXXXX | | XXXXXXXXXXXXXXXXXXXX |
| Bridge Number | 57-XXX | | 57-XXX | | 57-XXX |
| Structure Type | XXXXXXXXXXXXXXXXXXXX | | XXXXXXXXXXXXXXXXXXXX | | XXXXXXXXXXXXXXXXXXXX |
| Width (Feet) [out to out] | 0 LF | | 0 LF | | 0 LF |
| Total Length (Feet) | 0 LF | | 0 LF | | 0 LF |
| Total Area (Square Feet) | 0 SQFT | | 0 SQFT | | 0 SQFT |
| Structure Depth (Feet) | 0 LF | | 0 LF | | 0 LF |
| Footing Type (pile or spread) | XXXXXXXXXXXXXXXXXXXX | | XXXXXXXXXXXXXXXXXXXX | | XXXXXXXXXXXXXXXXXXXX |
| Cost Per Square Foot | \$0 | | \$0 | | \$0 |
| COST OF EACH | \$0 | | \$0 | | \$0 |

| | |
|------------------------------|------------|
| TOTAL COST OF BRIDGES | \$0 |
|------------------------------|------------|

| | |
|--------------------------------|------------|
| TOTAL COST OF BUILDINGS | \$0 |
|--------------------------------|------------|

| | | |
|--------------------------------|-----|------------|
| STRUCTURES MOBILIZATION | 10% | \$0 |
|--------------------------------|-----|------------|

Recommended Contingency: (Pre-PSR 30%-50%, PSR 25%, Draft PR 20%, PR 15%, after PR approval 10%, Final PS&E 5%)

Total recommended percentages includes any quantified risk based contingency from the risk register.

| | | |
|-------------------------------|-----|------------|
| STRUCTURES CONTINGENCY | 10% | \$0 |
|-------------------------------|-----|------------|

| | |
|---------------------------------|------------|
| TOTAL COST OF STRUCTURES | \$0 |
|---------------------------------|------------|

Estimate Prepared By: _____
 XXXXXXXXXXXXXXXXXXXX ----- Division of Structures

 Date

III. RIGHT OF WAY

Fill in all of the available information from the Right of Way Data Sheet.

| | | | | |
|----|-----|--|----|--------|
| A) | A1) | Acquisition, including Excess Land Purchases, Damages & Goodwill, Fees | \$ | 25,000 |
| | A2) | SB-1210 | \$ | 0 |
| B) | | Acquisition of Offsite Mitigation | \$ | 0 |
| C) | C1) | Utility Relocation (State Share) | \$ | 0 |
| | C2) | Potholing (Design Phase) | \$ | 0 |
| D) | | Railroad Acquisition | \$ | 0 |
| E) | | Clearance / Demolition | \$ | 0 |
| F) | | Relocation Assistance (RAP and/or Last Resort Housing Costs) | \$ | 0 |
| G) | | Title and Escrow | \$ | 0 |
| H) | | Environmental Review | \$ | 0 |
| I) | | Condemnation Settlements <u>0%</u> | \$ | 0 |
| J) | | Design Appreciation Factor <u>0%</u> | \$ | 0 |
| K) | | Utility Relocation (Construction Cost) | \$ | 0 |

| | | |
|----|------------------------------------|-----------------|
| L) | TOTAL RIGHT OF WAY ESTIMATE | \$25,000 |
|----|------------------------------------|-----------------|

| | | |
|----|--------------------------------------|-----------------|
| M) | TOTAL R/W ESTIMATE: Escalated | \$30,000 |
|----|--------------------------------------|-----------------|

| | | |
|----|-----------------------------|------------------|
| N) | RIGHT OF WAY SUPPORT | \$162,865 |
|----|-----------------------------|------------------|

Support Cost Estimate
Prepared By _____ Project Coordinator¹ _____ Phone _____

Utility Estimate Prepared
By _____ Utility Coordinator² _____ Phone _____

R/W Acquisition Estimate
Prepared By _____ Right of Way Estimator³ _____ Phone _____

Note: Items G & H applied to items A + B

¹ When estimate has Support Costs only² When estimate has Utility Relocation³ When R/W Acquisition is required