State Route 12/State Route 113 Intersection Improvement Project

SOLANO COUNTY, CALIFORNIA
STATE ROUTE 12 – SOL PM 19.2/19.2
EA 4G560; Project ID 0412000504

Initial Study with Mitigated Negative Declaration

Prepared by the
California Department of Transportation

January 2017
# INITIAL STUDY WITH MITIGATED NEGATIVE DECLARATION

**Dist.-Co.-Rte.** | **P.M./P.M.** | **E.A.**
---|---|---
Project Title: | State Route 12/ State Route 113 Intersection Improvement Project |
Lead agency name and address: | California Department of Transportation 111 Grand Ave., Oakland, CA 94612 |
Contact person and phone number: | Wahida Rashid, Senior Environmental Planner (510) 286-5935 |
Project Location: | Solano County, California |
General plan description: | Transportation |
Zoning: | Transportation |
Surrounding land uses and setting; briefly describe the project's surroundings: | Agricultural |
Other public agencies whose approval is required (e.g., environmental permits); CEQA Responsible Agencies are denoted with a *: |
- Biological Opinion from the U.S. Fish and Wildlife Service |
- Incidental Take Permit from the California Department of Fish and Wildlife* |
- California Transportation Commission* |
Have California Native American tribes traditionally and culturally affiliated with the project area requested consultation pursuant to Public Resources Code section 21080.3.1? If so, has consultation begun? | The Yocha Dehe Wintun Nation requested consultation pursuant to Public Resources Code section 21080.3.1. Consultation has begun. |

Note: Conducting consultation early in the CEQA process allows tribal governments, lead agencies, and project proponents to discuss the level of environmental review, identify and address potential adverse impacts to tribal cultural resources, and reduce the potential for delay and conflict in the environmental review process (See Public Resources Code section 21083.3.2.). Information may also be available from the California Native American Heritage Commission's Sacred Lands File per Public Resources Code section 5097.96 and the California Historical Resources Information System administered by the California Office of Historic Preservation. Please also note that Public Resources Code section 21082.3(c) contains provisions specific to confidentiality.

Additional copies of this document, as well as the technical studies this document relies on, are available for review at the District office, 111 Grand Ave., Oakland, CA 94612 and at [http://www.dot.ca.gov/dist4/envdocs.htm](http://www.dot.ca.gov/dist4/envdocs.htm)

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Stefan Galvez-Abadia
Chief, Office of Environmental Analysis
California Department of Transportation, District 4, Oakland

For individuals with sensory disabilities, this document can be made available in Braille, in large print, on audiocassette, or on computer disk. To obtain a copy in one of these alternate formats, please call or write to California Department of Transportation, Attn: Karen Jang, Environmental Planning, 111 Grand Avenue, MS 8-B, Oakland, CA 94612, or use the California Relay Service 1 (800) 735-2929 (TTY), 1 (800) 735-2929 (Voice) or 711.
Project Information

Location

The California Department of Transportation (Caltrans) proposes to improve safety at the intersection of State Route (SR) 12/SR 113, located at post mile (PM) 19.2 on SR 12 in unincorporated Solano County, approximately six miles west of the City of Rio Vista. Two Build Alternatives are being considered for this proposed project; Build Alternative 1, a single lane roundabout, and Build Alternative 2, a signalized intersection. This is a safety project and aims to reduce the number of collisions at the SR 12 and SR 113 intersection. The new roundabout structure or signalized intersection would be constructed at the same location as the existing un-signalized Four-Way Intersection.

Existing Facility

The intersection of SR 12 and SR 113 is a 4-legged intersection with an offset of approximately 50 feet between SR 113 and Birds Landing Road. SR 113 intersects SR 12 from the north and Birds Landing Road, a local road, intersects SR 12 from the south. A two-way stop sign controls traffic turning onto SR 12 from SR 113 and Birds Landing Road, and a signal mast arm with flashing beacon lights is located in the southwest corner of the intersection. See photos 1-3 on pages 2 and 3 to view the existing intersection.

There are multiple drainage features in the vicinity of the intersection. Two culverts, an 18 inch plastic pipe and a 24 inch reinforced concrete pipe, enable water flowing under the roadway to drain. They run south to north and are located on the west and east sides of the intersection.

Additionally, there are two drainage inlets and one culvert along the south side of SR 12 in the southwest quadrant of the intersection. Drainage inlets are designed to collect excess rain and storm water runoff and direct the flow to underground drainage systems.

There is one concrete channel leading to a drainage inlet in the northeast quadrant of the intersection.

An over-side drain, which is a gap in the dike, is located in the northwest quadrant of the intersection and allows water to drain into a ditch that leads to Round Hill Creek.

There is one bioswale, a gently sloped landscape element designed to remove pollution from surface runoff water, in the northeast quadrant and another in the southeast quadrant of the intersection.

Round Hill Creek is located west of the SR 12/SR 113 intersection. The creek runs under a bridge on SR 12 about 530 feet west of the intersection, and under a bridge on SR 113 about 430 feet north of the intersection. All storm water collected from the drainage system is designed to drain to the creek north of the intersection, near the SR 113 bridge.

There are existing overhead poles for telephone lines and electrical lines within the project footprint. The utility line runs parallel to SR 12 south of the intersection. At the western edge of the intersection, the lines cross to the north of SR 12, and zig-zag across SR 113 moving north. There is an underground
natural gas line that runs in a north-south direction crossing SR 12 immediately west of the SR 12/SR 113 intersection, approximately 6.5 feet below the existing ground.

Photo 1. View of SR 113 looking south towards Birds Landing Road

Photo 2. View of Birds Landing Road looking north towards SR 113
Purpose and Need

The proposed safety project aims to reduce the number and severity of collisions at the SR 12 and SR 113 intersection in Solano County, thereby improving safety at this location.

SR 12 carries the through traffic, while drivers coming from SR 113 and Birds Landing Road must bring their vehicle to a complete stop at the stop sign and select a safe gap before entering the east-west traffic stream. This condition constantly presents a challenge to the driver’s ability to judge gaps, especially when speeds on SR 12 are higher than expected by the drivers turning left onto SR 12 from SR 113 and Birds Landing Road. Gaps that appear sufficient may, in fact, be too small, leading to the higher accident rate. A 10 year Traffic Accident Surveillance and Analysis System (from 04/01/2000 to 03/31/2010) was analyzed by Caltrans.

Project Funding and Programming

The project is funded from the 2014 State Highway Operation and Protection Program (SHOPP), under the Safety Improvements Program, Program Code 201.010. The total approximate cost of the project for support and capital, including construction costs, is $7,122,000.
INTERSECTION IMPROVEMENT PROJECT
Route 12 & Route 113 (Near Rio Vista)

Project Vicinity and Location Map
Project Description

This project as proposed is considering three alternatives; 1.) a Roundabout, 2.) a Signalized intersection and, 3.) No Build Alternative.

Build Alternatives

Build Alternative 1: Single Lane Roundabout

A single lane roundabout would be constructed at the intersection of SR 12, SR 113, and Birds Landing Road to address the safety issues for vehicles turning left onto SR 12 at this location.

Numerous studies have shown significant safety improvements at intersections converted from conventional forms to roundabouts. Roundabouts can have traffic calming effects on streets by using curved approach legs to reduce vehicle speeds. Based on the National Cooperative Highway Research Program (NCHRP) Report 572, there are significant safety benefits when converting signalized and two-way-stop-control intersections to roundabouts, and particularly significant reductions in fatal and injury crashes. Caltrans’ Highway Safety Manual (HSM) indicates that by converting from a two-way stop control intersection to a roundabout, a location can experience an 82 percent reduction in fatal (or injury) crashes and a 44 percent reduction in overall crashes.

In addition to safety, roundabouts also provide other benefits. According to the Federal Highway Administration (FHWA) website;

Roundabouts often provide environmental benefits by reducing vehicle delay and the number and duration of stops compared with signalized or all-way-stop-controlled alternatives. Even when there are heavy volumes, vehicles continue to advance slowly in moving queues rather than coming to a complete stop. This can reduce noise and air quality impacts and fuel consumption significantly by reducing the number of acceleration/deceleration cycles and the time spent idling. (safety.fhwa.dot.gov)

The proposed project would include curved approach legs, the central island, circulatory roadway, splitter islands, and the traversable apron. See Table 1 on page 6 which describes the various components included in the proposed roundabout.
<table>
<thead>
<tr>
<th>Component</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Approach Legs</td>
<td>Roadways approaching the proposed roundabout. For this proposal, the approach legs consist of approximately 500 feet leading up to the center of the intersection.</td>
</tr>
<tr>
<td>Splitter Islands</td>
<td>Traffic calming structures built above street level between the travel lanes of the approach legs. These create curves in the road and force traffic to slow down when approaching the intersection. The maximum entry speed on these curves would be 25 miles per hour. SR 12 would be widened in specific locations in order to construct the splitter islands. The proposed project may include a 4-6 foot gap at street level within each splitter island to allow for pedestrians to cross. Caltrans is currently working to determine if this feature would be included. This project does not propose to provide crosswalks because there is no recorded foot traffic at this location.</td>
</tr>
<tr>
<td>Central Island and Truck Apron</td>
<td>The central island is comprised of two components; 1) a mounded island in the middle of the roundabout which traffic is directed around, and 2) a truck apron circling the perimeter of the fixed structure. The total diameter of the central island (raised structure in the middle of the roundabout plus the truck apron) would be 115 feet. The raised structure in the middle of the roundabout serves to alert vehicles of the shape of the roundabout as they approach the intersection, as well as provide a visual screen to the glare of headlights from oncoming vehicles. The truck apron is a paved area, adjacent to the circulatory roadway, designated for large vehicles that drift out of the lane.</td>
</tr>
<tr>
<td>Circulatory Roadway</td>
<td>A 17.5 foot wide travel lane inside the roundabout</td>
</tr>
</tbody>
</table>

See Figure 1 on page 8 which illustrates the various components of the roundabout.
**Drainage Configuration**

The existing bioswales and drainage ditches on the southeast and northeast side of the intersection would be temporarily impacted due to construction, but would be rebuilt after construction is complete. There would be no other modifications to the drainage system.

**Electrical Components**

Some underground electrical wiring would be rerouted to provide power to new street light poles around the intersection. The existing street light pole located in the southwest corner of the intersection would be relocated a further distance away, and the existing advance flashing beacon located in the southwest corner of the intersection would be removed. In its place, three advance flashing beacons would be installed in the northbound and southbound directions of SR 12 and on SR 113 in the southbound direction. Depending on further study, the two existing advance flashing beacons located on SR 12 approximately 700 feet from the intersection may need to be relocated.

**Utility Relocations**

All existing electrical poles may remain in place since they are currently located far enough away from the roadway. The call box in the southwest corner of the intersection may be relocated outside of the new widened roadway to accommodate the approach leg. All utility relocations would remain within Caltrans Right of Way (ROW).
Figure 1. Build Alternative 1: Proposed Project Footprint with Roundabout Features
Figure 3. Build Alternative 1: Cross Section
Construction

The staging area for construction materials is within Caltrans ROW and would not be paved. Prior to using any staging areas not within the areas shown on the plans, the contractor must obtain clearance from the appropriate permitting agencies and comply with all applicable laws, statutes, ordinances, and regulations.

Caltrans estimates that construction would occur during the dry season between April 15th and October 15th. This is a period of six months, which translates to approximately 120 working days. Most of the construction would be completed at night to avoid the high traffic volumes during the day.

In general, construction work would occur in the following order:

1. Install Environmentally Sensitive Area (ESA) fencing;
2. Clear and grub;
3. Roadway widening where necessary;
4. Electrical trenching;
5. Set up temporary lane closures;
6. Close the median for construction of central island and splitter islands;
7. Overlay the existing pavement section.

Detour

Due to high traffic volumes, access on SR 12 and SR 113 would be maintained throughout the project and would not be detoured. Temporary traffic delays are expected to occur, but will not cause a significant impact. Birds Landing Road would be closed with a possible detour to a local road. Caltrans is currently working to determine further details on lane closures and delay times.

Right of Way Requirements

All proposed activities are to remain within Caltrans ROW. There is no additional ROW acquisition anticipated. The project would not result in the displacement of residents or businesses.

Build Alternative 2: Signalized Intersection

This alternative would have a total of 6 to 8 new electrical signal poles installed at the four corners of the intersection, and 3 flashing warning beacons on the approach legs of SR12 and SR113. Birds Landing Road and SR 113 intersect SR 12 at an almost 90 degree angle, but their center lines are offset by about 50 ft. This alignment prevents making simultaneous left turns from SR 113 and Birds Landing Road. Signalization may require minor pavement delineation work. All work for this proposed alternative would remain within Caltrans ROW, and would not require new pavement. See Figure 4 on page 13 which illustrates the proposed project footprint and the locations of the signal poles.
A signalized intersection would not have the environmental benefits of the roundabout alternative, such as reductions in noise and air quality impacts, as well as reduced fuel consumption.

*Electrical and Drainage Components*

Build Alternative 2 would require some electrical work such as trenching, and possible drainage restoration after construction is complete. All work would remain within Caltrans ROW. Further details would be determined during the Plans, Specifications, and Estimates phase of the project.

*Proposed Project Footprint/Environmental Study Area*

The environmental study area for the proposed project extends approximately 500 feet from the center of the existing intersection along all four roadways. The northeast corner of the existing intersection would be widened to accommodate the roundabout, traversable apron, and roadways. Build Alternative 2, the signalized intersection, has the same project footprint as Build Alternative 1. All work would remain completely within Caltrans ROW for both Build Alternatives. See Figures 2-3 on pages 9 and 10 to view a layout sheet and cross section of the proposed roundabout, and Figure 4 on page 13 for Build Alternative 2.
Figure 4. Build Alternative 2: Proposed Project Footprint and Signalization Features
No-Build Alternative

Under the No-Build Alternative, no major reconstruction would occur at the intersection of SR 12, SR 113 and Birds Landing Road. The safety concerns at this location would remain unresolved.

Public Comment Period

The public comment period for the two proposed Build Alternatives and the environmental document was from November 18, 2016 to December 19, 2016, with a public meeting held in an open house format on December 7, 2016 at Rio Vista City Hall in the City of Rio Vista, CA.

Please see Appendix G for a summary of public participation for the project, and Appendix H to view the public comments the proposed project has received and Caltrans’ response to those comments.

Preferred Alternative

The Preferred Alternative for the project is the single lane roundabout. This alternative better suits the purpose of the project, which is to improve safety at the SR 12/SR 113 intersection. The slower speeds in the roundabout and wide viewing radius improves visibility and gives both pedestrians and vehicles a longer reaction time.

According to the Federal Highway Administration (FHWA), roundabouts cause a 70% reduction in collisions and an 89% reduction in fatal collisions when converting from a signalized intersection to a roundabout.

Roundabouts also reduce congestion. They are typically able to handle higher traffic volumes than signalized intersections can, and do not require vehicles to come to a complete stop. Instead, roundabouts allow continuous movement throughout the intersection and only require vehicles to yield during periods of heavy traffic.

Alternatives Considered but Eliminated From Further Discussion

Rejected Alternative 1: Two Lane Roundabout

The scope of work for this rejected alternative would be greater than that of the Build Alternative, which is a one lane roundabout.

This alternative was rejected as it would involve the acquisition of additional ROW, require additional paved sections, and cause greater environmental impact. Further environmental studies would have also been required and since the proposed project is classified as a safety project, an accelerated project schedule was a key consideration.

Rejected Alternative 2: Signalized Intersection

The signalized intersection alternative was rejected because it does not have the safety and operational benefits that a roundabout provides, and would increase congestion at the intersection.
Signalized intersections offer greater opportunity for accidents to occur because there are multiple directions of traffic a driver must be mindful of while moving through the intersection. In addition, drivers are often not aware of pedestrians in the intersection because their sight is focused on the traffic light, not on their surroundings.

Signalized intersections also worsen congestion because they require vehicles to come to a complete stop, regardless if traffic is light or heavy. In addition, SR 113 and Birds Landing Road have an offset of approximately 50 feet. With a signalized intersection, this configuration prevents vehicles from making simultaneous left turns onto SR 12 from SR 113 and Birds Landing Road. As a result, drivers would have to wait through an additional signal light cycle, causing more traffic delays.
A. ENVIRONMENTAL FACTORS POTENTIALLY AFFECTED

The environmental factors checked below would be potentially affected by this project. Please see the checklist beginning on page 19 for additional information.

<table>
<thead>
<tr>
<th>☐ Aesthetics</th>
<th>☒ Agriculture and Forestry</th>
<th>☒ Air Quality</th>
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<tbody>
<tr>
<td>☒ Biological Resources</td>
<td>☒ Cultural Resources</td>
<td>☒ Geology/Soils</td>
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<td>☒ Greenhouse Gas Emissions</td>
<td>☒ Hazards and Hazardous Materials</td>
<td>☒ Hydrology/Water Quality</td>
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<td>☐ Land Use/Planning</td>
<td>☐ Mineral Resources</td>
<td>☒ Noise</td>
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<td>☐ Population/Housing</td>
<td>☒ Public Services</td>
<td>☒ Recreation</td>
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<tr>
<td>☒ Transportation/Traffic</td>
<td>☒ Tribal Cultural Resources</td>
<td>☒ Utilities/Service Systems</td>
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|☐ Mandatory Findings of Significance |

B. DETERMINATION

On the basis of this initial evaluation:

☐ I find that the proposed project COULD NOT have a significant effect on the environment, and a NEGATIVE DECLARATION will be prepared.

☒ I find that although the proposed project could have a significant effect on the environment, there will not be a significant effect in this case because revisions in the project have been made by or agreed to by the project proponent. A MITIGATED NEGATIVE DECLARATION will be prepared.

☐ I find that the proposed project MAY have a significant effect on the environment, and an ENVIRONMENTAL IMPACT REPORT is required.

☐ I find that the proposed project MAY have a "potentially significant impact" or "potentially significant unless mitigated" impact on the environment, but at least one effect 1) has been adequately analyzed in an earlier document pursuant to applicable legal standards, and 2) has been addressed by mitigation measures based on the earlier analysis as described on attached sheets. An ENVIRONMENTAL IMPACT REPORT is required, but it must analyze only the effects that remain to be addressed.

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

Signature: [Signature] Date: 11/2/2017
Printed Name: Melanie Brent For:
Mitigated Negative Declaration  
Pursuant to: Division 13, Public Resources Code

Project Description

The California Department of Transportation (Caltrans) proposes a safety project at the intersection of SR 12/SR 113 at Post Mile 19.2 in unincorporated Solano County approximately six miles west of the City of Rio Vista. Two Build Alternatives were considered for this proposed project; Build Alternative 1, a single lane roundabout, and Build Alternative 2, a signalized intersection. For the roundabout alternative, the existing intersection would be demolished and a new roundabout with four approach legs would be constructed at the same location as the existing intersection. The signalized intersection would also be constructed at the same location as the existing intersection, and would not require new pavement. Construction activities for both Build Alternatives would remain within Caltrans Right of Way (ROW).

The roundabout has been selected as the preferred alternative.

Determination

Caltrans has prepared an IS for this project and has determined from this study that the proposed project (roundabout) would not have a significant effect on the environment for the following reasons:

The proposed roundabout would have no significant impact on Agriculture/Forestry, Cultural Resources, Geology/Soils, Land Use/Planning, Mineral Resources, Noise, Population/Housing, Public Services, and Recreation.

In addition, the proposed project would have less than significant impacts to Aesthetics, Air Quality, Biological Resources, Greenhouse Gas Emissions, Hazards and Hazardous Materials, Hydrology/Water Quality, Transportation/Traffic, Tribal Cultural Resources, and Utilities/Service Systems.

With the following mitigation measures incorporated in this document, the proposed project would have less than significant effects to biological resources.

- Compensatory mitigation for California Tiger Salamander.

Melanie Brent  
Deputy District Director, Environmental Planning and Engineering  
District 4

11/12/2017
CEQA Environmental Checklist

This checklist identifies physical, biological, social and economic factors that might be affected by the proposed project. In many cases, background studies performed in connection with the projects indicate no impacts. A NO IMPACT answer in the last column reflects this determination. Where there is a need for clarifying discussion, the discussion is included either following the applicable section of the checklist or is within the body of the environmental document itself. The words "significant" and "significance" used throughout the following checklist are related to CEQA, not NEPA, impacts. The questions in this form are intended to encourage the thoughtful assessment of impacts and do not represent thresholds of significance. Please note that content-based changes to the text from the draft environmental document to this final environmental document will be noted with a line in the right hand margin.

<table>
<thead>
<tr>
<th>Potentially Significant Impact</th>
<th>Less Than Significant with Mitigation</th>
<th>Less Than Significant Impact</th>
<th>No Impact</th>
</tr>
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I. AESTHETICS: Would the project:

a) Have a substantial adverse effect on a scenic vista

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

c) Substantially degrade the existing visual character or quality of the site and its surroundings?

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

Build Alternative 1

Visual Resources and Resource Change

Visual resources of the project setting are defined and identified by assessing visual character and visual quality in the project corridor. Resource change is assessed by evaluating the visual character and the visual quality of the visual resources that comprise the project corridor before and after the construction of the proposed project.

By examining the vividness, intactness, and unity of the landscape, as these characteristics relate to the highway corridor and the specific project site, the visual quality of the landscape and the impact the project would have can be better understood.

Overall, the landscape that motorists experience while driving toward the project site is memorable due mostly to the nearby wind farm. The area otherwise lacks variety but is a distinctly rural/agricultural landscape that is not especially vivid. The landscape exhibits a moderate to high level of intactness and unity due to the predominant agricultural character and its similarity of features and conditions.
The degree of resource change resulting from implementation of Build Alternative 1, resource change meaning changes to visual resources exhibited by changes in visual character and visual quality, would be low. The project would modify the existing intersection of two highways, merely a fraction of the larger landscape that is in view. No trees would be removed. For the proposed Build Alternative 1, slightly widened roadways at the intersection, a new traffic circle, lighting, and approach warning beacons would be new features. The proposed project features would not disrupt or interfere with views from the highway or any other locations. The proposed project would not alter the character of the area and would not reduce the current levels of vividness, intactness, and unity. Instead, the roundabout feature may increase the level of vividness since it would be a unique feature of the highway system in this area, particularly if the roundabout were designed to have aesthetic appearance and be visually appealing to motorists. The visual quality of the corridor would not be degraded, but could potentially be improved by the roundabout. See Figure 5 below that illustrates the factors Caltrans considers when determining visual impact.

Figure 5. VIA Concept Diagram

Viewers and Viewer Response

Neighbors (people with views to the road) and highway users (people with views from the road) would not be affected by the proposed project.

The duration of highway user exposure to the proposed project would be very short. In total, the project site is a maximum of 1,000 feet long, which includes the road modifications. Motorists and cyclists would briefly see project features as they approach and pass through the intersection.

Viewers of the project would include persons traveling on SR 12, SR 113, and Birds Landing Road. Sensitivity to landscape change would be low since travelers would pass through the intersection in a short time and the degree of change as a result of the project would be minor. There are no private residences with direct views of the project site. The average response of all viewer groups would be low.
Visual Impacts

Visual Impacts are determined by assessing changes to visual resources and predicting viewer response to those changes. Most visual impacts would only last as long as construction of the project was ongoing. There would be little or no lasting effects related to the visual presence.

Temporary impacts during construction would be related to the presence of construction workers, materials, and equipment.

The level of visual impact attributable to the project would be low to none. The project would ultimately cause a very low degree of resource change. Viewer response to change within the project area would be low. The visual character of the proposed project would match the existing character of the corridor. Visual quality would not be diminished but could potentially be improved by the proposed project.

Build Alternative 2

In the case of Build Alternative 2, the new traffic signals and warning beacons would be apparent features of the project. These are components that are familiar to motorists as they travel through the surrounding areas.

Avoidance and Minimization Measures for Build Alternatives 1 and 2

Avoidance or minimization measures have been identified and can lessen visual impacts caused by the project. Also, the inclusion of aesthetic features in the previously discussed project design can help generate public acceptance of the proposed project. This section describes additional avoidance and/or minimization measures to address specific visual impacts. These will be designed and implemented with concurrence of the District Landscape Architect. The measures include:

- Seed all disturbed areas with appropriate vegetation.
- If Build Alternative 1 is selected, include aesthetic elements or treatments inside the roundabout circle that ensure it would be visually appealing. These should be designed in consultation with the Office of Landscape Architecture and approved by the District Landscape Architect.

Conclusion

The preferred alternative for the project is Build Alternative 1, the single lane roundabout.

Based on the studies conducted, both of the proposed Build Alternatives would not substantially affect views or vistas. The proposed Build Alternatives would be consistent with the visual quality and character of the existing highway corridor. No scenic resources as defined by Caltrans or CEQA would be adversely affected. With the application of the avoidance and minimization measures outlined above, the project would have no negative visual impacts. On the contrary, proposed Build Alternative 1 may potentially benefit visual quality at the project site.
II. AGRICULTURE AND FOREST RESOURCES: In determining whether impacts to agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997) prepared by the California Dept. of Conservation as an optional model to use in assessing impacts on agriculture and farmland. In determining whether impacts to forest resources, including timberland, are significant environmental effects, lead agencies may refer to information compiled by the California Department of Forestry and Fire Protection regarding the state’s inventory of forest land, including the Forest and Range Assessment Project and the Forest Legacy Assessment Project, and the forest carbon measurement methodology provided in Forest Protocols adopted by the California Air Resources Board. Would the project:

<table>
<thead>
<tr>
<th></th>
<th>Potentially Significant Impact</th>
<th>Less Than Significant with Mitigation</th>
<th>Less Than Significant Impact</th>
<th>No Impact</th>
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</thead>
<tbody>
<tr>
<td>a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?</td>
<td>☐</td>
<td>☐</td>
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</tr>
<tr>
<td>b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
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<tr>
<td>c) Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g)), timberland (as defined by Public Resources Code section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104(g))?</td>
<td>☐</td>
<td>☐</td>
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<tr>
<td>d) Result in the loss of forest land or conversion of forest land to non-forest use?</td>
<td>☐</td>
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<tr>
<td>e) Involve other changes in the existing environment which, due to their location or nature, could result in conversion of farmland, to non-agricultural use or conversion of forest land to non-forest use?</td>
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</table>

The preferred alternative for the project is the roundabout.

The project would not convert farmland to non-agricultural use. The land surrounding the project area is zoned exclusively for agricultural. However, the proposed project would stay entirely within Caltrans ROW and would not impact current agricultural uses. There is no land under the Williamson Act in the project area. The project area is not zoned as forest land or timber land, nor is it zoned for timberland production.
### III. AIR QUALITY:

Where available, the significance criteria established by the applicable air quality management or air pollution control district may be relied upon to make the following determinations. Would the project:

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

The preferred alternative for the project is the roundabout.

The project would have no conflict with the implementation of an applicable air quality plan and would not create objectionable odors. This project would not cause a violation of federal or state air quality standards, would not have a cumulatively considerable net increase in any criteria pollutant, or expose sensitive receptors to substantial pollutant concentrations.

The project falls within the Sacramento Valley air basin, a nonattainment area for federal ozone and PM$_{2.5}$ air quality standard. However, this project is exempt from regional conformity requirements pursuant to 40 CFR 93.127. This project is listed in the currently conforming RTP (Regional Transportation Plan - Plan Bay Area), and 2015 Transportation Improvement Program (TIP) in grouped listing in the SHOPP-Collision Reduction category (TIP ID VAR110004) (RTP ID 240745).

#### Short Term Effects

Short term air quality effects include the release of airborne dust caused by excavation, grading, hauling, and other activities related to construction. Emissions from construction equipment powered by gasoline and diesel engines are also anticipated and would include carbon monoxide (CO), nitrogen oxide (NO$_x$), volatile organic compounds (VOCs), directly emitted PM$_{10}$ (particulate matter less than 10 microns in diameter) and PM$_{2.5}$ (particulate matter less than 2.5 microns in diameter), and toxic air contaminants (TACs). Construction activities are expected to increase traffic congestion in the area, resulting in increases in emissions from traffic during the delays. These emissions would be temporary and limited to the immediate area surrounding the construction site.

Dust from soil would be generated by this project during grinding, paving, excavation, debris transport, and vehicle and equipment traffic. Material or waste stockpiles, such as excavated soil, may also be sources of dust. Caltrans Standard Specifications for dust control and job site management would minimize or eliminate discharge into the air.
These procedures ensure that there would be no significant impact.

*Long Term Effects*

The proposed project site is in attainment for CO in both National and California Ambient Air Quality Standards, meaning that the air quality in the area is as good as or better than air quality standards. Therefore, a CO hot-spot analysis is not required for this project.

With respect to PM$_{2.5}$, analysis of the five criteria for the Project of Air Quality Concern (POAQC), basis per 40 CFR 93.123(b)(1), concludes that the project is not a POAQC.

The proposed project, TIP ID SOL110061, was presented to an interagency consultation meeting on May 26, 2016 at the Metropolitan Transportation Commission’s (MTC) Bay Area Metro Center in San Francisco. The Bay Area Air Quality Conformity Task Force concurred that the project is not a POAQC and no detailed PM$_{2.5}$ hot-spot analysis is required. See Appendix E to view the memo from MTC.

*Avoidance and Minimization Measures (A&M)*

The following measures would reduce air quality impacts resulting from construction activities:

- The construction contractor must comply with the Caltrans’ Standard Specifications in Section 14-9 (2015).
  - Section 14-9-02 specifically requires compliance by the contractor with all applicable laws and regulations related to air quality, including air pollution control district and air quality management district regulations and local ordinances.
  - Section 10-5 is directed at controlling dust. If dust calming materials other than water are to be used, material specifications are described in Section 18.
- Water or a dust palliative will be applied to the site and equipment as often as necessary to control airborne dust emissions.
- Where dust is a problem during dry weather or mud tracking is a problem during wet weather, a stabilized access road will be designed to support the heaviest vehicles and equipment that will be used.
- Construction equipment and vehicles will be properly tuned and maintained. All construction equipment will use low sulfur fuel as required by CA Code of Regulations Title 17, Section 93114.
- Entrances and exits to and from unpaved staging areas will be stabilized and properly maintained.
- Stockpiles will be covered and utilize berms to prevent discharge of dust.
- All transported loads of soils and wet materials will be covered before transport, or adequate freeboard (space from the top of the material to the top of the truck) will be provided to minimize emission of dust during transportation.
• Dust and mud that are deposited on paved, public roads due to construction activity and traffic will be promptly and regularly removed to reduce PM emissions. Sweepers will be available onsite for housekeeping, as needed.

• To the extent feasible, construction traffic will be scheduled and routed to reduce congestion and related air quality impacts caused by idling vehicles along local roads during peak travel times.

• In an anticipated storm event, disturbed areas which require temporary protection will be applied with hydraulic mulch until permanent vegetation is established. As temporarily protected areas will be re-disturbed for further construction, this process is repeated prior to every storm event.

• Vegetation will be planted as soon as practical after grading to reduce windblown PM in the area.

**Climate Change**

Climate change is analyzed in the Greenhouse Gases Section of this document. Neither the United States Environmental Protection Agency (U.S. EPA) nor the Federal Highway Administration (FHWA) has issued explicit guidance or methods to conduct project-level greenhouse gas analysis. As stated on FHWA’s climate change website (http://www.fhwa.dot.gov/hep/climate/index.htm), climate change considerations should be integrated throughout the transportation decision-making process—from planning through project development and delivery. Addressing climate change mitigation and adaptation up front in the planning process will aid decision-making and improve efficiency at the program level, and will inform the analysis and stewardship needs of project-level decision-making. Climate change considerations can easily be integrated into many planning factors, such as supporting economic vitality and global efficiency, increasing safety and mobility, enhancing the environment, promoting energy conservation, and improving the quality of life.

Because there have been more requirements set forth in California legislation and executive orders on climate change, the issue is addressed in the California Environmental Quality Act (CEQA) chapter of this environmental document and may be used to inform the National Environmental Policy Act (NEPA) decision. The four strategies set forth by FHWA to lessen climate change impacts do correlate with efforts that the State has undertaken and is undertaking to deal with transportation and climate change; the strategies include improved transportation system efficiency, cleaner fuels, cleaner vehicles, and reduction in the growth of vehicle hours travelled.

See Section VII of this document for further information on climate change and greenhouse gas emissions.
IV. BIOLOGICAL RESOURCES: Would the project:

<table>
<thead>
<tr>
<th>Impact Level</th>
<th>Potentially Significant Impact</th>
<th>Less Than Significant with Mitigation</th>
<th>Less Than Significant Impact</th>
<th>No Impact</th>
</tr>
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The preferred alternative for the project is the roundabout.

The biological study area (BSA) for the project includes the area within the project footprint plus a surrounding buffer zone, and includes all temporary and permanent impacts. The BSA consists of approximately 28 acres. See Figure 6 on page 27 which outlines the BSA.

The proposed project would have permanent effects on approximately 0.05 acre of California Tiger Salamander (CTS) upland dispersal habitat and temporary effects on 2.66 acres of CTS upland dispersal habitat. See Figure 7 on page 31 which illustrates permanent and temporary impact areas, and Figure 8 on page 32 which illustrates the occurrences of CTS within a five mile radius of the proposed project.

The project may affect, and is likely to adversely affect CTS through the potential take of individuals should any be present in the work area during construction, but would not jeopardize the continued existence of CTS.

Caltrans has performed Formal Section 7 consultation with the USFWS under the Federal Endangered Species Act for CTS. The BO was received on December 22, 2016. See Appendix I to view the BO.
To reduce potential impacts to sensitive biological resources, Caltrans proposes to incorporate Caltrans standard construction Best Management Practices (BMPs) and avoidance and minimization measures into the proposed project as shown in Appendix C.

In addition to BMPs and avoidance and minimization measures, compensatory mitigation or mitigation credits are required for the proposed project. The proposed project is within the boundaries of a previous project, the Solano Highway 12 Roadway Rehabilitation and Safety Improvements Project (EA 2A620), completed in 2011, which fully mitigated for biological impacts by purchasing credits from Wildlands, Inc. These credits were for impacts to upland CTS dispersal habitat within the project area. A small area, approximately 0.38 acre of upland CTS habitat not mitigated for by the previous Solano Highway 12 Roadway Rehabilitation and Safety Improvements Project, would be impacted by this proposed project and mitigation would be purchased through an approved mitigation bank. An Incidental Take Permit (ITP) from the California Department of Fish and Wildlife (CDFW) may require the project to be fully mitigated, which would require mitigation credits be purchased for the approximately 2.71 acres of permanent and temporary upland habitat loss for CTS.

After performing Formal Section 7 consultation with USFWS under the Federal Endangered Species Act and upon receipt of the BO on December 22, 2016, no additional compensatory mitigation or mitigation credits are required for this project. Caltrans provided habitat compensation for the area of disturbance in association with the overlapping Solano highway 12 Roadway Rehabilitation and Safety Improvements Project with purchase of occupied CTS habitat credits as a Service-approved conservation bank and has therefore contributed to the conservation of CTS in the region of the project.

See Figure 9 on page 35 which shows the occurrences of special-status species and federally listed animals, and Table 2 beginning on page 43 which lists all special-status species and critical habitat with the potential to occur in the BSA.

Wildlife Varieties

Wildlife associated with the grassland habitat in the BSA includes invertebrates, fish, amphibians, reptiles, birds, and mammals. Myriad species of invertebrates contribute to the diversity and complexity of the vernal pools and playa lake systems found within the region. These invertebrates have developed mechanisms to survive the yearly cycle of flooding and drought. Vernal pool tadpole shrimp are good examples of invertebrates that have adapted to limiting physical and biological conditions.

Amphibians known to occur in the area include western toad (Bufo boreas), Pacific chorus frog (Pseudacris regilla), and bull frog (Rana catesbeiana). The California red-legged frog (federal threatened, California species of concern) (Rana draytonii) is considered absent from the area and is not expected to occur in the project area. CTS are known to occur approximately 10 miles north of the project site in the Jepson Prairie area and in the wind farm area approximately 5 miles southwest of the project. Reptile species known to occur in the grasslands of southern Solano County include the western racer (Coluber constrictor mormon), western skink (Eumecces gilberti), California kingsnake (Lampropeltis getulus californiae), Pacific gopher snake (Pituophis melanoleucus catenifer), common garter snake
(Thamnophis sirtalis), and sharp-tailed snake (Contia tenuis). The western fence lizard (Sceloporus occidentalis) is also common in the area.

Generally in the grasslands of the Solano Plain, avian nesting and perching sites are largely associated with marshes, grassland, and isolated small groves of trees. Several sensitive bird species, particularly raptors, are known to inhabit areas to the north along SR 113 near Jepson Prairie and south of SR 12 in the central part of the Montezuma Hills. Trees or groves suitable for bird nesting or perching within Caltrans ROW have not been observed during field surveys of the BSA.

Birds observed within the BSA include red-winged blackbird (Agelaius phoenicius), mourning dove (Zenaisa macroura), Western meadowlark (Sturnella neglecta), horned lark (Eremophila alpestris), savanna sparrow (Passerculus sandwichensis), turkey vulture (Cathartes aura), and red-tailed hawk (Buteo jamaicensis).

Mammals potentially occurring within or near the BSA are predominantly nocturnal. No formal mammal surveys have been conducted. Signs of pocket gophers (Thomomys bottae) and ground squirrels (Spermophilus beecheyi) are sparsely distributed within the BSA. Tracks and signs of raccoon (Procyon lotor), fox (Vulpes sp.), and striped skunk (Mephitis mephistas) have been observed in dry mud near ephemeral culvert openings. Other common mammals of this area include opossum (Didelphis virginiana), cottontail rabbit (Sylvilagus auduboni), California vole (Microtus californicus), muskrat (Ondatra zibethica), and coyote (Canis latrans) (Solano County Farmlands and Open Space Foundation 1998).

Migration and Travel Corridors

At the SR 12/SR 113 intersection, two culverts cross SR 12 west and east of the intersection. Small wildlife species are likely to use these culverts to safely reach habitats bisected by the roadway.

Special-status Wildlife Species - California Tiger Salamander (Ambystoma californiense)

A search of the California Natural Diversity Database (CNDDB) indicated three California Tiger Salamander (CTS) occurrences within a 5-mile radius of the BSA. These three occurrences are shown in Figure 7 on page 31. CTS are known to occur in the seasonal pools of the Jepson Prairie and other areas that provide adequate breeding habitat. These areas are approximately 10 miles north of the BSA.

Critical Habitat

A CTS habitat assessment was conducted on November 2, 2015. Based on the conducted site visit, potentially moderate quality aquatic breeding habitat for CTS was observed within Round Hill Creek. However, based on the dry creek field conditions during the site visit, the creek cannot provide suitable breeding habitat during a drought year. Suitable upland dispersal habitat for CTS was also observed in the northwestern and southwestern quadrants of the BSA, where Round Hill Creek is located. Due to the lack of recent occurrences near the BSA, CTS has a low potential to occur on the project site. Upland dispersal habitat refers to the grassland that adult and juvenile CTS disperse to, where they live in underground rodent burrows.
However, while no recent CTS observations have been made within the 1.3 mile range of the CTS, their potential presence on the site cannot be ruled out given that suitable habitat has been observed onsite for this species. Due to the reasons above, CTS presence in the project area is inferred, and the annual grassland of the BSA is considered CTS upland dispersal habitat.

**Impacts to the California Tiger Salamander**

Cumulative impacts on CTS result from past, current, and reasonably foreseeable future projects in the region, including periodic maintenance and replacement of roads and highways throughout Solano County. These projects would undergo (or have undergone) separate environmental review and would require separate environmental permitting from regulatory agencies. Although these and similar projects could result in impacts on CTS, it is expected that most current and future projects that affect this species and its habitats would be required to mitigate these impacts through the CEQA, Section 1600, or Section 404/401 permitting process, and the FESA Section 7 consultation process. As a result, most projects in the region would mitigate their impacts on CTS, minimizing cumulative impacts on the species. With implementation of avoidance and minimization measures, this project would not make a contribution to cumulative impacts on the CTS or its habitat.

The BO states that the proposed project is not likely to jeopardize the continued existence of CTS. USFWS has concurred with Caltrans’ original determination that the project may affect and is likely to adversely affect CTS.

An Incidental Take Permit (ITP) from the California Department of Fish and Wildlife (CDFW) is required for the proposed project.

**Avoidance and Minimization Measures for the California Tiger Salamander**

Caltrans will implement both the general avoidance and minimization measures listed in Appendix C.

**Compensatory Mitigation for the California Tiger Salamander**

A small area, approximately 0.38 acre of upland CTS habitat not mitigated for by the previous Solano Highway 12 Roadway Rehabilitation and Safety Improvements Project, would be impacted by this proposed project and mitigation would be purchased through an approved mitigation bank. An ITP from CDFW may require the project be fully mitigated, which would require mitigation credits be purchased for the approximately 2.71 acres of permanent and temporary upland habitat loss for CTS.

As shown in the BO, USFWS has determined that no compensatory mitigation is required for the proposed project.
Figure 7. Permanent and Temporary Impact Areas
Figure 8. Occurrences of CTS and Giant Garter Snake
**Migratory Birds**

Surveys for breeding birds were not conducted for this project. Biologists documented several species of birds in the BSA during other surveys in the area. The habitat in the BSA is potential breeding habitat for bird species, and numerous bird species may breed within and adjacent to the BSA. The Migratory Bird Treaty Act (MBTA) protects nesting or breeding migratory and native birds. The MBTA is discussed in more detail further on in the Biological Resources section.

Birds observed within the BSA include red-winged blackbird (*Agelaius phoenicius*), mourning dove (*Zenaisa macroura*), Western meadowlark (*Sturnella neglecta*), horned lark (*Eremophila alpestris*), savanna sparrow (*Passerculus sandwichensis*), turkey vulture (*Cathartes aura*), and red-tailed hawk (*Buteo jamaicensis*).

**Impacts to Migratory Birds**

The temporary impacts on the natural landscape in the BSA would be small. Project construction and an increase in people and construction equipment (with associated noise) has the potential to affect nesting birds.

This project has the potential to affect nesting birds during construction if occupied nests are disturbed or removed during the breeding season; however, successful implementation of avoidance and minimization measures would avoid the loss of migratory bird nests, eggs, or young.

Indirect impacts of this project include the temporary increase in people, construction activity, and noise, which may deter some birds from foraging, roosting, or nesting in the BSA during project construction. This would result in an effective temporary reduction in suitable habitat for these individuals.

This project may affect breeding birds. However, with the avoidance and minimization measures mentioned below, there would be no impacts to nesting or migratory birds.

**Avoidance and Minimization for Migratory Birds**

The project would implement measures to avoid and minimize the potential for nest or egg destruction or abandonment of an active nest, and to generally minimize impacts on birds, nests, and nesting habitat protected by the MBTA. General avoidance and minimization efforts would be followed to reduce project impacts on potential bird habitat.

The following measures would be implemented to avoid or minimize impacts to nesting birds:

- Preconstruction nest surveys will be conducted within the BSA for all bird species (if construction occurs during the bird breeding season from February 1 through August 31) no more than 72 hours prior to construction activities. If rare, threatened, or endangered species are detected, Caltrans will consult with the California Department of Fish and Wildlife (CDFW) or the U.S. Fish and Wildlife Service (USFWS) as appropriate.
• With the exception of nests of listed bird species, unoccupied nests (nests without birds or eggs) will be removed to deter birds from re-establishing nests within the project area. If an active bird nest is found, it will be avoided/buffered to the extent determined by a qualified biologist to avoid take or abandonment of an active bird nest.

• Qualified biologists will monitor for signs of bird stress and expand buffer areas as needed until the young have fledged. If establishment of the buffer is not feasible, CDFW and USFWS will be contacted for further avoidance and minimization guidelines.

• If occupied nests—nests with birds or eggs—are present within the project area, work within 300 feet of raptor species or 50 feet of all other species will be avoided.
Figure 9. Occurrences of Special-Status State and Federally Listed Animals

Note: CNDDB version April 2018. The occurrences shown on this map represent known locations of the species listed here as of the date of this version. There may be additional occurrences, or additional species within the area which have not yet been surveyed and/or mapped. Lack of information in the CNDDB about a species or an area can never be used as proof that no special status species occur in an area.
Vegetation Varieties

Vegetation communities in the BSA consist of annual grassland and agricultural vegetation. Lands northwest and southwest of the intersection consist of annual grassland used as rangeland, and lands to the northeast and southeast are used for crop cultivation and are heavily disked. Vegetation throughout this area is heavily grazed. Common species include medusa-head (*Elymus caput-medusae*) and soft chess (*Bromus Hordeaceus*), with scattered yellow star-thistle (*Centaurea solstitialis*) and hayfield tarweed (*Hemizionia congesta*). Ruderal vegetation, or vegetation that colonizes disturbed areas, is present northeast and southeast of the intersection. Common species include rip-gut brome (*Bromus diandrus*), wild oat (*Avena sp.*), fennel (*Foeniculum vulgare*), Italian thistle (*Carduus pycnocephalus*), annual yellow sweetclover (*Melilotus indicus*), and black mustard (*Brassica nigra*). Vegetation associated within Caltrans ROW includes weedy annual grasses and forbs that are mowed as part of annual roadway maintenance. See Figure 11 on page 38 that shows the vegetation types and their boundaries.

Compensatory Mitigation for Vegetation Communities

The project area had previously been subject to a habitat evaluation for Contra Costa goldfields (*Lasthenia conjugens*) for a previous project, the Solano Highway 12 Project. The seasonal wetland located approximately 100 feet outside of the project footprint, but within the BSA, could be potential habitat for Contra Costa goldfields. For the previous project in this area, mitigation for the potential habitat was provided to account for the permanent loss of habitat within Caltrans ROW.

Special Status Plant Species

No rare, federally threatened, or federally endangered plants were observed during biological surveys within the survey area.

Protocol rare plant surveys were conducted for the current project footprint for special-status plant species, including Contra Costa goldfields, and none were found.

See Figure 10 on page 37 which shows the special status plant species that have occurred within a five mile radius of the BSA.
Figure 10. Occurrences of Special-Status State and Federally Listed Plants
Figure 11. General Vegetation Types

General Vegetation Types
State Route 12/113 Intersection Improvement Project
E4-04-69195, 04-30CL-17 AM 18-30
Solano County, California
**Federal Endangered Species Act Consultation Summary**

Caltrans initiates consultation with USFWS or National Marine Fisheries Service (for marine and anadromous species) when a project has the potential to affect a federally listed species and/or adversely modify designated critical habitat. Formal Section 7 consultation with USFWS under the Federal Endangered Species Act was initiated with the submission of a Biological Assessment (BA) prepared for the project on July 18, 2016.

For the proposed project, Caltrans submitted a Biological Assessment (BA) to the USFWS for the federally listed CTS and sought concurrence that the project may affect and is likely to adversely affect CTS. Caltrans has made a no effects determination on all other federally listed species that may occur within the BSA.

Caltrans received the BO on December 22, 2016, which states that the proposed project is not likely to jeopardize the continued existence of CTS. USFWS has concurred with Caltrans’ original determination that the project may affect and is likely to adversely affect CTS.

An Incidental Take Permit (ITP) from CDFW is required for the proposed project.

**California Endangered Species Act Consultation Summary**

The California Endangered Species Act (CESA) generally parallels the main provisions of the federal ESA (FESA), but extends the take prohibitions to species proposed for listing. Section 2080 & 2081 of California Fish & Game Code prohibits the take (defined as hunting, pursuing, catching, capturing, or killing) of endangered, threatened, or candidate species unless otherwise authorized by permit.

The CESA allows for take incidental to otherwise lawful projects except for those species listed as fully protected. State lead agencies are required to consult with CDFW to ensure that any action they undertake is not likely to jeopardize the continued existence of any listed or candidate species, or result in destruction or adverse modification of essential habitat.

**Wetlands and Other Waters of the United States**

A 0.11-acre seasonal wetland area is identified within the BSA on the southwestern side of the intersection, as well as Round Hill Creek, a non-wetland waters of the U.S. See Figure 12 on page 41 that shows the location of the seasonal wetland area and Round Hill Creek in relation to the proposed project limits.

**Impacts to Wetlands and Other Waters of the United States**

The proposed project has been designed to prevent wetlands or Waters of the United States from being affected. All proposed activities would occur within Caltrans ROW and would not impact the seasonal wetland area or Round Hill Creek. Both aquatic resources are outside the boundary of the project limits, and no temporary or permanent disturbances would occur.

**Avoidance and Minimization for Wetlands and Other Waters of the United States**
Since the proposed project would not be affecting wetlands or other waters of the U.S., no avoidance or minimization measures are necessary.
Figure 12. Wetlands and Waters

Legend
- Biological Study Area
- Project Limits
- Seasonal Wetland (0.11 acre)
- Round Hill Creek (0.62 acre)

Wetlands and Waters
State Route 12/113 Intersection Improvement Project
SOL-12-PM 19.2
EA 04-4GS60
Solano County, California
**Other Regulatory Requirements**

**Migratory Bird Treaty Act and Other Bird Protections**

MBTA implements international treaties between the United States and other nations devised to protect migratory birds and any of their parts, eggs, and nests from activities such as hunting, pursuing, capturing, killing, selling, and shipping, unless expressly authorized in the regulations or by permit. USFWS administers the MBTA. All native species of birds are protected during active nesting. The protection extends to the adults birds and nest contents, including eggs and nestlings. Nonnative bird species, including European starling (*Sturnus vulgaris*), rock pigeon (*Columbia livia*) and house sparrow (*Passer domesticus*) are not provided protection by the MBTA. The regulations governing migratory bird permits are in 50 CFR 13, General Permit Procedures, and 50 CFR 21, Migratory Bird Permits. While no permits are issued for species protected under codes, coordination with CDFW and USFWS is required.

**Invasive Species (Executive Order 13112)**

The intent of Executive Order 13112, Invasive species, is “to prevent the introduction of invasive species and provide for their control and to minimize the economic, ecological, and human health impacts that invasive species cause.” General avoidance and minimization measures will control invasive species introduction.

**California Native Plant Protection Act**

The California Native Plant Protection Act requires state agencies to conserve endangered and rare native plants. Provisions of the act prohibit the taking of listed plants from the wild and require notification to CDFW at least 10 days before any change of land use. As required, Caltrans has conducted a botanical survey of the BSA and would continue to consult with CDFW during project planning to comply with the provisions of this act; however, no effects on endangered or rare native plants are expected.
<table>
<thead>
<tr>
<th>Common Name</th>
<th>Scientific Name</th>
<th>Status</th>
<th>General Habitat Preferences</th>
<th>Suitable Habitat Present/Absent in Biological Study Area</th>
<th>Potential to Occur in Biological Study Area</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ferris’ milk-vetch</td>
<td>Astragalus tener var. ferrisiae</td>
<td>1B:1</td>
<td>Meadows and seeps, valley and foothill grassland. Subalkaline flats on overflow land in the Central Valley; usually seen in dry, adobe soil.</td>
<td>Present</td>
<td>Not expected. Marginally suitable grassland habitat within BSA. No CNDDB records within 5 miles. Not found during protocol rare plant surveys.</td>
</tr>
<tr>
<td>Pappose tarplant</td>
<td>Centromadia parryi ssp. parryi</td>
<td>1B:2</td>
<td>Valley and foothill grassland.</td>
<td>Present</td>
<td>Not expected. Marginally suitable grassland habitat within BSA. No CNDDB records within 5 miles. Not found during protocol rare plant surveys.</td>
</tr>
<tr>
<td>Parry’s rough tarplant</td>
<td>Centromadia parryi ssp. rudis</td>
<td>1B:2</td>
<td>Chaparral, coastal prairie, meadows and seeps, coastal salt marsh, valley and foothill grassland.</td>
<td>Present</td>
<td>Not expected. Marginally suitable grassland habitat within BSA. No CNDDB records within 5 miles. Not found during protocol rare plant surveys.</td>
</tr>
<tr>
<td>Diamond-petaled</td>
<td>Eschscholzia rhombipetala</td>
<td>1B:1</td>
<td>Valley and foothill grassland, alkaline, clay slopes and flats.</td>
<td>Present</td>
<td>Not expected. Marginally suitable grassland habitat within BSA. No CNDDB records within 5 miles. Not found during protocol rare plant surveys.</td>
</tr>
<tr>
<td>California poppy</td>
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<tr>
<td>Fragrant fritillary</td>
<td>Fritillaria liliacea</td>
<td>1B:2</td>
<td>Coastal scrub, valley and foothill grassland, coastal prairie, cismontane woodland, often on serpentine.</td>
<td>Present</td>
<td>Not expected. Marginally suitable grassland habitat within BSA. No CNDDB records within 5 miles. Not found during protocol rare plant surveys.</td>
</tr>
<tr>
<td>Contra Costa goldfields</td>
<td>Lasthenia conjugens</td>
<td>FE, 1B:1</td>
<td>Valley and foothill grassland, vernal pools, and cismontane woodland; extraplated from most of its range.</td>
<td>Present</td>
<td>Low. Suitable potential habitat within seasonal wetland within southwestern quadrant of BSA, outside of project footprint.</td>
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<tr>
<td>Heckard’s pepper-grass</td>
<td>Lepidium latipes var. heckardi</td>
<td>1B:2</td>
<td>Valley and foothill grassland, sometimes vernal pool edges.</td>
<td>Present</td>
<td>Not expected. Marginally suitable grassland habitat within BSA. No CNDDB records within 5 miles. Not found during protocol rare plant surveys.</td>
</tr>
<tr>
<td>Showy golden mignon</td>
<td>Mada radiata</td>
<td>1B:2</td>
<td>Valley and foothill grassland, cismontane woodland, mostly on adobe clay in grassland or among shrubs.</td>
<td>Present</td>
<td>Not expected. Marginally suitable grassland habitat within BSA. No CNDDB records within 5 miles. Not found during protocol rare plant surveys.</td>
</tr>
<tr>
<td>Common Name</td>
<td>Scientific Name</td>
<td>Statusa</td>
<td>General Habitat Preferences</td>
<td>Suitable Habitat Present/Absent in Biological Study Area</td>
<td>Potential to Occur in Biological Study Area</td>
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<td>----------------------------------------------------------------------------------------------</td>
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<td>-----------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Bearded popcornflower</td>
<td><em>Plagiobothrys hystriculatus</em></td>
<td>IB.1</td>
<td>Vernal pools, valley and foothill grassland.</td>
<td>Present</td>
<td><strong>Not expected.</strong> Marginally suitable grassland habitat within BSA. No CNDDB records within 5 miles. Not found during protocol rare plant surveys.</td>
</tr>
<tr>
<td>Showy rancheria clover</td>
<td><em>Trifolium amoenum</em></td>
<td>FE, 1B.1</td>
<td>Valley and foothill grassland, coastal bluff scrub. Sometimes on serpentine soil, open sunny sites, swales. Usually occurs in wetlands, but occasionally found in non-wetlands. Most recently sighted on roadside and eroding cliff face.</td>
<td>Present</td>
<td><strong>Not expected.</strong> Marginally suitable grassland habitat within BSA. No CNDDB records within 5 miles. Not found during protocol rare plant surveys. No effect on this species is anticipated.</td>
</tr>
</tbody>
</table>

**Amphibians**

<table>
<thead>
<tr>
<th>Amphibian Name</th>
<th>Scientific Name</th>
<th>Status</th>
<th>General Habitat Preferences</th>
<th>Suitable Habitat Present/Absent in Biological Study Area</th>
<th>Potential to Occur in Biological Study Area</th>
</tr>
</thead>
<tbody>
<tr>
<td>California tiger salamander</td>
<td><em>Ambystoma californiense</em></td>
<td>FT, ST, SSC</td>
<td>Quiet water of ponds, reservoirs, lakes, vernal pools, streams, and stock ponds within annual grasslands: oak savannah, oak woodland, and open chaparral.</td>
<td>Present</td>
<td><strong>Moderate.</strong> Suitable upland dispersal habitat is present within BSA. Three CNDDB occurrence records are located within 5 miles. No protocol surveys conducted; potential presence is inferred. The project is likely to adversely affect, but not threaten the continued existence of, the California tiger salamander.</td>
</tr>
<tr>
<td>California red-legged frog</td>
<td><em>Rana draytoni</em></td>
<td>FT, SSC</td>
<td>Lowlands and foothills in or near permanent sources of water with dense, shrubby, or emergent riparian vegetation.</td>
<td>Present</td>
<td><strong>Not expected.</strong> No historic occurrences recorded in the Delta area east of the Coastal Ranges. Critical habitat not present within BSA. No effect on this species is anticipated.</td>
</tr>
</tbody>
</table>

**Reptiles**

<table>
<thead>
<tr>
<th>Reptile Name</th>
<th>Scientific Name</th>
<th>Status</th>
<th>General Habitat Preferences</th>
<th>Suitable Habitat Present/Absent in Biological Study Area</th>
<th>Potential to Occur in Biological Study Area</th>
</tr>
</thead>
<tbody>
<tr>
<td>Giant garter snake</td>
<td><em>Thamnophis gigas</em></td>
<td>FE, SE</td>
<td>Vicinity of freshwater marshes, ponds, and slow-moving streams in San Mateo County and extreme northern Santa Cruz County. Prefers dense cover and water depths of at least 1 foot. Upland areas near water are also important.</td>
<td>Present</td>
<td><strong>Not expected.</strong> Based on survey observations, only giant garter snake refuge habitat in the form of ground squirrel burrows and riprap occur onsite. Because of the lack of recent occurrences for giant garter snake near BSA and lack of suitable habitat for this species, the giant garter snake is not likely to occur within BSA. No effect on this species is anticipated.</td>
</tr>
<tr>
<td>Common Name</td>
<td>Scientific Name</td>
<td>Status</td>
<td>General Habitat Preferences</td>
<td>Suitable Habitat Present/Absent in Biological Study Area</td>
<td>Potential to Occur in Biological Study Area</td>
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</tr>
<tr>
<td>Swainson’s hawk</td>
<td><em>Buteo swainsoni</em></td>
<td>ST</td>
<td>Open agricultural fields, grasslands, and low hills, with sparse trees. Nesting often associated with riparian areas.</td>
<td>Present</td>
<td>Low. Suitable foraging habitat within BSA; no suitable nesting habitat. CNDDB record (2007) is approximately 1 mile east from the project along SR 12.</td>
</tr>
<tr>
<td><strong>Invertebrates</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Conservancy fairy shrimp</td>
<td><em>Branchinecta conservatio</em></td>
<td>FE</td>
<td>Large, cool-water vernal pools with moderately turbid water; the pools generally last until June.</td>
<td>Absent</td>
<td>Low. Suitable potential habitat within seasonal wetland within southwestern quadrant of BSA, outside of project footprint. No CNDDB records within 5 miles. The project is not likely to adversely affect conservancy fairy shrimp.</td>
</tr>
<tr>
<td>Vernal pool fairy shrimp</td>
<td><em>Branchinecta lynchii</em></td>
<td>FT</td>
<td>Inhabits vernal pools containing clear to highly turbid water, ranging from 50 square feet in the former Mather Air Force Base area of Sacramento County, to the 89-acre Olcott Lake at Jepson Prairie.</td>
<td>Absent</td>
<td>Low. BSA contains one seasonal wetland in the southwest region that is suitable potential habitat. CNDDB record (1993) is 2.8 miles northwest. The project is not likely to adversely affect vernal pool fairy shrimp.</td>
</tr>
<tr>
<td>Valley elderberry longhorn beetle</td>
<td><em>Desmocerus californicus dimorphus</em></td>
<td>FT</td>
<td>Nearly always found on or close to its host plant, elderberry (<em>Sambucus</em> sp.). Inhabited shrubs typically have stems that are 1.0 inch or greater in diameter at ground level. Distribution is patchy throughout the remaining riparian forests of the Central Valley from Redding to Bakersfield.</td>
<td>Absent</td>
<td>Not expected. No elderberry (<em>Sambucus</em> sp.) species present within BSA. No effect on this species is anticipated.</td>
</tr>
<tr>
<td>Delta green ground beetle</td>
<td><em>Elaphis viridis</em></td>
<td>FT</td>
<td>Occurs at the margins of vernal pools in grassland areas, and prefers substrates of sandy-mud, with gentle slopes and low-growing vegetation. This species is currently restricted to the grassland areas between Jepson Prairie and Travis Air Force Base in Solano County.</td>
<td>Absent</td>
<td>Not expected: No vernal pools in BSA, and BSA is outside species’ range. Nearest CNDDB record (2002) is 7.5 miles east. No effect on this species is anticipated.</td>
</tr>
<tr>
<td>Common Name</td>
<td>Scientific Name</td>
<td>Status</td>
<td>General Habitat Preferences</td>
<td>Suitable Habitat Present/Absent in Biological Study Area</td>
<td>Potential to Occur in Biological Study Area</td>
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<td>--------------------------------------------</td>
</tr>
<tr>
<td>Vernal pool tadpole shrimp</td>
<td><em>Lepidurus packardi</em></td>
<td>FE</td>
<td>Inhabits vernal pools containing clear to highly turbid water, ranging from 50 square feet in the former Mather Air Force Base area of Sacramento County, to the 89-acre Oicott Lake at Jepson Prairie.</td>
<td>Absent</td>
<td>Low. BSA contains one seasonal wetland in the southwest region that is suitable potential habitat. CNDDDB record (2002) is 2.8 miles east. The project is not likely to adversely affect vernal pool tadpole shrimp.</td>
</tr>
<tr>
<td>California freshwater shrimp</td>
<td><em>Syncaris pacifica</em></td>
<td>FE, SE</td>
<td>Occurs in shallow riparian pools out of main stream flow areas, with a preference for streams at low elevations and with low gradients. Microhabitat use varies depending on season; will use leafy branches in contact with water in the summer and exposed roots of undercut banks in the winter. This species is endemic to Marin, Napa, and Sonoma counties.</td>
<td>Present</td>
<td>Not expected: Outside of species’ range (endemic to Marin, Napa, and Sonoma counties). CNDDDB record (1990) is 10.7 miles northwest in Napa County. No effect on this species is anticipated.</td>
</tr>
</tbody>
</table>

Sources: CDFW 2016a, 2016b; CNPS 2016; USFWS 2016.

* Status definitions:
USFWS and CDFW
FE = Federal Endangered
FT = Federal Threatened
SE = State Endangered
SSC = State Species of Special Concern
ST = State Threatened

CNPS Rankings
1B.1 = Plants rare, threatened, or endangered in California and elsewhere; ranked as seriously threatened in California
1B.2 = Plants rare, threatened, or endangered in California and elsewhere; ranked as moderately threatened in California
The preferred alternative for the project is the roundabout.

A Historic Property Survey Report (HPSR), finalized on April 26, 2016, presents the results of archaeological and architectural identification efforts for the proposed project. The HPSR determined that, pursuant to Section 106 PA Stipulation VIII.B, there are no cultural resources present in the APE. As such, Caltrans, pursuant to Section 106 PA Stipulation IX.A, has determined that a Finding of No Historic Properties Affected is appropriate for the proposed project because there are no historic properties within the Area of Potential Effects (APE).

The APE represents the maximum extent of potential ground disturbance for the proposed project. The proposed project would not extend outside the State ROW and temporary construction easements would not be required. The APE extends along SR 12 for 700 feet from the intersection both east and west, and extends 400 feet north from the intersection along SR 113 up to the bridge. Along Birds Landing Road, the APE is about 200 feet south from the intersection.

A review was completed on October 11, 2015 by the Caltrans Office of Cultural Resource Studies (OCRS), and it concluded that there are no historic properties within or adjacent to the APE. Two bridges within the project area were identified on the Caltrans historic bridge inventory. Both bridges were built in 2003 and are not eligible for the National Register of Historic Places.

The archaeological research conducted for the proposed project as part of Caltrans’ regulatory responsibilities under the PA did not result in the identification of any previously recorded or unrecorded cultural resources. The overall historic and prehistoric archaeological sensitivity within the APE is low and this determination is consistent with the results of the previous archaeological studies. No prehistoric surface indications have been documented by prior field surveys in the APE and analysis of the OCRS Geographic Information System (GIS) sensitivity model has shown little potential for buried cultural resources within the APE. Sufficient information has been obtained from the analysis of historical maps and the archaeological record.
to form an adequate assessment of the historic-period archaeological sensitivity for the APE. The presence of historic-period archaeological sites has been established across much of the surrounding area through extensive corridor wide cultural studies and none were identified in the current APE.

Avoidance and Minimization Measures

- If cultural materials are discovered during construction, all work must stop within a 60 foot radius of the discovery area until a qualified archaeologist can assess the nature and significance of the find. Immediately protect the discovery area and notify the engineer and Department archaeologist.

- If human remains are discovered, State Health and Safety Code Section 7050.5 states that further disturbances and activities shall stop in any area or nearby area suspected to overlie remains, and the County Coroner contacted. Pursuant to CA Public Resources Code (PRC) Section 5097.98, if the remains are thought to be Native American, the coroner will notify the Native American Heritage Commission (NAHC, which will the notify the Most Likely Descendent (MLD). At this time, the person who discovered the remains will contact Brett Rushing, District Office Chief, Caltrans District 4 Office of Cultural Resource Studies, at the same time as the coroner so that they may work with the MLD on the respectful treatment and disposition of the remains. Further provisions of PRC 5097.98 are to be followed as applicable.

No Impacts to sensitive paleontological resources is anticipated. The project site is within previously disturbed soil due to agricultural activities, and overlies land known to contain paleontologically sensitive material. Proposed excavations are shallow, less than five feet deep, and do not meet the criteria for monitoring. No further paleontological work is necessary.

### VI. GEOLOGY AND SOILS: Would the project:

<table>
<thead>
<tr>
<th>Potentially Significant Impact</th>
<th>Less Than Significant with Mitigation</th>
<th>Less Than Significant Impact</th>
<th>No Impact</th>
</tr>
</thead>
<tbody>
<tr>
<td>☐</td>
<td>☐</td>
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<td>☒</td>
</tr>
</tbody>
</table>

a) Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:

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

   ☐

   ☐

   ☐

   ☒

ii) Strong seismic ground shaking?

   ☐

   ☐

   ☐

   ☒

iii) Seismic-related ground failure, including liquefaction?

   ☐

   ☐

   ☐

   ☒
iv) Landslides? ☐ ☐ ☐ ✗

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

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

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

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

The preferred alternative for the project is the roundabout.

The project as proposed would not expose the public to surface fault rupture caused by shallow earthquakes, or hazards caused by strong ground shaking such as liquefaction or settlement. The proposed project would not expose the public to landslides, or erodible or unstable soils. Strong seismic ground shaking may exist, however, this is an existing hazard at the site and the project would not further expose the public to such hazards. No unique geologic features would be impacted by the proposed project.

VII. GREENHOUSE GAS EMISSIONS: Would the project:

a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment? While Caltrans has included this good faith effort in order to provide the public and decision-makers as much information as possible about the project, it is Caltrans’ determination that in the absence of further regulatory or scientific information related to GHG emissions and CEQA significance, it is too speculative to make a significance determination regarding the project’s direct and indirect impact with respect to climate change. Caltrans does remain firmly committed to implementing measures to help reduce the potential effects of the project. See http://www.dot.ca.gov/hq/tpp/offices/ogm/key_reports_files/State_Wide_Strategy/Caltrans_Climate_Action_Program.pdf

b) Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases? The preferred alternative for the project is the roundabout.

Climate change refers to long-term changes in temperature, precipitation, wind patterns, and other elements of the earth’s climate system. An ever-increasing body of scientific research attributes these climatological changes to greenhouse gas (GHG) emissions, particularly those generated from the production and use of fossil fuels.

While climate change has been a concern for several decades, the establishment of the Intergovernmental Panel on Climate Change (IPCC) by the United Nations and World
Meteorological Organization in 1988 has led to increased efforts devoted to GHG emissions reduction and climate change research and policy. These efforts are primarily concerned with the emissions of GHGs generated by human activity including carbon dioxide (CO₂), methane (CH₄), nitrous oxide (N₂O), tetrafluoromethane, hexafluoroethane, sulfur hexafluoride (SF₆), HFC-23 (fluoroform), HFC-134a (s, s, 2-tetrafluoroethane), and HFC-152a (difluoroethane).

In the U.S., the main source of GHG emissions is electricity generation, followed by transportation¹. In California, however, transportation sources (including passenger cars, light-duty trucks, other trucks, buses, and motorcycles make up the largest source of GHG-emitting sources². The dominant GHG emitted is CO₂, mostly from fossil fuel combustion.

There are typically two terms used when discussing the impacts of climate change: “Greenhouse Gas Mitigation” and “Adaptation.” "Greenhouse Gas Mitigation" is a term for reducing GHG emissions to reduce or "mitigate" the impacts of climate change. “Adaptation” refers to the effort of planning for and adapting to impacts resulting from climate change (such as adjusting transportation design standards to withstand more intense storms and higher sea levels)³.

There are four primary strategies for reducing GHG emissions from transportation sources: 1) improving the transportation system and operational efficiencies, 2) reducing travel activity), 3) transitioning to lower GHG-emitting fuels, and 4) improving vehicle technologies/efficiency. To be most effective all four strategies should be pursued cooperatively. ⁴

**Regulatory Setting**

This section outlines state and federal efforts to comprehensively reduce GHG emissions from transportation sources.

**State**

With the passage of several pieces of legislation including State Senate and Assembly bills and Executive Orders, California has been innovative and pro-active in addressing GHG emissions and climate change.

Assembly Bill 1493 (AB 1493), Pavley, Vehicular Emissions: Greenhouse Gases, 2002: This bill requires the California Air Resources Board (ARB) to develop and implement regulations to reduce automobile and light truck GHG emissions. These stricter emissions standards were designed to apply to automobiles and light trucks beginning with the 2009-model year.

Executive Order S-3-05 (EO) (June 1, 2005): The goal of this EO is to reduce California’s GHG emissions to: 1) year 2000 levels by 2010, 2) year 1990 levels by the 2020, and 3) 80 percent below the year 1990 levels by 2050. This goal was further reinforced with the passage of Assembly Bill 32 in 2006 and SB32 in 2016.

Assembly Bill 32 (AB 32), Chapter 488, 2006  Núñez and Pavley, The Global Warming Solutions Act of 2006: AB 32 codified the 2020 GHG emissions reduction goals as outlined in EO S-3-05, while

² https://www.arb.ca.gov/cc/inventory/data/data.htm
³ http://climatechange.transportation.org/ghg_mitigation/
⁴ http://www.fhwa.dot.gov/environment/climate_change/mitigation/
further mandating that ARB create a scoping plan and implement rules to achieve “real, quantifiable, cost-effective reductions of greenhouse gases.” The Legislature also intended that the statewide GHG emissions limit continue in existence and be used to maintain and continue reductions in emissions of greenhouse gases beyond 2020 (Health and Safety Code Section 38551(b)). The law requires ARB to adopt rules and regulations in an open public process to achieve the maximum technologically feasible and cost-effective GHG reductions.

Executive Order S-20-06 (October 18, 2006): This order establishes the responsibilities and roles of the Secretary of the California Environmental Protection Agency (Cal/EPA) and state agencies with regard to climate change.

Executive Order S-01-07 (January 18, 2007): This order set forth the low carbon fuel standard for California. Under this EO, the carbon intensity of California’s transportation fuels is to be reduced by at least ten percent by the year 2020. ARB re-adopted the LCFS regulation in September 2015, and the changes went into effect on January 1, 2016. The program establishes a strong framework to promote the low carbon fuel adoption necessary to achieve the Governor's 2030 and 2050 greenhouse gas reduction goals.


Senate Bill 375 (SB 375), Chapter 728, 2008, Sustainable Communities and Climate Protection: This bill requires the California Air Resources Board (CARB) to set regional emissions reduction targets from passenger vehicles. The Metropolitan Planning Organization (MPO) for each region must then develop a "Sustainable Communities Strategy" (SCS) that integrates transportation, land-use, and housing policies to plan for the achievement of the emissions target for their region.

Senate Bill 391 (SB 391) Chapter 585, 2009 California Transportation Plan: This bill requires the State’s long-range transportation plan to meet California’s climate change goals under AB 32.

Executive Order B-16-12 (March 2012) orders State entities under the direction of the Governor including ARB, the Energy Commission, and Public Utilities Commission to support the rapid commercialization of zero emission vehicles. It directs these entities to achieve various benchmarks related to zero emission vehicles,

Executive Order B-30-15 (April 2015), establishes an interim statewide greenhouse gas emission reduction target to reduce greenhouse gas emissions to 40 percent below 1990 levels by 2030 in order to ensure California meets its target of reducing greenhouse gas emissions to 80 percent below 1990 levels by 2050. It further orders that all state agencies with jurisdiction over sources of greenhouse gas emissions to implement measures, pursuant to statutory authority, to achieve reductions of greenhouse gas emissions to meet the 2030 and 2050 greenhouse gas emissions reductions targets. It also directs ARB to update the Climate Change Scoping Plan to express the 2030 target in terms of million metric tons of carbon dioxide equivalent (MMTCO2e). Finally, it requires the Natural Resources Agency to update the state’s climate adaptation strategy, Safeguarding California, every three years, and to ensure that its provisions are fully implemented.
Senate Bill 32 (SB32) Chapter 249, 2016, this legislation codifies the greenhouse gas reduction targets to achieve a mid-range goal of 40 percent below 1990 levels by 2030 established in EO B-30-15.

**Federal**

Although climate change and GHG reduction are a concern at the federal level; to date no national standards have been established for nationwide mobile source GHG reduction targets, nor have any regulations or legislation been enacted specifically to address climate change and GHG emissions reduction at the project level.

The National Environmental Policy Act (NEPA) (42 United States Code [USC] Part 4332) requires federal agencies to assess the environmental effects of their proposed actions prior to making a decision on the action or project.

The Council on Environmental Quality (CEQ) released final guidance (Aug1, 2016) for Federal agencies on how to consider the impacts of their actions on global climate change in their National Environmental Policy Act (NEPA) reviews. This final guidance provides a framework for agencies to consider both the effects of a proposed action on climate change, as indicated by its estimated greenhouse gas emissions, and the effects of climate change on a proposed action. The final guidance applies to all types of proposed Federal agency actions that are subject to NEPA analysis and guides agencies on how to address the greenhouse gas emissions from Federal actions and the effects of climate change on their proposed actions within the existing NEPA regulatory framework.

FHWA supports the approach that climate change considerations should be integrated throughout the transportation decision-making process, from planning through project development and delivery. Addressing climate change mitigation and adaptation up front in the planning process will assist in decision-making and improve efficiency at the program level, and will inform the analysis and stewardship needs of project-level decision-making. Climate change considerations can be integrated into many planning factors, such as supporting economic vitality and global efficiency, increasing safety and mobility, enhancing the environment, promoting energy conservation, and improving the quality of life. The four strategies outlined by FHWA to lessen climate change impacts correlate with efforts that the state is undertaking to deal with transportation and climate change; these strategies include improved transportation system efficiency, cleaner fuels, cleaner vehicles, and a reduction in travel activity.

Climate change and its associated effects are being addressed through various efforts at the federal level to improve fuel economy and energy efficiency.

The Energy Policy Act of 1992 (102nd Congress H.R.776.ENR, abbreviated as EPACT92) was passed by Congress and set goals, created mandates, and amended utility laws to increase clean energy use and improve overall energy efficiency in the United States. The Act consists of twenty-seven titles detailing various measures designed to lessen the nation's dependence on imported energy, provide incentives for clean and renewable energy, and promote energy conservation in buildings. Title III of EPACT92 addresses alternative fuels. It gave the U.S. Department of Energy administrative power to regulate the minimum number of light duty alternative fuel vehicles required in certain federal fleets beginning in fiscal year 1993. The primary goal of the Program is to cut petroleum use in the United States by 2.5 billion gallons per year by 2020.
Energy Policy Act of 2005 (109th Congress H.R. 6 (2005-2006)) Sets forth an energy research and development program covering: (1) energy efficiency; (2) renewable energy; (3) oil and gas; (4) coal; (5) Indian energy; (6) nuclear matters and security; (7) vehicles and motor fuels, including ethanol; (8) hydrogen; (9) electricity; (10) energy tax incentives; (11) hydropower and geothermal energy; and (12) climate change technology.

Energy Policy and Conservation Action of 1975 and Corporate Average Fuel Standards


Compliance with federal fuel economy standards is determined through the Corporate Average Fuel Economy (CAFE) program on the basis of each manufacturer’s average fuel economy for the portion of its vehicles produced for sale in the United States.

Executive Order 13514, Federal Leadership in Environmental, Energy, and Economic Performance (74 Federal Register 52117 (October 8, 2009)). The Executive Order set sustainability goals for federal agencies and focuses on making improvements in their environmental, energy, and economic performance. Instituted policy of the United States that Federal agencies measure, report, and reduce their GHG emissions from direct and indirect activities.

Executive Order 13653 Preparing the United States for the Impacts of Climate Change (78 Federal Register 66817, November 6, 2013) Builds on a previously released (and since revoked) EO 13514 Federal Leadership in Environmental Energy, and Economics Performance to establish direction for federal agencies on how to improve on climate preparedness and resilience strategies.

President Obama’s Climate Action Plan June 2013, President Obama announced a comprehensive plan for action to cut carbon pollution, prepare the Nation for the impacts of climate change, and lead international efforts to address climate change as a global challenge. The Plan builds on the work of the 13 USGCRP member agencies, the USGCRP National Climate Assessment program, and the Interagency Climate Change Adaptation Task Force.

Executive Order 13693 Planning for Federal Sustainability (80 Federal Register 15869, March 2015). Reaffirms the policy of the United States that Federal agencies measure, report, and reduce their GHG emissions from direct and indirect activities. Sets sustainability goals for all agencies to promote energy conservation, efficiency, and management while by reducing energy consumption and GHG emissions. Builds on the adaptation and resiliency goals in EO 13693 to ensure agency operations and facilities prepare for impacts of climate change. Revokes EO 13514.

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

U.S. EPA in conjunction with NHTSA issued the first of a series of GHG emission standards for new cars and light-duty vehicles in April 2010[1] and significantly increased the fuel economy of all new cars.

passenger cars and light trucks sold in the United States. The standards set a requirement to meet an average fuel economy of 34.1 miles per gallon by 2016. In August 2012, the federal government adopted the second rule that increases fuel economy for the fleet of passenger cars, light-duty trucks, and medium-duty passenger vehicles for model years 2017 and beyond to average fuel economy of 54.5 miles per gallon by 2025. Because NHTSA cannot set standards beyond model year 2021 due to statutory obligations and the rules’ long timeframe, a mid-term evaluation is included in the rule. The Mid-Term Evaluation is the overarching process by which NHTSA, EPA, and the California Air Resources Board (CARB) will decide on CAFE and GHG emissions standard stringency for model years 2022-2025. Standards for model years 2022 through 2025 have not been formally adopted by NHTSA.

NHTSA and EPA issued a Final Rule for “Phase 2” for medium and heavy duty vehicles to improve fuel efficiency and cut carbon pollution. The agencies estimate that the standards will save up to 2 billion barrels of oil and reduce CO2 emissions by up to 1.1 billion metric tons over the lifetimes of model years 2018-2029 vehicles.

**Environmental Setting**

In 2006, the Legislature passed the California Global Warming Solutions Act of 2006 [Assembly Bill 32 (AB 32)], which created a comprehensive, multi-year program to reduce greenhouse gas (GHG) emissions in California. AB 32 required the California Air Resources Board (ARB or Board) to develop a Scoping Plan that describes the approach California will take to reduce GHGs to achieve the goal of reducing emissions to 1990 levels by 2020. The Scoping Plan was first approved by the Board in 2008 and must be updated every five years. The First Update to the Climate Change Scoping Plan was approved by the Board on May 22, 2014. ARB is moving forward with a second update to the Scoping Plan to reflect the 2030 target established in Executive Order B-30-15 and Senate Bill 32 (SB32).

The AB 32 Scoping Plan and the subsequent update contains the main strategies California will use to reduce GHG emissions. As part of its supporting documentation for the Draft Scoping Plan, CARB released the GHG inventory for California (Forecast last updated: March 24, 2014). The forecast is an estimate of the emissions anticipated to occur in the year 2020 if none of the foreseeable measures included in the Scoping Plan were implemented.

An emission projection estimates future emissions based on current emissions, expected regulatory implementation, and other technological, social, economic, and behavioral patterns. The projected 2020 emissions provided below represents a Business-as-Usual (BAU) scenario assuming none of the Scoping Plan measures are implemented. The 2020 BAU emissions estimate assists the Air Resources Board (ARB) in demonstrating progress toward meeting the 2020 goal of 431 MMTCO₂e.

The 2020 BAU emissions projection was revisited in support of the First Update to the Scoping Plan (2014). This projection accounts for updates to the economic forecasts of fuel and energy demand as well as other factors. It also accounts for the effects of the recent economic recession and the projected recovery. The total emissions expected in the 2020 BAU scenario includes reductions anticipated from Pavley I and the Renewable Electricity Standard (30 MMTCO₂e total). With these reductions in the baseline, estimated 2020 statewide BAU emissions are 509 MMTCO₂e. 2020 Business as Usual (BAU) Emissions Projection 2014 Edition

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5 the revised target using Global Warming Potentials (GWP) from the IPCC Forth Assessment Report (AR4)
Project Analysis

The purpose of this project is to reduce the number and severity of collisions at the SR 12 and SR 113 intersection in Solano County, thereby improving safety at this location.

Construction Emissions

GHG emissions for transportation projects can be divided into those produced during construction and those produced during operations. Construction GHG emissions include emissions produced as a result of material processing, emissions produced by on-site construction equipment, and emissions arising from traffic delays due to construction. These emissions will be produced at different levels throughout the construction phase; their frequency and occurrence can be reduced through innovations in plans and specifications and by implementing better traffic management during construction phases.

In addition, with innovations such as longer pavement lives, improved traffic management plans, and changes in materials, the GHG emissions produced during construction can be mitigated to some degree by longer intervals between maintenance and rehabilitation events.

Greenhouse Gas Reduction Strategies

Caltrans continues to be involved on the Governor’s Climate Action Team as the ARB works to implement Executive Orders S-3-05 and S-01-07 and help achieve the targets set forth in AB 32.

Caltrans is supporting efforts to reduce vehicle miles traveled by planning and implementing smart land use strategies: job/housing proximity, developing transit-oriented communities, and
high-density housing along transit corridors. Caltrans works closely with local jurisdictions on planning activities, but does not have local land use planning authority. Caltrans assists efforts to improve the energy efficiency of the transportation sector by increasing vehicle fuel economy in new cars, light and heavy-duty trucks; Caltrans is doing this by supporting ongoing research efforts at universities, by supporting legislative efforts to increase fuel economy, and by participating on the Climate Action Team. It is important to note, however, that control of fuel economy standards if held by the U.S. EPA and ARB.

Caltrans is also working towards enhancing the State’s transportation planning process to respond to future challenges. Similar to requirements for regional transportation plans under Senate Bill (SB) 375, SB 391 require the State’s long-range transportation plan to meet California’s climate change goals under AB 32.

The California Transportation Plan (CTP) is a statewide, long-range transportation plan to meet our future mobility needs and reduce GHG emissions. The CTP defines performance-based goals, policies, and strategies to achieve our collective vision for California’s future, statewide, integrated, multimodal transportation system.

The purpose of the CTP is to provide a common policy framework that will guide transportation investments and decisions by all levels of government, the private sector, and other transportation stakeholders. Through this policy framework, the CTP 2040 will identify the statewide transportation system needed to achieve maximum feasible GHG emission reductions while meeting the State’s transportation needs.

Caltrans Director’s Policy 30 (DP-30) Climate Change (June 22, 2012): is intended to establish a Department policy that will ensure coordinated efforts to incorporate climate change into Departmental decisions and activities.

Caltrans Activities to Address Climate Change (April 2013) provides a comprehensive overview of activities undertaken by Caltrans statewide to reduce greenhouse gas emissions resulting from agency operations.

The following measures will also be included in the project to reduce the GHG emissions and potential climate change impacts from the project:

1. Caltrans Standard Specification 14-9.01, Standard Specification 10, and Standard Specification 18, which address the requirements of the local air pollution control district. In addition, the YSAQMD CEQA Guidelines provides the following feasible control measures for construction emissions (see Section III, Air Quality):

2. Idling times shall be minimized either by shutting equipment off when not in use or reducing the maximum idling time to 5 minutes (as required by the California airborne toxics control measure Title 13, Section 2485 of California Code of Regulations [CCR]). Clear signage shall be provided for construction workers at all access points.

3. Implementation of idling restrictions during construction will reduce temporary greenhouse gas emissions from this project.

4. All new lighting structures will utilize light-emitting diode (LED) light bulbs
Adaptation Strategies

“Adaptation strategies” refer to how Caltrans and others can plan for the effects of climate change on the state’s transportation infrastructure and strengthen or protect the facilities from damage. Climate change is expected to produce increased variability in precipitation, rising temperatures, rising sea levels, variability in storm surges and intensity, and the frequency and intensity of wildfires. These changes may affect the transportation infrastructure in various ways, such as damage to roadbeds from longer periods of intense heat; increasing storm damage from flooding and erosion; and inundation from rising sea levels. These effects will vary by location and may, in the most extreme cases, require that a facility be relocated or redesigned. There may also be economic and strategic ramifications as a result of these types of impacts to the transportation infrastructure.

At the federal level, the Climate Change Adaptation Task Force, co-chaired by the White House Council on Environmental Quality (CEQ), the Office of Science and Technology Policy (OSTP), and the National Oceanic and Atmospheric Administration (NOAA), released its interagency task force progress report on October 28, 2011, outlining the federal government's progress in expanding and strengthening the Nation's capacity to better understand, prepare for, and respond to extreme events and other climate change impacts. The report provides an update on actions in key areas of federal adaptation, including: building resilience in local communities, safeguarding critical natural resources such as freshwater, and providing accessible climate information and tools to help decision-makers manage climate risks.

Climate change adaptation must also involve the natural environment as well. Efforts are underway on a statewide-level to develop strategies to cope with impacts to habitat and biodiversity through planning and conservation. The results of these efforts will help California agencies plan and implement mitigation strategies for programs and projects.

On November 14, 2008, then-Governor Arnold Schwarzenegger signed EO S-13-08, which directed a number of state agencies to address California’s vulnerability to sea level rise caused by climate change. This EO set in motion several agencies and actions to address the concern of sea level rise.

All state agencies that are planning to construct projects in areas vulnerable to future sea level rise are directed to consider a range of sea level rise scenarios for the years 2050 and 2100 to assess project vulnerability and, to the extent feasible, reduce expected risks and increase resiliency to sea level rise. Sea level rise estimates should also be used in conjunction with information on local uplift and subsidence, coastal erosion rates, predicted higher high water levels, storm surge and storm wave data.

Although the proposed project is outside the coastal zone, the Cal Adapt website was reviewed for potential impacts to the surrounding Delta area for potential inundation potentially exacerbated by projected future sea level rise. Direct impacts to transportation facilities due to projected sea level rise are not expected.

6 http://www.whitehouse.gov/administration/eop/ceq/initiatives/adaptation
Currently, Caltrans is working to assess which transportation facilities are at greatest risk from climate change effects. However, without statewide planning scenarios for relative sea level rise and other climate change effects, Caltrans has not been able to determine what change, if any, may be made to its design standards for its transportation facilities. Once statewide planning scenarios become available, Caltrans will be able review its current design standards to determine what changes, if any, may be needed to protect the transportation system from sea level rise.

Climate change adaptation for transportation infrastructure involves long-term planning and risk management to address vulnerabilities in the transportation system from increased precipitation and flooding; the increased frequency and intensity of storms and wildfires; rising temperatures; and rising sea levels. Caltrans is an active participant in the efforts being conducted in response to EO S-13-08 and is mobilizing to be able to respond to the National Academy of Science Sea Level Rise Assessment Report.

VIII. HAZARDS AND HAZARDOUS MATERIALS: Would the project:

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

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

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

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

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

f) For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area?

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

h) Expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?
The preferred alternative for the project is the roundabout.

The project is within an area where soil likely contains detected levels of surface-deposited contaminants, such as aerially deposited lead (ADL) and petroleum hydrocarbons. Since this project involves roadway widening and therefore soil excavation activities, a soil investigation is necessary during the design phase of the project in order to define the concentrations of these contaminants in the soil and to evaluate feasible methods for soil handling and management.

An excavation and transportation plan would be submitted by the contractor to manage the disturbance of soil affected by aerially deposited lead (ADL), and jobsite management would be in the contractor’s water pollution control program (WPCP) to describe management of the project site during construction activities, including but not limited to: temporary soil stabilization, temporary sediment control, tracking control, wind erosion control, material pollution prevention and control, waste management, and non-storm water management.

The proposed project is located in an area where naturally occurring asbestos is not an issue.

The proposed project is located far from any industrial lead source. However, lead-contaminated waste might be generated by this project during excavation of ADL-impacted soil. A site investigation of the SR 12/SR 113 intersection was performed by the IT Corporation in December 1998 to assess the presence of ADL-impacted soil; it concluded that ADL-impacted soil is present, but low lead concentrations allow for reuse within the project site. Since the project would disturb lead-contaminated soil, Caltrans’ project specifications would require a lead compliance plan (LCP) to minimize worker exposure. Jobsite management of hazardous waste would be detailed in the project’s WPCP to minimize or prevent discharge of dust to air, receiving waters, and drainage systems.

### IX. HYDROLOGY AND WATER QUALITY

Would the project:

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<tr>
<th>Potentially Significant Impact</th>
<th>Less Than Significant with Mitigation</th>
<th>Less Than Significant Impact</th>
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<tbody>
<tr>
<td>a) Violate any water quality standards or waste discharge requirements?</td>
<td>☑</td>
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<tr>
<td>b) Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)?</td>
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<tr>
<td>c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on- or off-site?</td>
<td>☑</td>
<td>☐</td>
<td>☐</td>
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</tbody>
</table>
d) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site?  

☐ ☐ ☒ ☐

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

☐ ☐ ☒ ☐

f) Otherwise substantially degrade water quality?  

☐ ☐ ☒ ☐

g) Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?  

☐ ☐ ☐ ☒

h) Place within a 100-year flood hazard area structures which would impede or redirect flood flows?  

☐ ☐ ☐ ☒

i) Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam?  

☐ ☐ ☐ ☒

j) Inundation by seiche, tsunami, or mudflow  

☐ ☐ ☐ ☒

The preferred alternative for the project is the roundabout.

Caltrans does not currently anticipate the need for any water quality permits for the proposed project.

There is a floodplain within the project area, but the proposed project would have no effect to the floodplain. See Figure 14 on page 64 to view the Flood Insurance Rate Map (FIRM) with the proposed project location.

Section 404 of the Clean Water Act (CWA) regulates discharges to Waters of the US and is administered nationwide by the US Army Corps of Engineers (USACE). CWA Section 401 requires that states certify 404 permits, and such 401 certification is provided in California by the State Water Resources Control Board (SWRCB) or Regional Water Quality Control Boards (RWQCBs). This project is under the jurisdiction of the Central Valley Regional Water Quality Control Board. The project does not require Section 401 certification or Section 404 permit.

Section 402 of the CWA establishes the National Pollutant Discharge Elimination System (NPDES) permit system, which is a framework for regulating municipal and industrial storm water discharges. The current Caltrans statewide NPDES storm water permit (Order No. 2012-0011-DWQ, as amended 2014-0077-DWQ), applies to Caltrans projects which completed their Project Initiation Document (PID) design phase on July 1, 2013 or after. This project completed its PID phase before July 1, 2013 and is therefore subject to the previous Caltrans statewide NPDES storm water permit (Order No. 99-06-DWQ).

The Department’s (Caltrans’) MS4 Permit, Order No. 2012-0011-DWQ (adopted on September 19, 2012 and effective on July 1, 2013), as amended by Order No. 2014-0077-DWQ (effective July 1, 2014) and Order No. 2015-0036-EXEC (effective April 7, 2015) has three basic requirements:
1. The Department must comply with the requirements of the Construction General Permit (see below);

2. The Department must implement a year-round program in all parts of the State to effectively control storm water and non-storm water discharges; and

3. The Department storm water discharges must meet water quality standards through implementation of permanent and temporary (construction) Best Management Practices (BMPs), to the maximum extent practicable, and other measures as the SWRCB determines to be necessary to meet the water quality standards.

To comply with the permit, the Department is developing a Statewide Storm Water Management Plan (SWMP) to address storm water pollution controls related to highway planning, design, construction, and maintenance activities throughout California. The SWMP assigns responsibilities within the Department for implementing storm water management procedures and practices as well as training, public education and participation, monitoring and research, program evaluation, and reporting activities. The SWMP describes the minimum procedures and practices the Department uses to reduce pollutants in storm water and non-storm water discharges. It outlines procedures and responsibilities for protecting water quality, including the selection and implementation of BMPs. The proposed project will be programmed to follow the guidelines and procedures outlined in the latest SWMP to address storm water runoff.

Construction General Permit

Construction General Permit, Order No. 2009-0009-DWQ (adopted on September 2, 2009 and effective on July 1, 2010), as amended by Order No. 2010-0014-DWQ (effective February 14, 2011) and Order No. 2012-0006-DWQ (effective on July 17, 2012). The permit regulates storm water discharges from construction sites that result in a Disturbed Soil Area (DSA) of one acre or greater, and/or are smaller sites that are part of a larger common plan of development. By law, all storm water discharges associated with construction activity where clearing, grading, and excavation result in soil disturbance of at least one acre must comply with the provisions of the General Construction Permit. Construction activity that results in soil disturbances of less than one acre is subject to this Construction General Permit if there is potential for significant water quality impairment resulting from the activity as determined by the RWQCB. Operators of regulated construction sites are required to develop Storm Water Pollution Prevention Plans (SWPPPs); to implement sediment, erosion, and pollution prevention control measures; and to obtain coverage under the Construction General Permit.

The Construction General Permit separates projects into Risk Levels 1, 2, or 3. Risk levels are determined during the planning and design phases, and are based on potential erosion and transport to receiving waters. Requirements apply according to the Risk Level determined. For example, a Risk Level 3 (highest risk) project would require compulsory storm water runoff pH and turbidity monitoring, and before construction and after construction aquatic biological assessments during specified seasonal windows. For all projects subject to the permit, applicants are required to develop and implement an effective SWPPP. In accordance with the Department’s SWMP and Standard Specifications, a Water Pollution Control Program (WPCP) is necessary for projects with a DSA of less than one acre.
The proposed project currently involves less than one acre of DSA, and will likely require a WPCP. Further details will be developed in the Design phase of the project.

Impacts

Water Quality impacts that may result from this project would include increased sediment and pH impacts due to construction activities. An increase in impervious area may also increase sediment discharge to waters of the US.

Pollutants commonly found in runoff from Caltrans facilities include: Total Suspended Solids (TSS), nutrients, pesticides, metals (particulate and dissolved), pathogens, litter, Biochemical Oxygen Demand (BOD), Total Dissolved Solids (TDS), zinc (total or dissolved), phosphorous, copper (total or dissolved), sediments and general metals. These pollutants were identified by Caltrans studies throughout California.

Minimization and Restoration

- Treatment BMPs address post-construction water quality impacts and remove pollutants from storm water runoff before it is discharged to receiving waters.

- Construction site BMPs include sediment control, tracking control and concrete washouts. Perimeter control such as silt fencing or fiber rolls can prevent sediment from washing into waters of the US. Street sweeping or construction site entrances may prevent trucks from tracking sediment on the roads.

- The project will replace all existing treatment destroyed by the proposed project in order to comply with the Statewide NPDES Permit. Caltrans is required to maintain all BMPs currently installed.
Figure 14. Project Area Floodplain Map

Solano County Unincorporated Areas
060631

Project Location
X. LAND USE AND PLANNING: Would the project:

<table>
<thead>
<tr>
<th>Impact Level</th>
<th>a) Physically divide an established community?</th>
<th>b) Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?</th>
<th>c) Conflict with any applicable habitat conservation plan or natural community conservation plan?</th>
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<tbody>
<tr>
<td>No Impact</td>
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The preferred alternative for the project is the roundabout.

This project is consistent with state, regional, and local plans and programs.

State Planning

The 2012 State Route 113 Transportation Concept Report proposes a conceptual project to install a traffic signal at the SR 12/SR 113 intersection, the same location as the proposed project, to maintain efficient movement, including truck turning movements. Conceptual projects are not yet included in a planning or programming document, but are recommended to maintain mobility and access along the segment.

Regional Planning

The long-range regional transportation plan (RTP), called Plan Bay Area, was adopted by the Metropolitan Transportation Commission (MTC) in July 2013. Plan Bay Area does not identify any roadway improvement projects for this section of roadway. However, it identifies performance targets that align with the proposed project:

- Reduce per capita CO₂ emissions from cars and light-duty trucks by 15 percent (Statutory requirement is for year 2035, per SB 375).
- Reduce by 50 percent the number of injuries and fatalities from all collisions (including bike and pedestrian).

Local Planning

The proposed project would not change any existing land uses. The project is consistent with the 2008 Solano County General Plan.

Several policies discuss the design of roadway features in areas of Solano County:
Policy TC.P-1: Maintain and improve current transportation systems to remedy safety and congestion issues, and establish specific actions to address these issues when they occur.

Policy TC.P-6: Participate in transportation programs that promote technical solutions resulting in more efficient use of energy, reduced greenhouse gas emissions and noise levels, and improved air quality.

Policy TC.P-11: Maintain and improve the current roadways and highway system to meet recommended design standards set forth by the County, including streets that also carry transit and nonmotorized traffic.

Policy LU.P-35: Promote land use and design standards that create cleaner air and water and safer streets.

**XI. MINERAL RESOURCES:** Would the project:

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<tr>
<th>Impact Level</th>
<th>Potentially Significant Impact</th>
<th>Less Than Significant with Mitigation</th>
<th>Less Than Significant Impact</th>
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<tbody>
<tr>
<td>a) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?</td>
<td>☐</td>
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<tr>
<td>b) Result in the loss of availability of a locally-important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?</td>
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</table>

The preferred alternative for the project is the roundabout.

There are no documented mineral resources within the project area.

**XII. NOISE:** Would the project result in:

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<tr>
<th>Impact Level</th>
<th>Potentially Significant Impact</th>
<th>Less Than Significant with Mitigation</th>
<th>Less Than Significant Impact</th>
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<tr>
<td>a) Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?</td>
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<tr>
<td>b) Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?</td>
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<tr>
<td>c) A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?</td>
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<tr>
<td>d) A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?</td>
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</table>
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels? ☒

f) For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels? ☒

The preferred alternative for the project is the roundabout.

The project would not introduce new noise impacts or increase ambient noise levels. Construction noise will be temporary and would be within acceptable levels for construction activity. There are no sensitive receptors near the project site. The intersection is approximately 1 mile from the nearest residence. Sensitive receptors are those such as hospitals, schools, churches, libraries, auditoriums, public meeting rooms, motels, hotels, residences, recreational facilities and lands on which serenity and quiet are of extraordinary importance and which serve an important public need.

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<th>No Impact</th>
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</table>

XIII. POPULATION AND HOUSING: Would the project:

a) Induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)? ☒

b) Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere? ☒

c) Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere? ☒

The preferred alternative for the project is the roundabout.

The project would not displace any housing units or people. The project is not growth inducing.

XIV. PUBLIC SERVICES:

Potentially Significant Impact | Less Than Significant with Mitigation | Less Than Significant Impact | No Impact |

a) Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services: ☒
The preferred alternative for the project is the roundabout.

The proposed project would have no effect on the provision of, or the need for, public services. To maintain the flow of traffic during construction, Caltrans would prepare a Transportation Management Plan (TMP) that will ensure accessibility through the project area for vehicles associated with essential services.

XV. RECREATION:

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

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

The preferred alternative for the project is the roundabout.

The project does not include any recreational areas, nor would it limit access to recreational areas.

XVI. TRANSPORTATION/TRAFFIC:

Would the project:

a) Conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit?
b) Conflict with an applicable congestion management program, including, but not limited to level of service standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways?

☐ ☐ ☐ ☐ ☒

c) Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks?

☐ ☐ ☐ ☐ ☒

d) Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?

☐ ☐ ☐ ☐ ☒

e) Result in inadequate emergency access?

☐ ☐ ☐ ☐ ☒

f) Conflict with adopted policies, plans or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities?

☐ ☐ ☐ ☐ ☒

The preferred alternative for the project is the roundabout.

There are no existing dedicated pedestrian or non-motorized facilities within the project corridor. A two-day highway operations traffic study performed in October 2014 concluded in zero counts for pedestrian and bicycle traffic.

There would be an approximate 15 minute traffic delay during construction. Caltrans would maintain one-lane access along SR 12 and SR 113 throughout the duration of the construction period. Birds Landing Road would be closed for a period during construction and would be detoured through a local road. Caltrans is currently determining the details for the closure of Birds Landing Road, possible road detours, and accurate traffic delay times.

In the year 2040, it is projected that the Level of Service (LOS) at the project location would be F and would result in significant traffic delays due to population growth and an increase in traffic. The proposed project is a safety project, not an operational improvements project, and the purpose is to improve safety rather than accommodate future growing traffic conditions.

If the SR 12/SR 113 intersection is left in its current state with no modification, the LOS would still be F in the year 2040.
XVII. TRIBAL CULTURAL RESOURCES: Would the project cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is:

a) Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code section 5020.1(k), or ☐ ☐ ☒ ☐

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

The proposed project falls within the ancestral territory of the Yocha Dehe Wintun Nation. On February 26, 2016, the OCRS sent a letter describing the proposed project to the Tribal Historic Preservation Officer (THPO) for the Yocha Dehe Wintun Nation. The Yocha Dehe Wintun Nation Cultural Resources Department reviewed the project and on March 7, 2016, the THPO declined any further comment.

A letter was sent to Mr. James Kinter, Tribal Historic Preservation Office (THPO) on February 25, 2016 describing the project in detail and Caltrans efforts to identify cultural resources within the project area. Mr. James Kinter responded on March 7, 2106 declining comment on the project.

No additional consultation efforts were made.

XVIII. UTILITIES AND SERVICE SYSTEMS: Would the project:

a) Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?

☐ ☐ ☐ ☒

b) Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?

☐ ☐ ☐ ☒

c) Require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?

☐ ☐ ☒ ☐
d) Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed? [ ] [ ] [ ] [x]

e) Result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project’s projected demand in addition to the provider’s existing commitments? [ ] [ ] [ ] [x]

f) Be served by a landfill with sufficient permitted capacity to accommodate the project’s solid waste disposal needs? [ ] [ ] [ ] [x]

g) Comply with federal, state, and local statutes and regulations related to solid waste? [ ] [ ] [ ] [x]

The existing bioswales and drainage ditches on the southeast and northeast side of the intersection are expected to be reconstructed due to their deteriorated condition after construction. No other modifications to the drainage system are proposed.

Some of the existing electrical trenches would need to be rerouted to provide power to new light poles around the intersection. The trenching would have a maximum depth of approximately 48 inches and a maximum width of approximately 12 inches.

The existing street light pole located in the southwest quadrant of the intersection would be relocated to have enough distance from the edge of travel way. Replacing street lighting would require a 5-foot cast-in-drilled-hole (CIDH) foundation and trenching to the existing power source in the northwest quadrant.

An existing advance warning flashing beacon is located in the southwest quadrant of the intersection and would be removed. Three advance warning flashing beacons would be installed in both directions of SR 12 and SR 113 in the southbound direction. Two existing advance warning flashing beacons are located approximately 700 feet from the intersection along SR 12. Depending on further study, these flashing beacons may be relocated. Caltrans is working to determine whether this is necessary.

All existing electrical poles would remain unaffected. The call box in the southwest quadrant may need to be relocated outside of the new widened roadway due to the approach leg. Caltrans is working to determine whether this is necessary.

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<th>Less Than Significant Impact</th>
<th>No Impact</th>
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XIX. MANDATORY FINDINGS OF SIGNIFICANCE
a) Does the project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, substantially reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?

☐ ☒ ☐ ☐ ☐

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

☐ ☐ ☐ ☒

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

☐ ☐ ☐ ☒

The preferred alternative for the project is the roundabout.

If a project does not cause a direct or indirect impact on a resource, it would not contribute to a cumulative impact on that resource. A cumulative impact analysis focuses only on those resources that are significantly impacted by the project.

The only resources identified that the proposed project would have a significant effect on are biological resources, specifically CTS. With the mitigation measures outlined in the Biological Resources section in this Initial Study, the impacts to these resources would be reduced to a less than significant level.

A previous project within the biological resource study area, the Solano Highway 12 Roadway Rehabilitation and Safety Improvements Project (EA 2A620), was identified. This project underwent a separate environmental review to identify, account, and mitigate for potential significant impacts. All projects would incorporate avoidance, minimization and mitigation measures including standard Caltrans BMPs, which would protect surrounding habitat and water quality. Therefore, Caltrans does not anticipate any cumulative effects as a result of the proposed project.
Appendix A: References

Caltrans District 4 Office of Biological Studies and Permits. Natural Environment Study for the State Route 12/State Route 113 Intersection Improvement Project. Oakland, CA. May 2, 2016.

Caltrans District 4 Office of Cultural Resources. Memorandum, Section 106 Compliance for the 04-SOL-12 Intersection Improvement Project in Solano County, CA. Oakland, CA. May 4, 2016.


Appendix B: List of Preparers

Stefan Galvez-Abadia  Caltrans District 4 Office of Environmental Analysis
Wahida Rashid  Caltrans District 4 Office of Environmental Analysis
Karen Jang  Caltrans District 4 Office of Environmental Analysis
Noah Stewart  Caltrans District 4 Office of Cultural Resource Studies
Kathryn Rose  Caltrans District 4 Office of Cultural Resource Studies
Benjamin Harris  Caltrans District 4 Office of Cultural Resource Studies
Frances Schierenbeck  Caltrans District 4 Office of Cultural Resource Studies
Susan Lindsay  Caltrans District 4 Office of Landscape Architecture
Thomas Packard  Caltrans District 4 Office of Landscape Architecture
Martha McCardy  Caltrans District 4 Office of Landscape Architecture
John Yeakel  Caltrans District 4 Office of Biological Studies and Permits
Chris Pincetich  Caltrans District 4 Office of Biological Studies and Permits
Holly Barbare  CH2M Hill, Inc., Caltrans District 4 Office of Biological Studies and Permits
Kathleen Reilly  Caltrans District 4 Office of Hydraulic Engineering
Ray Boyer  Caltrans District 4 Office of Environmental Engineering (Air/Noise)
Shiang Yang  Caltrans District 4 Office of Environmental Engineering (Air/Noise)
Daisy Laurino  Caltrans District 4 Office of Environmental Engineering (Air/Noise)
Jon Wellen  Caltrans District 4 Office of Environmental Engineering (Water Quality)
Norman Gonsalves  Caltrans District 4 Office of Environmental Engineering (Water Quality)
Chris Wilson  Caltrans District 4 Office of Environmental Engineering (Hazardous Waste)
Chris Risden  Caltrans District 4 Office of Geotechnical Design – West
Ghulam Popal  Caltrans District 4 Office of Design – North Counties
Tomo Mori  Caltrans District 4 Office of Design – North Counties
Osama Elhamshary  Caltrans District 4 Office of Project Management
Appendix C: Avoidance, Minimization and Mitigation Measures

Caltrans has incorporated several avoidance, minimization and mitigation measures into the proposed project to avoid and minimize the impacts of this project on special-status species, migratory birds, and other resources that occur in the project area. Special-status species known to occur or with a potential to occur in the project area include the California Tiger Salamander (CTS). Measures taken to minimize the likelihood of take of a State and federally listed species (CTS) would be identified through consultation with the CDFW and USFWS pursuant to CESA and section 7 of the federal Endangered Species Act. The principal measures listed below are not all inclusive and not an iterative list. For example, the final biological opinion contains several, very specific measures that would ultimately be incorporated into the contractor’s bid package but are not listed here. The list below is a general overview of the most important and applicable measures. The proposed avoidance, minimization and mitigation measures are as follows:

<table>
<thead>
<tr>
<th>Protected or Regulated Resource</th>
<th>Proposed Avoidance, Minimization and Mitigation Measures</th>
</tr>
</thead>
</table>
| General Avoidance and Minimization Measures | 1. **Worker Environmental Awareness Training.** Before the onset of construction activities, a qualified biologist will conduct and education program for construction personnel. The training will include a description of all listed species with the potential to occur in the BSA as well as migratory birds and their habitats; the occurrence of these species within the project area; an explanation of the status of these species and protection under FESA and CESA; the measures to be implemented to conserve listed species and their habitats as they relate to the work site; and boundaries within which construction may occur. A fact sheet conveying this information will be prepared and distributed to project personnel entering the project area. Upon completion of the training program, personnel will sign a form stating that they attended the program and understand the A&M measures and implications of FESA and CESA.  
  
2. **Environmentally Sensitive Area (ESA) Fencing.** ESA fencing will be implemented by the contractor and inspected by a qualified biologist before construction and monitored regularly to ensure its integrity. The boundaries of the construction area will be fenced, and all construction activity will be confined within the area. ESA fencing will prevent the encroachment of construction equipment and personnel into adjacent habitat areas. The final project plans will depict all locations where ESA fencing will be installed and how it will be installed. The special provisions in the bid solicitation package will describe acceptable fencing material and prohibited construction activities, construction vehicle operation, project material and equipment storage, and other project surface-disturbing activities within the ESA fencing.  
  
3. **Water Quality/Erosion Control Best Management Practices (BMPs).** A Storm Water Pollution Prevention Plan and erosion control BMPs will be implemented to minimize wind- and water-related erosion. They will also comply with the requirements of the Regional Water Quality Control Board. Using Caltrans’ BMP Guidance Handbook, design staff will include measures in the construction contracts to protect sensitive areas and protect and minimize storm-water and non-storm-water discharges. Protective measures will include the following: |
### Protected or Regulated Resource

<table>
<thead>
<tr>
<th>Proposed Avoidance, Minimization and Mitigation Measures</th>
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<tbody>
<tr>
<td>a. Prohibit discharging of pollutants from vehicle and equipment cleaning into storm drains or watercourses.</td>
</tr>
<tr>
<td>b. Keep vehicle and equipment fueling and maintenance operations at least 50 feet from the ordinary high water mark or the edge of sensitive habitat (e.g., wetlands), except at established commercial gas stations or established vehicle maintenance facilities.</td>
</tr>
<tr>
<td>c. Collect and dispose of concrete wastes in washouts and water from curing operations; neither will be allowed into watercourses. Sediment and debris removed from the roadway will be disposed of offsite at an approved location where the sediment and debris cannot enter surface waters.</td>
</tr>
<tr>
<td>d. Maintain spill containment kits onsite at all times during construction operations and staging or fueling of equipment.</td>
</tr>
<tr>
<td>e. Use water trucks and dust palliatives to control dust in excavation-and-fill areas, and cover temporary stockpiles when weather conditions require.</td>
</tr>
<tr>
<td>f. Install coir rolls or straw wattles along or at the base of slopes during construction to capture sediment.</td>
</tr>
<tr>
<td>g. Protect graded areas from erosion using a combination of silt fences, fiber rolls along toes of slopes or along edges of designated staging areas, and erosion control netting (such as jute or coir) as appropriate on sloped areas.</td>
</tr>
<tr>
<td>h. Establish permanent erosion control measures to receive storm-water discharges from the highway or other impervious surfaces.</td>
</tr>
</tbody>
</table>

### 4. Construction Site Management Practices

The following site restrictions will be implemented to avoid or minimize impacts on listed species and their habitats:

<table>
<thead>
<tr>
<th>Proposed Avoidance, Minimization and Mitigation Measures</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. Enforce a speed limit of 20 mph within the project footprint in unpaved and paved areas to reduce dust and excessive soil disturbance.</td>
</tr>
<tr>
<td>b. Located construction access, staging, storage, and parking area outside of any designated ESA or outside of the right-of-way in areas environmentally cleared and permitted by Caltrans. The following areas will be limited to the minimum necessary to construct the proposed project: access routes, staging and storage areas, and contractor parking. Routes and boundaries of roadwork will be clearly marked before construction or grading begins.</td>
</tr>
<tr>
<td>c. Certify, to the maximum extent practicable, borrow material to be non-toxic and weed-free.</td>
</tr>
<tr>
<td>d. Enclose food and food-related trash items in sealed trash containers, and remove them from the site at the end of each day.</td>
</tr>
<tr>
<td>e. Prohibit pets within the project area during construction.</td>
</tr>
<tr>
<td>f. Prohibit firearms within the project site except for those carried by authorized security personnel or local, state, or federal law enforcement officials.</td>
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</tbody>
</table>
77

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<thead>
<tr>
<th>Protected or Regulated Resource</th>
<th>Proposed Avoidance, Minimization and Mitigation Measures</th>
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<tbody>
<tr>
<td>g.</td>
<td>Maintain equipment to prevent the leakage of vehicle</td>
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<td></td>
<td>fluids such as gasoline, oils, or solvents, and develop</td>
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<td></td>
<td>a Spill Response Plan. Hazardous materials such as</td>
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<td></td>
<td>fuels, oils, or solvents will be stored in sealable</td>
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<td>containers in a designated location that is at least 50</td>
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<td>feet from aquatic habitats.</td>
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<td>5.</td>
<td><strong>Avoidance of Entrapment.</strong> To prevent inadvertent</td>
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<tr>
<td></td>
<td>entrapment of animals during construction, excavated,</td>
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<tr>
<td></td>
<td>steep-walled holes or trenches more than one foot deep</td>
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<td></td>
<td>will be covered at the close of each working day by</td>
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<td>plywood or similar materials, or will be provided with</td>
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<td></td>
<td>one or more escape ramps constructed or earthfill or</td>
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<td></td>
<td>wooden planks. Before holes or trenches are filled, they</td>
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<td>must be inspected for trapped animals. Replacement pipes,</td>
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<td>culverts, or similar structures stored within the project</td>
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<td>area overnight will be inspected before they are moved,</td>
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<td></td>
<td>capped, or buried. Plastic mono-filament netting (erosion</td>
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<td>control matting) or similar material will not be used at</td>
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<td>the project site because CTS may become entangled or</td>
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<td>trapped in it. Acceptable substitutes include coconut</td>
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<td></td>
<td>coir matting or tackified hydroseeding compounds.</td>
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<td>6.</td>
<td><strong>Handling of Listed Species.</strong> If at any time a listed</td>
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<td>species is discovered, the Resident Engineer and the USFWS-</td>
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<td>approved biologist will be immediately informed. The</td>
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<td>biologist will determine whether relocating the species</td>
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<td>is necessary and will work the corresponding agency (USFWS</td>
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<td>or CDFW) before handling or relocating unless otherwise</td>
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<td>authorized.</td>
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<td>7.</td>
<td><strong>Vegetation Removal.</strong> Vegetation within the project</td>
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<td></td>
<td>limits will be affected by construction activities, and</td>
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<td>clearing will be required. Vegetation will be cleared</td>
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<td>only where necessary and will be cut above soil level</td>
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<td>except in areas that will be excavated for roadway</td>
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<tr>
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<td>construction. This will allow plants that reproduce</td>
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<td>vegetatively to resprout after construction. A qualified</td>
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<tr>
<td></td>
<td>biologist(s) will survey for nesting birds within the</td>
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<td>area(s) to be disturbed, including a perimeter buffer of</td>
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<td>50 feet for passerines, before clearing activities begin</td>
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<td>during the nesting season (February 16 through August 31).</td>
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<td>Nest avoidance requirements of the Migratory Bird Treaty</td>
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<td>Act (MBTA) and California Fish and Game Code will be</td>
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<td>observed. Cleared vegetation will be removed from the</td>
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<td>BSA to prevent attracting animals to the project site.</td>
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<td>The contractor will be responsible for obtaining permits,</td>
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<td>licenses, and environmental clearances for properly</td>
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<td>disposing of such materials.</td>
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<td>8.</td>
<td><strong>Site Cleanup and Restoration.</strong> Caltrans will restore</td>
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<td>temporarily disturbed areas to the preconstruction function</td>
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<td>and values to the maximum extent practicable. Construction</td>
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<td>materials, including ESA fencing, will be removed after</td>
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<td>construction activities are complete. The temporarily</td>
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<td>disturbed areas will be cleaned up, re-contoured to the</td>
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<td>original grade where feasible, and protected by</td>
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<td></td>
<td>implementation of erosion control measures.</td>
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<td>9.</td>
<td><strong>Control of Invasive Species.</strong> To reduce the spread of</td>
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<td>invasive nonnative plant species and minimize the potential</td>
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<td>decrease of palatable vegetation for wildlife species,</td>
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<td>Caltrans will comply with Executive Order 13112. This</td>
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<td>order is intended to prevent the introduction of invasive</td>
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<td>species and provide for their control to minimize the</td>
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<td>economic, ecological, and human health impacts. If noxious</td>
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<td></td>
<td>weeds are disturbed or removed during construction</td>
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<td></td>
<td>activities, the contractor will be required to contain</td>
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<td>the plant material associated with these noxious</td>
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<tr>
<td>Protected or Regulated Resource</td>
<td>Proposed Avoidance, Minimization and Mitigation Measures</td>
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<tr>
<td>weeds and dispose of it in a manner that will not promote the spread of the species. The contractor will be responsible for obtaining permits, licenses, and environmental clearances for properly disposing of materials. Areas subject to noxious weed removal or disturbance will be replanted with fast-growing native grasses or a native erosion control seed mixture. If seeding is not possible, the areas within the project area should be covered to the extent practicable with heavy black plastic solarization material until the project is complete.</td>
<td></td>
</tr>
<tr>
<td>1. <strong>USFWS-Approved Biologist(s).</strong> A USFWS-approved biologist(s) will be designated for the activities that will affect CTS upland dispersal habitat, which has been defined as the annual grassland within the northwest and southwest quadrants of the intersection within the project area. The USFWS-approved biologist(s) will be onsite during construction activities that may reasonably result in the take of CTS.</td>
<td></td>
</tr>
<tr>
<td>a. The names and qualifications of the biologist(s) will be submitted to USFWS for review and written approval at least 30 calendar days before groundbreaking at the project site. Prior to approval, the biologist(s) will submit a letter to USFWS verifying that he or she possesses a copy of the BO and understands its Terms and Conditions.</td>
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<tr>
<td>b. The biologist(s) will keep a copy of the BO in his or her possession when onsite.</td>
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<tr>
<td>c. The biologist(s) will be given the authority to communicate verbally or by telephone, email message, or hardcopy with Caltrans personnel, construction personnel, or other person(s) at the project site or otherwise associated with the project.</td>
<td></td>
</tr>
<tr>
<td>d. The biologist(s) will have oversight over implementation of the Terms and Conditions of the BO and will have the direct authority to stop project activities that may result in the take of listed species or if the requirements associated with the Terms and Conditions of the BO are not being fulfilled. The USFWS-approved biologist(s) will coordinate with the Resident Engineer to stop work if necessary.</td>
<td></td>
</tr>
<tr>
<td>e. If work is stopped, the biologist(s) will notify USFWS and CDFW by telephone or email within 24 hours.</td>
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</table>
# Protected or Regulated Resource

## Migratory birds

1. Preconstruction nest surveys will be conducted within the BSA for all bird species (if construction occurs during the bird breeding season from February 1 through August 31) no more than 72 hours prior to construction activities. If rare, threatened, or endangered species are detected, Caltrans will consult with the California Department of Fish and Wildlife (CDFW) or the U.S. Fish and Wildlife Service (USFWS) as appropriate.

2. With the exception of nests of listed bird species, unoccupied nests (nests without birds or eggs) will be removed to deter birds from re-establishing nests within the project area. If an active bird nest is found, it will be avoided/buffered to the extent determined by a qualified biologist to avoid take or abandonment of an active bird nest.

3. Qualified biologists will monitor for signs of bird stress and expand buffer areas as needed until the young have fledged. If establishment of the buffer is not feasible, CDFW and USFWS will be contacted for further A&M guidelines.

4. If occupied nests—nests with birds or eggs—are present within the project area, work within 300 feet of raptor species or 50 feet of all other species will be avoided.

## Aesthetics

1. Seed all disturbed areas with appropriate vegetation.

2. Include aesthetic elements or treatments inside the roundabout circle that ensure it would be visually appealing. These should be designed in consultation with the Office of Landscape Architecture and approved by the District Landscape Architect.

## Air Quality

   a. Section 14-9-02 specifically requires compliance by the contractor with all applicable laws and regulations related to air quality, including air pollution control district and air quality management district regulations and local ordinances.
   b. Section 10-5 is directed at controlling dust. If dust calming materials other than water are to be used, material specifications are described in Section 18.

2. Water or a dust calming material will be applied to the site and equipment as often as necessary to control airborne dust emissions.

3. Where dust is a problem during dry weather or mud tracking is a problem during wet weather, a stabilized access road will be designed to support the heaviest vehicles and equipment that will be used.

4. Construction equipment and vehicles will be properly tuned and maintained. All construction equipment will use low sulfur fuel as required by CA Code of Regulations Title 17, Section 93114.

5. Entrances and exits to and from unpaved staging areas will be stabilized and properly maintained.

6. Stockpiles will be covered and utilize berms to prevent discharge of dust.

7. All transported loads of soils and wet materials will be covered before transport, or adequate freeboard (space from the top of the material to the top of the truck) will be provided to minimize emission of dust during transportation.
### Protected or Regulated Resource

Proposed Avoidance, Minimization and Mitigation Measures

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<tbody>
<tr>
<td>8.</td>
<td>Dust and mud that are deposited on paved, public roads due to construction activity and traffic will be promptly and regularly removed to reduce PM emissions. Sweepers will be available onsite for housekeeping, as needed.</td>
</tr>
<tr>
<td>9.</td>
<td>To the extent feasible, construction traffic will be scheduled and routed to reduce congestion and related air quality impacts caused by idling vehicles along local roads during peak travel times.</td>
</tr>
<tr>
<td>10.</td>
<td>In an anticipated storm event, disturbed areas which require temporary protection will be applied with hydraulic mulch until permanent vegetation is established. As temporarily protected areas will be re-disturbed for further construction, this process is repeated prior to every storm event.</td>
</tr>
<tr>
<td>a.</td>
<td>Vegetation will be planted as soon as practical after grading to reduce windblown PM in...</td>
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</tbody>
</table>

### Cultural Resources

1. If cultural materials are discovered during construction, all work must stop within a 60 foot radius of the discovery area until a qualified archaeologist can assess the nature and significance of the find. Immediately protect the discovery area and notify the engineer and Department archaeologist. |
2. If human remains are discovered, State Health and Safety Code Section 7050.5 states that further disturbances and activities shall stop in any area or nearby area suspected to overlie remains, and the County Coroner contacted. Pursuant to CA Public Resources Code (PRC) Section 5097.98, if the remains are thought to be Native American, the coroner will notify the Native American Heritage Commission (NAHC), which will notify the Most Likely Descendent (MLD). At this time, the person who discovered the remains will contact Brett Rushing, District Office Chief, Caltrans District 4 Office of Cultural Resource Studies, at the same time as the coroner so that they may work with the MLD on the respectful treatment and disposition of the remains. Further provisions of PRC 5097.98 are to be followed as applicable. |

### Hydrology and Water Quality

1. Treatment BMPs address post-construction water quality impacts and remove pollutants from storm water runoff before it is discharged to receiving waters. |
2. Construction site BMPs include sediment control, tracking control, and concrete washouts. Perimeter control such as silt fencing or fiber rolls can prevent sediment from washing into waters of the US. Street sweeping or construction site entrances may prevent trucks from tracking sediment on the roads. |
3. The project will replace all existing treatment destroyed by the proposed project in order to comply with the Statewide NPDES Permit. Caltrans is required to maintain all BMPs currently installed. |

### Greenhouse Gas Emissions

1. Caltrans Standard Specification 14-9.01, Standard Specification 10, and Standard Specification 18, which address the requirements of the local air pollution control district. In addition, the YSAQMD CEQA Guidelines provides the following feasible control measures for construction emissions (see Section III, Air Quality): |
   a. Idling times shall be minimized either by shutting equipment off when not in use or reducing the maximum idling time to 5 minutes (as required by the... |
<table>
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<tr>
<th>Protected or Regulated Resource</th>
<th>Proposed Avoidance, Minimization and Mitigation Measures</th>
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<tbody>
<tr>
<td></td>
<td>California airborne toxics control measure Title 13,</td>
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<td></td>
<td>Section 2485 of California Code of Regulations (CCR).</td>
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<td></td>
<td>Clear signage shall be provided for construction</td>
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<td>workers at all access points.</td>
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<tr>
<td>b.</td>
<td>Implementation of idling restrictions during</td>
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<td>construction will reduce temporary greenhouse gas</td>
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<td></td>
<td>emissions from this project.</td>
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<td>c.</td>
<td>All new lighting structures will utilize light-emitting</td>
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<tr>
<td></td>
<td>diode (LED) light bulbs</td>
</tr>
</tbody>
</table>
Appendix D: Species Lists – National Marine Fisheries Service (NMFS), United States Fish and Wildlife Service (USFWS)

Pincetich, Christopher@DOT

From: Pincetich, Christopher@DOT
Sent: Thursday, November 10, 2016 11:31 AM
To: 'nmfswcrca.specieslists@noaa.gov'
Subject: Caltrans State Route 12/113 Intersection Improvement Project

Quad Name  Birds Landing
Quad Number  38121-B7

ESA Anadromous Fish

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

ESA Anadromous Fish Critical Habitat

SONCC Coho Critical Habitat -
CCC Coho Critical Habitat -
CC Chinook Salmon Critical Habitat -
CVSR Chinook Salmon Critical Habitat -

T = Threatened, E = Endangered

ESU = Evolutionarily Significant Unit, DPS = Distinct Population Segment
Consultation Code: 08ESMF00-2017-SLI-0267  
Event Code: 08ESMF00-2017-E-00480  
Project Name: Solano 12/113 Intersection Improvement Project  

Subject: List of threatened and endangered species that may occur in your proposed project location, and/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, under the jurisdiction of the U.S. Fish and Wildlife Service (Service) 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 Service under section 7(c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 et seq.).  

Please follow the link below to see if your proposed project has the potential to affect other species or their habitats under the jurisdiction of the National Marine Fisheries Service:  
http://www.nwr.noaa.gov/protected_species/species_list/species_lists.html  

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

Please be aware that bald and golden eagles are protected under the Bald and Golden Eagle Protection Act (16 U.S.C. 668 et seq.), and projects affecting these species may require development of an eagle conservation plan (http://www.fws.gov/windenergy/eagle_guidance.html). Additionally, wind energy projects should follow the wind energy guidelines (http://www.fws.gov/windenergy/) for minimizing impacts to migratory birds and bats.

Guidance for minimizing impacts to migratory birds for projects including communications towers (e.g., cellular, digital television, radio, and emergency broadcast) can be found at:
http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/towers.htm;
http://www.towerkill.com; and

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 Tracking Number in the header of this letter with any request for consultation or correspondence about your project that you submit to our office.

Attachment
Official Species List

Provided by:
Sacramento Fish and Wildlife Office
FEDERAL BUILDING
2800 COTTAGE WAY, ROOM W-2605
SACRAMENTO, CA 95825
(916) 414-6600

Consultation Code: 08ESMF00-2017-SLI-0267
Event Code: 08ESMF00-2017-E-00480

Project Type: TRANSPORTATION

Project Name: Solano 12/113 Intersection Improvement Project
Project Description: Construct intersection improvement.

Please Note: The FWS office may have modified the Project Name and/or Project Description, so it may be different from what was submitted in your previous request. If the Consultation Code matches, the FWS considers this to be the same project. Contact the office in the 'Provided by' section of your previous Official Species list if you have any questions or concerns.
Project Location Map:

Project Coordinates: The coordinates are too numerous to display here.

Project Counties: Solano, CA
Endangered Species Act Species List

There are a total of 15 threatened or endangered species on your 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. Critical habitats listed under the Has Critical Habitat column may or may not lie within your project area. See the Critical habitats within your project area section further below for critical habitat that lies within your project. Please contact the designated FWS office if you have questions.

<table>
<thead>
<tr>
<th>Amphibians</th>
<th>Status</th>
<th>Has Critical Habitat</th>
<th>Condition(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>California red-legged frog (<em>Rana draytonii</em>)</td>
<td>Threatened</td>
<td>Final designated</td>
<td></td>
</tr>
<tr>
<td>Population: Wherever found</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>California tiger Salamander (<em>Ambystoma californiense</em>)</td>
<td>Threatened</td>
<td>Final designated</td>
<td></td>
</tr>
<tr>
<td>Population: U.S.A. (Central CA DPS)</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Birds</th>
<th>Status</th>
<th>Has Critical Habitat</th>
<th>Condition(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>California Clapper rail (<em>Rallus longirostris obsOLETUS</em>)</td>
<td>Endangered</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Population: Wherever found</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>California Least tern (<em>Sterna antillarum browni</em>)</td>
<td>Endangered</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Population: Wherever found</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Crustaceans</th>
<th>Status</th>
<th>Has Critical Habitat</th>
<th>Condition(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Conservancy fairy shrimp (<em>Branchinecta conservatio</em>)</td>
<td>Endangered</td>
<td>Final designated</td>
<td></td>
</tr>
<tr>
<td>Population: Wherever found</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Vernal Pool fairy shrimp</td>
<td>Threatened</td>
<td>Final designated</td>
<td></td>
</tr>
</tbody>
</table>

http://ecos.fws.gov/ipac, 11/14/2016  12:38 PM
### (Branchinecta lynchi)
- Population: Wherever found

### Vernal Pool tadpole shrimp
- *Lepidurus packardi*
- Population: Wherever found
- Status: Endangered
- Designation: Final designated

### Fishes

#### Delta smelt
- *Hypomesus transpacificus*
- Population: Wherever found
- Status: Threatened
- Designation: Final designated

#### Steelhead
- *Oncorhynchus (=salmo) mykiss*
- Population: Northern California DPS
- Status: Threatened

### Flowering Plants

#### Keck's Checker-mallow
- *Silphium keckii*
- Population: Wherever found
- Status: Endangered
- Designation: Final designated

### Insects

#### Delta Green Ground beetle
- *Elaphrus viridis*
- Population: Wherever found
- Status: Threatened
- Designation: Final designated

#### San Bruno Elfin butterfly
- *Callophrys mohii bayensis*
- Population: Wherever found
- Status: Endangered

#### Valley Elderberry Longhorn beetle
- *Desmocerus californicus dimorphus*
- Population: Wherever found
- Status: Threatened
- Designation: Final designated

### Mammals

#### Salt Marsh Harvest mouse
- Status: Endangered
### (Reithrodontomys raviventris)
- Population: wherever found

### Reptiles

<table>
<thead>
<tr>
<th>Giant Garter snake (<em>Thamnophis gigas</em>)</th>
<th>Threatened</th>
</tr>
</thead>
</table>
- Population: Wherever found          |            |
Critical habitats that lie within your project area

There are no critical habitats within your project area.
Appendix E: MTC Project Assessment Determination

Jang, Karen@DOT

From: Fund Management System <fms@mtc.ca.gov>
Sent: Thursday, May 26, 2016 2:12 PM
To: Adam Crenshaw
Cc: Fund Management System; Harold Brazil
Subject: FMS POAQC Project TIP ID SOL110061 (SR12-SR113 Intersection Improvements)
update: Project is not a POAQC

Dear Project Sponsor

Based on the recent interagency consultation with the Air Quality Conformity Task force, Project TIP ID SOL110061 (FMS ID:6355.00) does not fit the definition of a project of air quality concern as defined by 40 CFR 93.123(b)(1) or 40 CFR 93.128 and therefore is not subject to PM2.5 project level conformity requirement. Please save this email as documentation confirming the project has undergone and completed the interagency consultation requirement for PM2.5 project level conformity. Note project sponsors are required to undergo a proactive public involvement process which provides opportunity for public review as outlined by 40 CFR 93.105(e). For projects that are not of air quality concern, a comment period is only required for project level conformity determinations if such a comment period would have been required under NEPA. For more information, please see FHWA PM2.5 Project Level Conformity Frequently Asked Questions (FAQ): http://www.fhwa.dot.gov/environment/air_quality/conformity/reference/faqs/pm25faqs.cfm

If you have any questions, please direct them to Harold Brazil at hbrazil@mtc.ca.gov or by phone at (510) 817-5747
Appendix F: Title VI Non-Discrimination Policy

March 2013

NON-DISCRIMINATION POLICY STATEMENT

The California Department of Transportation, under Title VI of the Civil Rights Act of 1964 and related statutes, ensures that no person in the State of California shall, on the grounds of race, color, national origin, sex, disability, religion, sexual orientation, or age, be excluded from participation in, be denied the benefits of, or be otherwise subjected to discrimination under any program or activity it administers.

For information or guidance on how to file a complaint based on the grounds of race, color, national origin, sex, disability, religion, sexual orientation, or age, please visit the following web page: http://www.dot.ca.gov/hq/bep/title_vi/t6_violated.htm.

Additionally, if you need this information in an alternate format, such as in Braille or in a language other than English, please contact the California Department of Transportation, Office of Business and Economic Opportunity, 1823 14th Street, MS-79, Sacramento, CA 95811. Telephone: (916) 324-0449, TTY: 711, or via Fax: (916) 324-1949.

MALCOLM DOUGHERTY
Director

“Caltrans improves mobility across California.”
Appendix G: Public Participation Summary

Early and continuing coordination with the general public and appropriate public agencies is an essential part of the environmental process. It helps planners determine the necessary scope of environmental documentation, the level of analysis required, and to identify potential impacts and mitigation measures and related environmental requirements.

The Initial Study with Proposed Mitigated Negative Declaration (IS/MND) for the State Route 12/113 Intersection Improvement Project in Solano County was circulated to the public with a 30-day comment period from November 18, 2016 to December 19, 2016.

A Notice of Availability (NOA) was circulated in the Fairfield Daily Republic on Friday, November 18, 2016, and in the Sacramento Bee on Wednesday, November 20, 2016. The notice provided information on the project, including the two Build Alternatives, where the environmental document can be reviewed, the address to where comments could be sent, the closing date of the comment period, and the date of the Open House/Public Meeting that would be held at Rio Vista City Hall on December 7, 2016 from 6:00 pm to 8:00 pm. Please see the attached NOA.

The Caltrans environmental documents website posted the IS/MND for the proposed project at http://www.dot.ca.gov/dist4/envdocs.htm. Additional copies of the document were also made available for review by the public at the Caltrans District 4 office, Rio Vista City Hall, and in public libraries at Rio Vista, Fairfield, and Suisun City.

An Open House/Public Meeting was held from 6:00 pm to 8:00 pm on December 7, 2016 during the 30-day review period of the proposed IS/MND document. The intent of the public forum was to solicit comments and receive input from the public and agencies on the environmental analyses and conclusions presented in the IS/MND. The public meeting was held at Rio Vista City Hall, 1 Main Street, Rio Vista, CA 94571.

During the public meeting, Caltrans presented a brief summary of the environmental process and introduced the Caltrans project development team (PDT) members. The public meeting was in an open house format, therefore no formal presentation was made on the project. Caltrans PDT spent the duration of the public meeting discussing the project scope, alternatives, and project schedule with the public, as well as addressing concerns and their alternative preferences. Seven display boards and five handouts were made available to provide information on the project alternatives and other project details. Please see the attached display boards on pages 98-106.

Also presented at the meeting were five short videos on roundabouts (provided by HQ Design) which illustrated highway roundabout geometry and function. Also presented were the two Build Alternatives and their benefits included in the environmental document. The two Build Alternatives were:

1) Roundabout, and
2) Signalized Intersection
Thirty one individuals attended the public meeting, including representatives from the Solano Transportation Agency (STA), Assembly Member Jim Frazier’s office, and Rio Vista City Council members. Also among the public were property owners from the project vicinity, representatives from a bicycle and pedestrian group as well as other local interest groups, and local residents.

Based on conversations the PDT had with members of the public during the public meeting and on the comments Caltrans received prior to and after the meeting, approximately half of the public were in favor of the roundabout. The remainder of the public were in favor of the signalized intersection or believed there was no perfect solution to improve safety at the existing intersection. In addition, the members of the public had a wide array of statements concerning the project, including:

- Focusing on other concerns on SR 113,
- Designing the intersection under collaboration between Caltrans, the local trucking community and other users of the facility
- Making SR 113 “bicycle friendly”
- Ensuring the proposed project complies with water quality standards and permitting requirements

Furthermore, some members of the public wanted a detailed and formal presentation on the alternatives, rather than the open house format. Comments were taken into consideration during preparation of this final IS/EA document.

A total of 9 comment cards from 8 members of the public were collected at the meeting. In addition, one letter dated November 16, 2016 from a local resident was received in the days prior to the public meeting. In the period following the public meeting, Caltrans received one letter each from the Solano Transportation Authority (STA), and the Central Valley Regional Water Quality Control Board. Please see the public comments on pages 108-123, and Caltrans’ response to comments on pages 124-128.

The 30-day comment period ended on December 19, 2016.
NOTICE OF AVAILABILITY OF DRAFT ENVIRONMENTAL DOCUMENT (INITIAL STUDY) AND INTENT TO ADOPT A MITIGATED NEGATIVE DECLARATION FOR THE STATE ROUTE (SR) 12/SR 113 INTERSECTION IMPROVEMENT PROJECT

WHAT'S BEING PLANNED?

The California Department of Transportation (Caltrans) proposes to improve safety at the intersection of State Route (SR) 12/SR 113, located at post mile (PM) 19.2 on SR 12 in unincorporated Solano County, approximately six miles west of the City of Rio Vista. Two Build Alternatives are being considered for this proposed project; 1) a roundabout and 2) a signalized intersection. This is a safety project and aims to reduce the number of collisions at the SR 12 and SR 113 intersection. The new roundabout structure and signalized intersection would be constructed at the same location as the existing un-signalized Four-Way Intersection.

WHY THIS AD?

CALTRANS has studied the effects this project may have on the environment. Our studies show it will not significantly affect the quality of the environment, under the California Environmental Quality Act (CEQA). The report that explains this is called an Initial Study with Proposed Mitigated Negative Declaration. This notice is to tell you of the preparation of the Initial Study with Proposed Mitigated Negative Declaration and of its availability. This is an opportunity for you to offer comments and to attend a public open house/map display.

The public open house/map display will be held on December 7, 2016 from 6:00 p.m. to 8:00 p.m. at Rio Vista City Hall, City Council Chambers, 1 Main Street, Rio Vista, CA 94571.

WHAT'S AVAILABLE?

The Initial Study with Proposed Mitigated Negative Declaration and other project information are available for review and copying at the CALTRANS District 4 Office, 111 Grand Avenue, Oakland, California, on weekdays from 8:00 AM to 3:00 PM. The Initial Study with Proposed Mitigated Negative Declaration is also available to download at http://www.dot.ca.gov/dist4/envdocs.htm. In addition, the document will be made available at the following locations in the project vicinity.

Rio Vista Library
44 South 2nd Street
Rio Vista, CA 94571

Rio Vista City Hall
1 Main Street
Rio Vista, CA 94571

Fairfield Civic Center Main Library
1150 Kentucky St.
Fairfield, CA 94533

Suisun City Library
601 Pettitl Drive
Suisun City, CA 94585

WHERE YOU COME IN

You are invited to review the Initial Study with Proposed Mitigated Negative Declaration for the SR 12/SR 113 Intersection Improvement Project and provide comments to us. Please send your written comments to Wahida Rashid, Senior Environmental Planner, at Wahida.Rashid@dot.ca.gov or send postal mail to the California Department of Transportation, District 4, Attn: Wahida Rashid, 111 Grand Avenue, Office of Environmental Analysis, MS-88, Oakland, CA 94612. Hard copies or compact discs of the document are available by writing to the above mailing address; electronic copies are online at http://www.dot.ca.gov/dist4/envdocs.htm. Comment period begins on November 18, 2016 and closes on December 10, 2016.

CONTACT

For more information about this study or any transportation matter, call CALTRANS at (510) 286-4444. Individuals who require documents in alternative formats are requested to contact the District 4 Public Affairs Office at (510) 286-6445. TDD users may contact the California Relay Service TDD line at 1-800-735-2929 or Voice Line at 1-800-735-2922.
The project proposes to enhance safety by either signalization or roundabout at the intersection of State Route (SR) 12 and SR 113.

A preferred alternative will be identified at the end of the public circulation and comment period.

**THE NEED**
Accident rate at the intersection warrants a study to provide intersection improvement. Traffic coming from SR 113 has to come to a complete stop at the limit line and then select a safe gap before entering SR 12. The project has identified alternatives that could potentially improve safety at this intersection.

**BENEFITS**
The project would reduce the number and severity of collisions to improve safety on SR 12 at the intersection of SR 12 and SR 113.

**PROJECT STATUS**
The project is currently in the Project Approval and Environmental Document (PAED) phase. The next phase of the project will be Plans, Specifications and Estimates (PS&E), which is the design phase.

**PROJECT SCHEDULE (TENTATIVE)**

<table>
<thead>
<tr>
<th>Stage</th>
<th>Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Project Initiation Document (PID) Approval</td>
<td>June 2013</td>
</tr>
<tr>
<td>Environmental Document (PAED)</td>
<td>Winter 2017</td>
</tr>
<tr>
<td>Ready to List (RTL) End of Design</td>
<td>Summer 2018</td>
</tr>
<tr>
<td>Begin Construction</td>
<td>Fall 2018</td>
</tr>
<tr>
<td>End Construction</td>
<td>Fall 2019</td>
</tr>
</tbody>
</table>
Level of Environmental Document
The level of environmental document for the proposed project is an Initial Study (IS)/Mitigated Negative Declaration (MND) for the California Environmental Quality Act (CEQA), and a categorical exclusion under the National Environmental Policy Act (NEPA).

Project Description
The California Department of Transportation (Caltrans) proposes to improve safety at the intersection of State Route (SR) 12 & SR 113, located at post mile 19.2 on SR 12 in unincorporated Solano County, approximately six miles west of the City of Rio Vista. Two Build Alternatives are being considered:

- Build Alternative 1: Roundabout
- Build Alternative 2: Signalized Intersection

Purpose and Need
- The proposed project is a safety project, and
- Aims to reduce the number and severity of collisions at the SR 12 & SR 113 intersection by constructing one of the two proposed Build Alternatives.

Environmental Impacts
California Tiger Salamander (CTS) is likely to be affected by the proposed project. With avoidance and minimization measures, impacts to CTS will be less than significant.

Right of Way
All work for the proposed project will remain within Caltrans right of way.

<table>
<thead>
<tr>
<th>PROJECT SCHEDULE</th>
<th>JUNE 2013</th>
<th>WINTER 2017</th>
<th>SUMMER 2018</th>
<th>FALL 2018</th>
<th>FALL 2019</th>
</tr>
</thead>
<tbody>
<tr>
<td>PROJECT INITIATION DOCUMENT (PID) APPROVAL</td>
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<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
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<tr>
<td>ENVIRONMENTAL DOCUMENT (PAGED)</td>
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<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
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</tr>
<tr>
<td>READY TO LIST (RTL) END OF DESIGN</td>
<td>✔️</td>
<td>✔️</td>
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<tr>
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<td>✔️</td>
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<td>END CONSTRUCTION</td>
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<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
</tr>
</tbody>
</table>
The 200 foot buffer zone surrounding the project footprint was used to study the potential effects of the proposed project on natural resources.
ALTERNATIVE 1: ROUNDABOUT

STATE ROUTE 12/STATE ROUTE 113 ROUNDABOUT

- Customized advance warning signs and striping
- Flashing beacon
- Visibility lighting on the splitter islands
STATE ROUTE 12/STATE ROUTE 113 SIGNALIZED INTERSECTION

LEGEND

SIGNAL POLES

FLASHING BEACON
ROUNDABOUT/SIGNALS

INCREASE SAFETY
- Traffic calming/reduce vehicles conflict points (from 32 to 8)
- Fewer crashes and less severe crashes
- Reduce speed differential among conflicting movement
- Reduce maintenance worker exposure

OPERATION PERFORMANCE
- Increase capacity (range from 1800 vph – 2400 vph)
- Reduce delay (average from 14 to 2 sec)

GREEN HOUSE GAS EMISSION (GHG)
- Reduce vehicle emissions and fuel consumption (average 30%)

MAINTENANCE AND OPERATIONS (M & O)
- Overall life cycle cost reduction
- Fewer electrical system components (hardware)
  - Detection devices, signal head, controller cabinet, etc.
- Less M & O cost where signal need continuous inspection

ACCOMMODATE LARGER VEHICLES
- The geometry includes truck apron that accommodates larger tracks (STAA and OSOW)
- Accommodate vehicles from the local community, farms, businesses and Airforce base

AESTHETICS
- Landscaping opportunities in the center island
- “Gateway” into communities
WHERE TO CONSIDER ROUNDBOUTS

- Intersections with high crash rates/high severity rates
- Intersections with complex geometry, skewed approaches, >4 approaches
- Rural intersections with high-speed approaches
- Freeway interchange ramp terminals
- Closely spaced intersections
- Replacement of all-way stops
- Replacement of signalized intersections
- At intersections with high left turn volumes
- Replacement of 2-way stops with high side-street delay
- Intersections with high U-turn movements
- Transitions from higher-speed to lower-speed areas
- Where aesthetics are important
- Where accommodating older drivers is an objective

SAFETY PERFORMANCE OF ROUNDBOUTS

<table>
<thead>
<tr>
<th>ACCIDENT DATA AT THE INTERSECTION (4/7/2010-3/31/2015)</th>
<th>TYPE OF COLLISION</th>
<th>NUMBER OF OCCURRENCE (Existing Two-Way Stop)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>BROADSIDE</td>
<td>8</td>
</tr>
<tr>
<td></td>
<td>SIDE SWIPE</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>REAR ENDED</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>HIT OBJECT</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>OVER TURN</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>OTHERS/NOT STATED</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>TOTAL</td>
<td>14 (5 Injury Accidents, 9 Property Damage Only Accidents)</td>
</tr>
</tbody>
</table>

National Studies show that the number of total crashes is reduced by 29% and the number of severe injuries is reduced by 81% when converting a two-way stop controlled intersection to a roundabout intersection in rural areas.

Signalized Intersection

Roundabout Intersection
Project Core Personnel

Osama Elhamshary  
Project Manager

Tomo Mori  
Design Project Engineer

Karen Jang  
Environmental Coordinator

Katie Yim  
Traffic Safety

Evelyn Gustavo  
Traffic Ops

Jerry Champa  
HQ Division of Traffic Operations
Appendix H: Public Comments and Caltrans' Response to Comments

PUBLIC COMMENTS

In this document, the public agencies or individuals who have submitted comments are categorized in ascending order with 1.0, 1.1, 1.2, etc. Comments by public agencies are categorized by using the acronym of the agency. Comments by individual members of the public are categorized using the first and last name initials of the individual submitting the comments. Each comment is assigned a numeric subscript.

For example, if John Doe submitted two comments, the first comment would be denoted as JD₁ and the second comment would be denoted as JD₂.
December 19, 2016

Wahida Rashid, Branch Chief
Caltrans District 4
Office of Environmental Analysis
111 Grand Avenue, MS 8-B
Oakland, CA 94612

RE: Letter of Support for the Initial Study with Proposed Mitigated Negative Declaration for SR 12/SR 113 Intersection Improvement Project

Dear Ms. Rashid:

This letter is written to convey the Solano Transportation Authority (STA)’s support for the State Route (SR) 12/SR 113 Intersection Improvement Project. The STA received a hard copy of the Initial Study with Proposed Mitigated Negative Declaration for the Project on November 18, 2016. Electronic copies were also made available to our agency for additional distribution to the STA’s member agencies (i.e., Solano County cities and unincorporated government agency).

As the Initial Study indicates, drivers entering SR 12 from SR 113 and Birds Landing Road must bring their vehicle to a complete stop and find a safe gap on SR 12 before entering the traffic stream. This condition is challenging for drivers, particularly having to judge gaps on SR 12 that might appear sufficient, but in fact, may be too small and thereby potentially creating unsafe conditions that may result in increased accident rates. The proposed project would improve intersection safety and reduce the number and/or severity of crashes at this location.

We understand two types of improvements are being considered by Caltrans at this time: 1) Modern Roundabout Alternative and 2) Traditional Signalized Intersection Alternative.

Either option will accomplish the goal of reducing accidents and/or the severity of the crashes. However, the STA supports Caltrans’ decision to consider a roundabout as an alternative. A roundabout is an innovative solution that can reduce accidents by as much as 44% and reduce severity of accidents by as much as 82%, according to the State’s Highway Safety Manual. In addition, Caltrans’ 2014 Roundabouts Report, “The California State Highway System Roundabouts Inventory”, documented that a roundabout increases operational performance by increasing efficiency and capacity, improving air quality and reducing environmental impacts when compared to signalized intersections.

STA would also like to thank Caltrans District 4 Project Management team for their effort in educating and obtaining comments at the STA’s Technical Advisory Committee held on November 30th and the STA’s SR 12/SR 113 Committee held on December 1st. Caltrans District 4 Project Management team also held a Public Open House on December 7th at Rio Vista City Hall. Caltrans staff provided project background information and a roundabout demonstration video at all three publicly noticed events.
Thank you for the opportunity to review the Initial Study with Proposed Mitigated Negative Declaration for SR 12/SR 113 Intersection Improvement Project. Please contact Robert Guerrero, STA Senior Project Manager, at (707) 399-3211 or rguerrero@sta.ca.gov if you have any questions regarding this letter of support.

Sincerely,

Daryl K. Halls
Executive Director

Cc: The Honorable Bill Dodd, Senate District 3
    The Honorable Jim Frazier, Assembly District 11
    STA Board Members
    Solano County Board of Supervisors
    Birgitta Corsello, CAO, County of Solano
    Bijan Sartipi, Caltrans District Caltrans 4
Central Valley Regional Water Quality Control Board

12 December 2016

Karen Jang
Department of Transportation
111 Grand Avenue
Oakland, CA 94612

CERTIFIED MAIL
91 7196 9991 7035 8417 5460

COMMENTS TO REQUEST FOR REVIEW FOR THE MITIGATED NEGATIVE DECLARATION, STATE ROUTE 12 / STATE ROUTE 113 INTERSECTION IMPROVEMENT PROJECT, SCH# 2018112050, SOLANO COUNTY

Pursuant to the State Clearinghouse's 18 November 2016 request, the Central Valley Regional Water Quality Control Board (Central Valley Water Board) has reviewed the Request for Review for the Mitigated Negative Declaration for the State Route 12/State Route 113 Intersection Improvement Project, located in Solano County.

Our agency is delegated with the responsibility of protecting the quality of surface and groundwaters of the state; therefore our comments will address concerns surrounding those issues.

I. Regulatory Setting

Basin Plan
The Central Valley Water Board is required to formulate and adopt Basin Plans for all areas within the Central Valley region under Section 13240 of the Porter-Cologne Water Quality Control Act. Each Basin Plan must contain water quality objectives to ensure the reasonable protection of beneficial uses, as well as a program of implementation for achieving water quality objectives with the Basin Plans. Federal regulations require each state to adopt water quality standards to protect the public health or welfare, enhance the quality of water and serve the purposes of the Clean Water Act. In California, the beneficial uses, water quality objectives, and the Antidegradation Policy are the State's water quality standards. Water quality standards are also contained in the National Toxics Rule, 40 CFR Section 131.36, and the California Toxics Rule, 40 CFR Section 131.38.

The Basin Plan is subject to modification as necessary, considering applicable laws, policies, technologies, water quality conditions and priorities. The original Basin Plans were adopted in 1975, and have been updated and revised periodically as required, using Basin Plan amendments. Once the Central Valley Water Board has adopted a Basin Plan amendment in noticed public hearings, it must be approved by the State Water Resources Control Board (State Water Board), Office of Administrative Law (OAL) and in some cases,
the United States Environmental Protection Agency (USEPA). Basin Plan amendments only become effective after they have been approved by the OAL and in some cases, the USEPA. Every three (3) years, a review of the Basin Plan is completed that assesses the appropriateness of existing standards and evaluates and prioritizes Basin Planning issues.

For more information on the Water Quality Control Plan for the Sacramento and San Joaquin River Basins, please visit our website:
http://www.waterboards.ca.gov/centralvalley/water_issues/basin_plans/.

**Antidegradation Considerations**

All wastewater discharges must comply with the Antidegradation Policy (State Water Board Resolution 68-16) and the Antidegradation Implementation Policy contained in the Basin Plan. The Antidegradation Policy is available on page IV-15.01 at:
http://www.waterboards.ca.gov/centralvalleywater_issues/basin_plans/sacsjr.pdf

In part it states:

*Any discharge of waste to high quality waters must apply best practicable treatment or control not only to prevent a condition of pollution or nuisance from occurring, but also to maintain the highest water quality possible consistent with the maximum benefit to the people of the State.*

*This information must be presented as an analysis of the impacts and potential impacts of the discharge on water quality, as measured by background concentrations and applicable water quality objectives.*

The antidegradation analysis is a mandatory element in the National Pollutant Discharge Elimination System and land discharge Waste Discharge Requirements (WDRs) permitting processes. The environmental review document should evaluate potential impacts to both surface and groundwater quality.

**II. Permitting Requirements**

**Construction Storm Water General Permit**

Dischargers whose project disturb one or more acres of soil or where projects disturb less than one acre but are part of a larger common plan of development that in total disturbs one or more acres, are required to obtain coverage under the General Permit for Storm Water Discharges Associated with Construction Activities (Construction General Permit), Construction General Permit Order No. 2009-009-DWQ. Construction activity subject to this permit includes clearing, grading, grubbing, disturbances to the ground, such as stockpiling, or excavation, but does not include regular maintenance activities performed to restore the original line, grade, or capacity of the facility. The Construction General Permit requires the development and implementation of a Storm Water Pollution Prevention Plan
(SWPPP).

For more information on the Construction General Permit, visit the State Water Resources Control Board website at:

**Phase I and II Municipal Separate Storm Sewer System (MS4) Permits**

The Phase I and II MS4 permits require the Permittees reduce pollutants and runoff flows from new development and redevelopment using Best Management Practices (BMPs) to the maximum extent practicable (MEP). MS4 Permittees have their own development standards, also known as Low Impact Development (LID)/post-construction standards that include a hydromodification component. The MS4 permits also require specific design concepts for LID/post-construction BMPs in the early stages of a project during the entitlement and CEQA process and the development plan review process.

For more information on which Phase I MS4 Permit this project applies to, visit the Central Valley Water Board website at:

For more information on the Phase II MS4 permit and who it applies to, visit the State Water Resources Control Board at:

**Industrial Storm Water General Permit**

Storm water discharges associated with industrial sites must comply with the regulations contained in the Industrial Storm Water General Permit Order No. 2014-0057-DWQ.

For more information on the Industrial Storm Water General Permit, visit the Central Valley Water Board website at:

**Clean Water Act Section 404 Permit**

If the project will involve the discharge of dredged or fill material in navigable waters or wetlands, a permit pursuant to Section 404 of the Clean Water Act may be needed from the United States Army Corps of Engineers (USACOE). If a Section 404 permit is required by the USACOE, the Central Valley Water Board will review the permit application to ensure that discharge will not violate water quality standards. If the project requires surface water

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1 Municipal Permits = The Phase I Municipal Separate Storm Water System (MS4) Permit covers medium sized Municipalities (serving between 100,000 and 250,000 people) and large sized municipalities (serving over 250,000 people). The Phase II MS4 provides coverage for small municipalities, including non-traditional Small MS4s, which include military bases, public campuses, prisons and hospitals.
drainage realignment, the applicant is advised to contact the Department of Fish and Game for information on Streambed Alteration Permit requirements.

If you have any questions regarding the Clean Water Act Section 404 permits, please contact the Regulatory Division of the Sacramento District of USACOE at (916) 557-5250.

**Clean Water Act Section 401 Permit – Water Quality Certification**

If an USACOE permit (e.g., Non-Reporting Nationwide Permit, Nationwide Permit, Letter of Permission, Individual Permit, Regional General Permit, Programmatic General Permit), or any other federal permit (e.g., Section 10 of the Rivers and Harbors Act or Section 9 from the United States Coast Guard), is required for this project due to the disturbance of waters of the United States (such as streams and wetlands), then a Water Quality Certification must be obtained from the Central Valley Water Board prior to initiation of project activities. There are no waivers for 401 Water Quality Certifications.

**Waste Discharge Requirements – Discharges to Waters of the State**

If USACOE determines that only non-jurisdictional waters of the State (i.e., “non-federal” waters of the State) are present in the proposed project area, the proposed project may require a Waste Discharge Requirement (WDR) permit to be issued by Central Valley Water Board. Under the California Porter-Cologne Water Quality Control Act, discharges to all waters of the State, including all wetlands and other waters of the State including, but not limited to, isolated wetlands, are subject to State regulation.

For more information on the Water Quality Certification and WDR processes, visit the Central Valley Water Board website at:

http://www.waterboards.ca.gov/centralvalley/help/business_help/permit2.shtml

**Dewatering Permit**

If the proposed project includes construction or groundwater dewatering to be discharged to land, the proponent may apply for coverage under State Water Board General Water Quality Order (Low Risk General Order) 2003-0003 or the Central Valley Water Board’s Waiver of Report of Waste Discharge and Waste Discharge Requirements (Low Risk Waiver) R5-2013-0145. Small temporary construction dewatering projects are projects that discharge groundwater to land from excavation activities or dewatering of underground utility vaults. Dischargers seeking coverage under the General Order or Waiver must file a Notice of Intent with the Central Valley Water Board prior to beginning discharge.

For more information regarding the Low Risk General Order and the application process, visit the Central Valley Water Board website at:


For more information regarding the Low Risk Waiver and the application process, visit the Central Valley Water Board website at:
Regulatory Compliance for Commercially Irrigated Agriculture

If the property will be used for commercial irrigated agricultural, the discharger will be required to obtain regulatory coverage under the Irrigated Lands Regulatory Program. There are two options to comply:

1. **Obtain Coverage Under a Coalition Group.** Join the local Coalition Group that supports land owners with the implementation of the Irrigated Lands Regulatory Program. The Coalition Group conducts water quality monitoring and reporting to the Central Valley Water Board on behalf of its growers. The Coalition Groups charge an annual membership fee, which varies by Coalition Group. To find the Coalition Group in your area, visit the Central Valley Water Board's website at: http://www.waterboards.ca.gov/centralvalley/water_issues/irrigated_lands/app_appr_oval/index.shtml; or contact water board staff at (916) 464-4611 or via email at IrrLands@waterboards.ca.gov.

2. **Obtain Coverage Under the General Waste Discharge Requirements for Individual Growers, General Order R5-2013-0100.** Dischargers not participating in a third-party group (Coalition) are regulated individually. Depending on the specific site conditions, growers may be required to monitor runoff from their property, install monitoring wells, and submit a notice of intent, farm plan, and other action plans regarding their actions to comply with their General Order. Yearly costs would include State administrative fees (for example, annual fees for farm sizes from 10-100 acres are currently $1,084 + $6.70/Acre); the cost to prepare annual monitoring reports; and water quality monitoring costs. To enroll as an Individual Discharger under the Irrigated Lands Regulatory Program, call the Central Valley Water Board phone line at (916) 464-4611 or e-mail board staff at IrrLands@waterboards.ca.gov.

**Low or Limited Threat General NPDES Permit**

If the proposed project includes construction dewatering and it is necessary to discharge the groundwater to waters of the United States, the proposed project will require coverage under a National Pollutant Discharge Elimination System (NPDES) permit. Dewatering discharges are typically considered a low or limited threat to water quality and may be covered under the General Order for **Dewatering and Other Low Threat Discharges to Surface Waters** (Low Threat General Order) or the General Order for **Limited Threat Discharges of Treated/Untreated Groundwater from Cleanup Sites, Wastewater from Superchlorination Projects, and Other Limited Threat Wastewaters to Surface Water** (Limited Threat General Order). A complete application must be submitted to the Central Valley Water Board to obtain coverage under these General NPDES permits.
For more information regarding the Low Threat General Order and the application process, visit the Central Valley Water Board website at:

For more information regarding the Limited Threat General Order and the application process, visit the Central Valley Water Board website at:

**NPDES Permit**

If the proposed project discharges waste that could affect the quality of the waters of the State, other than into a community sewer system, the proposed project will require coverage under a National Pollutant Discharge Elimination System (NPDES) permit. A complete Report of Waste Discharge must be submitted with the Central Valley Water Board to obtain a NPDES Permit.

For more information regarding the NPDES Permit and the application process, visit the Central Valley Water Board website at:

If you have questions regarding these comments, please contact me at (916) 464-4644 or Stephanie.Tadlock@waterboards.ca.gov.

Stephanie Tadlock  
Environmental Scientist

cc: State Clearinghouse unit, Governor's Office of Planning and Research, Sacramento
Mr Wahida Rashid  
California Department of Transportation  
District 4...Office of Environmental Analysis  
111 Grand Ave MS-8B  
Oakland, Ca. 94612

RE: State Route 4/113 Intersection Improvement Project

Dear Mr Rashid:

We are writing as concerned citizen’s, regarding Cal Trans deciding what to do at the above mentioned intersection.

We would strongly urge Cal Trans to place lighted traffic signals in this location. This area is used by many long haul trucks. In the evening hours, the trucks will not be slowing down as they should and I envision many toppling.

Warren & Cynthia Oglove  
400 Willow Brook Way  
Rio Vista, Ca. 94571
Comment Code: RH

**QUESTIONS / COMMENTS**

- **Project**: SR12/SR113 Intersection  
  **Date**: 12/19/16  
  **Location**: Rio Vista City Hall

- **Name (First/Last)**: Richard Hamilton  
  **Phone/Fax**: (209) 849-8650

- **Company**: Hamilton Bros / Hamilton Joint Venture  
  **Address**: 8327 Montezuma Hills Rd  
  **City**: Rio Vista  
  **State**: CA  
  **Zip Code**: 94571

- **Wish this meeting helpful to you?**: I wish there was a formal presentation to here the reasoning for the proposed roundabout. Plus, the meeting missed the major stakeholder who used the road daily then the intersections (ag. agricultural transportation).

- **How can this kind of meeting be improved?**

- **Other comments**: I believe the proposed roundabout doesn’t take into consideration the reality of the situation. Who uses the road from their trucks, make the turn with a heavy congestion of car traffic. There is not a perfect answer but adding stop lights to the current configuration might be the best answer.

Please contact these stakeholders:

- Adams Grain
- Riverside Grain
- Gallo Wine - who hauls the grapes from Napa Valley to Modesto and back
- Livestock haulers
  - Harris Ranch
  - contact Solano County Farm Bureau for names of other livestock haulers
  - Paul Graham drilling - gas industry driller in Solano County
- Montezuma Fire District - Fire department that responds to accidents at the intersection.
Comment Code: AD

Comment Code: LW
Comment Code: BP

**QUESTIONS / COMMENTS**

- **Project:** 13/12  
  **Date:** 12/07  
  **Location:** 113/12

- **Name (Please Print):** Bill Paato  
  **Phone/Fax:** 945-634-3000 (cell)

- **Company:** Web Top Realty

- **Address:** 369 Pebble Beach Dr.  
  **City:** Rio Vista  
  **State:** CA  
  **Zip Code:** 94571

- **Was this meeting helpful to you?** Yes

- **How can this kind of meeting be improved?** Just Fine

- **Other comments:** Why not overpass ??

Comment Code: BS

**QUESTIONS / COMMENTS**

- **Project:** 13/12  
  **Date:** 12/17/16  
  **Location:** Rio Vista

- **Name (Please Print):** Berno Von Soseni  
  **Phone/Fax:** 717-429-4077 (cell)

- **Company:**

- **Address:** 177 Valley Hill Dr.  
  **City:** Rio Vista  
  **State:** CA  
  **Zip Code:** 94571

- **Was this meeting helpful to you?** Roundabout is best for this intersection

- **How can this kind of meeting be improved?** Vote

- **Other comments:** (see other sheet)
Comment Code: DL

**Project:** 12-113
**Date:** 12-7-16
**Location:** Rio Vista CA

**Name (Please Print):** David Larsen
**Phone/Fax:** 707-374-2391

**Company:**

**Address:** 510 Silver Ridge Dr city Rio Vista state CA zip code 94971

- Was this meeting helpful to you? Yes

- How can this kind of meeting be improved?

- Other comments: Roundabout best.
**Comment Code: LH**

**QUESTIONS / COMMENTS**

- **Project**: Highway 12 Road about 1/3  
- **Date**: 12/11/16  
- **Location**: Rio Vista

<table>
<thead>
<tr>
<th>Name (Please Print)</th>
<th>Lynne Hansen</th>
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<tbody>
<tr>
<td>Phone/Fax</td>
<td>707-374-4160</td>
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</tr>
<tr>
<td>Address</td>
<td>385 Del Monte Dr, Rio Vista, CA, 94571</td>
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</tbody>
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- **Was this meeting helpful to you?** Yes

- **How can this kind of meeting be improved?** Have a little more information before looking at easels.

- **Other comments:** Do a cost analysis before deciding asphalt or concrete. It may be less costly and could be done in stages.

**Comment Code: DK**

**QUESTIONS / COMMENTS**

- **Project**: H12/113 Intersection  
- **Date**: 12/7/16  
- **Location**: Rio Vista

<table>
<thead>
<tr>
<th>Name (Please Print)</th>
<th>Debra J. King</th>
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<tr>
<td>Phone/Fax</td>
<td><a href="mailto:King.debra94@gmail.com">King.debra94@gmail.com</a></td>
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<tr>
<td>Company</td>
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</tr>
<tr>
<td>Address</td>
<td>825 Goose Pond Dr, Rio Vista, CA, 94087</td>
</tr>
</tbody>
</table>

- **Was this meeting helpful to you?** Somewhat. They did an individual informal discussion rather than Town Hall Q&A.

- **How can this kind of meeting be improved?** Not sure how this format was for most folks.

- **Other comments:** Intersection would be dangerous with traffic light there. People could try to beat
The red or just run it and trucks would not be able to stop. Trucks stopping and starting would slow traffic tremendously. With slow starting trucks not that many cars would get through and people would end up sitting through multiple red lights thereby increasing frustration.

A well designed roundabout would slow down all of the traffic but keep it moving. Both 12 and 113 would be on an equal playing field. If anyone does not navigate correctly, the speed would be slower to stop and therefore safer.

**Important**: Extra signage beyond standard would need to be added initially. A major communication instruction plan in local papers/social media is critical.
CALTRANS’ RESPONSE TO COMMENTS

1.0 Solano Transportation Authority (STA), Public Agency

STA: We understand two types of improvements are being considered by Caltrans at this time: 1) Modern Roundabout Alternative and 2) Traditional Signalized Intersection Alternative. Either option will accomplish the goal of reducing accidents and/or the severity of the crashes. However, the STA supports Caltrans’ decision to consider a roundabout as an alternative.

Response to STA: Thank you for your comment. The single lane roundabout has been selected as the Preferred Alternative.

1.1 Central Valley Water Board (CVWB), Public Agency

CVWB: Our agency is delegated with the responsibility of protecting the quality of surface and groundwaters of the state; therefore our comments will address concerns surrounding those issues.

Any discharge of waste to high quality waters must apply best practicable treatment of control not only to prevent a condition of pollution or nuisance from occurring, but also to maintain the highest water quality possible consistent with the maximum benefit to the people of the State.

Water Quality permitting requirements, when applicable, include the Construction Storm Water General Permit, Phase I and II Municipal Separate Storm Sewer System (MS4) Permits, Industrial Storm Water General Permit, Clean Water Act Section 404 Permit, Clean Water Act Section 401 Permit-Water Quality Certification, Waste Discharge Requirements-Discharges to Waters of the State, Dewatering Permit, Regulatory Compliance for Commercially Irrigated Agriculture, Low or Limited Threat General NPDES Permit, and the NPDES Permit.

Response to CVWB: Thank you for your comment. Caltrans will comply with all water quality standards, regulations, policies, and permitting requirements. Caltrans does not anticipate the need for any water quality permits with the current scope of the project.

1.2 Oglove, Warren and Cynthia (WO), Individual

WO: We would strongly urge Caltrans to place lighted traffic signals in this location. This area is used by many long haul trucks. In the evening hours, the trucks will not be slowing down as they should and I envision many toppling.

Response to WO: A signalized intersection at this location would cause additional congestion due to the fact that State Route (SR) 113 and Birds Landing Road have an offset of approximately 50 feet. This means that vehicles can not make simultaneous left turns onto SR 12 from SR 113 and Birds Landing Road, and would require vehicles on all legs of the intersection to wait through an additional signal light cycle. Signalized intersections may require additional space to accommodate turn lanes,
and can also have higher post-construction costs due to electric bills and scheduled and unscheduled maintenance needs.

Roundabouts provide numerous benefits including reduced congestion, pollution and fuel use, and substantial reductions in fatal and injury crashes. They are cheaper to operate and maintain over traditional signalized intersections, can serve as points of aesthetic interest, and the slower speeds of a roundabout and wide viewing radius allow for a longer reaction time for both pedestrians and vehicles. Compared to a signalized intersection, roundabouts cause a 70% reduction in collisions and an 89% decrease in fatal crashes.

Both alternatives, the roundabout and the signalized intersection, were presented in the environmental document. After the 30-day comment period, Caltrans considered the comments received from the public, local agencies, stakeholders, and local interest groups and selected the roundabout as the preferred alternative to improve safety at the intersection.

Thank you for your comment.

1.3 Hamilton, Richard (RH), Individual

RH1: I believe the proposed roundabout doesn’t take into consideration the reality of the situation, such as who uses the road and if trucks can make the turn with heavy congestion. There is not a perfect answer but adding stop lights to the current configuration might be the best answer.

Response to RH1: With input from the public and local agencies, Caltrans has selected the roundabout as the preferred alternative.

State routes are planned, designed, constructed and maintained for inter-regional travel of people and goods, and our design guidance reflects the users of these facilities. Trucks are an important consideration in the design and selection of alternatives. As with a signalized intersection, roundabouts can also be adjusted to heavier traffic volumes in the future, if traffic data and analysis shows more lanes are needed due to heavy congestion. According to current Caltrans traffic studies, the single lane roundabout will sufficiently accommodate current traffic volumes.

Preliminary design of the proposed roundabout is based on guidelines by the National Cooperative Highway Research Program (NCHRP 672) and the Surface Transportation Assistance Act of 1982 (STAA), which provides Caltrans with transportation safety guidance. Caltrans will design the proposed project per NCHRP and STAA’s guidelines for length and weight of commercial vehicles.

Thank you for your comment and participating in the Open House/Public Meeting.

RH2: Please contact these stakeholders:

- Adams Grain
- Riverside Grain
- Gallo Wine, who hauls the grapes from Napa Valley to Modesto and back
Livestock Haulers: Harris Ranch, and contact the Solano County Farm Bureau for names of other livestock haulers
- Paul Graham Drilling, a gas industry driller in Solano County
- Montezuma Fire District, the Fire Department that responds to accidents at the intersection

Response to RH₂: Caltrans undertook an extensive public outreach process to inform the public and users of this corridor about the project.

Caltrans' public outreach process for the proposed project involved posting a public notice (Notice of Availability) for the Open House/Public Meeting in the Fairfield Daily Republic and the Sacramento Bee. Additionally, the environmental document was made available to all members of the public, including stakeholders, online at http://www.dot.ca.gov/dist4/envdocs.htm. Physical copies of the document were also available for review at local libraries.

All users and stakeholders, including those you've listed, have access to the environmental document where both alternatives were presented.

Caltrans has responded to all public comments received during the public comment period (November 18, 2016 to December 19, 2016).

Thank you for your comment and participating in the Open House/Public Meeting.

1.4 Durham, Annette (AD), Individual

AD₁ A roundabout would not work with even slower speeds. It would be too hard for the big trucks. They do work in the towns, but not on a highway. Signals are the answer because the large trucks could adapt to the signal.

Response to AD₁: Large trucks can easily navigate a roundabout. For the proposed project, Caltrans will design the roundabout by using the Highway Design Manual (HDM), which designs roundabouts to accommodate commercial vehicles. California Legal trucks have a maximum overall length of 75 feet. However, Caltrans roundabouts are designed to accommodate expected oversize vehicles, which are larger and/or heavier than the dimensions of California Legal trucks.

The proposed roundabout would include a truck apron which gives trucks a wider turning radius, and the project would utilize customized advance warning signs and striping, flashing beacons, and light poles to slow down vehicle speeds and to make drivers aware of the approaching roundabout. The curved approach legs of the roundabout would also cause vehicles to slow down their speeds when approaching the roundabout.

A signalized intersection would require drivers to wait through an additional traffic signal cycle due to the approximate 50 feet offset between SR 113 and Birds Landing Road, whereas a roundabout would reduce congestion and create a safer environment for both pedestrians and vehicles.
After considering all comments received from the public, Caltrans has decided to construct a roundabout at this location in order to improve safety.

Thank you for your comment and participating in the Open House/Public Meeting.

1.5 Williams, LEE (LW), Individual

LW_1 Need to talk about speed and heavy traffic going into the passing lane.

Response to LW_1: Since two lanes (in addition to the acceleration lane) exist at the exit of the existing intersection, the second lane can be used shortly after exiting the circulatory roadway so trucks can get up to speed without slowing other traffic. In general, roundabouts can accommodate higher traffic volumes over signalized intersections because vehicles do not have to stop (but must yield) to enter the roundabout.

Thank you for your comment and participating in the Open House/Public Meeting.

LW_2 Need to talk about shoulders in case of vehicle breakdowns for traffic.

Response to LW_2: The absence of shoulders within the roundabout allow for a more consistent turning radius for vehicles, and minimizes weaving and acceleration due to the absence of the extra space that a shoulder would provide. This improves safety and leads to operational improvement. Shoulders will be available to vehicles prior to and after the roundabout.

Safety features will be considered and addressed during the design phase of the project per Caltrans design standards.

Thank you for your comment and participating in the Open House/Public Meeting.

1.6 Poate, Bill (BP), Individual

BP_1 Why not overpass?

Response to BP_1: SR 12 is a two lane conventional highway. Overpasses, most commonly called overcrossings by Caltrans, are not normally provided for either cars or pedestrians on conventional highways. However, an overcrossing may be considered in those cases where pedestrian use is extensive, where it has been determined that placement and configuration of the grade separation will result in the majority of pedestrians using it, and where the local agency has requested it in writing. There are currently no pedestrian facilities at the project location to warrant an overcrossing.

Thank you for your comment and participating in the Open House/Public Meeting.

1.7 von Sosen, Bill (BS), Individual

BS_1 Please consider shoulders for bicycles, and for all of SR 113. There is currently no way to ride safely between Rio Vista and Dixon.
Response to BS₁: The purpose and need of the project is to reduce collisions at the SR 12/SR 113 intersection. There are shoulders on both state routes within the project limits. Although shoulders along the remaining segments of State Route 113 are included in the Transportation Concept Report as part of the long term vision for the corridor, adding shoulders in other locations would not be within the scope of this project.

Thank you for your comment and participating in the Open House/Public Meeting.

1.8 Larsen, David (DL), Individual

DV₁: Roundabout best.

Response to DV₁: Your comment is noted. A roundabout will be constructed at this location to increase safety and reduce congestion. A signalized intersection would not have the safety benefits that a roundabout provides, and would result in increased congestion due to the additional left turn traffic light cycle that would be needed to accommodate the offset between SR 113 and Birds Landing Road.

Thank you for your comment and participating in the Open House/Public Meeting.

1.9 Hansen, Lynne (LH), Individual

LH₁: Do a cost analysis before deciding asphalt or concrete. The roundabout should be concrete.

Response to LH₁: A full-cycle cost benefit analysis will be performed during the design phase of the project to determine the best construction materials for the project.

Thank you for your comment and participating in the Open House/Public Meeting.

2.0 King, Debra J. (DK), Individual

DK₁: The intersection would be dangerous with traffic lights there. People would try to beat the red or just run the light, and trucks would not be able to stop. Trucks stopping and starting would slow traffic tremendously. With slow starting trucks not that many cars would get through and people would end up sitting through multiple red lights, thereby increasing frustration. A well designed roundabout would slow down all of the traffic but keep it moving. Both SR 12 and SR 113 would be on an equal playing field. If anyone does not navigate correctly, the speed would be slower to stop and therefore safer.

Response to DK₁: Your comment is noted. Caltrans will construct a roundabout, not a signalized intersection, at this location because of the benefits to both pedestrian and driver safety, and reductions in traffic congestion. Compared to a signalized intersection, a roundabout has the ability to accommodate higher traffic volumes, and therefore more vehicles overall are able to travel through the intersection. With a roundabout, trucks and other vehicles would be able to move through the intersection without having to come to a complete stop.

Thank you for your comment and participating in the Open House/Public Meeting.
**DK²** Extra signage beyond standard would need to be added initially. A major communication/instruction plan in local papers/social media is critical.

*Response to DK²: Thank you for your comment. Caltrans fully understands the importance of the additional effort needed to alert drivers of the approaching roundabout. Caltrans is currently considering the inclusion of conceptual warning features such as customized advanced warning signs and striping, flashing beacons, and light poles. However, these features will be designed and finalized during the design phase of the project.*

*Thank you for your comment and participating in the Open House/Public Meeting.*
Appendix I: Biological Opinion from USFWS

United States Department of the Interior
FISH AND WILDLIFE SERVICE
Sacramento Fish and Wildlife Office
2800 Cottage Way, Suite W-2605
Sacramento, California 95825-1846

DEC 22 2016

Ms. JoAnn Cullom
California Department of Transportation
Environmental Division, MS-8E
111 Grand Avenue
Oakland, California 94612

Subject: Formal Consultation on the State Route 12/State Route 113 Intersection Improvement Project, Solano County, California (Caltrans EA 4G560)

Dear Ms. Cullom:

This letter is in response to the California Department of Transportation's (Caltrans) July 18, 2016 request to initiate formal consultation with the U.S. Fish and Wildlife Service (Service) on the proposed State Route (SR) 12/SR 113 Intersection Improvement Project in Solano County, California. Your request was received by the Service on July 22, 2016. At issue are the proposed project's effects on the Federally threatened Central California Distinct Population Segment of the California tiger salamander (Central California tiger salamander) (Ambystoma californiense). This response is provided under the authority of the Endangered Species Act of 1973, as amended (16 U.S.C. § 1531 et seq.), (Act), and in accordance with the implementing regulations pertaining to interagency cooperation (50 CFR 402).

Moving Ahead for Progress in the 21st Century Act (MAP-21) was signed into law on July 6, 2012. Effective, October 1, 2012, MAP-21 includes provisions to promote streamlined and accelerated project delivery. Caltrans was approved to participate in the MAP-21 Surface Transportation Project Delivery Program through the National Environmental Policy Act (NEPA) Assignment Memorandum of Understanding (MOU). The MOU allows Caltrans to assume the Federal Highway Administration's (FHWA) responsibilities under NEPA as well as FHWA’s consultation and coordination responsibilities under Federal environmental laws for most highway projects in California. Caltrans is exercising this authority as the Federal nexus for section 7 consultation on this project.

The Federal action on which we are consulting on includes modification of the described intersection in a rural area of Solano County, approximately 6.5 miles northwest of the City of Rio Vista. Pursuant to 50 CFR 402.12(j), you submitted a Biological Assessment (BA) for our review and requested concurrence with the findings presented therein. These findings conclude that the proposed project may affect, and is likely to adversely affect the Central California tiger salamander. Critical habitat has been designated for the Central California tiger salamander but does not occur within the action area.
In considering your request, we based our evaluation on the following: (1) Caltrans’ July 18, 2016 request for consultation and the accompanying June 2016, BA; (2) Caltrans’ September 16, 2016, response to the Service’s August 22, 2016, electronic mail (e-mail) message; (3) revised project information received on November 3, 2016; (4) previous consultations completed in the vicinity; and (5) other information available to the Service.

The remainder of this document provides our biological opinion on the effects of the proposed project on the Central California tiger salamander.

Consultation History

July 22, 2016  The Service received Caltrans’ July 18, 2016 request for consultation along with a June 2016 BA.

August 22, 2016  The Service sent Caltrans an e-mail message requesting additional information needed to complete the requested consultation. The message was the functional equivalent of a 30-day letter.

September 16, 2016  The Service received Caltrans’ response to our August 22, 2016 request for additional information.

October 6, 2016  The Service provided Caltrans with a copy of the project description from the draft BO for review along with additional questions regarding the September 16, 2016 response.

November 3, 2016  The Service received Caltrans’ response to the Service’s October 6, 2016 request. The response included information regarding a revised project design and acreage values for the associated permanent and temporary habitat loss.

November 10, 2016  The Service received Caltrans’ request to modify one of the conservation measures from their project description.

BIOLOGICAL OPINION

Description of the Action

The purpose of the proposed project is to improve safety by replacing the standard intersection at the junction of SR 12, SR 113, and Birds Landing Road with a roundabout feature. The current intersection allows through travel on SR 12 with stop signs for SR 113 to the north and Birds Landing Road to the south of the intersection. Entry and exit to and from SR 113 and Birds Landing Road is a safety risk due to the speed of through traffic on SR 12. Constructing the roundabout will require a larger intersection footprint.

Construction will include the removal of the existing pavement and associated infrastructure within the intersection, such as stop signs and a flashing beacon signal. Construction of the roundabout will include 17-foot wide circular lane and modification of the four approaches. Two existing street lights will be relocated and two additional street lights will be added such that there will be one light in each quadrant of the new intersection. Trenching will be needed to install the associated electrical conduit. The existing bioswales and drainage ditches on the southeast and northeast sides of the
Ms. JoAnn Cullom

intersection will be reconstructed. Landscape adjacent to the road shoulder will be graded for
drainage and to correspond with the surrounding topography. Staging will take place in an
approximately 1.4 acre area in the northeast quadrant. The proposed footprint partially overlaps the
construction footprint previously disturbed by the Solano Highway 12 Roadway Rehabilitation and
Safety Improvements Project, for which construction was completed in 2007. Formal consultation
was completed with Caltrans for this former project (Service File 1-1-04-F-0122) for the Central
California tiger salamander. The footprint relationship between the two projects is described in the
following Table 1. Caltrans purchased Central California tiger salamander habitat credits at an
approved conservation bank as compensation for the permanent and temporary habitat loss
associated with the former project.

<table>
<thead>
<tr>
<th>Ground Disturbance</th>
<th>Contained within completed project (acres)</th>
<th>Outside completed project (acres)</th>
<th>Total (acre)</th>
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<td>To existing hardscape</td>
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<td>Permanent habitat loss</td>
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<td>Temporary habitat loss</td>
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<tr>
<td>TOTAL</td>
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</table>

Site Clean-Up and Restoration
All construction-related materials including fencing will be removed after construction has been
completed. Areas identified as temporary access and work areas will be restored to baseline
ecological values following their use. These areas will be recontoured if appropriate and replacement
native vegetation will be planted in areas where they would not affect roadway safety. Specifications
regarding vegetation replacement will be provided to the Service during the design phase of the
project. Permanent erosion control, including soil stabilization measures such as hydroseeding, coir
netting and non-filament mesh, will be applied to all areas of ground disturbance to minimize
erosion following each construction phase.

Schedule
Caltrans anticipates that construction will begin in 2019 and will take approximately 120 working
days to complete. All ground-disturbing activities will occur between April 15 and October 15. Work
beyond October 15th would be restricted to hardscape areas and maintenance of the landscape
revegetation effort. The majority of the construction will take place at night.

Conservation Measures
Caltrans proposes to reduce adverse effects to the Central California tiger salamander by
implementing the following measures:

1. At least 15 days prior to the onset of any construction-related activities covered in this
   consultation, Caltrans will submit to the Service, for approval, the name(s) and credentials of
   biologists it wishes to conduct activities specified for this project. Information included in a
   request for authorization should include, at a minimum: (1) relevant education; (2) relevant
   training concerning California tiger salamander identification, survey techniques, handling
   individuals of different age classes, and handling of different life stages by a permitted
   biologist or recognized species expert authorized for such activities by the Service; (3) a
   summary of field experience conducting requested activities (to include project/research
   information); (4) a summary of BOs under which they were authorized to work with the
   California tiger salamander and at what level (such as construction monitoring versus
   handling), this should also include the names and qualifications of persons under which the
   work was supervised as well as the amount of work experience on the actual project; (5) A
list of Federal Recovery Permits [10(a)1(A)] held or under which are authorized to work with the California tiger salamander (to include permit number, authorized activities, and name of permit holder); and (6) any relevant professional references with contact information. No project construction will begin until Caltrans has received written Service approval for biologists to conduct specified activities.

2. Worker Environmental Awareness Training. Before the onset of construction activities, a Service-approved biologist will conduct an environmental education program for construction personnel. The training will include a description of the Central California tiger salamander as well as migratory birds and their habitats within the project area; an explanation of their protection under the Act, the California Endangered Species Act (CESA), and Migratory Bird Treaty Act (MBTA); the measures to be implemented to protect the listed salamander and migratory birds; boundaries within which construction may occur; what they should do if they observe a salamander or bird nest; and the role and authority of the Service-approved monitor. A fact sheet conveying this information will be prepared and distributed to project personnel entering the project area. Upon completion of the training program, personnel will sign a form stating that they attended the program and understand the conservation measures and implications of the Act, CESA, and MBTA.

3. Environmentally Sensitive Area Fencing. Fencing, staking, or other obvious markers will be installed around project limits and inspected by a Service-approved biologist before construction and monitored regularly to ensure its integrity. The boundaries of the construction area will be fenced/identified, and all activity will be confined within the area. Access to and from the project area will be clearly marked with signs. Clearly identifying the work boundary will prevent the encroachment of construction equipment and personnel into adjacent habitat not identified for ground disturbance. The final project plans will depict all locations where boundary fencing/or other identifiers will be installed and how they will be installed. The special provisions in the bid solicitation package will describe acceptable material and prohibited construction activities, vehicle operation, material and equipment storage, and other surface-disturbing activities within salamander habitat.

4. The Service-approved biologist(s) will perform pre-construction surveys for the Central California tiger salamander no more than 14 calendar days prior to any ground disturbance in a given location identified as habitat for the species in Caltrans’ November 3, 2016 response.

5. The Service-approved biologist(s) will perform a Central California tiger salamander clearance survey immediately prior to the initial ground disturbance within areas identified as habitat for the species in Caltrans’ November 3, 2016 response. Safety permitting, the Service-approved biologist(s) will investigate areas of disturbed soil for signs of the listed species within 30 minutes following the initial disturbance of that given area.

6. The Service-approved biologist(s) will keep a copy of the BO in their possession when onsite.

7. The Service-approved biologist(s) will be given the authority to communicate verbally or by telephone, e-mail message, or hardcopy with Caltrans personnel, construction personnel, or other person(s) at the project site or otherwise associated with the project.
8. The Service-approved biologist(s) will have oversight over implementation of the Terms and Conditions of the BO and will have the direct authority to stop project activities that may result in the take of a listed species or if the requirements associated with the Terms and Conditions of the BO are not being fulfilled. The Service-approved biologist(s) will coordinate with the Resident Engineer to stop work if necessary.

9. If work is stopped, the biologist(s) will notify the Service and the California Department of Fish and Wildlife (CDFW) by telephone and e-mail within 24 hours.

10. The Service-approved biological monitor will halt work immediately and contact the Service and CDFW in the event that a listed species is found within the construction zone. The biological monitor will suspend all construction activities within 50 feet of active construction until the animal leaves the site voluntarily or is removed by the biologist to a release site using Service-approved translocation/relocation techniques.

11. Vegetation will be cleared only where necessary and will be cut above soil level in areas of temporary disturbance that will be subject to post-construction revegetation. This will promote the ability of plants that reproduce vegetatively to re-sprout after construction. A Service-approved biologist(s) will survey for nesting birds within the area(s) to be disturbed, including a perimeter buffer of 50 feet for passerines, before allowing clearing activities during the nesting season (February 16 through August 31). Nest avoidance requirements of the MBTA and California Fish and Game Code will be observed. Cleared vegetation will be removed from the project area to prevent attracting animals to the project site. The contractor will be responsible for obtaining permits, licenses, and environmental clearances for properly disposing of such materials.

12. Avoidance of Entrapment. To prevent inadvertent entrapment of animals during construction, excavated, steep-walled holes or trenches 6 inches or more deep will be covered at the close of each working day by plywood or similar materials, or will be provided with one or more escape ramps constructed of earthfill or wooden planks. Before holes or trenches are filled, they will be inspected for trapped animals. Replacement pipes, culverts, or similar structures stored within the project area overnight will be inspected before they are moved, capped, or buried. Plastic mono-filament netting (erosion control matting) or similar material will not be used at the project site because salamanders may become entangled or trapped in it. Acceptable substitutes include coconut coir matting or tackified hydrosedding compounds.

13. Water Quality/Erosion Control Best Management Practices (BMPs). A Storm Water Pollution Prevention Plan and erosion control BMPs will be implemented to minimize wind- and water-related erosion. They will also comply with the requirements of the Regional Water Quality Control Board. Using Caltrans' BMP Guidance Handbook, design staff will include measures in the construction contracts to protect sensitive areas and prevent and minimize storm-water and non-storm-water discharges. Protective measures will include the following:

a. Prohibit discharging of pollutants from vehicle and equipment cleaning into storm drains or watercourses.
b. Keep vehicle and equipment fueling and maintenance operations at least 50 feet from the ordinary high water mark or the edge of sensitive habitat (e.g., wetlands), except at established commercial gas stations or established vehicle maintenance facilities.

c. Collect and dispose of concrete wastes in washouts and water from curing operations; neither will be allowed into watercourses. Sediment and debris removed from the roadway will be disposed of offsite at an approved location where the sediment and debris cannot enter surface waters.

d. Maintain spill containment kits onsite at all times during construction operations and staging or fueling of equipment.

e. Use water trucks and dust palliatives to control dust in excavation and-fill areas, and cover temporary stockpiles when weather conditions require.

f. Install coir rolls or straw wattles along or at the base of slopes during construction to capture sediment.

g. Protect graded areas from erosion using a combination of silt fences, fiber rolls along toes of slopes or along edges of designated staging areas, and erosion control netting (such as jute or coir) as appropriate on sloped areas.

h. Establish permanent erosion control measures to receive storm-water discharges from the highway or other impervious surfaces.

14. Construction Site Management Practices. The following site restrictions will be implemented:

a. Enforce a speed limit of 20 mph within the project footprint in unpaved areas to reduce dust and excessive soil disturbance.

b. Locate construction access, staging, storage, and parking areas outside of the project footprint described in Caltrans’ November 3, 2016 response. Access routes, staging and storage areas, and contractor parking will be limited to the minimum necessary to construct the proposed project. Routes and boundaries of roadwork will be clearly marked before construction or grading begins.

c. Certify, to the maximum extent practicable, borrow material to be non-toxic and weed-free.

d. Enclose food and food-related trash items in sealed trash containers, and remove them from the site at the end of each day.

e. Prohibit pets within the project area during construction.

f. Prohibit firearms within the project site except for those carried by authorized security personnel or local, state, or Federal law enforcement officers.

g. Maintain equipment to prevent the leakage of vehicle fluids such as gasoline, oils, or solvents, and develop a Spill Response Plan. Hazardous materials such as fuels, oils, and
solvents will be stored in sealable containers in a designated location that is at least 50 feet from aquatic habitats.

15. Site Cleanup and Restoration. Caltrans will restore temporarily disturbed areas to baseline ecological function and values to the maximum extent practicable. Construction materials, including the fencing, will be removed after construction activities are complete. Temporarily disturbed areas will be cleaned up, re-contoured to the original grade where feasible, and protected by implementation of erosion control measures.

16. Caltrans will provide a restoration and revegetation plan for the project to be reviewed and approved by the Service no later than sixty (60) calendar days prior to the initial groundbreaking at the project site. The plan will include, but will not be limited to: schedule, methodology, a list of the seed mixes and container plants, plant material source, irrigation, maintenance schedule, monitoring program, success criteria, control of invasive, noxious weeds, and remediation and adaptive management. A revegetation status and success report will be submitted on or before December 31 of each year monitoring is conducted.

17. Control of Invasive Species. To reduce the spread of invasive non-native plant species and minimize the potential decrease of palatable vegetation for wildlife species, Caltrans will comply with Executive Order 13112. This order is intended to prevent the introduction of invasive species and provide for their control to minimize the economic, ecological, and human health impacts. If noxious weeds are disturbed or removed during construction activities, the contractor will be required to contain the plant material associated with these noxious weeds and dispose of it in a manner that will not promote the spread of the species. The contractor will be responsible for obtaining permits, licenses, and environmental clearances for properly disposing of materials. Areas subject to noxious weed removal or disturbance will be replanted with fast-growing native grasses or native erosion control seed mixture. If seeding is not possible, the area within the project area should be covered to the extent practicable with heavy black plastic solarization material until the project is complete.

18. If requested, before, during, or upon completion of groundbreaking and construction activities, Caltrans will allow access by Service personnel into the project footprint to inspect the project and its activities.

Action Area

The action area is defined in 50 CFR § 402.02, as “all areas to be affected directly or indirectly by the Federal action and not merely the immediate area involved in the action.” For the proposed project, the action area encompasses a 5.64-acre construction footprint plus a 300 foot habitat buffer zone. The action area beyond the construction footprint has the potential to be affected by noise, visual disturbance, and barrier effects.

Analytical Framework for the Jeopardy Determination

Section 7(a)(2) of the Act requires that Federal agencies ensure that any action they authorize, fund, or carry out is not likely to jeopardize the continued existence of listed species. “Jeopardize the continued existence of” means to engage in an action that reasonably would be expected, directly or indirectly, to reduce appreciably the likelihood of both the survival and recovery of a listed species in the wild by reducing the reproduction, numbers, or distribution of that species (50 CFR § 402.02).
The jeopardy analysis in this BO considers the effects of the proposed Federal action, and any cumulative effects, on the range wide survival and recovery of the listed species. It relies on four components: (1) the Status of the Species, which describes the range wide condition of the species, the factors responsible for that condition, and its survival and recovery needs; (2) the Environmental Baseline, which analyzes the condition of the species in the action area, the factors responsible for that condition, and the relationship of the action area to the survival and recovery of the species; (3) the Effects of the Action, which determines the direct and indirect impacts of the proposed Federal action and the effects of any interrelated or interdependent activities on the species; and (4) the Cumulative Effects, which evaluates the effects of future, non-Federal activities in the action area on the species.

**Status of the Species**

Please refer to the 2015 Draft Recovery Plan for the Central California Distinct Population Segment of the California Tiger Salamander (Service 2015) (available at http://ecos.fws.gov/docs/recovery_plan/DRAFT_RP_CTS-201_60113.pdf) and the 2014 5-Year Review (Service 2014) (available at http://ecos.fws.gov/docs/five_year_review/doc4466.pdf) for the latest published status of the species. The referenced documents do not include the threat, recovery, survey data, and other relevant updates for the species since their issuance. Since that time, actions have been implemented that have resulted in additional adverse effects to the species. In association with those actions, conservation measures have been implemented for the purpose of minimizing those adverse effects and in some cases, restoring or enhancing California tiger salamander habitat. Environmental factors such as the recent cycle of below average annual rainfall may have influenced the distribution and quality of suitable habitat throughout its range.

**Environmental Baseline**

The action area is located within the Central California tiger salamanders’ range and contains the upland grassland habitat with potential aquatic breeding habitat associated with its life history. A map depicting the species’ range is included in the Service’s online profile for the species at http://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=D01T.

The action area is within the expansive Central Valley Recovery Unit and more regionally, within the Jepson Prairie Management Unit described in the species’ 2015 draft recovery plan (Service 2015). The closest Central California tiger salamander occurrence in the California Natural Diversity Database (CNDDB) is approximately 2.1 miles west of the action area (Occurrence 1180, CDFW 2016). The Jepson Prairie critical habitat unit is located approximately 3.75 miles to the north, immediately adjacent to SR 113 (Service 2005). There are ephemeral drainages, swales, vernal pools, stock ponds, and other water impoundments within species’ potential dispersal distance of 1.3 miles (Service 2015). These features may provide potential breeding habitat for the Central California tiger salamander under favorable climatic conditions.

The proposed project is within the coverage area for the Draft Solano County Multispecies Conservation Plan (Solano County HCP) (SWCA 2009). The draft Solano County HCP characterizes the action area as part of a large contiguous Valley Floor Grassland and Vernal Pool Community that is within the potential range of the Central California tiger salamander. Caltrans is not one of the member agencies participating in the HCP and its activities would not be covered under the HCP; however, reference to the HCP is relevant because it represents the culmination of the best available science and conservation strategy for the region and the special-status species within its coverage. As part of the reserve design and conservation approach presented in the draft
HCP, the action area is located within an area identified as having medium value for vernal pool conservation for the benefit of the species, including the Central California tiger salamander, associated with them.

In their June 2016 BA, an experienced California tiger salamander biologist concluded that the action area included suitable upland and potential breeding habitat for the listed salamander. The potential breeding habitat was identified in the adjacent Round Hill Creek. As a result, Caltrans concluded that presence of the listed salamander in the action area could not be ruled out.

Like most of the State’s highways, SR 12 and SR 113 were constructed long before the establishment of the NEPA (1969), the Act (1973), or the California Environmental Quality Act (1970), as well as the Federal listing of the Central California tiger salamander (2004). Our current understanding regarding the effects roads have on wildlife and how roads can be designed to minimize those effects has advanced considerably since those highways were designed and constructed. Most of the property adjacent to the alignment is privately owned and has not been subject to ground surveys for listed species.

The land adjacent to the proposed project is influenced by this heavily used transportation corridor. High traffic volume, traffic noise, night-time lighting, exhaust, ROW vegetation maintenance, roadway runoff, invasive vegetation, and animal-vehicle collision have an adverse effect on the function of the neighboring habitat for both common and listed wildlife. This parallel band of disturbance is referred to as a “road effects zone”. The outward extent of this zone can vary with factors such as topography and the sensitivity of a given species to those effects. A spectrum of typical road effects is likely to negatively influence the suitability of the Central California tiger salamander habitat in and adjacent to the project footprint as well as the behavior of these species within their respective road effects zone.

The habitat and species utilizing it is less influenced by SR 113/SR 12 with increasing distance from the edge of the road shoulder. The outside of the ROW is less influenced by maintenance activities and the adjacent land beyond the Caltrans ROW fence is either farmed, grazed, or unmanaged. Much of the action area is part of a large expanse of relatively contiguous habitat for the Central California tiger salamander.

The road effects zone applies to the Central California tiger salamander and in this case, SR 113 and SR 12 are hindrances to north/south and east/west movement due to road mortality and obstructions such as concrete medians. The culvert crossings under these roads convey hydrology and may provide a measure of connectivity between the otherwise fragmented habitat. Artificial lighting within the intersection is also a likely source of behavioral disruption and may interfere with the animals’ ability to forage and avoid detection by predators. These baseline conditions likely create a risk for Central California tiger salamanders that diminishes with distance from the intersection.

Therefore the Service has determined that the Central California tiger salamander is reasonably certain to occur within the action area because: (1) the project is located within the species’ range and current distribution; (2) the project area is modeled as potential habitat for the species’ presence in the Solano County HCP; (3) there is suitable upland habitat within the action area and potential breeding habitat nearby; (4) the habitat within the action area is similar to that which is found in nearby areas with confirmed Central California tiger salamander occupancy; (5) the action area is linked to a large block of suitable habitat within the Jepson Prairie; (6) the potential for the animal to
move long distances and therefore occupy a large areas near breeding habitat; and (7) other factors of the animal's the biology and ecology.

**Effects of the Action**

The direct effects of the proposed project are those effects occurring within the action area during construction of the proposed project. For this project much of the direct effects are associated with the loss of habitat for the Central California tiger salamander. The effects of habitat loss were analyzed based on the term of the loss, restoration potential, and the associated changes to functional value. As a result, habitat loss was characterized as permanent or temporary.

Permanent habitat loss was defined as those areas that will be converted to hardscape as a result of the project. Hardscape can retain some functional use. For instance, salamanders may still be able to move across these areas to access other resources. Temporary habitat loss was considered for any landscape cover that will be restored to baseline habitat values (for the given species) within one year following the initial disturbance.

Indirect effects are the effects of the proposed project generally occurring later in time after construction has been completed (e.g., degradation of habitat due to the spread of invasive plant species; barriers to dispersal due to the installation of retaining walls). An interrelated activity is an activity that is part of the proposed project and depends on the proposed project for its justification. An interdependent activity is an activity that has no independent utility apart from the action under consultation.

Caltrans proposes to minimize construction related effects by implementing the *Conservation Measures* included in the project description section of this BO. Effective implementation of *Conservation Measures* will likely minimize effects to the Central California tiger salamander during construction but incidental take is still likely to occur. Therefore, the proposed project has the potential to result in a variety of adverse effects to the Central California tiger salamander.

Based on information provided by Caltrans on November 4, 2016, the proposed project will result in 0.05 acre of permanent habitat loss due to the addition of pavement outside the existing hardscape footprint. This area was previously disturbed and restored during construction of the Solano Highway 12 Roadway Rehabilitation and Safety Improvements Project. This area of land cover conversion is currently occupied by upland grassland habitat adjacent to the existing road shoulder.

Also as stated in the November 3, 2016 response, the proposed project will involve the temporary loss of 2.66 acres of upland habitat. This area will be utilized for staging and work space. The temporary work areas adjacent to the new road shoulder will be regraded but revegetated with upland groundcover. Approximately 2.28 acres of this temporary effects area were previously disturbed as part of the Solano Highway 12 Roadway Rehabilitation and Safety Improvements Project. This leaves approximately 0.38 acre of upland habitat that will be subjected to temporary effects that was not previously disturbed. Proposed regrading is not expected to preclude Central California tiger salamander utilization of the habitat following construction. Revegetation efforts for the staging and grading areas will be initiated in time to take advantage of a fall and winter establishment period. It reasonable to expect the growth of annual grassland vegetative cover the following spring, less than one year from the initiation of project construction.
Vegetation clearing could affect the movement and available cover sites for the listed salamander. It will also result in the loss of foraging habitat and cover from predators and the elements. The ground disturbance associated with vegetation removal may result in exposure, stranding, crushing, maiming, or otherwise harassing or harming the Central California tiger salamander. The noise and vibration associated with the vegetation removal will be disruptive and may result in the animal avoiding the action area, therefore modifying its behavior and discouraging access to resource areas. Noise and vibration may also result in the Central California tiger salamander taking cover in inconspicuous areas rather than fleeing potential harm. This will make them more difficult to find, avoid, and rescue.

Educating project personnel will encourage compliance with the conservation measures and increase the possibility that Central California tiger salamanders in the work area will be identified and addressed appropriately for avoidance. Worker education is limited by the effectiveness of the presentation and the willingness of the construction personnel to participate in compliance.

Pre-construction surveys by a Service-approved biologist will assist in clearing Central California tiger salamanders from the work areas prior to the introduction of a potential construction-related threat. Biological clearance of work areas is limited by the experience of the biologist, the complexity and abundance of potential cover sites, the small size and inconspicuous nature of the species, and the challenges of completing a thorough clearance given the construction schedule.

Despite being “cleared” prior to construction, Central California tiger salamanders may continue to move into the work site undetected. Listed amphibians may be actively moving around, through or within the work area during the evening as well as when work is taking place. This places greater emphasis on thorough biological clearance of work areas and under staged equipment and materials prior to the start of each day’s activities. Exclusion of amphibians from active work areas will depend on the integrity of the installed boundary fencing. Monitors would also need to inspect the fence daily for “stranded” listed amphibians along the inside or outside fence edge, which are risking exposure and predation while attempting to negotiate the new barrier.

Monitoring and the proposed installation of escape ramps should provide a means of exit from steep-walled excavations but salamanders risk being directly killed or may be unable to escape and be killed due to predation, desiccation, entombment, or starvation. Proper trash disposal is often difficult to enforce and is a common non-compliance issue. Improperly disposed edible trash could attract predators, such as raccoons, crows, and ravens, to the site, which could subsequently prey on the salamanders.

The chance of a disease being introduced into a new area is greater today than in the past due to the increasing occurrences of disease throughout amphibian populations in California and the United States. It is possible that chytridiomycosis, caused by chytrid fungus, may exacerbate the effects of other diseases on amphibians or increase the sensitivity of the amphibian to environmental changes (e.g., water pH) that reduce normal immune response capabilities (Bosch et al. 2001, Weldon et al. 2004). If unrestricted, biologists and construction workers traveling to the action area from other project sites may transmit chytrid by introducing contaminated equipment.

Discovery, capture, and relocation of individual Central California tiger salamanders may avoid injury or mortality due to construction activities; however, capturing and handling animals may result in stress and/or inadvertent injury during handling, containment, and transport.
Central California tiger salamanders and their prey could also be affected by contamination due to chemical or sediment discharge. Exposure pathways could include inhalation, dermal contact, direct ingestion, or secondary ingestion of contaminated soil, plants or prey species. Exposure to contaminants could cause short- or long-term morbidity, possibly resulting in reduced productivity or mortality. However, Caltrans proposes to reduce these risks by implementing BMPs that consist of refueling, oiling, or cleaning of vehicles and equipment a minimum of 50 feet from aquatic areas; installing coir rolls, straw wattles and/or silt fencing to capture sediment and prevent runoff or other harmful chemicals from entering the aquatic habitat; and locating staging, storage and parking areas away from wetland habitat.

Caltrans’ commitment to use erosion control devices other than mono-filament should be effective in avoiding the associated risk of entrapment that can result in death by predation, starvation, or desiccation (Stuart et al. 2001).

Given that the project will result in a minor addition of roadway over the existing condition, and is not expected to result in an increase of traffic volume, the road effects zone described in the baseline section is unlikely to change.

Effective restoration of the areas needed for access, work space, and grading is expected to reestablish baseline grassland habitat values for the Central California tiger salamander within a year of initial disturbance.

**Cumulative Effects**

Cumulative effects include the effects of future State, Tribal, local or private actions that are reasonably certain to occur in the action area considered in this biological opinion. Future Federal actions that are unrelated to the SR 12/SR 113 Intersection Improvement Project are not considered in this section because they require separate consultation pursuant to section 7 of the Act. During this consultation, the Service did not identify any future non-federal actions that are reasonably certain to occur in the action area of the proposed project.

**Conclusion**

After reviewing the current status of the Central California tiger salamander, the environmental baseline for the action area, the effects of the proposed project, and the cumulative effects, it is the Service’s biological opinion that the SR 12/SR 113 Intersection Improvement Project, as proposed, is not likely to jeopardize the continued existence of the Central California tiger salamander. We base this conclusion on the following: (1) successful implementation of the described Conservation Measures is likely to reduce the potential for proposed project activities to result in the disruption of normal Central California tiger salamander behavior or risk of injury; (2) habitat disturbed for access and work space will be restored to baseline levels; and (3) Caltrans provided habitat compensation for the area of disturbance in association with the overlapping Solano Highway 12 Roadway Rehabilitation and Safety Improvements Project with purchase of occupied Central California tiger salamander habitat credits at a Service-approved conservation bank and has therefore contributed to the conservation of the Central California tiger salamander in the region of the project.

**INCIDENTAL TAKE STATEMENT**

Section 9 of the Act and Federal regulation pursuant to section 4(d) of the Act prohibit the take of endangered and threatened species, respectively, without special exemption. Take is defined as to
harass, harm, pursue, hunt, shoot, wound, kill, trap, capture or collect, or to attempt to engage in any such conduct. Harass is defined by Service regulations at 50 CFR 17.3 as an intentional or negligent act or omission which creates the likelihood of injury to wildlife by annoying it to such an extent as to significantly disrupt normal behavior patterns which include, but are not limited to, breeding, feeding, or sheltering. Harm is defined by the same regulations as an act which actually kills or injures wildlife. Harm is further defined to include significant habitat modification or degradation that results in death or injury to listed species by significantly impairing essential behavior patterns, including breeding, feeding, or sheltering. Incidental take is defined as take that is incidental to, and not the purpose of, the carrying out of an otherwise lawful activity. Under the terms of section 7(b)(4) and section 7(o)(2), taking that is incidental to and not intended as part of the agency action is not considered to be prohibited taking under the Act provided that such taking is in compliance with the terms and conditions of this Incidental Take Statement.

The measures described below are non-discretionary, and must be undertaken by the Caltrans so that they become binding conditions of any grant or permit issued to the applicant, as appropriate, for the exemption in section 7(o)(2) to apply. The Caltrans has a continuing duty to regulate the activity covered by this incidental take statement. If the Caltrans (1) fails to assume and implement the terms and conditions or (2) fails to require the applicant to adhere to the terms and conditions of the incidental take statement through enforceable terms that are added to the permit or grant document, the protective coverage of section 7(o)(2) may lapse. In order to monitor the impact of incidental take, Caltrans must report the progress of the action and its impact on the species to the Service as specified in the incidental take statement [50 CFR §402.14(b)(3)].

**Amount or Extent of Take**

The Service anticipates that incidental take of the Central California tiger salamander will be difficult to detect because when this amphibian is not in breeding ponds, foraging, migrating, or conducting other surface activity, it inhabits burrows or other cover sites; these cover sites may be located a distance from the breeding ponds; and the adult migrations occur on a limited period during rainy nights in the fall, winter, or spring. Finding an injured or dead Central California tiger salamander is unlikely due to their relatively small body size, rapid carcass deterioration, and likelihood that the remains will be removed by a scavenger. Losses of this species may also be difficult to quantify due to a lack of baseline survey data and seasonal/annual fluctuations in their numbers due to environmental or human-caused disturbances. There is a risk of harm, harassment, injury and mortality as a result of the proposed construction activities, the permanent and temporary loss/degradation of suitable habitat, and capture and relocation efforts. Therefore, the Service is authorizing take incidental to the proposed action as: (1) the harassment of all Central California tiger salamanders within the areas action area; (2) the capture of all Central California tiger salamanders within the construction footprint; and (3) the injury or mortality of one adult or juvenile Central California tiger salamander.

Upon implementation of the following Reasonable and Prudent Measures, the incidental take of Central California tiger salamanders associated with the proposed project in proportion to the amount and type of take outlined above will become exempt from the prohibitions described under section 9 of the Act. No other forms of take are exempted under this opinion.

**Effect of the Take**

In the accompanying biological opinion, the Service determined that this level of anticipated take for the Central California tiger salamander is not likely to result in jeopardy to the species.
Reasonable and Prudent Measure

The Service has determined that the following reasonable and prudent measure is necessary and appropriate to minimize the effect of the action on the Central California tiger salamander. Caltrans will be responsible for the implementation and compliance with this measure:

1. Minimize the adverse effects to the Central California tiger salamander and its habitat in the action area by implementing their proposed project, including the conservation measures as described, with the following terms and conditions.

Terms and Conditions

In order to be exempt from the prohibitions of section 9 of the Act, Caltrans must ensure compliance with the following terms and conditions, which implement the reasonable and prudent measure described above. These terms and conditions are nondiscretionary.

1. The following Terms and Conditions implement Reasonable and Prudent Measure one (1):

   a. Rodenticides shall not be used at the project site. Herbicides shall only be used if needed to control noxious weeds.

   b. Each Central California tiger salamander encountered shall be treated on a case-by-case basis in coordination with the Service but general guidance is as follows: (1) leave the non-injured animal if it is not in danger or (2) move the animal to a nearby location if it is in danger.

   These two options are further described as follows:

1) When a Central California tiger salamander is encountered in the action area the first priority is to stop all activities in the surrounding area that have the potential to result in the harm, harassment, injury, or death of the individual. Then the monitor needs to assess the situation in order to select a course of action that will minimize adverse effects to the individual. Contact the Service once the site is secure. The contacts for this situation are Ryan Oolah (ryan.olah@fws.gov) or John Cleckler (john.cleckler@fws.gov). They can also be reached at (916) 414-6623 and (916) 414-6639 respectively. Contact the Service prior to the start of construction to confirm the status of this contact information.

The first priority is to avoid contact with the animal and allow it to move out of the project footprint and hazardous situation on its own to a safe location. The animal should not be picked up and moved because it is not moving fast enough or it is inconvenient for the construction schedule. This guidance only applies to situations where an animal is encountered on the move during conditions that make their upland travel feasible. This does not apply to animals that are uncovered or otherwise exposed or in areas where there is not sufficient adjacent habitat to support the life history of the animal should they move outside the construction footprint.

Avoidance is the preferred option if the animal is not moving and is using aquatic habitat or is within some sort of burrow or other refugia. The area should be well
marked for avoidance by construction and a Service-approved biological monitor should be assigned to the area when work is taking place nearby.

2) The animal should be captured and moved when it is the only option to prevent its death or injury.

If appropriate habitat is located immediately adjacent to the capture location then the preferred option is short distance relocation to that habitat. This must be coordinated with the Service but the general guidance is the animal should not be moved outside of the area it would have traveled on its own. Under no circumstances should an animal be relocated to another property without the owner’s written permission. It is Caltrans’ responsibility to arrange for that permission.

The release must be coordinated with the Service and will depend on where the individual was found and the opportunities for nearby release. In most situations the release location is likely to be into the mouth of a small burrow or other suitable refugia and in certain circumstances pools without non-native predators may be suitable.

Only Service-approved biologists for the project can capture the Central California tiger salamander. Nets or bare hands may be used to capture Central California tiger salamanders. Soaps, oils, creams, lotions, repellents, or solvents of any sort cannot be used on hands within 2 hours before and during periods when they are capturing and relocating the two listed amphibians. To avoid transferring disease or pathogens between sites during the course of surveys or handling of amphibians, Service-approved biologists must use the following guidance for disinfecting equipment and clothing. These recommendations are adapted from the Declining Amphibian Population Task Force’s Code (http://www.open.ac.uk/daptf/).

i. All dirt and debris, including mud, snails, plant material (including fruits and seeds), and algae, must be removed from nets, traps, boots, vehicle tires and all other surfaces that have come into contact with water and/or an amphibian. Cleaned items should be rinsed with fresh water before leaving each site.

ii. Boots, nets, traps, etc., must then be scrubbed with either a 70 percent ethanol solution, a bleach solution (0.5 to 1.0 cup of bleach to 1.0 gallon of water), QUAT 128 (quaternary ammonium, use 1:60 dilution), or a 6 percent sodium hypochlorite 3 solution and rinsed clean with water between sites. Avoid cleaning equipment in the immediate vicinity of a pond or wetland. All traces of the disinfectant must be removed before entering the next aquatic habitat.

iii. Used cleaning materials (liquids, etc.) must be disposed of safely, and if necessary, taken back to the lab for proper disposal.

iv. Service-approved biologists must limit the duration of handling and captivity. While in captivity, amphibians shall be kept in a cool, dark, moist, aerated
environment, such as a clean and disinfected bucket or plastic container with a damp sponge. Containers used for holding or transporting should not contain any standing water.

**Reporting Requirements**

In order to monitor whether the amount or extent of incidental take anticipated from implementation of the project is approached or exceeded, Caltrans shall adhere to the following reporting requirements. Should this anticipated amount or extent of incidental take be exceeded, Caltrans must reinitiate formal consultation as per 50 CFR 402.16.

1. Notification of injured or dead listed species will be made to the Coast-Bay Division Chief of the Endangered Species Program at the Sacramento Fish and Wildlife Office at (916) 414-6623. When an injured or dead individual of the listed species is found, Caltrans shall follow the steps outlined in the following *Disposition of Individuals Taken* section.

2. Sightings of any listed or sensitive animal species should be reported to the CNDDDB (http://www.dfg.ca.gov/biogeodata/cnddb/).

3. Construction compliance reports will be addressed to the Coast-Bay Division Chief of the Endangered Species Program at the Sacramento Fish and Wildlife Office.

4. Caltrans shall submit post-construction compliance reports prepared by the Service-approved biologist to the Service within 60 calendar days following completion of each construction season or within 60 calendar days of any break in construction activity lasting more than 60 calendar days. This report shall detail (1) dates that relevant project activities occurred; (2) pertinent information concerning the success of the project in implementing avoidance and minimization measures; (3) an explanation of failure to meet such measures, if any; (4) known project effects on the Central California tiger salamander; (5) occurrences of incidental take of any listed species; (6) documentation of employee environmental education; and (7) other pertinent information.

**Disposition of Individuals Taken**

Injured listed species must be cared for by a licensed veterinarian or other qualified person(s), such as the Service-approved biologist. Dead individuals must be sealed in a resealable plastic bag containing a paper with the date and time when the animal was found, the location where it was found, and the name of the person who found it, and the bag containing the specimen frozen in a freezer located in a secure site, until instructions are received from the Service regarding the disposition of the dead specimen. The Service contact person is the Coast-Bay Division Chief of the Endangered Species Program at the Sacramento Fish and Wildlife Office at (916) 414-6623.

**CONSERVATION RECOMMENDATIONS**

Section 7(a)(1) of the Act directs Federal agencies to utilize their authorities to further the purposes of the Act by carrying out conservation programs for the benefit of endangered and threatened species. Conservation recommendations are discretionary agency activities to minimize or avoid adverse effects of a proposed action on listed species or critical habitat, to help implement recovery plans, or to develop information. The Service recommends the following actions:
1. The Service recommends that Caltrans place plywood cover boards in strategic areas to provide refugia for Central California tiger salamanders that may otherwise seek it under equipment or stored materials.

2. Caltrans District 4 should work with the Service to develop a conservation strategy that would identify the current safe passage potential along Bay Area highways and the areas where safe passage for wildlife could be enhanced or established.


4. Caltrans should consider participating in the planning for a regional habitat conservation plan for the Central California tiger salamander, other listed species, and sensitive species.

5. Caltrans should consider establishing functioning preservation and creation conservation banking systems to further the conservation of the Central California tiger salamander. Such banking systems also could be utilized for other required mitigation (i.e., seasonal wetlands, riparian habitats, etc.) where appropriate. Efforts should be made to preserve habitat along roadways in association with wildlife crossings.

6. Roadways can constitute a major barrier to critical wildlife movement. Therefore, Caltrans should incorporate culverts, tunnels, or bridges on highways and other roadways that allow safe passage by the Central California tiger salamander and other wildlife. Photographs, plans, and other information into the BAs if “wildlife friendly” crossings are incorporated into projects. Efforts should be made to establish upland culverts designed specifically for wildlife movement rather than accommodations for hydrology. Transportation agencies should also acknowledge the value of enhancing human safety by providing safe passage for wildlife in their early project design.

7. Caltrans has a standard practice of using locally sourced native plant seed in their erosion control applications and restoration efforts. Some of the plant species included in the mix are food plants for adult monarchs. Inclusion of locally native milkweed seed in the restoration/erosion control seed mix for this project would have conservation value for the monarch and be in line with Caltrans' environmental stewardship goals. It is likely that Caltrans will discover that milkweed seed is readily available and its inclusion would not result in additional project costs relative to the cost of other seed used in the existing mix.

The White House released a presidential memorandum in June 2014 calling for a Federal strategy to promote the health of honey bees and other pollinators. The monarch and the Department of Transportation are specifically mentioned in the memo. (Available at: https://www.whitehouse.gov/the-press-office/2014/06/20/presidential-memorandum-creating-federal-strategy-promote-health-honey-b.)

As stated: “The Department of Transportation shall evaluate its current guidance for grantees and informational resources to identify opportunities to increase pollinator habitat along roadways and implement improvements, as appropriate. The Department of Transportation shall work with State Departments of Transportation and transportation associations to promote pollinator-friendly practices and corridors. The Department of Transportation shall evaluate opportunities to make railways, pipelines, and transportation
facilities that are privately owned and operated aware of the need to increase pollinator habitat.”

The Service recommends that Caltrans use this opportunity to plant native milkweed to aid the recovery efforts for the monarch butterfly.

In order for the Service to be kept informed of actions minimizing or avoiding adverse effects or benefiting listed species or their habitats, the Service requests notification of the implementation of any conservation recommendations.

REINITIATION—CLOSING STATEMENT

This concludes reinitiation of formal consultation on the SR 12/SR 113 Intersection Improvement Project. As provided in 50 CFR §402.16, additional reinitiation of formal consultation is required and shall be requested by the Federal agency or by the Service where discretionary Federal agency involvement or control over the action has been retained or is authorized by law and: (a) if the amount or extent of taking specified in the incidental take statement is exceeded; (b) if new information reveals effects of the action that may affect listed species or critical habitat in a manner or to an extent not previously considered; (c) if the identified action is subsequently modified in a manner that causes an effect to the listed species or critical habitat that was not considered in the biological opinion; or (d) if a new species is listed or critical habitat designated that may be affected by the identified action.

If you have questions concerning this consultation or implementation of its measures, please contact John Cleckler, Caltrans Liaison, john_cleckler@fws.gov, (916) 414-6639 or Ryan Olah, Coast-Bay Division Chief, ryan_olah@fws.gov, (916) 414-6623, at the letterhead address, by telephone, or by e-mail.

Sincerely,

Jennifer M. Norris
Field Supervisor

cc:
Melissa Escaron, California Department of Fish and Wildlife, Napa, California
John Yeakel and Christopher Pincerich, Caltrans District 4, Oakland, California
Literature Cited


California Department of Fish and Wildlife (CDFW). 2016. California Natural Diversity Data Base (CNDDB) RAREFIND. Natural Heritage Division, Sacramento, California.


