



# Natural Environment Study

(Minimal Impacts)

Almonte Boulevard-Shoreline Highway Bicycle and Pedestrian  
Improvements Project

Transportation Authority of Marin

State Route 1, Mill Valley, Marin County

04-Marin-1 PM 0.5/0.76

Federal Project Number: MRN090020

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STATE OF CALIFORNIA  
Department of Transportation  
Transportation Authority of Marin

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## Summary

The Transportation Authority of Marin (TAM) is proposing the Almonte Boulevard-Shoreline Highway Bicycle and Pedestrian Improvements Project (project), which includes the improvement of pedestrian and bicycle connectivity, accessibility, and circulation in the immediate vicinity of Tam Junction along State Route 1 (SR-1) in Mill Valley, Marin County, California. The extent of the Tam Junction area includes a segment between Coyote Creek and Flamingo Road as well as a segment along Almonte Boulevard between Helen Avenue and SR-1.

The project would install new or reconstruct existing sidewalks and ramps, adjust driveway cross slopes, restripe approximately 1,542 feet of SR-1 to allow for 5-foot bicycle lanes, add new Americans with Disabilities Act (ADA) ramps, and construct and modify drainage facilities to accommodate sidewalk improvements and bicycle lanes.

Because all proposed construction activities would occur on existing pavement and developed road shoulders, the project would not impact jurisdictional waters of the United States (US) or State. No habitat for special-status species occurs within the project footprint. With the implementation of project avoidance and minimization measures, there are no anticipated direct, indirect, or cumulative impacts to special-status species or habitat as a result of the project within the surrounding Biological Study Area (BSA).

Avoidance and minimization measures include, but are not limited to, implementation of a worker environmental awareness program (WEAP), conducting nesting bird surveys prior to construction if the project takes place during the nesting season, restricting project-related noise levels along Almonte Boulevard to less than 101 dB if the project takes place during the Ridgway's rail nesting season (February through August), and the implementation of a Storm Water Pollution Prevention Plan (SWPPP) or similar plan.

## 1 – Introduction

The Transportation Authority of Marin (TAM) is proposing the Almonte Shoreline Project (project), which includes the improvement of pedestrian and bicycle connectivity, accessibility, and circulation in the immediate vicinity of Tam Junction along State Route 1 (SR-1) in Mill Valley, Marin County, California. The extent of the Tam Junction area includes a segment between Coyote Creek and Flamingo Road as well as a segment along Almonte Boulevard south of Helen Avenue and north of SR-1. Figure 1 shows the location of the project.

### ***Project Purpose and Need***

TAM determined that there is a need for improvements to connectivity, accessibility, and circulation routes for pedestrians and bicyclists in the vicinity of Tam Junction. Bicycle lanes are not currently provided along the east side of SR-1 between Coyote Creek and Almonte Boulevard, and along SR-1 between Flamingo Road and Almonte Boulevard. Installation of bicycle lanes would connect to existing bicycle pathways and improve bicycle connectivity and safety along SR-1 within the vicinity of Tam Junction.

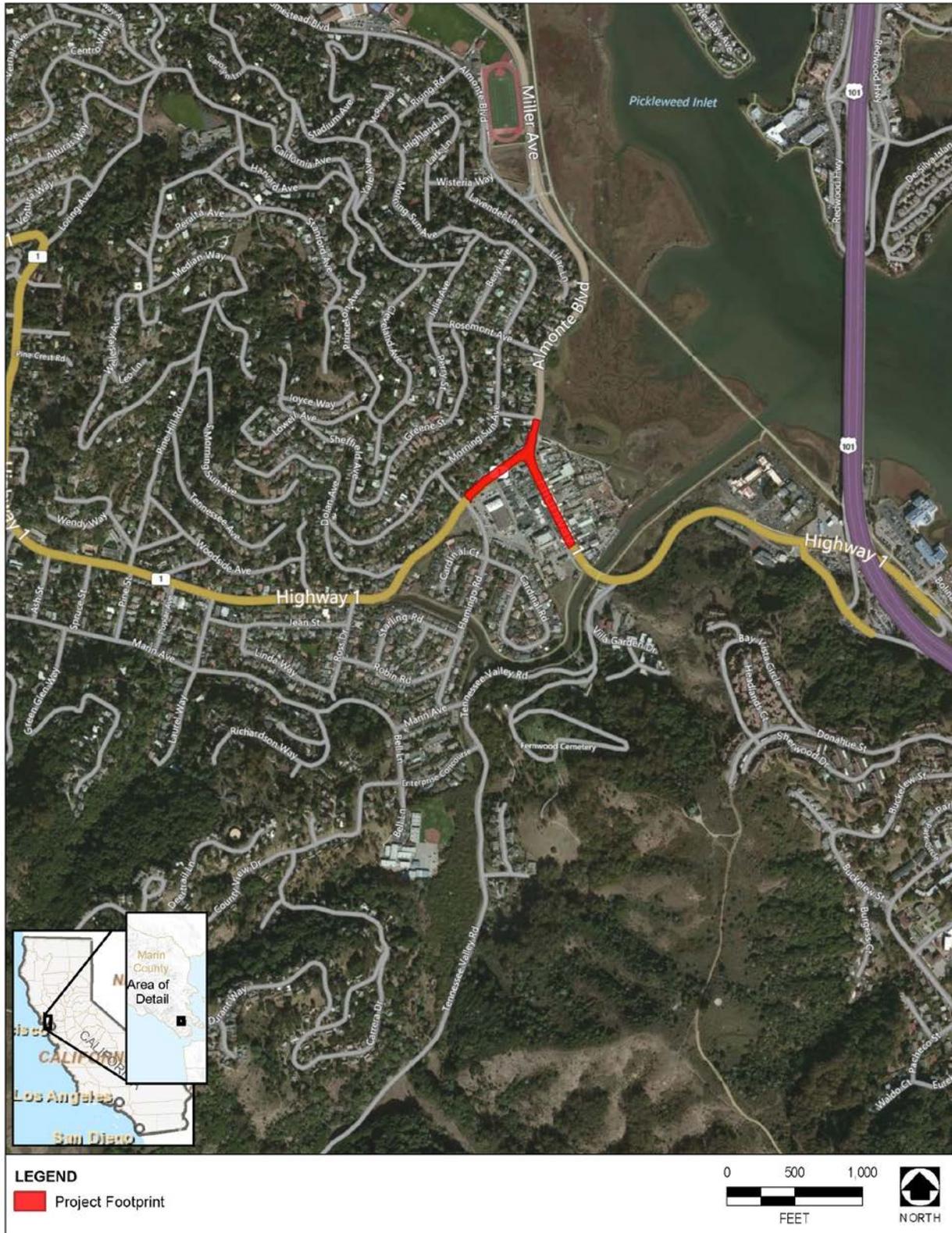
### ***Project Description***

The project is located in the surroundings of SR-1 and Almonte Boulevard, from post mile (PM) 0.5 to PM 0.76 in Mill Valley, Marin County (see Figure 1). The area is commonly referred to as Tam Junction and is comprised of a commercial strip that is built on muddy soil that was formerly a wetland. The eastern extent of the project is approximately 215 feet northwest of the bridge crossing of Coyote Creek, the southwestern extent is Flamingo Road, and the northern extent is approximately 260 feet north of the intersection of Almonte Boulevard and SR-1, as illustrated in Figure 2. The project is located in Section 4, Township 1S, Range 6W within the San Rafael 7.5' Quadrangle map.

The proposed project includes:

- Restriping approximately 1,540 feet of SR-1 (the east side of SR-1 between Coyote Creek and Almonte Boulevard, and along the north side of SR-1 between Flamingo Road and Almonte Boulevard) to allow for 5-foot-wide bicycle lanes (Class II pathway);
- Adding new Americans with Disabilities (ADA) ramps (potentially involving up to 8 inches of ground surface scarification and re-compaction);
- Rehabilitating and resurfacing portions of existing asphalt pavement;
- Modifying the traffic signal at Almonte Boulevard and SR-1 to include bicycle loop detection within the roadway section;
- Removal of two utility poles to be replaced by a single pole by PG&E;
- Constructing an approximately 2-foot-high, 40-foot-long retaining wall (maximum depth 2.5 feet) on the north side of SR-1 between Almonte Boulevard and Flamingo Road to replace an existing wooden fence;
- Constructing and modifying drainage facilities on SR-1 between Almonte Boulevard and Flamingo Road (maximum depth 1.5 feet) and on the east side of SR-1 approaching and including its intersection with Almonte Boulevard (maximum depth 4.7 feet) to accommodate ADA improvements and bicycle lanes; and
- Adjusting driveway grades at existing driveway approaches (potentially involving up to 8 inches for ground scarification and re-compaction).

All proposed construction activities for the bicycle lanes would occur on existing pavement and developed road shoulders within the SR-1 right-of-way. The overall duration of the construction period is anticipated to take about 8 to 12 weeks. Along Almonte Boulevard, construction equipment would include an asphalt grinder, paver, haul trucks, pick-up trucks, and a backhoe. From the intersection of SR-1/Almonte Boulevard to Flamingo Road, construction equipment would include an asphalt grinder, paver, haul



Source: Base Imagery Provided by Bing Maps, 2015

**Figure 1. Project Location Map**



Source: Base Imagery Provided by Bing Maps, 2015

Figure 2. Detailed Project Map

trucks, pick-up trucks, backhoe, and post hole drill. Replacement of the two utility poles with a single pole by PG&E will require a truck to remove and set new joint poles.

## **2 – Study Methods**

In preparing this Natural Environment Study (Minimal Impacts), AECOM biologists searched existing databases and literature, conducted in May 2015, in order to identify special-status species and/or their habitat that have the potential to occur in the project footprint. Details regarding the studies that were conducted are described below. Based on the literature review, biologists identified that special-status species are highly unlikely to occur in the project footprint, but may occur in the surrounding area, particularly east of the project in salt marsh habitat. Figure 2 provides a map of the project footprint.

### ***Regulatory Requirements***

The project would avoid all impacts to natural aquatic features, including wetlands and streams; however, the project would require modification of manmade drainage facilities. Therefore, the project may require a Clean Water Act (CWA) Section 404 U.S. Army Corps of Engineers Nationwide Permit and a Section 401 Water Quality Certification from the San Francisco Bay Regional Water Quality Control Board. Modification to manmade drainage features would not affect species habitat or riparian corridors; therefore, no consultation with the California Department of Fish and Wildlife (CDFW) is anticipated.

The project would not result in the take of State- or federally-listed species, and thus it would not require take permits from CDFW, the U.S. Fish and Wildlife Service (USFWS), or the National Marine Fisheries Service (NMFS).

### ***Studies Required***

#### ***Literature Search***

To identify special-status species that have the potential to occur near the project, several databases of known, special-status species occurrences and habitats were reviewed, including:

- USFWS IPaC Trust Resource Report, Sacramento Fish and Wildlife Office, generated May 7, 2015 (USFWS 2015) (Appendix A)
- CDFW's California Natural Diversity Database (CNDDDB) occurrence records within 2 miles of the project footprint (CDFW 2015) (Figure 3)
- The California Native Plant Society (CNPS) online Inventory of Rare and Endangered Vascular Plants of California (CNPS 2015)
- USFWS Critical Habitat Portal (Figure 3)
- NMFS California Species List Tool, generated December 5, 2016 (NMFS 2016) (Appendix C)

#### ***Field Reviews***

On July 29, 2015, AECOM Biologist DJ Allison conducted a field review to assess the existing biological conditions of project locations. During this field review, the biologist also assessed potential direct and indirect effects of the project, and developed measures to avoid impacts on listed species' habitats, sensitive communities, and aquatic resources. On June 2, 2016, Jules Evens of Avocet Research Associates performed a habitat assessment to determine the suitability of marshland near the project site for the federally endangered Ridgway's rail and other special-status avian species. During the field visit, noise measurements were taken to evaluate the potential for noise to disturb the special-status avian species.



### ***Agency Coordination and Professional Contacts***

There has been no agency coordination to date, because the study findings do not indicate the need to consult.

### ***Limitations that May Influence Results***

Protocol-level surveys were not completed for the project; however, because of the developed nature of the BSA, confinement of construction to previously developed areas, and low potential for species to be present in the project footprint, detailed surveys were determined to be unnecessary.

## **3 – Results: Environmental Setting**

The BSA is in the northern San Francisco Bay Area, north and west of Coyote Creek and southwest of Bothin Marsh Preserve. The project would occur entirely within paved sections and developed road shoulders of SR-1 and Almonte Boulevard.

### ***Description of the Existing Biological and Physical Conditions***

#### *Study Area*

The project footprint is confined to the existing roadway and developed road shoulders of approximately 0.29 mile of SR-1 and 0.05 mile of Almonte Boulevard (see Figure 2). No portions of the project footprint lie outside of previously disturbed areas. The Biological Study Area (BSA) is defined as these portions of SR-1 and Almonte Boulevard (the extent of the project footprint), as well as the adjacent areas approximately 100 feet from the road. Because of the level of regular disturbance generated by the high volume of vehicular traffic along the roadway, this BSA was determined to be sufficient to address the potential direct and indirect effects of the project.

#### *Physical Conditions*

The climate in the BSA follows the typical wet winter/dry summer pattern of the Mediterranean climate found throughout California. The average monthly temperatures vary, from a maximum average monthly temperature of 85 degrees Fahrenheit (°F) in July to a minimum average monthly temperature of 41°F in December and January. Precipitation ranges from an average of 9.6 inches in January to 0.01 inches in July.

The BSA is on the southeastern side of Marin County. The immediate vicinity primarily consists of commercial and suburban development. To the west lies suburban development of Mill Valley. To the northeast lies the Bothin Marsh Preserve, which is attached to Pickleweed Inlet. Multiple water sources can be found in the project vicinity, including Coyote Creek, which is located approximately 215 feet southeast of the eastern extent of the project. Coyote Creek flows south of Bothin Marsh before draining into Richardson Bay, and then into the greater San Francisco Bay. The BSA ranges from approximately 10 to 15 feet above sea level. The larger Mill Valley area is marked by northwest-trending mountain ranges. The ranges bounding the region are the North Coast Ranges to the north, the Diablo Range to the east, and the Santa Cruz Mountains to the southwest. Current soils data indicate that the area is in what is characterized as urban land complex with tidal flats also present.

#### *Vegetation*

Plant communities present in the BSA include ruderal vegetation located immediately east of Almonte Boulevard, and salt marsh vegetation just beyond the ruderal vegetation to the east of Almonte Boulevard. No natural vegetation communities occur within the project footprint, as the project footprint is located on paved surfaces and disturbed roadside shoulders. Therefore, there is no potential that the project would occur within ruderal or salt marsh vegetation.

No aquatic features are present in the project footprint, although Coyote Creek passes under SR-1 approximately 215 feet southeast of the project footprint.

#### *Wildlife Use and Habitat Connectivity*

Bothin Marsh, at the eastern extent of the BSA, provides habitat for wildlife use and connectivity; however, the project footprint (SR-1 and Almonte Boulevard) does not provide habitat for wildlife, and SR-1 and Almonte Boulevard likely serve as existing barriers to dispersal for wildlife species in the area.

#### ***Special-Status Species and Sensitive Communities of Concern***

Based on the database and literature review, a list of special-status species that potentially may occur in the BSA was compiled. Table 1 summarizes the federal and state candidate, proposed, listed, or otherwise special-status species that potentially may occur in the BSA. The table details the general habitat requirements for each species and evaluates the likelihood that appropriate habitat occurs in the BSA. Only species known or with potential to occur (i.e., may occur) in or near the BSA are addressed further in this document, in Chapter 4. One sensitive natural community—salt marsh—was identified within the BSA, but is not located within the project footprint.

## **4 – Results: Biological Resources, Discussion of Impacts and Mitigation**

### ***Habitats and Natural Communities of Special Concern***

One sensitive natural community—salt marsh—is located at the northeastern extent of the BSA. This salt marsh is known as Bothin Marsh Preserve. Although this community is located within the BSA, no salt marsh habitat is located within the project footprint. Project-related runoff or accidental spills could enter salt marsh habitat; however, project avoidance and minimization measures would reduce the potential for wind or water-related material discharges through the implementation of a SWPPP or similar plan and erosion control Best Management Practices (BMPs).

Because of the minor nature of potential project effects as well as the low likelihood of the project affecting salt marsh habitat, and with implementation of the avoidance and minimization measures, no effects to salt marsh habitat are expected.

Because all proposed construction activities would occur on existing pavement and developed road shoulders, the project would not impact aquatic species listed in the NMFS Species List (Appendix C), or habitat for aquatic species.

Because all proposed construction activities would occur on existing pavement and developed road shoulders, the project would not impact jurisdictional waters of the US or State.

### ***Special Status Plant Species***

The plant species listed in Table 1 were eliminated from further consideration in this document because of a lack of suitable habitat characteristics, lack of recorded observations in the area, or no overlap of the species' range in the project footprint. At the northeastern extent of the BSA, salt marsh habitat provides marginally suitable habitat for hairless popcorn flower and Point Reyes salty bird's-beak; however, these species have a low potential to occur in the BSA, no potential to occur in the project footprint, and therefore have no potential to be affected by the project. The paved and developed areas subject to project disturbance would not support any special-status plant species with known occurrence in the area. Therefore, the project would have no effect on the special-status plant species identified in Table 1.

Table 1. Special-Status Species and Critical Habitat Potentially Occurring or Known to Occur in the BSA					
Scientific Name	Common Name	Status <sup>1</sup>	General Habitat Description	General Habitat Present/Absent	Rationale
<b>Plants</b>					
<i>Cirsium andrewsii</i>	Franciscan thistle	CNPS 1B.2	Occurs in coastal areas within mixed evergreen forest, northern coastal scrub, and wetland-riparian habitat. Blooms March through July.	Absent	One CNDDDB occurrence of this species has been recorded within 2 miles of the BSA. The project would occur on pavement and disturbed road shoulders; therefore, this species has no potential to occur in the project footprint. <b>No Potential</b>
<i>Chloropyron maritimum</i> ssp. <i>Palustre</i>	Point Reyes salty bird's-beak	CNPS 1B.2	Occurs in coastal salt marshes. Blooms June through October.	Absent	Five CNDDDB occurrences of this species have been recorded within 2 miles of the BSA; one of which was recorded in 1941. This species has potential to occur in Bothin Marsh Preserve at the outer extent of the BSA; however, the project would occur on pavement and disturbed road shoulders and therefore, this species has no potential to occur in the project footprint. <b>No Potential</b>
<i>Helianthella castanea</i>	Diablo helianthella	CNPS 1B.2	Occurs within riparian areas in chaparral, foothill woodland, northern coastal scrub, and valley grassland. Blooms March to June.	Absent	There is one CNDDDB occurrence of this species located within 2 miles of the BSA, which was recorded in 1938. The project would occur on pavement and disturbed road shoulders; therefore, this species has no potential to occur in the project footprint. <b>No Potential</b>

**Table 1. Special-Status Species and Critical Habitat Potentially Occurring or Known to Occur in the BSA**

Scientific Name	Common Name	Status <sup>1</sup>	General Habitat Description	General Habitat Present/Absent	Rationale
<i>Hesperolinon congestum</i>	Marin dwarf flax	FT, ST, CNPS 1B.1	Occurs in serpentine soils in Chaparral and Valley Grassland habitat. Blooms August to July.	Absent	No CNDDDB occurrences of this species have been recorded within 2 miles of the BSA. The project would occur on pavement and disturbed road shoulders; therefore, this species has no potential to occur in the project footprint. <b>No Potential</b>
<i>Plagiobothrys glaber</i>	hairless popcornflower	CNPS 1A	Occurs in meadows, coastal salt marsh, and wetland-riparian habitat. Blooms March through May.	Absent	One record from 1924, considered possibly extirpated. This species has potential to occur in Bothin Marsh Preserve; however, the project would occur on pavement and disturbed road shoulders; therefore, this species has no potential to occur in the project footprint. <b>No Potential</b>
<i>Quercus parvula</i> var. <i>tamalpaisensis</i>	Tamalpais oak	CNPS 1B.3	Occurs in lower montane coniferous forest. Blooms March and April.	Absent	One CNDDDB occurrence of this species has been recorded within 2 miles of the BSA. The project would occur on pavement and disturbed road shoulders; therefore, this species has no potential to occur in the project footprint. <b>No Potential</b>

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Scientific Name	Common Name	Status <sup>1</sup>	General Habitat Description	General Habitat Present/Absent	Rationale
<b>Invertebrates</b>					
<i>Plebejus icarioides missionensis</i>	Mission blue butterfly	FE	Habitat requirements include coastal scrubland and grassland vegetation that includes one of the three larval plants: <i>Lupinus albinfrons</i> , <i>L. varicolor</i> , and <i>L. formosuss</i> . Host plants require natural disturbances such as rockslides, mudslides, fires, and rodent burrows for colonization. The species is diurnally active and univoltine, adult flight period extends from late March to early July. Adults feed on variety of nectar plants but stay in close vicinity to larval plants.	Absent	No CNDDDB occurrences of this species have been recorded within 2 miles of the BSA. No suitable habitat for this species occurs in the BSA and there is no potential for this species' host plants to occur within the project footprint, which consists of paved areas and developed road shoulders. <b>No Potential</b>
<i>Speyeria callippe callippe</i>	Myrtle's silverspot butterfly	FE	Found exclusively in grassy hills surrounding San Francisco Bay. Depends upon its host plant Johnny jump-up ( <i>Viola pedunculata</i> ). Populations observed in San Bruno Mountain and Cordelia Hills. Adults feed on the nectar of a variety of native and non-native flowering plants. Adult flight period generally begins between mid-May and mid-July.	Absent	No CNDDDB occurrences of this species have been recorded within 2 miles of the BSA. No suitable habitat for this species occurs in the BSA and there is no potential for this species' host plants to occur within the project footprint, which consists of paved areas and developed road shoulders. <b>No Potential</b>

Table 1. Special-Status Species and Critical Habitat Potentially Occurring or Known to Occur in the BSA					
Scientific Name	Common Name	Status <sup>1</sup>	General Habitat Description	General Habitat Present/Absent	Rationale
<b>Fish</b>					
<i>Eucyclogobius newberryi</i>	Tidewater Goby	FE, SSC	Inhabits estuarine habitats along the California coast, ranging upstream slightly into fresh water and downstream in water of up to approximately 75 percent sea water. Typically found in salinities of less than 12 parts-per-thousand. Generally found in upper estuary habitat within the fresh-saltwater interface. Reproduces at all times of the year with peak spawning activity during the spring and again in the late-summer. Prefers to spawn in calm lagoon conditions afforded by sandbar closure.	Absent	No CNDDDB occurrences have been recorded within 2 miles of the BSA. Aquatic habitat is not present in the project footprint. <b>No Potential</b>
<i>Hypomesus transpacificus</i>	Delta smelt	FT, SE	Euryhaline species, but for a large part of its life span, it is associated with the freshwater edge of the mixing zone (saltwater/freshwater interface). Spawning habitats are side channels and sloughs in the middle reaches of the Delta. Spawn in shallow freshwater from December through July. Pelagic feeder.	Absent	No CNDDDB occurrences have been recorded within 2 miles of the BSA. Aquatic habitat is not present in the project footprint. <b>No Potential</b>
<i>Oncorhynchus mykiss</i>	Steelhead – Northern California distinct population segment (DPS)	FT	Includes naturally spawned anadromous <i>O. mykiss</i> (steelhead) originating below natural and manmade impassable barriers in California coastal river basins from Redwood Creek to and including the Gualala River.	Absent	No CNDDDB occurrences have been recorded within 2 miles of the BSA. Aquatic habitat is not present in the project footprint. <b>No Potential</b>

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Scientific Name	Common Name	Status <sup>1</sup>	General Habitat Description	General Habitat Present/Absent	Rationale
<i>Spirinchus thaleichthys</i>	longfin smelt	FT, SSC	The longfin smelt is a pelagic (lives in open water) estuarine fish. The known range of the longfin smelt extends from the San Francisco Bay-Delta in California northward to the Cook Inlet in Alaska.	Absent	One CNDDDB occurrence of this species has been recorded within 2 miles of the BSA. However, aquatic habitat is not present in the project footprint. <b>No Potential</b>
<b>Amphibians</b>					
<i>Rana draytonii</i>	California red-legged frog	FT, SSC	Found in dense, shrubby riparian vegetation ( <i>Salix lasiolepis</i> ; also <i>Typha</i> and <i>Scirpus</i> spp.) associated with deep (2.3 feet), still or slow-moving water.	Absent	No CNDDDB occurrences of this species have been recorded within 2 miles of the BSA. No suitable aquatic habitat or upland aestivation habitat is present in the project footprint. <b>No Potential</b>
<b>Birds</b>					
<i>Brachyramphus marmoratus</i>	Marbled murrelet	FT, SE	Found in old-growth coastal redwood and Douglas fir forests characterized by large trees, multiple canopy layers, and moderate to high canopy closure.	Absent	No CNDDDB occurrences of this species have been recorded within 2 miles of the BSA. Redwood or Douglas fir forests are not present in or near the BSA. <b>No Potential</b>
<i>Charadrius alexandrinus nivosus</i>	Western snowy plover	FT, SSC	Occurs year round in California, though seasonal status varies regionally. Breeds in California from March through September. Nests locally in the Central Valley; the Klamath Basin, Modoc Plateau, and Great Basin desert of northeastern and east-central California; and in the Mojave and Colorado deserts. Breeding habitat found on barren to sparsely vegetated flats and along the shores of alkaline and saline lakes, reservoirs, ponds, braided river channels, agricultural waste water ponds, and	Present	No CNDDDB occurrences of this species have been recorded within 2 miles of the BSA. This species has no potential to nest in the vicinity of the project, but may forage in Bothin Marsh Preserve, located northeast of the project footprint. <b>Low Potential</b>

Scientific Name	Common Name	Status <sup>1</sup>	General Habitat Description	General Habitat Present/Absent	Rationale
			salt evaporation ponds. Adults and broods typically forage near shallow water and on dry flats up to 4 kilometers from their nest.		
<i>Geothlypis trichas</i>	San Francisco common yellowthroat	SSC	Occurs in coastal riparian and wetland areas of western Marin County, the tidal marsh system of San Pablo Bay, the tidal marsh system of southern San Francisco Bay, and coastal riparian and wetland areas in San Mateo County.	Low Potential	No CNDDDB occurrences of this species have been recorded within 2 miles of the BSA. This species has no potential to nest in the vicinity of the project, but may forage in Bothin Marsh Preserve, located northeast of the project footprint. <b>Low Potential</b>
<i>Laterallus jamaicensis coturniculus</i>	California black rail	ST, FP	Found in tidal emergent wetlands dominated by pickleweed or in brackish marshes supporting bulrushes in association with pickleweed. Nest concealed in dense vegetation, often pickleweed, near upper limits of tidal flooding.	Present	There are two CNDDDB occurrences of this species within 2 miles of the project footprint, one of which was recorded in 1945. There is no habitat for this species located within the project footprint; however, suitable habitat in the form of salt marsh is located at the northeastern extent of the BSA, within Bothin Marsh Preserve. Bothin Marsh Preserve may provide suitable nesting and foraging habitat for this species. <b>Moderate Potential</b>
<i>Melospiza melodia samuelis</i>	San Pablo song sparrow	SSC	This species year-round range is confined to tidal and muted tidal salt marshes fringing San Pablo Bay in the northern reaches of the San Francisco Bay estuary.	Present	One CNDDDB occurrence of this species has been recorded within 2 miles of the BSA; however, this record is from 1947. There is no habitat for this species located within the project footprint; however, suitable habitat in the form of salt marsh is located at the northeastern extent of the

Scientific Name	Common Name	Status <sup>1</sup>	General Habitat Description	General Habitat Present/ Absent	Rationale
					BSA, within Bothin Marsh Preserve. Bothin Marsh Preserve may provide suitable nesting and foraging habitat for this species. <b>Moderate Potential</b>
<i>Phoebastria albatrus</i>	Short-tailed albatross	FE	Short-tailed albatrosses now nest on four known islands, all located outside of the contiguous U.S. This species has been observed foraging off the coast of California. This species feeds mainly on squid.	Absent	No CNDDDB occurrences of this species have been recorded within 2 miles of the BSA. No nesting habitat for this species is present in the BSA. Although this species is known to range as far as the western U.S., and could potentially traverse the BSA, no suitable foraging habitat for this species occurs in the BSA. <b>Low Potential</b>
<i>Rallus longirostris obsoletus</i>	Ridgway's rail (formerly California clapper rail)	FE, SE, FP	Salt and brackish marsh habitat with a high density of cordgrass. Nest concealed in dense vegetation, often cordgrass, near upper limits of tidal flooding.	Present	There is one CNDDDB occurrence of this species within 2 miles of the project footprint, which was recorded in 1967. There is no habitat for this species located within the project footprint; however, suitable habitat in the form of salt marsh is located at the northeastern extent of the BSA, within Bothin Marsh Preserve. Bothin Marsh Preserve may provide suitable nesting and foraging habitat for this species. <b>Moderate Potential</b>
<i>Sternula antillarum browni</i>	California least tern	FE, SE, FP	Nests in colonies on relatively open beaches where vegetation is limited by natural scouring from tidal action. Has two nesting periods during one season.	Present	No CNDDDB occurrences of this species have been recorded within 2 miles of the BSA. No nesting or foraging habitat for this

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Scientific Name	Common Name	Status <sup>1</sup>	General Habitat Description	General Habitat Present/ Absent	Rationale
			Typical egg-laying during the first period begins in early- to mid-May. The second nesting period is slightly longer than the first, and hatching may continue throughout July and occasionally into August. Fall migration to southern latitudes generally commences during the last week of July and the first week of August.		species is present within the project footprint. In addition, this species has no potential to nest in the vicinity of the project, but may forage in Bothin Marsh Preserve, located northeast of the project footprint. <b>Low Potential</b>
<i>Strix occidentalis caurina</i>	Northern spotted owl	FT, State Candidate Threatened	Live in forests characterized by a dense canopy of mature and old-growth trees, abundant logs, standing snags, and live trees with broken tops. Prefers older forest stands (over 150 years old) with multi-layered canopies of several tree species of varying size and age, both standing and fallen dead trees, and open space among the lower branches to allow flight under the canopy.	Absent	There are 13 occurrences of this species within 1.5 miles of the project area; however, none of these occurrences are located within 1 mile of the project area. Tam Junction is a developed commercial area surrounded by residential communities to the north, west, and south; and salt marsh habitat to the east. Due to the lack of nesting or foraging habitat in the immediate vicinity of the project area and the nature of construction activities on existing paved surfaces, noise from the project would not adversely affect northern spotted owl. <b>Low Potential</b>
<b>Mammals</b>					
<i>Reithrodontomys raviventris halicoetes</i>	Salt marsh harvest mouse	FE, SE	Found in salt marshes and brackish wetlands and has low tolerance for freshwater. Depends on habitats dominated by dense stands of pickleweed ( <i>Salicornia</i> sp.) that are adjacent to upland, salt-tolerant vegetation for escape during high tides. Breeding occurs from spring to fall.	Present	There is one CNDDB occurrences of this species within 2 miles of the project footprint, which was recorded in 1938. There is no habitat for this species located within the project footprint; however, suitable habitat in the form of salt marsh is

Table 1. Special-Status Species and Critical Habitat Potentially Occurring or Known to Occur in the BSA					
Scientific Name	Common Name	Status <sup>1</sup>	General Habitat Description	General Habitat Present/Absent	Rationale
					located on the northeastern extent of the BSA within Bothin Marsh Preserve. <b>Moderate Potential</b>
<p>Notes:</p> <p><sup>1</sup> Listing Status Codes:</p> <p>FE – Federally endangered</p> <p>FT – Federally threatened</p> <p>SE – State endangered</p> <p>ST – State threatened</p> <p>FP – fully protected</p> <p>SSC – species of special concern</p> <p>CNPS 1A – presumed extirpated</p> <p>CNPS 1B.1 – seriously threatened in California</p> <p>CNPS 1B.2 – threatened in California</p> <p>CNPS 1B.3 – not very threatened</p>					



### ***Special-Status Animal Species***

Four special-status wildlife species—salt marsh harvest mouse, California black rail, Ridgway's rail, and San Pablo song sparrow—were determined to have moderate potential to occur in the BSA. The other wildlife species listed in Table 1 were eliminated from further consideration in this document, either because the BSA does not support their required habitats, there are a lack of recorded observations in the area, or because the BSA is outside the species' known range. Species with a low potential to occur in the BSA are not discussed further in this document.

Salt marsh harvest mouse, California black rail, Ridgway's rail, and San Pablo song sparrow have potential to occur at the northeastern extent of the BSA, within Bothin Marsh Preserve. These species, however, have no potential to occur within the project footprint. The paved and developed areas subject to project disturbance would not support any special-status wildlife species with known occurrence in the area. Each of these species and the project's likely effects are discussed in detail below.

#### *Salt Marsh Harvest Mouse*

The northern salt marsh harvest mouse (*Reithrodontomys raviventris halicoetes*) is federally endangered and State endangered. This species has brown hair and a unicolorous to moderately bicolorous tail. The combined head and body length is approximately 3 inches with an average weight of less than 0.35 ounce. This species lives in the marshes of the San Pablo and Suisun Bays. This species is generally restricted to saline (salty) or brackish (somewhat salty) marsh habitats in the Suisun Bay area. Salt marsh harvest mice are typically associated with tall, dense, continuous stands of *Sarcocornia pacifica* which they use for cover and a food source. These stands remain mostly unsubmerged during periods of flooding, or are mixed with other unsubmerged sources of cover, such as taller vegetation (*Grindelia*). In addition, landward marsh edges serve as flood refugia for salt marsh harvest mice.

Habitat loss due to human actions is the greatest threat to the salt marsh harvest mouse. Habitat loss that threatens the salt marsh harvest mouse is due to filling, diking, subsidence, changes in water salinity, non-native species invasions, sea level rise associated with global climate change, and pollution (USFWS 2010).

#### *Survey Results*

There is one CNDDDB occurrences of this species within 2 miles of the project footprint, which was recorded in 1938. No salt marsh habitat is present in the project footprint; however, salt marsh habitat is present at the northeastern extent of the BSA, in Bothin Marsh Preserve.

#### *Project Impacts*

No salt marsh harvest mouse habitat is located within the project footprint; therefore, no direct permanent or temporary impacts to salt marsh harvest mouse habitat would occur. The project footprint is restricted to paved roadways and developed road shoulders and injury or crushing of salt marsh harvest mouse is not anticipated to occur. Therefore, the activities that have a potential to impact salt marsh harvest mouse are related to noise and increased human presence resulting in harassment of the species. However, the project footprint is confined to SR-1 and Almonte Boulevard, which are both highly utilized roadways that receive high levels of existing vehicle traffic and human activity. It is highly unlikely that the species utilizes these areas or the areas immediately adjoining the project footprint.

Accidental spills or runoff from the project footprint could potentially enter and degrade salt marsh habitat and result in indirect impacts. Implementation of the avoidance and minimization measures, including providing WEAP training, restricting project activities to approved work areas (existing roadway), and

installation of erosion control materials and BMPs would reduce the likelihood that salt marsh harvest mice would be indirectly affected by project construction activities. Indirect permanent impacts are not expected to occur as a result of the project, as the project would not increase the number of vehicles traveling through Tam Junction that could have an associated increase in permanent traffic noise or potential for accidental spills.

Because of the minor nature of potential project effects, the low likelihood of salt marsh harvest mice being impacted by construction noise or human presence, and implementation of the avoidance and minimization measures, no effects to salt marsh harvest mouse are anticipated.

#### *Ridgway's Rail*

The Ridgway's rail (*Rallus longirostris obsoletus*) is federally endangered, State endangered, and State fully protected. The Ridgway's rail is one of the largest rails, measuring 13-19 inches from bill to tail. It is characterized by its hen-like appearance, a long, slightly downward-curving bill, olive-brown upper parts, a cinnamon-buff colored breast, dark flanks crossed by white bars. This species occurs almost exclusively in tidal salt and brackish marshes with unrestricted daily tidal flows, adequate invertebrate prey food supply, well developed tidal channel networks, and suitable nesting and escape cover as refugia during extreme high tides. The Ridgway's rail now occurs only within the tidal salt and brackish marshes around San Francisco Bay where it is restricted to less than 10 percent of its former geographic range. The breeding season of Ridgway's rail begins by February. Nesting starts in mid-March and extends into August.

Threats include vulnerability to predation by native and non-native predators, which is exacerbated by reduction of Ridgway's rail habitat to narrow and fragmented patches close to urban edge areas that diminish habitat quality. Further, anticipated sea level rise presents a high magnitude threat in the long-term, especially in the central and south San Francisco Bay (USFWS 1970, USFWS 2013).

#### *Survey Results*

There is one CNDDDB occurrence of this species within 2 miles of the project footprint, which was recorded in 1967. No salt marsh habitat is present in the project footprint; however, salt marsh habitat is present at the northeastern extent of the BSA, in Bothin Marsh Preserve.

#### *Project Impacts*

No Ridgway's rail habitat is located within the project footprint; therefore, no direct permanent or temporary impacts to Ridgway's rail habitat would occur. The project footprint is restricted to paved roadways and developed road shoulders and injury or crushing of Ridgway's rail is not anticipated to occur. Therefore, the activities that have a potential to impact Ridgway's rail are related to noise and increased human presence resulting in harassment of Ridgway's rail. However, the project footprint is confined to SR-1 and Almonte Boulevard, which are both highly utilized roadways that receive high levels of existing vehicle traffic and human activity. On June 2, 2016, Jules Evens of Avocet Research Associates prepared an assessment of potential disturbance to Ridgway's rail and other special-status avian species for the Almonte Shoreline Improvements Project (Appendix B). The assessment indicates that the existing (ambient) pre-project sound levels along the section of Almonte Boulevard that most closely approaches occupied habitat) range from 62.5 to 93.3 dBA, with measurements at the high end due to single events that elevated the noise levels (e.g., operation of a chainsaw and back-up beepers on nearby construction equipment). Given the ambient sound levels at this busy intersection (average of 62.9 to 80.6 dBA), if anticipated action-generated sound levels range into the "high" or "very high" (91-100 dB) range, the estimated "harassment distance" for Ridgway's rail is 50 meters (or 164 feet), based on

the 2006 USFWS document “Estimating the effects of auditory and visual disturbance to Northern Spotted Owls and Marbled Murrelets in northwestern California.” (The Ridgway’s rail is approximately the same body mass as the murrelet and similarly furtive, so that the murrelet is a reasonable surrogate for the rail.) The potentially occupied Ridgway’s rail habitat is 75 meters (or approximately 246 feet) from the northern extent of the project site; therefore, the area where the Ridgway’s rail would be expected is beyond the harassment distance from future noise where Almonte Boulevard is proposed to be improved. Furthermore, the occupied habitat would be buffered from construction noise and visual impacts by an existing berm that runs along the roadway shoulder and would separate the habitat from the project site.

Accidental spills or runoff from the project footprint could potentially enter and degrade Ridgway’s rail habitat, resulting in indirect impacts. Implementation of the avoidance and minimization measures, including providing WEAP training, restricting project activities to approved work areas (existing roadway), and installation of erosion control materials and BMPs would reduce the likelihood that Ridgway’s rail would be indirectly affected by project activities. Indirect permanent impacts are not expected to occur as a result of the project, because the project would not increase the number of vehicles traveling through Tam Junction that could have an associated increase in permanent traffic noise or potential for accidental spills.

Because of the minor nature of potential project effects, the low likelihood of Ridgway’s rail being impacted by construction noise or human presence, and implementation of the avoidance and minimization measures, no effects to Ridgway’s rail are anticipated.

#### *California Black Rail*

California black rail (*Laterallus jamaicensis coturniculus*) is State threatened and State fully protected. This species is a small blackish rail, about the size of a sparrow, speckled with white. California black rail habitat generally includes salt marshes, freshwater marshes, and wet meadows. Most California populations are nonmigratory, and these habitat types serve for breeding, foraging, and overwintering. In tidal areas, the rails also require dense cover of upland vegetation to provide protection from predators when rails must leave marsh habitats during high tides. Typical associated vegetation includes pickleweed (*Salicornia virginica*) in salt marshes and bulrush (*Scirpus* spp.) in less saline habitats. California black rails forage in the same habitats that they use for breeding. This species begins breeding in February and nesting occurs from March to June. Nests are often concealed in dense vegetation, often pickleweed, near upper limits of tidal flooding (Dudek and ICF International 2012).

Human impacts on black rails include shooting and trapping, contaminants, collisions, and most importantly habitat impairment. In addition, effects such as potential disturbance of nesting birds during surveys, and mortality, nest failure, or exposure to predation, may occur in association with mist netting, radio tracking, or other invasive research techniques.

#### *Survey Results*

There are two CNDDDB occurrences of this species within 2 miles of the project footprint, one of which was recorded in 1945. No salt marsh habitat is present in the project footprint; however, salt marsh habitat is present at the northeastern extent of the BSA, in Bothin Marsh Preserve.

#### *Project Impacts*

Potential impacts to California black rail are almost identical to those discussed for Ridgway’s rail, including construction-related noise, increased human presence, and potential degradation of habitat due to accidental spills or runoff. The only significant differences between the two species are that Ridgway’s

rail tends to be more sensitive to disturbance, and Ridgway's rail has a longer breeding season, extending from February to August. As discussed in the assessment provided by Avocet Research Associates (Appendix B), impacts to this species from construction-related noise or other disturbances are not anticipated.

Implementation of the avoidance and minimization measures, including providing WEAP training, restricting project activities to approved work areas (existing roadway), and installation of erosion control materials and BMPs would reduce the likelihood that California black rail would be affected by project activities.

Because of the minor nature of potential project effects, the low likelihood of California black rail being impacted by construction noise or human presence, and implementation of the avoidance and minimization measures, no effects to California black rail are anticipated.

#### *San Pablo Song Sparrow*

The San Pablo song sparrow (*Melospiza melodia samuelis*) is a California endemic and a California species of special concern. This species is brownish on the back and pale on the breast and the belly, with bold dark stripes on the back, flanks, breast, and belly. Its year-round range is confined to tidal and muted tidal salt marshes fringing San Pablo Bay in the northern reaches of the San Francisco Bay estuary. San Pablo song sparrows are primarily associated with high marsh, particularly pickleweed, and their territories are densest in areas where tidal channels are lined with gumplant. As with all Song Sparrow subspecies, dense vegetation is required for nesting sites, for song perches, and as cover from predators. The species breeds from early March to July.

Further habitat loss, fragmentation, and degradation are the primary threats to the San Pablo song sparrow. Alteration of marsh habitat by invasive cord grass (*Spartina* spp.) may also have adverse effects (Spautz and Nur 2008).

#### *Survey Results*

One CNDDDB occurrence of this species has been recorded within 2 miles of the BSA; however, this record is from 1947. No salt marsh habitat is present in the project footprint; however, salt marsh habitat is present at the northeastern extent of the BSA, in Bothin Marsh Preserve. In addition, trees and shrub vegetation along the borders of Bothin Marsh Preserve provide suitable nesting habitat for San Pablo song sparrow and are in close proximity to planned project activities along Almonte Boulevard.

#### *Project Impacts*

No San Pablo song sparrow habitat is located within the project footprint; therefore, no direct permanent or temporary impacts to California black rail habitat would occur. However, San Pablo song sparrows are also known to use non-generic habitats for nesting, including developed areas along the edges of salt marsh habitat and therefore could nest within ornamental trees or structures close to the project footprint.

Other temporary construction activities that have a potential to impact San Pablo song sparrow are related to noise and increased human presence resulting in harassment of nesting San Pablo song sparrow. However, the project footprint is confined to SR-1 and Almonte Boulevard, which are both highly utilized roadways with high levels of existing vehicle traffic and human activity. It is highly unlikely that the species utilizes these areas or the areas immediately adjoining the project footprint. As discussed in the assessment provided by Avocet Research Associates (Appendix B), impacts to this species from construction-related noise or other disturbances are not anticipated.

Accidental spills or runoff from the project footprint could potentially enter and degrade San Pablo song sparrow habitat. Implementation of the avoidance and minimization measures, including providing WEAP training, restricting project activities to approved work areas (existing roadway), and installation of erosion control materials and BMPs would reduce the likelihood that the San Pablo song sparrow would be affected by project activities. Indirect permanent impacts are not expected to occur as a result of the project, because the project would not increase the number of vehicles traveling through Tam Junction which could increase permanent traffic noise or potential for accidental spills.

Because of the minor nature of potential project effects, the low likelihood of San Pablo song sparrow being impacted by construction noise or human presence, and implementation of the avoidance and minimization measures, no effects to San Pablo song sparrow are anticipated.

### ***Avoidance and Minimization Measures***

The following avoidance and minimization measures will be implemented to reduce or otherwise entirely avoid the effects of the project on special-status species.

1. Migratory birds may nest or roost in the BSA. Occupied nests and eggs of native migratory birds are protected by CDFW Code Sections 3503 and 3503.5, and the federal Migratory Bird Treaty Act. If construction activities occur during the nesting season (February 1–August 31), a qualified biologist will survey for nesting birds, including raptors, no more than 14 days before the start of construction. Surveys should be repeated at a minimum every 14 days during active construction during the nesting bird season. The survey areas will include the BSA and an area 300 feet beyond the BSA boundaries. If active nests are detected in the survey area, work within 50 feet of the nest of passerine species, or 300 feet of a raptor nest will be avoided until a qualified biologist determines that nesting activity has been completed. If it is not feasible to implement this avoidance buffer, a site-specific plan will be developed by a qualified biologist in coordination with the appropriate agencies to determine if a reduced avoidance buffer is appropriate based upon 1) the type and duration of construction activities being conducted, 2) sensitivity or acclimation to disturbance, 3) the topography surrounding the nest site, and/or 4) the implementation of additional protective measures.
2. Construction activities will be confined to approved work areas (within the paved roadway and developed or disturbed road shoulders). No construction activities will occur within salt marsh habitat.
3. If a listed species is encountered during project construction, all work that may result in direct injury, disturbance, or harassment of the individual will cease immediately. The project biologist will contact USFWS and/or CDFW the same day that the individual is detected, to determine the appropriate course of action to avoid direct or indirect impacts the listed species.
4. To eliminate an attraction to predators of protected species, all food-related trash items (e.g., wrappers, cans, bottles, and food scraps) will be disposed in solid, closed containers (trash cans) and will be removed from the entire construction site at the end of each working period.
5. No firearms will be permitted at the construction site at any time.
6. No pets will be allowed in the construction area at any time.

7. A Stormwater Pollution Prevention Plan (SWPPP) or similar plan and erosion control BMPs will be developed and implemented to minimize any wind or water-related material discharges. The SWPPP will provide guidance for design staff to include provisions in construction contracts for measures to protect sensitive areas and prevent and minimize stormwater and non-stormwater discharges.
8. During ground-disturbing activities, dust control measures, such as water trucks, will be used.
9. Before the onset of construction activities, a qualified biologist will conduct a Worker Environmental Awareness Program (WEAP) training for construction workers. At a minimum, the training will include: a description of the four special-status wildlife species potentially occurring in the BSA (i.e., salt marsh harvest mouse, Ridgway's rail, California black rail, and San Pablo song sparrow), and protection under the federal Endangered Species Act for federally listed species; 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 all construction workers before they begin construction. After completion of the program, attendees will sign a form stating that they have taken the training and understand all of the avoidance and minimization measures.
10. Construction-related sound levels associated with the portion of the project along Almonte Boulevard will not exceed 101 dB per the USFWS 2006 guidance during the Ridgway's rail nesting season (February through August).
11. The most potentially disruptive activities within 75-m (~250 ft) of the tidal marsh habitat at the northern extent will be conducted during the September through January construction window.

## **5 – Conclusions and Regulatory Determination**

### ***Federal Endangered Species Act Consultation Summary***

Species lists were obtained from USFWS in May 2015 (Appendix A) and from NMFS in December 2016 (Appendix C). The project is receiving federal funding through the Federal Highway Administration (FHWA), and Caltrans has assumed FHWA's responsibilities under the Endangered Species Act of 1973 (16 U.S.C. 1531 et seq) in accordance with 23 U.S.C. 327, as described in the Memorandum of Understanding between the FHWA and Caltrans Concerning the State of California's Participation in the Project Delivery Program Pursuant to 23 U.S.C. 327 effective October 1, 2012 and codified in 23 U.S.C. 327 (a)(2)(A). Under this authority, Caltrans is authorized to make no effect determinations.

Based on a review of these species' habitat requirements, distribution, proximity of known occurrences, the habitats present in the BSA, potential dispersal corridors and barriers, none of these special-status species are expected to occur within the project footprint. No critical habitat occurs within the vicinity of the BSA (USFWS 2015). All construction activities would be restricted to the paved roadway and developed road shoulders at both project locations. With the implementation of project avoidance and minimization measures, the project would have no direct, indirect, or cumulative impacts on special-status species identified in Table 1, including salt marsh harvest mouse, California black rail, and Ridgway's rail.

## **References**

Avocet Research Associates, LLC. 2016. TAM Almonte Boulevard-Shoreline Highway Bicycle and Pedestrian Improvements Project: Assessment of Potential Disturbance to the Federally Endangered Ridgway's Rail and Other Special-Status Avian Species. Pointe Reyes Station, CA.

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- . 2015. Critical Habitat Portal. <http://crithab.fws.gov/crithab>. Accessed May 7, 2015.



**Appendix A  
USFWS/IPaC List of Species**

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# My project

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## *IPaC Trust Resource Report*

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US Fish &amp; Wildlife Service

# IPaC Trust Resource Report



## Project Description

NAME

My project

PROJECT CODE

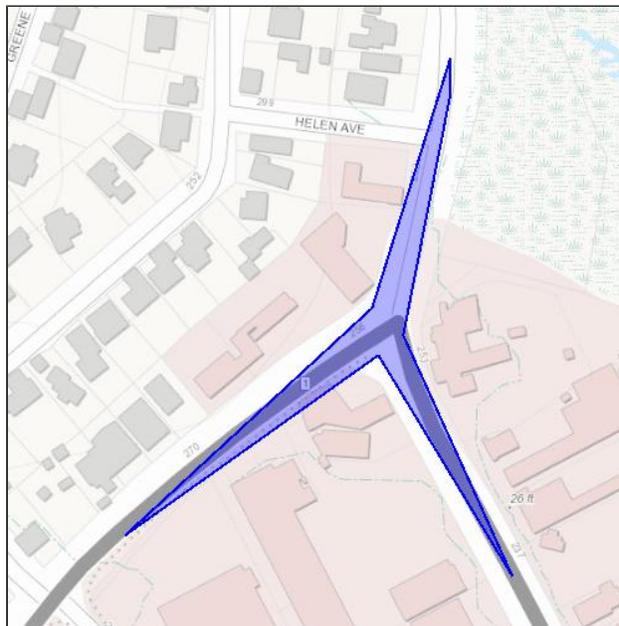
CMZ42-NINGR-GUHBN-6VHFC-74ENRQ

LOCATION

Marin County, California

DESCRIPTION

No description provided



## U.S. Fish & Wildlife Contact Information

Species in this report are managed by:

**Sacramento Fish And Wildlife Office**

Federal Building

2800 COTTAGE WAY, ROOM W-2605

Sacramento, CA 95825-1846

(916) 414-6600

# Endangered Species

Proposed, candidate, threatened, and endangered species that are managed by the [Endangered Species Program](#) and should be considered as part of an effect analysis for this project.

## Amphibians

### California Red-legged Frog

Threatened

#### DESCRIPTION

This subspecies of red-legged frog occurs from sea level to elevations of about 1,500 meters (5,200 feet). It has been extirpated from 70 percent of its former range and now is found primarily in coastal drainages of central California, from Marin County, California, south to northern Baja California, Mexico. Potential threats to the species include elimination or degradation of habitat from land development and land use activities and habitat invasion by non-native aquatic species.

<https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=D02D>

#### CRITICAL HABITAT

There is **final** critical habitat designated for this species.

## Birds

### California Clapper Rail

**Endangered**

#### DESCRIPTION

The California clapper rail (*Rallus longirostris obsoletus*) is one of the largest rails (family Rallidae), measuring 13-19 inches from bill to tail. It is characterized by its hen-like appearance, a long, slightly downward-curving bill, olive-brown upper parts, a cinnamon-buff colored breast, dark flanks crossed by white bars and white undertail coverts which are often exposed when the bird is agitated.

<https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?sPCODE=B04A>

#### CRITICAL HABITAT

**No critical habitat** has been designated for this species.

### California Least Tern

**Endangered**

#### DESCRIPTION

Long, narrow wings and a broad, forked tail identify the California least tern. Also have black-capped head and black-tipped, pale gray wings of the least tern contrast with its white body. It bears a white blaze across its forehead, dark forewings, black-tipped yellow bill, and yellowish feet. Is less the 25 cm when full grown and has 75 cm wingspan.

<https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?sPCODE=B03X>

#### CRITICAL HABITAT

**No critical habitat** has been designated for this species.

### Marbled Murrelet U.S.A. (CA, OR, WA)

**Threatened**

#### DESCRIPTION

The marbled murrelet is a small, chubby seabird that has a very short neck. During the breeding season it has dark brown to blackish upperparts and a white belly and throat that are greatly mottled. During the winter the upperparts become grey, dark marks form on the sides of the breast and a white ring develops around the eye. Males and females are similar in appearance and size. Juveniles are similar to the adult winter plumage, but with dusky mottling on the underparts. Vocalisations include ...

<https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?sPCODE=B08C>

#### CRITICAL HABITAT

There is **final** critical habitat designated for this species.

### Northern Spotted Owl

**Threatened**

#### DESCRIPTION

The northern spotted owl is a medium-sized, dark brown owl with a barred tail, white spots on the head and breast, and dark brown eyes surrounded by prominent facial disks. Males and females have similar plumage, but females typically weigh 10 to 20 percent more than males.

<https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?sPCODE=B08E>

#### CRITICAL HABITAT

There is **final** critical habitat designated for this species.

## Short-tailed Albatross

**Endangered**

### DESCRIPTION

The largest and only white-bodied albatross in the north Pacific. Golden, yellow cast on head and nape. Upper wings: white with black primaries, secondaries, and tertiaries. Under wing: white with black leading and trailing edges. White tail with black fringe. Large, pink bill with blue tip and black border around the base. Pale bluish feet and legs. Length: 84-91 cm (33.6-36.4 in); wingspan: 213-229 cm (7-7.5 ft); average life span: 12-45 yrs.

<https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?sPCODE=B00Y>

### CRITICAL HABITAT

**No critical habitat** has been designated for this species.

## Western Snowy Plover U.S.A. (CA, OR, WA), Mexico (within 50 miles of Pacific coast)

**Threatened**

### DESCRIPTION

The western snowy plover (*Charadrius alexandrinus nivosus*) is a small shorebird distinguished from other plovers (family Charadriidae) by its small size, pale brown upper parts, dark patches on either side of the upper breast, and dark gray to blackish legs. Snowy plovers weigh between 1.2 and 2 ounces. They are about 5.9 to 6.6 inches long.

<https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?sPCODE=B07C>

### CRITICAL HABITAT

There is **final** critical habitat designated for this species.

# Fishes

## Delta Smelt

**Threatened****DESCRIPTION**

No description available

<https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?sPCODE=E070>

**CRITICAL HABITAT**

There is **final** critical habitat designated for this species.

## Steelhead Northern California DPS - See 50 CFR 223.102

**Threatened****DESCRIPTION**

Steelhead trout (*Oncorhynchus mykiss*) belong to the family Salmonidae which includes all salmon, trout, and chars. Steelhead are similar to some Pacific salmon in their life cycle and ecological requirements. They are born in fresh water streams, where they spend their first 1-3 years of life. They then emigrate to the ocean where most of their growth occurs. After spending between one to four growing seasons in the ocean, steelhead return to their native fresh water stream to spawn. Unlike Pac...

<https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?sPCODE=E08D>

**CRITICAL HABITAT**

There is **final** critical habitat designated for this species.

## Tidewater Goby

**Endangered****DESCRIPTION**

No description available

<https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?sPCODE=E071>

**CRITICAL HABITAT**

There is **final** critical habitat designated for this species.

# Flowering Plants

## Marin Dwarf-flax

**Threatened****DESCRIPTION**

No description available

<https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?sPCODE=Q1X6>

**CRITICAL HABITAT**

**No critical habitat** has been designated for this species.

## Insects

### Mission Blue Butterfly

Endangered

DESCRIPTION

No description available

<https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?sPCODE=I00J>

CRITICAL HABITAT

**No critical habitat** has been designated for this species.

### Myrtle's Silverspot Butterfly

Endangered

DESCRIPTION

No description available

<https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?sPCODE=I00N>

CRITICAL HABITAT

**No critical habitat** has been designated for this species.

## Mammals

### Salt Marsh Harvest Mouse U.S.A.(CA)

Endangered

DESCRIPTION

Dark brown above; pinkish cinnamon or tawny below. Tail similarly bicolored. Upper incisors grooved.

<https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?sPCODE=A03Y>

CRITICAL HABITAT

**No critical habitat** has been designated for this species.

## Critical Habitats

Potential effects to critical habitat(s) within the project area must be analyzed along with the endangered species themselves.

There is no critical habitat within this project area

# Migratory Birds

Birds are protected by the [Migratory Bird Treaty Act](#) and the Bald and Golden Eagle Protection Act.

Any activity which results in the take of migratory birds or eagles is prohibited unless authorized by the U.S. Fish and Wildlife Service (1). There are no provisions for allowing the take of migratory birds that are unintentionally killed or injured.

You are responsible for complying with the appropriate regulations for the protection of birds as part of this project. This involves analyzing potential impacts and implementing appropriate conservation measures for all project activities.

## Allen's Hummingbird

This is a **bird of conservation concern** and has the highest priority for conservation

### SEASON

Breeding

### DESCRIPTION

No description available

## Bald Eagle

This is a **bird of conservation concern** and has the highest priority for conservation

### SEASON

Year-round

### DESCRIPTION

A large raptor, the bald eagle has a wingspread of about 7 feet. Adults have a dark brown body and wings, white head and tail, and a yellow beak. Juveniles are mostly brown with white mottling on the body, tail, and undersides of wings. Adult plumage usually is obtained by the 6th year. In flight, the bald eagle often soars or glides with the wings held at a right angle to the body.

## Bell's Sparrow

This is a **bird of conservation concern** and has the highest priority for conservation

### SEASON

Year-round

### DESCRIPTION

The Sage Sparrow is a medium-sized bird ranging from 12-15 cm in length. It is generally brownish-gray in color with a grayer head and a more brown-colored back and wings. Some distinctive features of the Sage Sparrow include a white eye ring, a white spot in front of the eye, white streaks along the side of the lower jaw, and sometimes a white streak in the middle of its forehead. The Sage Sparrows under parts are mostly white with a contrasting much darker blackish, brown tail. The Sage Sp...

## Black Oystercatcher

This is a **bird of conservation concern** and has the highest priority for conservation

### SEASON

Year-round

### DESCRIPTION

No description available

## Black Rail

This is a **bird of conservation concern** and has the highest priority for conservation

SEASON

Breeding

DESCRIPTION

No description available

## Burrowing Owl

This is a **bird of conservation concern** and has the highest priority for conservation

SEASON

Year-round

DESCRIPTION

No description available

## Common Yellowthroat

This is a **bird of conservation concern** and has the highest priority for conservation

SEASON

Breeding

DESCRIPTION

No description available

## Costa's Hummingbird

This is a **bird of conservation concern** and has the highest priority for conservation

SEASON

Breeding

DESCRIPTION

No description available

## Fox Sparrow

This is a **bird of conservation concern** and has the highest priority for conservation

SEASON

Wintering

DESCRIPTION

No description available

## Lesser Yellowlegs

This is a **bird of conservation concern** and has the highest priority for conservation

SEASON

Wintering

DESCRIPTION

No description available

## Lewis's Woodpecker

This is a **bird of conservation concern** and has the highest priority for conservation

SEASON

Wintering

DESCRIPTION

No description available

## Loggerhead Shrike

This is a **bird of conservation concern** and has the highest priority for conservation

SEASON

Wintering

DESCRIPTION

No description available

## Long-billed Curlew

This is a **bird of conservation concern** and has the highest priority for conservation

SEASON

Wintering

DESCRIPTION

The Long-billed Curlew is a very large shorebird of about 50-65 cm in length. Its distinctive features include a very long bill (11-22 cm) and long legs. Its plumage is a rich pale brown color intermingled with cinnamon and pink. Its flight feathers are a contrasting orange-brown color. Female and male plumage is similar, but females are slightly larger with a longer bill. Juveniles have similar, but slightly different coloring than adults, including less distinct streaking on their undersides, ...

## Marbled Godwit

This is a **bird of conservation concern** and has the highest priority for conservation

SEASON

Wintering

DESCRIPTION

No description available

## Nuttall's Woodpecker

This is a **bird of conservation concern** and has the highest priority for conservation

SEASON

Year-round

DESCRIPTION

No description available

## Oak Titmouse

This is a **bird of conservation concern** and has the highest priority for conservation

SEASON

Year-round

DESCRIPTION

No description available

## Olive-sided Flycatcher

This is a **bird of conservation concern** and has the highest priority for conservation

### SEASON

Breeding

### DESCRIPTION

No description available

## Peregrine Falcon

This is a **bird of conservation concern** and has the highest priority for conservation

### SEASON

Year-round

### DESCRIPTION

No description available

## Short-billed Dowitcher

This is a **bird of conservation concern** and has the highest priority for conservation

### SEASON

Wintering

### DESCRIPTION

No description available

## Short-eared Owl

This is a **bird of conservation concern** and has the highest priority for conservation

### SEASON

Wintering

### DESCRIPTION

The short-eared owl is an owl of about 0.7 to 0.8 lbs with females slightly larger in size than males. Plumage is brown, buff, white and rust colors. Patches of brown and buff occur mostly on the back side, while the underside is colored more lightly, being mostly white. Females and males have similar plumage. Some distinguishing characteristics of this owl are its gray white fascial disk, and black coloring around yellow eyes. Juveniles have similar plumage to adults, but upper parts and head a...

## Tricolored Blackbird

This is a **bird of conservation concern** and has the highest priority for conservation

### SEASON

Year-round

### DESCRIPTION

The Tricolored Blackbird is a medium-sized (18-24cm total length), sexually dimorphic North American passerine (Beedy, Edward, and Hamilton III 1999). Adult males are typically larger than females, and are black with bright red and white plumage on the wing shoulder. Adult females have sooty brown-black plumage with distinct grayish streaks, a relatively white chin and throat, and a smaller reddish shoulder-patch. Banding studies indicate a lifespan of 12-13 years (DeHaven and Neff 1973, Kenn...

## Whimbrel

This is a **bird of conservation concern** and has the highest priority for conservation

SEASON

Wintering

DESCRIPTION

No description available

## Yellow Rail

This is a **bird of conservation concern** and has the highest priority for conservation

SEASON

Wintering

DESCRIPTION

No description available

## Yellow Warbler

This is a **bird of conservation concern** and has the highest priority for conservation

SEASON

Breeding

DESCRIPTION

No description available

## Red Knot

This is a **bird of conservation concern** and has the highest priority for conservation

SEASON

Wintering

DESCRIPTION

No description available

## Refuges

Any activity proposed on [National Wildlife Refuge](#) lands must undergo a 'Compatibility Determination' conducted by the Refuge. If your project overlaps or otherwise impacts a Refuge, please contact that Refuge to discuss the authorization process.

There are no refuges within this project area

# Wetlands

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

Project proponents should discuss the relationship of these requirements to their project with the Regulatory Program of the appropriate [U.S. Army Corps of Engineers District](#).

## DATA LIMITATIONS

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

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

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

## DATA EXCLUSIONS

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

## DATA PRECAUTIONS

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

There are no wetlands identified in this project area

**Appendix B  
Assessment of Potential  
Disturbance to Ridgway's Rail and  
Other Special-Status Avian  
Species**

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**TAM ALMONTE BOULEVARD-SHORELINE HIGHWAY  
BICYCLE AND PEDESTRIAN IMPROVEMENTS PROJECT:  
ASSESSMENT OF POTENTIAL DISTURBANCE TO THE FEDERALLY  
ENDANGERED RIDGWAY'S RAIL (*RALLUS OBSOLETUS OBSOLETUS*),  
AND OTHER SPECIAL-STATUS AVIAN SPECIES.**



CALIFORNIA RIDGWAY'S RAIL. PHOTOGRAPH BY JULES EVENS

Report prepared for:

**AECOM**

One Montgomery Street, Suite 900, San Francisco, California 94104.

Report Prepared by:

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**28 April 2016**

## ***Introduction***

Avocet Research Associates (ARA) entered into an agreement with AECOM on 23 June 2016 to assess the potential impacts of construction activities associated with the Transportation Authority of Marin (TAM) Almonte Boulevard-Shoreline Highway Bicycle and Pedestrian Improvements Project on three special status avian species: “California” Ridgway’s Rail (*Rallus obsoletus obsoletus*), “California” Black Rail (*Laterallus jamaicensis coturniculus*) and “San Pablo” Song Sparrow (*Melospiza melodia samuelis*). California Ridgway’s Rail (CRR) is a federal and state listed endangered species; Black Rail is state threatened and federally protected; the sparrow is a California Bird Species of Special Concern (CBSSC). Another CBSSC, the “San Francisco” Common Yellowthroat (*Geothlypis trichas sinuosa*), is also known to occur in the local wetlands and is included in the analysis.

## ***Project Description (from AECOM documents)***

The project is located in the surroundings of SR-1 and Almonte Boulevard, from post mile (PM) 0.5 to PM 0.76 in Mill Valley, Marin County (Figure 1). The area is commonly referred to as “Tam Junction” and is comprised of a commercial strip that is built on muddy soil that was formerly a wetland. The eastern extent of the project is approximately 215 feet northwest of the bridge crossing of Coyote Creek, the southwestern extent is Flamingo Road, and the northern extent is approximately 260 feet north of the intersection of Almonte Boulevard and SR-1. The project is located in Section 4, Township 1S, Range 6W within the San Rafael 7.5’ Quadrangle map.

Construction activities associated with the project in the vicinity of Tam Junction include the following:

- Adjust driveways’ cross slopes;
- Restripe approximately 1,542 feet of SR-1 to allow for 5-foot bicycle lanes and if needed, rehabilitate and resurface the pavement;
- Modify the traffic signal at Almonte Blvd. and SR-1 to include bicycle loop detection within the roadway section;
- Construct and modify sidewalk and drainage facilities to accommodate ADA improvements and bicycle lanes.

## **Setting**

“Tam Junction” is a busy, commercial intersection where Shoreline Highway 1 meets surface streets of Mill Valley. The section of the project that approaches occupied CRR habitat most closely is the northern spur that extends 260 ft (79-m) along Almonte Blvd (Figures 1 & 2). Along the length of Almonte Blvd., the road shoulder is approximately 60 ft (18.3-m) from the tidal marsh edge and 215 ft (65.5-m) from viable CRR habitat, an area known as Bothin Marsh. The area between the road shoulder and the CRR habitat is vegetated with emergent marsh vegetation typical of tidal habitat above MHHW— a wide band of *Distichlis/Jaumea* that extends, on average, 130 ft (40 m) bayward from the upland edge. This high marsh habitat is not typical of CRR occupied habitat. Typical CRR habitat begins about 200 ft (61-m) out from the road shoulder (Figs. 2, 7). There is an artificial berm that parallels Almonte Blvd. along its east side that serves as a topographic barrier between the project and the tidal marsh habitat (Figs. 2, 3, 4). The “Mill Valley to Sausalito Path,” a heavily used pedestrian/bicycle pathway, bisects Bothin Marsh, effectively dividing the marsh into east and west portions. The project site is closest to the western portion of Bothin Marsh.

## **Methods**

Jules Evens, ARA Principal, visited the site on 2 June 2016 to assess the project area (Fig. 1), take sound measurements, and photograph relevant features (Figs. 3-7). Additionally, we compiled known records of California Ridgway’s Rail (formerly “California Clapper Rail”) from Bothin Marsh and Richardson Bay from various sources: California Natural Diversity Data Base (CNDDB); Invasive Spartina Project (ISP) reports; North Bay Birds (NBB) list server; Point Blue Conservation Science (PBCS) field data; eBird reports; Marin Audubon Society (MAS) archives, and personal field notes (J. Evens pers. obs.).

For the purposes of this assessment, “California” Ridgway’s Rail (CRR) is considered an “umbrella species,” that is, protection of its habitat and avoidance measures prescribed to protect this endangered marsh resident will also serve to protect other at-risk avian species present, or presumed present, within proximate tidal marsh habitat. (CRR is the largest of this suite of at-risk bird species, therefore the most susceptible to disturbance; larger animals tend to have greater response distances than smaller species—Marzluff *et al.* 2001).

To evaluate response distance to sources of disturbance, we relied on the 2006 USFWS document “Estimating the effects of auditory and visual disturbance to Northern Spotted Owls and Marbled Murrelets in northwestern California.”<sup>1</sup> CRR is approximately the same body mass as the murrelet and similarly furtive, therefore the murrelet is used a surrogate for the rail.

Sound measurements to assess ambient background noise were taken on Tuesday afternoon, 2 June 2016, from 1445 to 1545 hrs from the edge of the CRR habitat boundary using a Reed R8050 Sound Level Meter, Type 2. This time period was selected to represent “typical” ambient noise on a weekday afternoon with the expected level of commercial and commuter traffic. (The timing corresponded with the end of classes at nearby Tamalpais High School.)

### ***Findings***

Research of existing records of CRR (and “California Clapper Rail”) for Bothin Marsh, Richardson Bay, and Marin County Flood Control and Open Space District from various sources discovered 27 separate records for the period 1967 through 2016 (Table 1). These records indicate that CRR is annually resident in the tidal marsh complex in low to moderate densities. The anomalous peak count of 9-10 individuals (record #6) suggests several possible explanations compared to the more modest number of individuals reported by others (see discussion, Appendix A).

The records in Table 1 require some explanation. The CNDDDB database is woefully inadequate and does not include any recent records, although many of those records have been reported to CDFW. Records 2-6 were reported by Jules Evens, author of this report, as part of protocol-level surveys conducted in 2006/7 to inform the Invasive Spartina Project. The reports by John Comstock (pers. comm.) were located at “the mouths of Arroyo Corte Madera del Presidio and Coyote Creek” (††). The 9-10 birds reported by Bill Stagnaro were seen clustered together on some emergent vegetation during an extreme winter tide and likely represent high count for the marsh complex (see discussion, Appendix A). Those records with the source labeled as “ISP/PBCS survey” were derived from USFWS permitted surveys conforming to prescribed agency protocols. Those reports gleaned from NBB or eBird are anecdotal, but reported by experienced observers.

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<sup>1</sup> <https://www.fws.gov/arcata/es/birds/MM/documents/MAMU-NSO%20Harassment%20Guidance%20NW%20CA%202006Jul31.pdf>

<sup>2</sup> “Standardized” values are sound levels converted to 50-foot equivalents (as though

**Table 1.** Records of California Ridgway's Rail from Bothin Marsh and vicinity. Those for which locations are available are plotted in Figure 2. The Invasive Spartina Project (ISP) and Point Blue conservation Science (PBCS) have been surveying inner Richardson Bay continuously 2007-2014. Numbers of rails (Column 4-##) are an estimate of separate detections rather than absolute abundance values.

#	Date(s)	Mapped Location	##	Source
1	XX/XX/1967	NA	<6	CNDDB
2	2001-2004	Figure 2	##	John Comstock, pers. comm.
3	04/01/2006	Figure 2	1	ISP/PBCS survey
4	01/30/2007	Figure 2	1-2	ISP/PBCS survey
5	01/30/2007	Figure 2	2+	ISP/PBCS survey
6	10/10/2006	NA	9-10	Bill Stagnaro, pers. comm.
7	02/14/2008	Figure 2	3	ISP/PBCS survey
8	02/29/2008	Figure 2	1	ISP/PBCS survey
9	03/17/2008	Figure 2	2	ISP/PBCS survey
10	11/XX/2008	NA	1	Maggie Rufo, NBB
11	01/23/2009	NA	1	Maggie Rufo, NBB
12	01/27/2009	Figure 2	2	ISP/PBCS survey
13	02/10/2009	Figure 2	2	ISP/PBCS survey
14	03/30/2009	Figure 2	6	ISP/PBCS survey
15	01/15/2010	Figure 2	2	ISP/PBCS survey
16	04/03/2010	Figure 2	6	ISP/PBCS survey
17	6/19/2010	NA	1	Harry Fuller, eBird
18	01/17/2011	NA	4	ISP/PBCS survey
19	02/22/2011	Figure 2	2	ISP/PBCS survey
20	03/29/2012	Figure 2	4	ISP/PBCS survey
21	08/17/2012	NA	1	Robt. Hinz, eBird
22	04/01/2013	Figure 2	4	ISP/PBCS survey
23	01/4/2013	NA	3	Megan Elrod, eBird
24	03/10/2014	Figure 2	6	ISP/PBCS survey
25	02/03/2014	NA	1	Carolee Coulter, eBird
26	xx/xx/2015	NA	3	ISP surveys
27	03/25/162016	NA	1	ISP/PBCS survey

Sound measurements taken at the edge of the tidal marsh habitat ranged from 62.5 to 93.3 dBa. The peak levels were episodic, occurring when a chainsaw was operating on residential property across Almonte Blvd., large tractor-trailers were downshifting, and back-up beepers were operating on construction equipment nearby. Average sound levels were in the range of 62.9-80.6 dBa. These ambient levels are characterized a "low" (61-70 dB) to "moderate" (71-80), but episodically ranged into "very high" (91-100 dB) levels (USFWS 2006).

## **Assessment**

This assessment considers four special status avian taxa occurring within the tidal marsh habitat adjacent to portions of the project site. For this assessment, it is assumed that prescriptions designed to protect CRRs will also protect these other smaller and generally less sensitive species from aural and visual impacts of the proposed project.

The preponderance of records from Bothin Marsh and associated wetlands, for which exact CRR locations are known, are east of the Mill Valley to Sausalito Path that traverses the wetlands (Fig 2). However, some CRR detections from the west marsh (ISP/PBCS surveys 2007-2014) indicate occupancy in that portion as well (Fig. 2). Indeed, the structure and characteristics of the marsh west of the path provides habitat elements required by CRR (Evens *et al.* 2010, Albertson and Evens 2000). Therefore, we consider the channelized tidal marsh west of the Mill Valley to Sausalito Path as occupied CRR habitat (Fig. 2).

The earthen berm that parallels Almonte Blvd. is an existing topographic feature that will serve to attenuate aural and visual impacts associated with the construction activities that might otherwise intrude into occupied CRR habitat (Figs. 2, 3, & 4).

The existing (ambient) pre-project sound levels along the section of Almonte Blvd. that most closely approaches occupied habitat were measured in the “high” (81-90 dB) range. Referring to the 2006 USFWS guidance: Given the ambient sound levels at this busy intersection, if anticipated action-generated sound levels range into the “high” or “very high” (91-100 dB) range, the estimated “harassment distance” is 164 ft (50-m) (Table 1 *in* USFWS 2006). The potentially occupied CCR habitat is approximately 246 ft (75-m) from the northern extent of the project site, therefore beyond the predicted harassment distance. Furthermore, the occupied habitat will be buffered from construction noise and visual impacts by the berm that separates the habitat from the project site (Figs. 2-5).

The project footprint also approaches the narrow tidal marsh corridor along Coyote Creek at its southern extent (where the Shoreline Hwy bridge crosses Coyote Creek). The shoreline of Coyote Creek here is heavily degraded by human activity and does not provide viable CRR habitat.

USFWS identifies the nesting period for the CRR as March through August (USFWS 2016) and recommends that activities that may impact nesting CRRs be conducted from September through January. As a precautionary measure, the most sound generating aspects of the project along its northern spur (Almonte Blvd.) should

be scheduled to occur during that time frame. If that restriction is followed by the project, the need for formal consultation with the relevant agencies is probably unnecessary. The construction along SR-1 is sufficiently distant from occupied or viable CRR habitat that it will not cause aural or visual disturbance.

A determination of no aural or visual disturbance impacts on the resident CRRs (and associated species) addressed in this report is contingent on the following assumptions:

- 1) The project site will be restricted to the area (including staging areas) provided to ARA by AECOM (Fig 1).
- 2) Relative sound levels associated with the portion of the project along Almonte Blvd. will not cross the “extreme” threshold of “standardized”<sup>2</sup> sound levels ( $\geq 101$  dB) per the USFWS 2006 guidance during the CRR nesting season (February through August).
- 3) The most potentially disruptive activities associated with this project will be conducted during the September through January construction window. This should apply to those sections within 75-m (~250 ft) of the tidal marsh habitat of the project at the northern extent (Almonte Blvd.).
- 4) That protective measures relevant to CRR will also protect other listed avian species within the Bothin Marsh complex.

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<sup>2</sup> “Standardized” values are sound levels converted to 50-foot equivalents (as though measured at 50 feet from the source).

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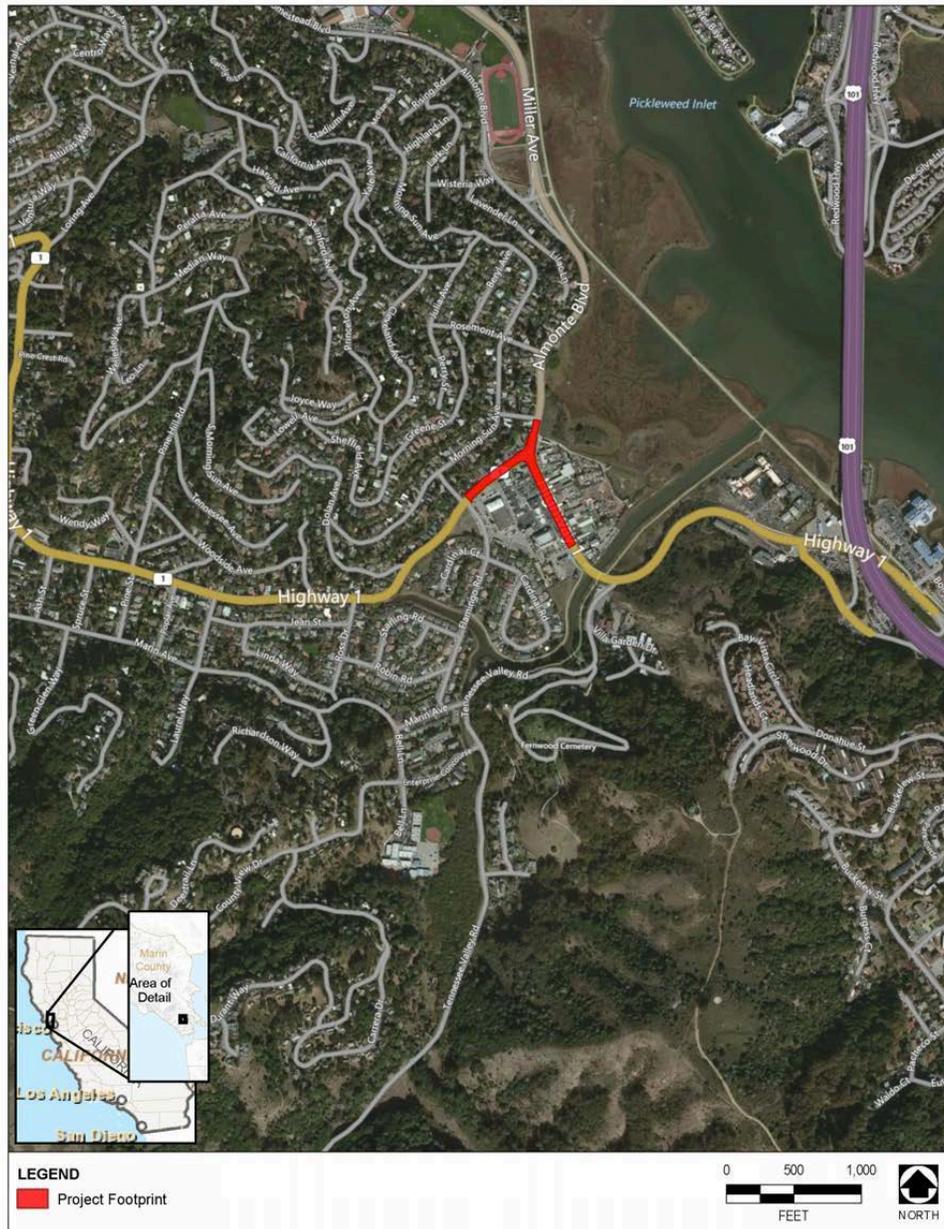
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Megan Elrod and Julian Woods of Point Blue Conservation Science generously provided recent CRR records. Rodney Jeung and Peter Boice of AECOM reviewed earlier versions of this report and provided helpful guidance

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 U.S. Fish and Wildlife Endangered Species Permit: TE 786728-4  
 California Department of Fish and Game Collecting Permit # 801092-04*



Source: Base Imagery Provided by Bing Maps, 2015

**Project Location**

TAM Almonte Shoreline

**Figure 1. PROJECT LOCATION**



**Figure 2.** Areas of Bothin Marsh where CRRs have been detected in ongoing protocol-level surveys conducted by ISP/PBCS (2007-2014) are encircled in red. Outliers from the main areas are indicated with red circles. The yellow line is the demarcation of the upland edge of suitable CRR habitat nearest (~75 meters; 246 feet) to the project site. The green polygon encloses the berm that stands between the Almonte Blvd. section of the project and the CRR habitat.



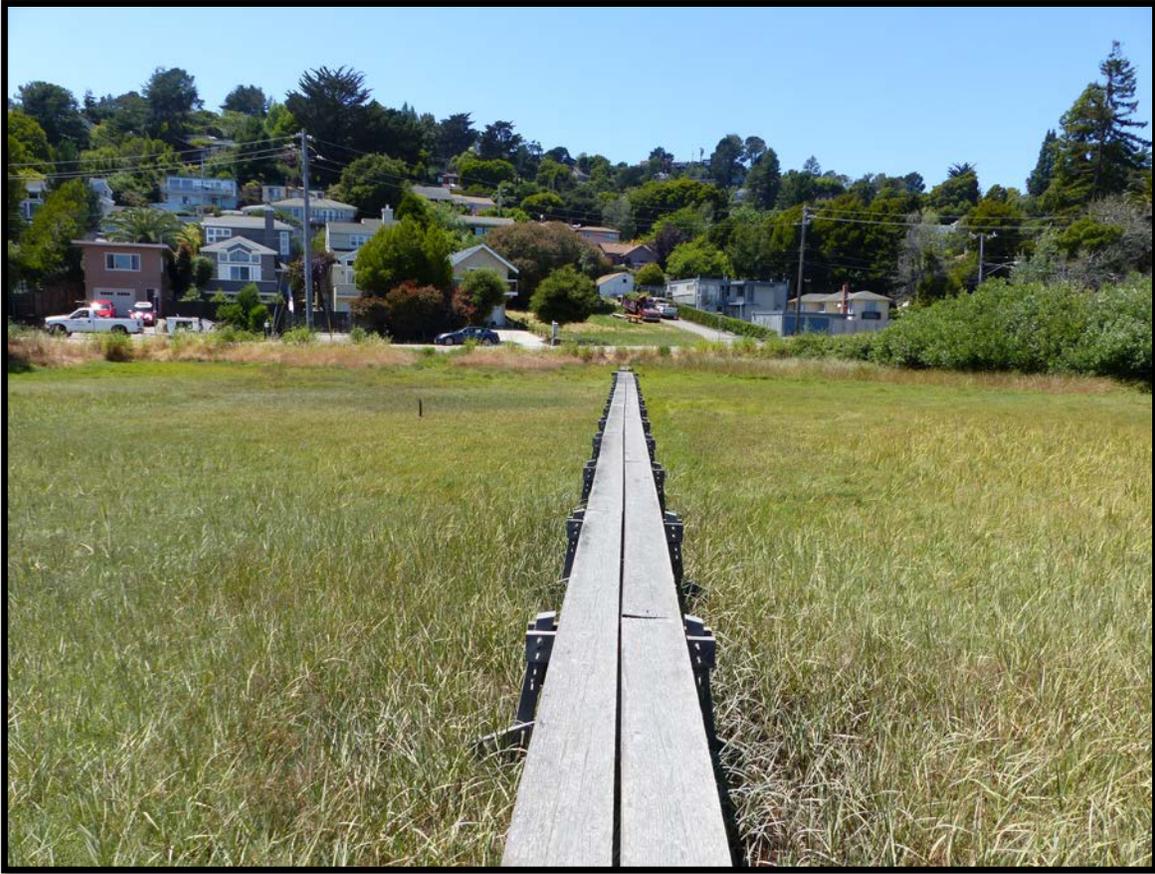
**Figure 3.** View of Almonte Blvd. looking south from the northern most extension of the project area showing the vegetated berm (left) that parallels the roadway. For scale, the vehicle (Toyota Highlander SUV) is ~ 6 feet tall.



**Figure 4.** View of the tidal marsh habitat from the PGE boardwalk looking SSW. The berm that parallels Almonte Blvd. is shown on the upper half of the image. The berm is vegetated with ruderal weeds (mostly non-native sweet fennel, *Foeniculum vulgare*) and oak trees. It is an estimated 6-8 feet in height and provides a visual and aural barrier between the section of the construction site along Almonte Blvd. and tidal marsh habitat. The channel in the foreground is a manmade ditch that drains a culvert under Almonte Blvd.



**Figure 5.** View of the berm, 130 ft. (40-m) distant, that parallels Almonte Blvd. from the PG&E tower located at the edge of high-value rail habitat (see Fig. 7). The high marsh habitat between the channelized marsh and the berm is planar, lacking tidal channels and covered in a near monotypic stand of perennial saltgrass (*Distichlis spicata*), an indicator of the high marsh plane, generally at or above mean higher high water.



**Figure 6.** View looking west along the PG&E boardwalk from the edge of viable CRR habitat toward Almonte Blvd., a distance of 188 feet (57.5 m).



**Figure 7.** View looking SE from the PG&E tower into channelized tidal marsh, viable California Ridgway's Rail habitat. Note the lack of higher micro-elevations that would support gumplant bushes (*Grindelia stricta*) typical nesting habitat for CRR.

## APPENDIX A.

### Surveys of selected marshlands in the San Francisco Estuary California Clapper Rail (*Rallus longirostris obsoletus*): Invasive *Spartina* Project, 2007.

**Final Report to: Olofson Environmental, Inc. 2560 9th St., Berkeley, CA 94710**  
**By: Jules Evens, Avocet Research Associates 65 Third St., Suite 25 Point Reyes Station, CA 9456 July 9, 2007**

#### Mill Valley/Bayfront Park/Bothin Marsh (ISP site 23j.)

**Coverage:** We conducted seven passive (Type A) surveys in 2007 as part of the Bothin Marsh complex as well as for the Marin County Flood Control and Open Space District. **Evaluation:** The results of these surveys indicate that clapper rails are resident in Bothin Marsh during the breeding season. Our detections were all outboard (west) of the trail that bisects the marsh (Figure 2), an area also as the “north basin.” The low number of detections on our surveys (none heard on the three protocol-level surveys conducted after January 30th) suggests that densities of clapper rails in Bothin Marsh are relatively low. Based on our protocol-level surveys, we estimate 1 to 2 pair in the entire marsh system. There are other recent reports of clapper rails from Bothin Marsh. A local resident who is also a birder mentioned that he has seen pairs in the vicinity of “both bridges” along the path (John Comstock, pers. comm. 2005). Also, Bill Stagnaro, a biologist with Wetland Research Associates, reported 9-10 individuals seen in the south basin during a winter flood tide (Oct. 10, 2006). These birds were clustered together in emergent vegetation, apparently refugees from the flooded tidal marsh. Regarding Mr. Stagnaro’s observation, the number of birds and their location in the south basin suggests several possibilities: (1) our estimate is low and there are 4-5 pairs of clapper rails resident in the Bothin system; (2) the fall-winter population is higher than the breeding population; or, (3) the fall-winter population is higher than the breeding population and birds present earlier in the season are either dying off or emigrating. (Although we formerly assumed Clapper Rails were sedentary during the breeding season, some recent evidence, based radio telemetry studies, shows mid-season dispersal. One bird tagged near the San Francisco Airport disappeared in May 2007 and reappeared 27 miles away, in Corte Madera) (ISP 2007).<sup>1</sup> To reconcile the high numbers reported by Mr. Stagnaro with the lower numbers noted on our surveys: Clapper Rails have high fecundity, laying 4-14 eggs per nest and 1 This previously unknown behavior may reflect the anomalous nature of the habitat near SFO, a marsh recently colonized by invasive non-native cordgrass (*Spartina alterniflora*). We suspect that these *Spartina* beds are an “attractive nuisance,” attracting birds initially, but not providing the viable habitat for successful nesting, potentially nesting several times in a season (Eddleman and Conway 1998). Even one successful nest might produce enough birds to account for the group observed by Mr. Stagnaro. Also, in sub-optimal habitat like that found at Bothin Marsh under current conditions, annual mortality is likely to be high for a ground-dwelling bird vulnerable to predation and flooding (Albertson and Evens 2000). Based on the results of our surveys and the observations of others, we infer that clapper rails nest in the outboard marshes, but use the inboard marsh of the south basin for refuge during periods of inundation. Survivorship of rails at the site through the

winter period is unknown, but the paucity of refugial habitat is cause for concern. We know of no records, nor did we have any detections in the marsh habitat north of the northern most station. Status: Occupied: 2 pair present in 2007. Other species: Canada Goose, Mallard, Gadwall, Green-winged Teal, American Wigeon, Pintail, Bufflehead, Ruddy Duck, Canvasback, Scaup spp., Common Goldeneye, Black-crowned Night-Heron, Great Blue Heron, Great Egret, Snowy Egret, Turkey Vulture, Red-tailed Hawk, American Avocet, Black-necked Stilt, Killdeer, Spotted Sandpiper, Greater Yellowlegs, Marbled Godwit, Whimbrel, Long-billed Curlew, Willet, Dunlin, Wilson's Snipe, Western Gull, Ring-billed Gull, Mourning Dove, Common Raven, Black Phoebe, Bewick's Wren, American Robin, European Starling, Song Sparrow, American Goldfinch. Notes: Active surveys for California Black Rails found no evidence of presence in the marsh complex. Several older records suggest that black rail may occur sporadically as a transient in higher elevation marsh vegetation



**Appendix C  
NMFS List of Species**

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## Boice, Peter

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**From:** NMFSWCRCA Specieslist - NOAA Service Account  
<nmfswcrca.specieslist+canned.response@noaa.gov>  
**Sent:** Tuesday, December 13, 2016 4:18 PM  
**To:** Boice, Peter  
**Subject:** Re: Caltrans - Almonte Boulevard-Shoreline Highway Bicycle and Pedestrian Improvements Project

Thank you for using NMFS' California species list, providing information for ESA, MSA, and MMPA resources under the jurisdiction of NMFS. Messages sent to this email address are not responded to directly. For questions, please contact Darren Howe by phone at [707-575-3152](tel:707-575-3152) or by email at [darren.howe@noaa.gov](mailto:darren.howe@noaa.gov).

**From:** [Boice, Peter](#)  
**To:** [nmfwcrca.specieslist@noaa.gov](mailto:nmfwcrca.specieslist@noaa.gov)  
**Cc:** [Jeung, Rodney](#); [Sossikian, Leana](#)  
**Subject:** Caltrans - Almonte Boulevard-Shoreline Highway Bicycle and Pedestrian Improvements Project  
**Date:** Tuesday, December 13, 2016 4:17:00 PM

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NOAA,

On behalf of the California Department of Transportation (Caltrans), I would like to request an official ESA species list (or email confirming receipt) for the Almonte Boulevard-Shoreline Highway Bicycle and Pedestrian Improvements Project. Per the guidance of Darren Howe (NOAA) and the "California Species List Tools," please see the following information:

**Agency Name and Address:**

California Department of Transportation  
District 4 Office  
111 Grand Avenue  
Oakland, CA 94612

**Point of Contact:**

Peter Boice  
Biologist/Permit Specialist  
D 415.547.2589 M 408.580.4011  
[Peter.Boice@AECOM.com](mailto:Peter.Boice@AECOM.com)

300 Lakeside Drive, Suite 400  
Oakland, CA 94612, USA  
T +1-510-893-3600

**Species List – Copied and Pasted from the “KMZ of NMFS Resources in California”**

-  
Quad Name **San Rafael**

Quad Number **37122-H5**

**ESA Anadromous Fish**

SONCC Coho ESU (T) -

CCC Coho ESU (E) - **X**

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) - **X**

**ESA Anadromous Fish Critical Habitat**

SONCC Coho Critical Habitat -

CCC Coho Critical Habitat - **X**

CC Chinook Salmon Critical Habitat -

CVSR Chinook Salmon Critical Habitat -

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

**ESA Marine Invertebrates**

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

**ESA Marine Invertebrates Critical Habitat**

- Black Abalone Critical Habitat - **X**

**ESA Sea Turtles**

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

**ESA Whales**

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

**ESA Pinnipeds**

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

**Essential Fish Habitat**

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

**MMPA Species (See list at left)**

**ESA and MMPA Cetaceans/Pinnipeds**

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

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

Please let us know if any additional information is required.

Thank you,

Peter Boice

Biologist/Permit Specialist  
D 415.547.2589 M 408.580.4011  
[Peter.Boice@AECOM.com](mailto:Peter.Boice@AECOM.com)

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