

East Bay Regional Park District  
**Addendum**  
**to the Previously Adopted**  
**Mitigated Negative Declaration**

**Martinez Bay Trail Project Phase II**

September 2024

*Prepared for:*  
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## **1.0 INTRODUCTION**

### **1.1 Summary and Purpose of this Addendum**

This document constitutes an Addendum to the May 7<sup>th</sup>, 2003 Initial Study/Mitigated Negative Declaration (IS/MND) (Appendix A) (City of Martinez, 2003). The IS/MND was originally prepared and adopted by the City of Martinez (City) for approval of the Martinez Bay Trail Phase II Project (hereafter referred to as the Original Project) located in Martinez, CA (Figure 1 and 2). A portion of the Original Project was constructed while construction of the rest of the project was put on hold until an easement could be obtained from Union Pacific Railroad (UPRR). In 2016, the East Bay Regional Park District (EBRPD) obtained an easement from UPRR to allow the project to move forward. The EBRPD is now finalizing design for the remaining project, proposes maintenance of existing segments and new but non-substantial improvements to the existing railroad crossing at Berrellesa Street (Proposed Project).

On August 7, 2020, the City responded to EBRPD's request, dated July 31, 2020, for EBRPD to act as Lead Agency for this Proposed Project. The EBRPD has prepared this Addendum to evaluate whether the Proposed Project would result in any new or substantially greater significant effects or require any new mitigation measures not identified in the 2003 MND that project proponents would decline to adopt. This Addendum, together with the 2003 MND will be used by EBRPD when considering approval of the Proposed Project.

### **1.2 Adoption and Availability of the Addendum**

In accordance with CEQA Guidelines Section 15164(c), an Addendum to an adopted MND need not be circulated for public review but can be included in or attached to the adopted MND and presented to the decision-making body. The decision-making body shall consider the Addendum with the adopted MND prior to making a decision on the project (CEQA Guidelines Section 15164(d)). EBRPD will file this Addendum to the previously approved MND for review and approval by the EBRPD Board of Directors.

### **1.3 Project Background**

The Original Project includes four segments of a total of approximately 3,100 feet of paved bike and pedestrian trail from the EBRPD Nejedly Staging Area to the existing EBRPD Martinez Regional Shoreline parking lot at Granger's Wharf (Figure 3). Segment 1 begins from the Nejedly Staging Area traveling northwesterly through EBRPD property to the UPRR right-of-way. Segment 2 is from the UPRR right-of-way traveling parallel to existing rail lines in the easterly direction to Berrellesa Street. Segment 3 consists of the trail crossing along the east side of Berrellesa Street at the UPRR right-of-way. Segment 4 includes a path traveling north along Berrellesa Street to Granger's Wharf. Segments 1, 3, and 4 were constructed following approval of the Original

Project in 2003. Segment 1 was constructed with aggregate base, though a paved surface was previously analyzed in the approved IS/MND. At the same time, the City also completed wetland mitigation within the Martinez Regional Shoreline to mitigate for wetland impacts due to proposed construction of Segment 2.

In addition to completing CEQA, the following permits were obtained:

- California Department of Fish and Game letter to East Bay Regional Park District, dated December 18, 2003
- U.S. Army Corps of Engineers Nationwide Permit, dated October 0 [sic], 2003
- California Regional Water Quality Control Board Conditional Water Quality Certification, dated December 17, 2004

Construction of Segment 2 was put on hold until a recreational trail easement could be obtained from UPRR. On May 3, 2016, an amended and restated Memorandum of Understanding was agreed to between UPRR and EBRPD, which provided recreational trail easements over railroad property and granted EBRPD a nonexclusive easement for a trail along UPRR right-of-way easterly to and across Berrellesa Street, which would allow construction for Segment 2. This amended and restated agreement is the impetus for EBRPD to complete this Proposed Project, which will close a gap in the existing trail network to complete entire Martinez Bay Trail Phase II Project, providing a continuous trail from Nejedly Staging Area to Granger's Wharf.

#### **1.4 CEQA Considerations**

Since the adoption of the Original Project, refinements to the project design that constitute minor modifications compared to those evaluated in the 2003 MND have occurred. For this reason, subsequent environmental review/documentation under CEQA Section 15164(b) was prepared. This section of the CEQA Guidelines states that an Addendum to an adopted Mitigated Negative Declaration may be prepared if only minor technical changes or additions are necessary or none of the conditions described in Section 15162 (further described below under Section 1.4) apply. Because of this CEQA requirement, the 2003 MND is the relevant environmental document for the Proposed Project for the following reasons:

- The Original 2003 MND was published approximately 18 years ago and only minor changes in the environmental landscape have occurred;
- There have been no significant changes with regard to the surrounding land uses that would result in new impacts from what was previously disclosed in the MND; and
- There have been no changes to EBRPD intent to complete the trail;
- There have been no significant changes to the any applicable land use and planning documents that would preclude trail improvements; and

- There have been no changes in circumstances in which new information is now available that was not available at the time the 2003 MND was adopted such that new or more significant impacts would occur, but project proponents decline to adopt the mitigation measure.

Therefore, the MND adopted in 2003 retains informational value regarding the potential impacts associated with the proposed trail improvements.

### **1.5 CEQA Framework for Addendum**

For a Proposed Project with modification from an original approved project, State CEQA Guidelines (Sections 15162 and 15164) provide that an Addendum to an adopted MND may be prepared if only minor technical changes or additions are necessary or none of the following conditions calling for the preparation of a subsequent MND have occurred:

- Substantial changes in the project which require major revisions to the MND due to the involvement of new significant environmental effects or a substantial increase in the severity of previously identified significant effects;
- Substantial changes with respect to the circumstances under which the project is undertaken which require major revisions to the MND due to the involvement of new significant environmental effects or a substantial increase in the severity of previously identified significant effects; or
- New information of substantial importance, which was not known and could not have been known with the exercise of reasonable diligence at the time of MND adoption, shows any of the following:
  - A. The project will have one or more significant effects not discussed in the MND,
  - B. The project will result in impacts substantially more severe than those disclosed in the MND,
  - C. Mitigation measures or alternatives previously found not to be feasible would in fact be feasible and would substantially reduce one or more significant effects of the project, but the project proponent declines to adopt the mitigation measure or alternative, or
  - D. Mitigation measures or alternatives that are considerably different from those analyzed in the MND would substantially reduce one or more significant effects on the environment, but the project proponent declines to adopt the mitigation measure or alternative.

As determined through the analysis and evaluation provided in this Addendum, no new significant impacts would occur as a result of the Proposed Project, nor would there be any substantial increase in the severity of any previously-identified significant environmental impact. In addition, no new information of substantial importance shows that mitigation measures or alternatives that were previously found not to be feasible or that are considerably different from those analyzed in the 2003 MND would substantially reduce one or more significant effects on the environment. No conditions described in Section 15162 of the CEQA Guidelines has occurred. Therefore, an Addendum is the appropriate document to comply with CEQA requirements for the Proposed Project.

## **1.6 Finding**

This Addendum evaluated whether the Proposed Project would result in any new or substantially more significant effects or require any new mitigation measures that project proponents decline to adopt. Although the Original Project was approved in 2003, substantial changes to the Original Project have not occurred that would result in previously unidentified significant impacts. In addition, the environmental setting surrounding has not changed in a manner that would lead to new or substantially different impacts; areas surrounding Segment 1 and 2 remain undeveloped property held by EBRPD and a developed operational UPRR right-of-way and City right-of-way, respectively. The new improvements to bring existing railroad crossing facilities to current standards do not result in previously unidentified impacts nor result in substantial changes to the Original Project.

The Proposed Project would not result in any previously unidentified impacts or identify additional mitigation measures that project proponents would decline to adopt. A biological resources assessment and updated wetland delineation was completed in May 2020, a rare plant survey was completed in August 2021, and a Natural Environment Study (Minimal Impact) (NESMI) was completed in January 2024 to support the analysis in this Addendum (Appendix B, C, D, and E respectively). The biological resources assessment recommended general avoidance and minimization measures that were not typical in 2003 but are now common conditions of approval for projects. EBRPD would adopt and implement these mitigation measures for the Proposed Project.

This Addendum verifies the analyses and the conclusions in the 2003 MND remain valid for the purposes of CEQA review. The Proposed Project consists of minor changes to the Original Project; would not cause new significant effects nor increase the level of environmental effect to substantial or significant; and no new mitigation measures previously found to be infeasible or which are considerably different from those analyzed in the previous MND would be necessary to reduce impacts to less than significant, but that project proponents would decline to adopt.

As summarized above, and detailed in the analysis below, this Addendum satisfies environmental review under CEQA for the Proposed Project. This Addendum incorporates by reference the previous mitigation measures detailed in the 2003 MND and includes mitigation measures recommended by the biological resources assessment completed in May 2020 to support this Addendum.

## **2.0 PROJECT DESCRIPTION**

### **2.1 Project Location**

The Proposed Project would be located in the City of Martinez in Contra Costa County, California. The Proposed Project would occupy Segment 1 and Segment 2 of the Original Project. The Original Project includes four segments of a total of approximately 3,100 feet of paved bike and pedestrian trail from the EBRPD Nejedly Staging Area to the existing EBRPD Martinez Regional Shoreline parking lot at Granger's Wharf (Figure 4). Segment 1 begins from the Nejedly Staging Area traveling northwesterly through EBRPD property to the UPRR right-of-way. Segment 2 is from the UPRR right-of-way traveling parallel to existing rail lines in the easterly direction to Berrellesa Street.

### **2.2 Proposed Project**

Both segments of the Proposed Project are in the same location and rights-of-way as the Original Project. Figure 4 shows the specific Proposed Project location and segments. Segment 1 was previously approved to be paved but constructed with aggregate base. At the time the Original Project was constructed, pavement was not installed in Segment 1 given the date to construct Segment 2 was unknown. Segment 1 begins at the Nejedly Staging Area at Carquinez Scenic Drive and then traverses northwesterly for approximately 800 feet to its terminus approximately 100 feet south of the existing UPRR alignment. Maintenance proposed for Segment 1 would include removal of existing upland and ruderal vegetation covering the existing gravel trail and resurfacing with asphalt. Vegetation clearing and maintenance would occur to clear the existing rock lined ditches adjacent to the trail and to conform the existing bridge to the trail. Minor bridge maintenance would be performed to repair a gap between the existing trail and abutment. Any maintenance work in the rock lined ditch or near the existing bridge would be conducted in the dry season. The proposed trail dimensions are consistent with the Original Project and would be approximately 10 feet of pavement with 2 feet aggregate base shoulders. No expansion of any existing facilities is proposed, and work would be within the scope of the Original Project.

Segment 2 would be approximately 1,900 feet in length and parallel to the existing UPRR alignment. This portion of the Proposed Project would include trail construction, grading, removal of trees and some vegetation, minor widening of drainage ditches, creation of bio basins, and installation of a retaining wall. Construction of the Proposed Project in Segment 2 would include permanent impacts to wetlands. These impacts were contemplated and disclosed in the

Original Project. Mitigation was completed for impacts to wetlands due to construction of Segment 2 through creation and enhancement of 0.79 acres of wetland habitat. This mitigation effort was completed prior to October 2007, at the Martinez Regional Shoreline.

An updated biological resources assessment, wetland delineation, and NESMI completed to support this Addendum found a similar species composition within the Proposed Project areas and that up to 0.5 acres of wetland could be impacted, representing a slight increase of impact by 0.06 acres as compared to the Original Project. Furthermore, since the mitigation has been constructed, no impacts due to temporal loss of wetlands occurred. As such, there was not a lag between when impacts occurred to when wetland mitigation was completed. Thus, no additional mitigation for permanent impacts to wetlands are proposed. Additional mitigation measures were proposed in the updated biological resources assessment and NESMI to address temporary impacts due to construction and are incorporated into this Addendum by reference to be implemented by project proponents during construction.

### **3.0 ANALYSIS OF POTENTIAL ENVIRONMENTAL EFFECTS**

The 2003 MND identified mitigation measures for biological resources that would reduce or eliminate potential environmental effects of the Original Project to a less than significant level. All of the mitigation measures approved for the Original Project have been completed and no new mitigation measures are necessary that project proponents would decline to adopt. No new or substantially more significant adverse impact to any environmental resource area has been identified.

#### **1) AESTHETICS**

The 2003 MND found that the Original Project would have no impacts on Aesthetic resources including scenic vistas, scenic resources, and the existing visual character of the site and its surroundings. The Proposed Project is not located in proximity to any scenic highway identified by Caltrans (CALTRANS, 2024). Prior permits obtained for the project included installation of fencing at the railroad property line. The Proposed Project would include fencing in accordance with the easement agreement approved by UPRR for safety and to prevent encroachment and disturbance from existing railroad operations. The proposed design refinements would not result in additional impacts to aesthetic resources beyond those identified in the 2003 MND. Minor changes in the trail materials and signage and striping, and potential minor adjustments in trail contours, slope, and grading, do not change the nature and intensity of construction. No impacts to aesthetic resources under the Proposed Project would be substantially different than under the Original Project. All construction activities would occur within the project site as was evaluated in the 2003 MND. No mitigation measures are required for either the Original or the Proposed Project.



## **2) AGRICULTURE**

The proposed design refinements would not result in additional impacts to agriculture beyond those identified in the 2003 MND. At the time the 2003 MND was adopted none of the Original Project area contained prime, unique, or statewide important farmlands. The 2003 MND did not identify any impacts to agricultural uses; therefore, mitigation was not required. Based on the California Department of Conservation (CDOC) California Important Farmland Finder, there are no areas mapped as unique, prime, or farmland of statewide importance with the Proposed Project area, and hence, the Proposed Project is not located on any land under a Williamson Act contract (CDOC, 2024). The Proposed Project is not located in an area designated as timberland or zoned for timber production and it would not result in the loss of forest land or conversion of such lands. No mitigation measures are required for either the Original Project or the Proposed Project.

## **3) AIR QUALITY**

The Proposed Project design refinements would not result in additional impacts to air quality beyond those identified in the 2003 MND. The Proposed Project is located within the same site as the Original Project for Segment 1 and Segment 2, with a similar alignment and project elements, and within the same air basin. Although air quality management strategies have changed, the Proposed Project would not violate any applicable air quality plan. The Original Project required a total cut and fill of approximately 5,000 cubic yards. Grading amount and equipment used to construct the Proposed Project would not substantially differ from the Original Project. Due to the limited nature and duration of work, air emissions would remain below all thresholds as with the Original Project. Similarly, the Proposed Project would not make a cumulatively significant contribution to any criteria pollutant.

The background conditions, construction equipment, and construction work hours needed for Segment 1 and Segment 2 of the Original Project have not notably changed and the Proposed Project refinements would not result in any substantial change in the way the Proposed Project would be constructed. Similarly, the surrounding land uses are similar and no impacts to sensitive receptors would occur. Therefore, as described in the 2003 MND, the Proposed Project would not exceed any Bay Area Air Quality Management District (BAAQMD) standards or contribute to air quality deterioration beyond BAAQMD projections. As was the case in 2003 for the Original Project, no mitigation is required to limit the Proposed Project's construction-related dust, criteria pollutant, and precursor emissions. This is the same conclusion for the Proposed Project. No mitigation measures are required for either the Original or the Proposed Project.

## **4) BIOLOGY**

The Proposed Project design refinements would not result in additional impacts on biological resources beyond those identified in the 2003 MND. The Proposed Project is located within the

same area as Segment 1 and Segment 2 in the Original Project and the biological conditions, including the area of the wetlands, have not substantially changed. The wetland was formed and remains due to poor drainage and ponding along the UPRR right-of-way and were determined to be jurisdictional by USACE. At the time, a mitigation site on EBRPD property within the Martinez Regional Shoreline was identified. Mitigation included creation of 3,000-4,000 square feet of new wetlands along an old road alignment, and the enhancement of 20,000 square feet of existing wetlands south of the old road through improved tidal circulation. Further, additional improvements associated with the Proposed Project, including the retaining wall and altered drainage ditches, would be positioned to avoid the nearby wetlands along the trail alignment.

In May 2020, a subsequent biological resources assessment and updated wetland delineation were completed. In August 2021, a rare plant survey was also completed. Moreover, an NESMI was completed in January 2024. While additional detail was provided in the May 2020, August 2021, and January 2024 assessments as compared to the 2003 studies, the current assessments found that similar impacts to biological resources would occur, the Proposed Project would permanently impact 0.05 acres of wetland, and two rare plant species and three sensitive natural communities occur adjacent to Segments 1 and 2 of the Proposed Project. The mitigation for permanent wetland impacts was completed prior to October 2007 and is considered adequate compensation for the currently proposed loss. The 2020 biological resources assessment and 2024 NESMI also recommended general avoidance and minimization measures for special status plant species, natural communities, wildlife, and nesting birds. Most of these measures include pre-construction surveys and monitoring, avoidance or establishment of buffers should a sensitive species or habitat be located, and coordination of species relocation and replanting if avoidance is not feasible. Inclusion of these measures was not typical in 2003 but are commonly added as standard conditions of approval to current projects. These measures would ensure impacts remain less than significant and would be implemented by project proponents.

Therefore, based on the contents of the 2003 studies compared to the 2020 biological resources assessment, 2021 rare plant survey, and 2024 NESMI, it was determined that the Proposed Project would not result in any new or more significant impacts to biological resources or new mitigation measures that project proponents are not willing to implement. In addition, the Proposed Project would still be required to conform to all applicable regulations pertaining to the protection of plant and animal species. Because similar types of species and natural communities still occur within the Proposed Project area, impacts are substantially the same as previously disclosed in the Original 2003 MND. Thus, the Proposed Project would have no new substantial impacts, and mitigation measures that are proposed would be implemented by EBRPD.

## **5) CULTURAL RESOURCES**

The extent and intensity of construction activities would not vary substantially relative to that evaluated in the 2003 MND, and new mitigation measures would not be required. In addition, implementation of Standard Conditions during Proposed Project construction would address impacts due to incidental discovery of previously unknown resources. There are known cultural resources within and adjacent to the Proposed Project area. While there are cultural resources in the area, there were no identified cultural resources within the Proposed Project site.

Similar to the Original Project, Segment 2 of the Proposed Project would occur along a previously disturbed gravel fire road, adjacent to the UPRR alignment and within existing street. Work along Segment 1 would involve vegetation clearing and ditch and bridge maintenance along an existing trail. All construction would occur within the Proposed Project site footprint. As such, the Proposed Project would not impact any cultural resources in the Proposed Project area. The Proposed Project also would occur within some wetland areas, but this would include minimal grading and placement of fill. Therefore, while the Proposed Project would include some ground disturbance, it would be roughly equivalent or less than the Original Project and impacts would remain the same. No mitigation was required as a result of the analysis in the 2003 MND and mitigation is not required for the Proposed Project.

The Proposed Project would include standard conditions related to the California Health and Safety Code Section 7050.5, State CEQA Guidelines Section 15064.5, and (PRC) Section 5097.98, which mandate the process to be followed in the event of an accidental discovery of any human remains in a location other than a dedicated cemetery. California Health and Safety Code Section 7050.5 requires that in the event that human remains are discovered, disturbance of the site shall be halted until the coroner has investigated the circumstances, manner and cause of death, and the recommendations concerning the treatment and disposition of the human remains have been made to the person responsible for the excavation, or to his or her authorized representative, in the manner provided in PRC Section 5097.98. If the coroner determines that the remains are not subject to his or her authority and if the coroner recognizes or has reason to believe the human remains to be those of a Native American, he or she shall contact the Native American Heritage Commission by telephone within 24 hours.

## **6) ENERGY**

At the time the Original MND was published there was not a CEQA requirement for analysis of energy. An analysis of energy impacts analyzes the potential for a project to result in wasteful, inefficient, or unnecessary consumption of energy, and an evaluation of a projects potential to conflict with a state or local plan for renewable energy. The Proposed Project consists of installation of an asphalt concrete overlay of approximately 800 linear feet on an existing trail constructed on aggregate base (Segment 1), and approximately 1,900 linear feet of newly paved trail (Segment 2). Construction would require minimal energy consumption in the form of fuels

to operate machinery for construction and vehicles to transport workers and materials. Operation of the trail would not require any energy except for negligible amounts of fuels needed for maintenance. As such, the Proposed Project would not be wasteful or inefficient regarding energy consumption, would increase the opportunity for alternative modes of transportation, and would not conflict with any local or state plans related to energy consumption. As a result, the Proposed Project would not result in any impacts not identified in the 2003 MND.

## **7) GEOLOGY**

The proposed refinements would not result in substantially different geophysical impacts beyond those identified in the 2003 MND. The Proposed Project would occur within the same geologic environment as the Original Project. Although the proposed changes to the timing of construction and operation have changed, these changes do not result in any new impacts. The Proposed Project still does not include any habitable structures and would not induce growth to a geologically prone area or exacerbate any existing geologic hazards. Therefore, impacts for the Original 2003 project would remain the same for the Proposed Project.

## **8) GREENHOUSE GAS EMISSIONS**

At the time the Original MND was published there was not a CEQA requirement for analysis of Greenhouse Gas (GHG) emissions. The Proposed Project includes construction of a trail that would result in very short-term and temporary emissions of GHG emissions. However, the emissions would not conflict with any applicable plan, policy, or regulation adopted for the purposes of reducing greenhouse gasses. Operationally the Proposed Project would not result in the generation of any GHG emissions. The Proposed Project consists of a trail and there would be no uses that would generate air emissions and hence there would be no generation of GHG emissions. Because the Original Project included a similar plan and would have required similar equipment, and would have operated in a similar manner for Segment 1 and Segment 2, the proposed changes would not result in any new or substantially more severe effects due to GHG emissions. No mitigation measures are required for either the Original Project or the Proposed Project.

## **9) HAZARDS AND HAZARDOUS MATERIALS**

The proposed design refinements would not result in additional impacts to hazards or hazardous materials beyond those identified in the 2003 MND because there are no hazardous wastes or hazardous materials known to occur at the project site. The State Water Resources Control Board (SWRCB) Geo Tracker website and Department of Toxic Substances Control (DTSC) do not list any cleanup sites or permitted facilities within the Proposed Project site. According to both databases, the nearest site is the AL Auto Detail, approximately 175 feet south of the intersection

between the UPRR and Berrellesa Street. This site is listed as an Open Inactive site. The case was opened in 2001 and as of 2009 is open-inactive (SWRCB and DTSC, 2024). The 2003 MND, which was written after the case was opened, did not identify this site or any other impacts from any other hazardous material or condition. The 2003 MND also did not note any deficiencies in defensible space for the Proposed Project. Segment 1 of the Proposed Project is located within a Very High Fire Hazard Severity Zone but no structures, habitable or otherwise, were part of the Original Project (CAL FIRE, 2009). Similarly, no such structures are planned under the Proposed Project and the findings of the 2003 MND are still relevant. No new mitigation measures are required for the proposed refinements to the project design. No mitigation measures are required for either the Original or the Proposed Project.

### **10) HYDROLOGY AND WATER QUALITY**

Similar to the Original Project, the Proposed Project would be required to comply with all applicable water quality regulations during and following construction activities. The Proposed Project consists of trail improvements, including drainage ditches and bio basins, which would not be within the delineated wetland area. As such, the Proposed Project would not have any uses that would violate any waste discharge requirements or substantially alter any drainage pattern or alter the course of any stream or river. The Proposed Project is located within the same site for Segment 1 and Segment 2 as the Original Project and would not impede flood flows, place people or structures at risk of flooding due to dam failure or water rise. As is the case with the 2003 Original Project compliance with standard conditions to comply with stormwater regulations to address construction related impacts would preclude the potential for significant impacts to receiving water bodies. No mitigation measures are required for either the Original or the Proposed Project.

### **11) LAND USE AND PLANNING**

The Proposed Project would require the same entitlements, permits, and other approvals as the Original Project. The Proposed Project would obtain an update to the original environmental permits since the Original Project approvals occurred more than 5 years ago. There are no immediately adjacent communities and the Proposed Project would not impede the flow of people from one location to another. The Proposed Project is considered an enhancement to bicycle and pedestrian linkages within the community and is consistent with EBRPD's 2013 Master Plan as shown on the EBRPD Existing and Potential Parklands and Trails Map (EBRPD, 2013). The adopted 2020 Downtown Martinez Community-Based Transportation Plan (Martinez, 2020) recognizes completion of the Proposed Project.. There are no applicable habitat conservation plans related to the project site. Thus, no mitigation measures are required for either the Original Project or the Proposed Project.

## **12) MINERAL RESOURCES**

The Proposed Project would not result in new or additional impacts to mineral resources beyond those identified in the 2003 MND. The Proposed Project site is not located within an area of known mineral resources, either of regional or local value, and the 2003 MND did not identify any impacts to mineral resources. Therefore, mitigation was not required. No mitigation measures are required for either the Original Project or the Proposed Project.

## **13) NOISE**

The Proposed Project would not result in new or additional impacts to noise beyond those identified in the 2003 MND. The Proposed Project would not result in design or operational changes to the project site or surrounding area that substantially differ from that analyzed in the 2003 MND. The overall intensity, equipment used and duration of use, and proximity to sensitive receptors would not be notably different than under the Original Project and it would not generate or result in any substantial temporary or noise increases in violation of any noise standard. The 2003 MND found that the Original Project would have less-than-significant impacts related to noise. The Proposed Project would have no change on the project's noise operations; therefore, it would not affect or change the MND noise analysis or conclusion made for the Original Project. No mitigation measures are required for either the Original Project or the Proposed Project.

## **14) POPULATION AND HOUSING**

Similar to the Original Project, the Proposed Project would not have any effect on population, housing, or employment in the City or region at large. The Proposed Project occupies the same area which is largely undeveloped and does not contain any existing residential units and it does not propose any utility extensions. Similar to the Original Project, the Proposed Project does not include construction of any habitable structures and it has no potential to displace any persons or existing residences. No adverse impacts would occur in this regard. Thus, No mitigation measures are required for either the Original Project or the Proposed Project.

## **15) PUBLIC SERVICES**

The Proposed Project would not result in additional impacts to public services beyond those identified in the 2003 MND because they would not result in changes to existing public services evaluated in the 2003 MND for the Original Project. The Proposed Project still consists of trail improvements and would not result in any new development that would increase the population or workforce and increase the demand for public services beyond that already evaluated in the 2003 MND. Accordingly, the 2003 MND did not identify any potentially significant impacts to public services; therefore, mitigation was not required. No mitigation measures are required for either the Original Project or the Proposed Project.

## **16) RECREATION**

The proposed design modifications would not result in new or additional impacts to recreational facilities beyond those identified in the 2003 MND. The 2003 MND did not identify any permanent impacts to recreational resources or facilities. The same as the Original Project, the Proposed Project would be considered a benefit to recreational resources as it would increase the amount of recreation area and would close a gap in an existing planned trail network. No mitigation measures are required for either the Original Project or the Proposed Project.

## **17) TRANSPORTATION**

The 2003 MND found that the project would have less-than-significant effects on transportation and circulation. The Proposed Project does not include any uses besides the trail that would generate vehicle trips not previously analyzed. The Proposed Project would result in no changes to operational trip generation compared to the Original Project. Moreover, the Proposed Project would not likely lead to substantial or measurable increases in vehicle miles traveled due to the addition of a trail that serves non-motorized travel, which would generally reduce VMT and avoid the necessity of an induced travel analysis (OPR, 2018). The Proposed Project involved a trail and no dangerous design features. Therefore, it would not change the 2003 MND analysis related to transportation and circulation. No mitigation measures are required for either the original or the Proposed Project.

## **18) TRIBAL AND CULTURAL RESOURCES**

Assembly Bill (AB) 52, passed in 2014, after the 2003 MND was approved. AB 52 requires environmental review documents to disclose and analyze potential significant impacts to tribal cultural resources including sites, features, places, cultural landscapes, sacred places, and objects with cultural value to a California Native American tribe. Lead agencies are also required to begin consultation with a California Native American tribe that is traditionally and culturally affiliated with the geographic area of the Proposed Project if the tribe requests to the lead agency, in writing, to be informed by the lead agency of Proposed Projects in that geographic area and the tribe requests consultation, prior to determining whether a negative declaration, mitigated negative declaration, or environmental impact report is required for a project.

AB 52 applies to projects that have a Notice of Preparation (NOP), a notice of negative declaration filed, or mitigated negative declaration filed on or after July 1, 2015. Because the NOP for the Original Project was filed prior to implementation of AB 52, AB 52 is not applicable to the Proposed Project.

## **19) UTILITIES AND SERVICE SYSTEMS**

Neither the Original Project nor Proposed Project would require or result in the construction or expansion of any public utilities. The Proposed Project would not provide any additional utility services or result in any growth that would increase demand or expand an existing service area. Temporary short-term and operational demands on public utilities or other infrastructure would not measurably change under the Proposed Project. Therefore impacts would be less than significant and no mitigation measures are required.

## **20) WILDFIRE**

At the time the Original Project's MND was published there was not a CEQA requirement analyze Wildfire. However, at the time of the Original Project, Hazards and Hazardous Materials did include an evaluation of the potential for exposure of people or structures to wildland fires or placement of urbanized areas adjacent to wildlands. As mentioned above, Segment 1 is located within a Very High Fire Hazard Severity Zone. The Original Project was found to have no impact based on the wildland fire criteria in place at that time. The Proposed Project includes construction of a trail and would not include any habitable structures. Thus, because the Proposed Project would occur within the same area for Segment 1 and Segment 2, does not propose construction of any habitable buildings, is not located adjacent to steep slopes or any uses that would increase wildfire risk, the conclusions of the 2003 MND in this regard remain valid. No mitigation measures are required.

## **21) MANDATORY FINDINGS OF SIGNIFICANCE**

The potential impacts of the Proposed Project with regard to biological resources, cultural resources, and direct and indirect effects on human beings would be comparable to the Original Project. Permanent wetland impacts due to construction of the Proposed Project have already been mitigated for as required by previously obtained permits and approvals from regulatory agencies, and new mitigation measures for biological resources would be implemented by EBRPD. As impacts under the Proposed Project would be similar to or reduced relative to the Original Project, impacts would be less or the same in this regard and no mitigation measures are required.

## **4.0 RECOMMENDATION**

The Deputy General Manager of the EBRPD recommended to the Board of Directors approval of the Proposed Project. The Board of Directors finds on the basis of substantial evidence in the light of the whole record that the proposed modifications to the Original Project are within the scope of the Original 2003 MND analysis and will not cause any new significant environmental impacts, substantially increase previously identified impacts, nor require any new or modified mitigation that project proponents decline to implement.



In making this finding, the Board of Directors has considered evidence presented by EBRPD the applicant, and other interested parties and has determined that:

(1) NO substantial changes are proposed in the project which will require major revisions of the previously adopted Mitigated Negative Declaration due to the involvement of new significant environmental effects or a substantial increase in the severity of previously identified significant effects;

(2) NO substantial changes occur with respect to the circumstances under which the project is undertaken which will require major revisions of the previously adopted Mitigated Negative Declaration due to the involvement of new significant environmental effects or a substantial increase in the severity of previously identified significant effects; or

(3) New information which was not known and could not have been known with the exercise of reasonable diligence at the time the previously adopted Mitigated Negative Declaration was adopted, does NOT show any of the following:

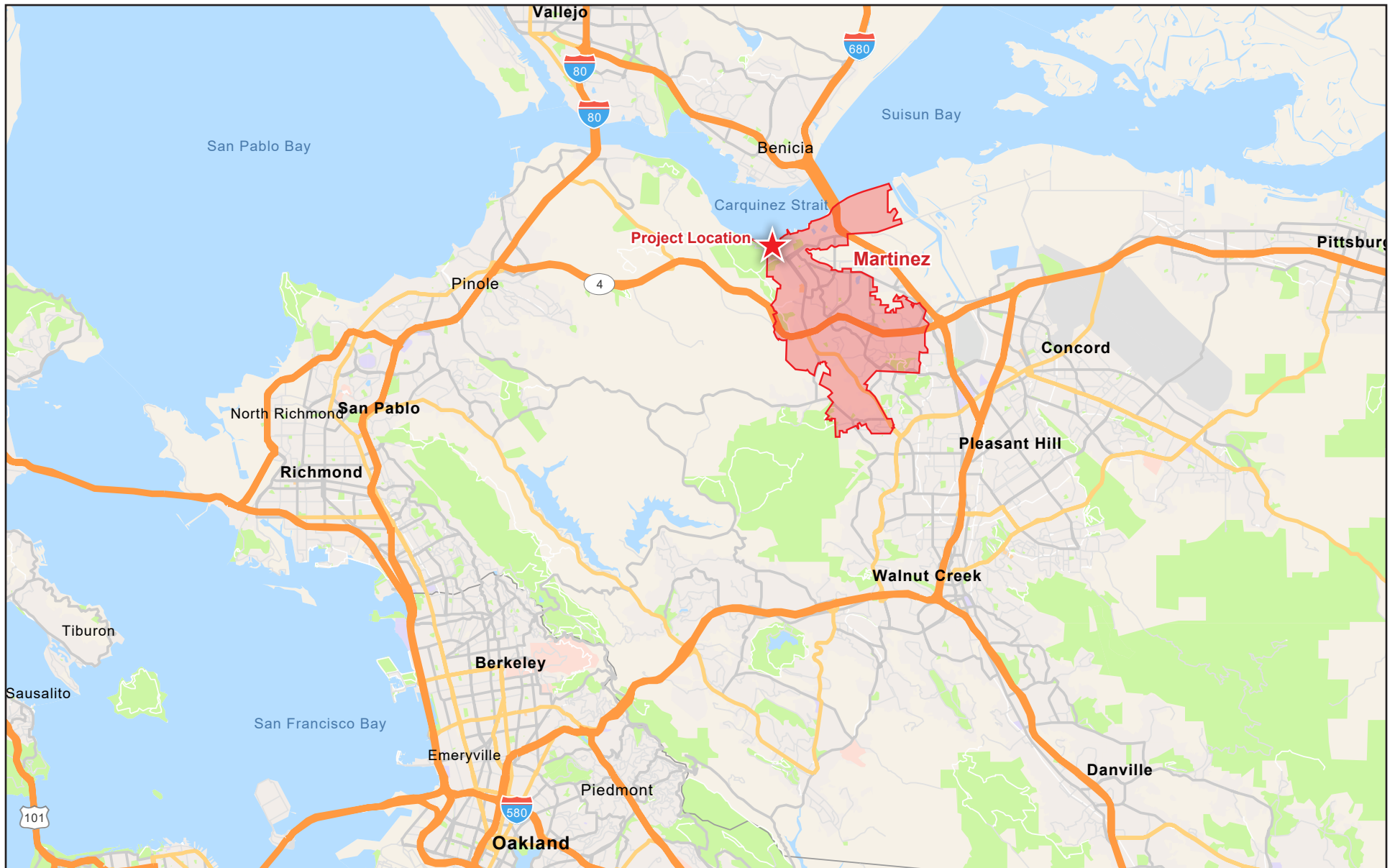
(A) The project will have one or more significant effects not discussed in the previously adopted Mitigated Negative Declaration;

(B) Significant effects previously examined will be substantially more severe than shown in the previously adopted Mitigated Negative Declaration;

(C) Mitigation measures or alternatives previously found not to be feasible would in fact be feasible, and would substantially reduce one or more significant effects of the project, but the project proponents decline to adopt the mitigation measure or alternative; or

(D) Mitigation measures or alternatives which are considerably different from those analyzed in the previous EIR would substantially reduce one or more significant effects on the environment, but the project proponents decline to adopt the mitigation measure or alternative.

Based on the foregoing, it is concluded that the analyses conducted, and the conclusions reached in the Final MND adopted on May 7, 2003 remain valid. The proposed revisions as part of the Proposed Project would not cause new significant impacts not identified in the 2003 MND, and no new mitigation measures would be necessary to reduce significant impacts but that project proponents decline to adopt. No changes have occurred with respect to circumstances surrounding the Proposed Project that would cause significant environmental impacts to which the Proposed Project would contribute considerably, and no new information has become available that shows that the project would cause significant environmental impacts. Therefore, no supplemental environmental review is required beyond this Addendum. Pursuant to CEQA Guidelines Section 15164, an Addendum need not be circulated for public review but can be included in or attached to the adopted Mitigated Negative Declaration.



Source: Esri, 2020

**FIGURE 1: Regional Vicinity Map**  
 Martinez Bay Trail Phase II Project  
 East Bay Regional Park District

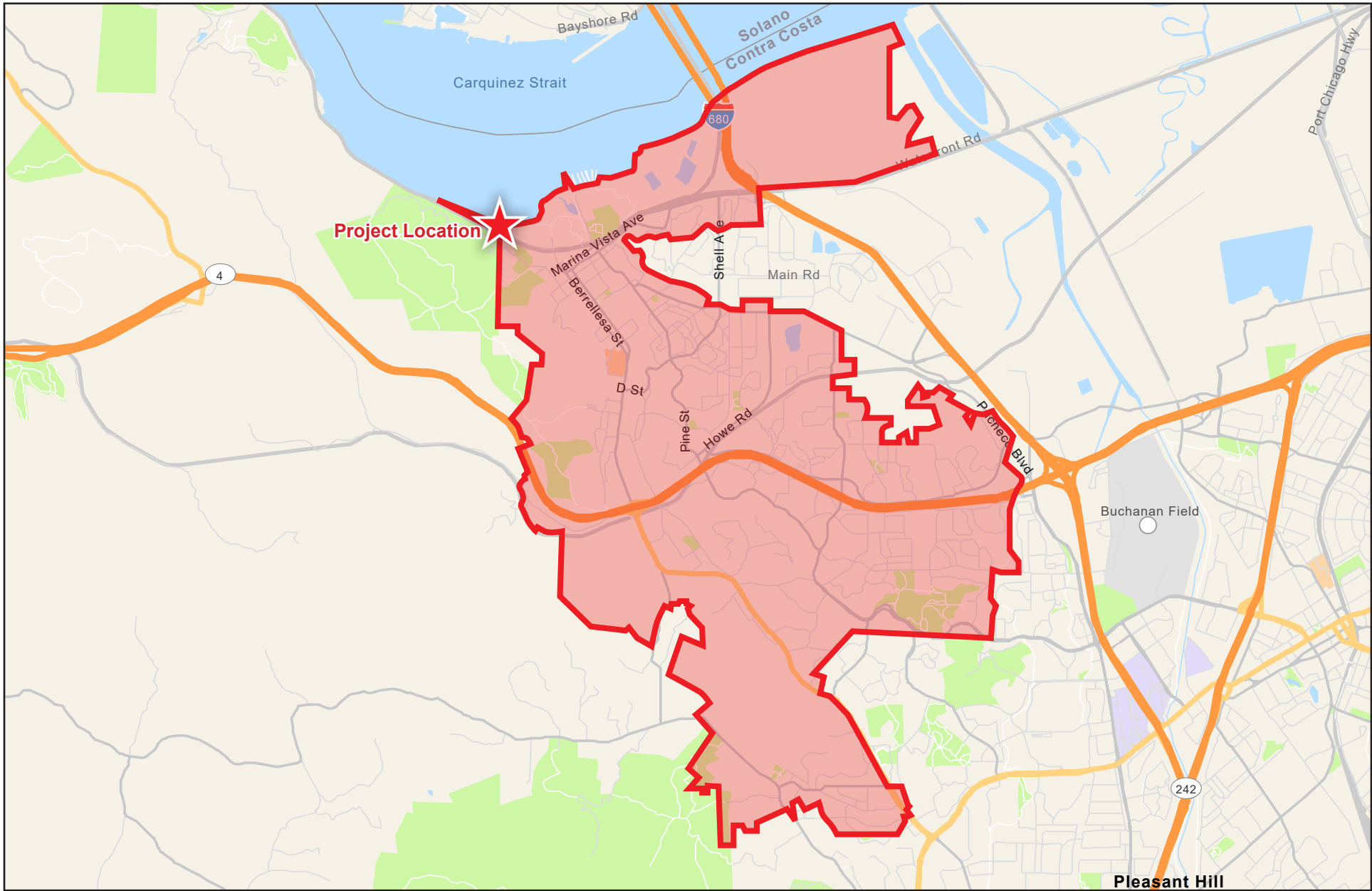


Not to scale



East Bay  
Regional Park District

Kimley»Horn



Source: Esri, 2020

**FIGURE 2: Local Vicinity Map**  
 Martinez Bay Trail Phase II Project  
 East Bay Regional Park District

 Not to scale



Source: Google Earth, 2020

**FIGURE 3: Original Project Conceptual Alignment**  
 Martinez Bay Trail Phase II Project  
 East Bay Regional Park District



Not to scale



East Bay  
Regional Park District

Kimley»Horn



Source: Google Earth, 2020

**FIGURE 4: Proposed Project Conceptual Alignment**  
 Martinez Bay Trail Phase II Project  
 East Bay Regional Park District

 Not to scale

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Appendix A  
**2003 IS/MND**

NOTICE OF DETERMINATION

TO: Office of Planning and Research  
1400 Tenth Street, Room 121  
Sacramento, CA 95814

FROM: X (Public Agency)  
City of Martinez  
525 Henrietta Street  
Martinez, CA 94553

X County Clerk  
County of Contra Costa  
P.O. Box 911, Room 103  
Martinez, CA 94553

FILED  
MAY 08 2003  
S.L. WEIR, COUNTY CLERK  
CONTRA COSTA COUNTY  
BY [Signature] DEPUTY

Subject: Filing of Notice of Determination in compliance with Section 21108 or 21163 of the Public Resources Code.

SAN FRANCISCO BAY TRAIL, PHASE II

Project Title  
RICHARD PEARSON 925-372-3525  
State Clearinghouse Number Contact Person Area Code/Number/Extension  
(If Submitted to Clearinghouse)

CARQUINEZ REGIONAL SHORELINE, NEJEDLY STAGING AREA TO BERRELLESA STREET VIA UNION PACIFIC RAILROAD RIGHT-OF-WAY, AND BERRELLESA STREET FROM THE UNION PACIFIC RAILROAD TO THE BERRELLESA STREET STAGING AREA

Project Location  
NEGATIVE DECLARATION FOR CONSTRUCTION OF BAY TRAIL PHASE II, INCLUDING REVIEW OF RIGHT-OF-WAY ACQUISITION FOR CONSISTENCY WITH THE GENERAL PLAN.

Project Description

This to advise that the City of Martinez  
(Lead Agency or Responsible Agency)

has approved the above described project on May 7, 2003 and has made the following  
(Date)  
determinations regarding the above described project:

- 1. The project     will, X will not have a significant effect on the environment.
- 2.     An Environmental Impact Report was prepared for this project pursuant to the provisions of CEQA.  
X a Negative Declaration was prepared for this project pursuant to the provisions of CEQA.
- 3. Mitigation measures X were,     were not made a condition of the approval of the project.
- 4. A statement of Overriding Considerations     was, X was not adopted for this project.

This is to certify that the final EIR with comments and responses and record of project approval is available to the General Public at:

City of Martinez, 525 Henrietta Street, Martinez, CA 94553

Date Received for Filing and Posting at OPR May 8, 2003

Richard Pearson Community Development Director  
Signature (Public Agency)



CALIFORNIA DEPARTMENT OF FISH AND GAME  
CERTIFICATE OF FEE EXEMPTION

De Minimis Impact Finding

Project Title/Location (include County):

SAN FRANCISCO BAY TRAIL, PHASE II - CARQUINEZ REGIONAL SHORELINE,  
NEJEDLY STAGING AREA TO BERRELLESA STREET VIA UNION PACIFIC RAILROAD  
RIGHT-OF-WAY, AND BERRELLESA STREET FROM THE UNION PACIFIC RAILROAD  
TO THE BERRELLESA STREET STAGING AREA.

CITY OF MARTINEZ - CONTRA COSTA COUNTY

Project Description:

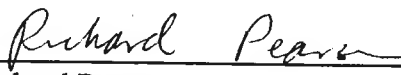
NEGATIVE DECLARATION FOR CONSTRUCTION OF BAY TRAIL PHASE II,  
INCLUDING REVIEW OF RIGHT-OF-WAY ACQUISITION FOR CONSISTENCY WITH  
THE GENERAL PLAN.

Findings of Exemption (attach as necessary):

**As a result of the initial study, this project involves no potential for any adverse effect,  
either individually or cumulatively on wildlife resources.**

Certification:

I hereby certify that the public agency has made the above finding and that the project  
will not individually or cumulatively have an adverse effect on wildlife resources, as defined in  
Section 711.2 of the Fish and Game Code.

  
Richard Pearson

Title: Community Development Director

Lead Agency: City of Martinez

Date: May 8, 2003

Section 771.4, Fish and Game Code

DFG: 12/90

F:\PLANN\clerical docs\ Bay Trail DeMinimis

CLERK'S CERTIFICATION OF POSTING

CONTRA COSTA COUNTY  
POST OFFICE BOX 350  
Martinez, California 94553

I certify that I am an employee of the County of Contra Costa and that a true copy of the

foregoing Notice for project San Francisco Bay Trail, Phase II

was posted for review at:

County Clerk's Office

822 Main Street

Martinez, California 94553

This Notice was posted for a minimum of 35 days commencing on 5/8/03.

Dated: JUL 08 2003

By:

B. Boree  
Deputy County Clerk

JUL 08 2003

# ENVIRONMENTAL CHECK LIST FORM

- 1. Project Title:** Bay Trail, Phase II
- 2. Lead Agency Name and Address:** City of Martinez  
525 Henrietta Street  
Martinez, CA 94553
- 3. Contact Person and Phone Number:** Richard Pearson, Community Development Director  
(925) 372-3525
- 4. Project Location:** Carquinez Regional Shoreline, Nejedly Staging Area to Berrellesa Street via Union Pacific Railroad Right-of-Way, and Berrellesa Street from the Union Pacific Railroad to the Berrellesa Street Staging Area
- 5. Project Sponsor's Name and Address:** City of Martinez  
525 Henrietta Street  
Martinez, CA 94553
- 6. General Plan Designation:** Industrial
- 7. Zoning:** M-OS/RF/R-3.5 (Mixed Use-Open Space/Recreational Facility/Residential)

**8. Description of Project:**

The Bay Trail Plan is a 400 mile regional network of bicycle and hiking trails along the shoreline areas of San Francisco and San Pablo Bays. Local cities, counties and park districts along the trail network have worked closely with the Association of Bay Area Governments (ABAG) in developing the Bay Trail Plan.

The City of Martinez proposes to begin work on a portion of the Bay Trail that will connect East Bay Regional Park District (EBRPD) Carquinez Regional Shoreline property on Carquinez Scenic Drive via an easement on the Union Pacific Railroad right-of-way to the existing public grade crossing at Berrellesa Street, then continuing north on Berrellesa Street to the existing EBRPD staging area at the north end of the street, at the entrance to the Martinez Regional Shoreline. The project consists of 3100' of a 10' wide paved trail with 2' rock shoulders, 400' of parallel ADA-compatible 4' concrete walkway, approximately 5,000 cy of associated grading, approximately 200' of 2-3' high retaining walls, a 35' x12' prefabricated bridge, up to 300' of boardwalks over wetland areas, and minor grading/ revegetation on EBRPD property in the Martinez Regional Shoreline to provide replacement wetlands for wetlands filled as a result of this project. Minor right-of-way acquisition may be needed from two residences on the east side of Berrellesa Street.

**9. Surrounding Land Uses and Setting:**

The project commences at the existing Nejedly Staging Area, which is located within the Carquinez Regional Shoreline. The trail enters the Union Pacific Railroad right-of-way 700' to the north and is bordered by the railroad tracks on the north and the Telfer-Sheldon petroleum products distribution plant on the south. The project crosses the existing Berrellesa Street grade crossing and continues north on the east side of Berrellesa Street, which is fronted by single-family residences. The project terminates 500' to the north of the railroad at the end of Berrellesa Street, at the entrance to the Martinez Regional Shoreline.

**10. Other public agencies whose approval is required (e.g., permits, financing approval, or participation agreement):**

The project is being developed in conjunction with the East Bay Regional Park District, and will be owned and maintained by EBRPD upon completion. A portion of the trail is located in an easement on the Union Pacific Railroad right-of-way, and will require design approval and a right-of-entry for construction. Approximately 800' of the trail crosses wetland areas along the edge of the railroad right-of-way, and will require permits from the US Army Corps of Engineers, the San Francisco Bay Regional Water Quality Control Board, and the State Department of Fish and Game.

**ENVIRONMENTAL FACTORS POTENTIALLY AFFECTED:**

The environmental factors checked below would be potentially affected by this project, involving at least one impact that is a "Potentially Significant Impact" as indicated by the checklist on the following pages.

- |   |  |  |
|---|--|--|
| <input type="checkbox"/> Land Use and Planning              | <input type="checkbox"/> Transportation/Circulation      | <input type="checkbox"/> Public Services             |
| <input type="checkbox"/> Population and Housing             | <input checked="" type="checkbox"/> Biological Resources | <input type="checkbox"/> Utilities & Service Systems |
| <input type="checkbox"/> Geological Problems                | <input type="checkbox"/> Energy & Mineral Resources      | <input type="checkbox"/> Aesthetics                  |
| <input type="checkbox"/> Water                              | <input type="checkbox"/> Hazards                         | <input type="checkbox"/> Cultural Resources          |
| <input type="checkbox"/> Air Quality                        | <input type="checkbox"/> Noise                           | <input type="checkbox"/> Recreation                  |
| <input type="checkbox"/> Mandatory Findings of Significance |  |  |

**DETERMINATION**

On the basis on this initial evaluation:

- I find that the proposed project COULD NOT have a significant effect on the environment, and a NEGATIVE DECLARATION will be prepared.
- I find that, although the proposed project could have a significant effect on the environment, there will not be a significant effect in this case because the mitigation measures described on an attached sheet have been added to the project. A NEGATIVE DECLARATION will be prepared.
- I find that the proposed project MAY have a significant effect on the environment, and an ENVIRONMENTAL IMPACT REPORT is required.
- I find that the proposed project MAY have a significant effect(s) on the environment, but at least one effect 1) has been adequately analyzed in an earlier document pursuant to applicable legal standards, and 2) has been addressed by mitigation measures based on the earlier analysis as described on attached sheets, if the effect is a "potentially significant impact" or "potentially significant unless mitigated." An ENVIRONMENTAL IMPACT REPORT is required, but must analyze only the effect that remains to be addressed.
- I find that, although the proposed project could have a significant effect on the environment, there will NOT be a significant effect in this case because all potentially significant effects (a) have been analyzed adequately in an earlier EIR pursuant to applicable standards and (b) have been avoided or mitigated pursuant to that earlier EIR, including revisions or mitigation measures that are imposed upon the proposed project.

\_\_\_\_\_  
Signature

\_\_\_\_\_  
Date

\_\_\_\_\_  
Printed Name

\_\_\_\_\_  
Title

## **EVALUATION OF ENVIRONMENTAL IMPACTS:**

1. A brief explanation is provided in the Discussion section for all answers except "No Impact" answers that are adequately supported by the information sources cited in the question. A "No Impact" answer is adequately supported if the referenced information sources show that the impact simply does not apply to projects like the one involved (e.g., the project falls outside a fault rupture zone). A "No Impact" answer is explained where it is based on project-specific factors as well as general standards (e.g., the project will not expose sensitive receptors to pollutants, based on a project-specific screening analysis).
2. All answers take account of the entire action involved, including off-site as well as on-site, cumulative as well as project-level, indirect as well as direct, and construction as well as operational impacts.
3. "Potentially Significant Impact" is appropriate if there is substantial evidence that an effect is significant. If there are one or more "Potentially Significant Impact" entries when the determination is made, an EIR is required.
4. "Potentially Significant Unless Mitigation Incorporated" applies where the incorporation of mitigation measures has reduced an effect from "Potentially Significant Impact" to a "Less than Significant Impact." Mitigation measures are described and how they reduce the effect to a less than significant level. Measures from earlier analyses may be cross-referenced.
5. Earlier analyses may be used where, pursuant to the tiering, program EIR, or other CEQA process, an effect has been adequately analyzed in an earlier EIR or Negative Declaration.
6. Where ever possible, references to information sources for potential impacts (e.g., general plans, zoning ordinances) are incorporated into the checklist. Where appropriate, a reference to the page or pages where the statement is substantiated is included. A source list is attached, and other sources used, or individuals contacted, are cited in the discussion.

|  | Potentially Significant Impact | Potentially Significant Unless Mitigation Incorporated | Less Than Significant Impact | No Impact |
|--|--------------------------------|--|------------------------------|-----------|
| <b>I. AESTHETICS. Would the project:</b>   |                                |  |                              |           |
| a) Have a substantial adverse effect on a scenic vista?  | <input type="checkbox"/>       | <input type="checkbox"/>                               | <input type="checkbox"/>     | X         |
| b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?   | <input type="checkbox"/>       | <input type="checkbox"/>                               | <input type="checkbox"/>     | X         |
| c) Substantially degrade the existing visual character or quality of the site and its surroundings?  | <input type="checkbox"/>       | <input type="checkbox"/>                               | <input type="checkbox"/>     | X         |
| d) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?  | <input type="checkbox"/>       | <input type="checkbox"/>                               | <input type="checkbox"/>     | X         |
| <b>II. AGRICULTURE RESOURCES.</b> In determining whether impacts to agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997), prepared by the California Dept. of Conservation as an optional model to use in assessing impacts on agriculture and farmland. Would the project: |                                |  |                              |           |
| a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?   | <input type="checkbox"/>       | <input type="checkbox"/>                               | <input type="checkbox"/>     | X         |
| b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?   | <input type="checkbox"/>       | <input type="checkbox"/>                               | <input type="checkbox"/>     | X         |
| c) Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland to non-agricultural use?   | <input type="checkbox"/>       | <input type="checkbox"/>                               | <input type="checkbox"/>     | X         |
| <b>III. AIR QUALITY.</b> Where available, the significance criteria established by the applicable air quality management or air pollution control district may be relied upon to make the following determinations. Would the project:   |                                |  |                              |           |
| a) Conflict with or obstruct implementation of the applicable air quality plan?  | <input type="checkbox"/>       | <input type="checkbox"/>                               | <input type="checkbox"/>     | X         |
| b) Violate any air quality standard or contribute substantially to an existing or projected air quality violation?   | <input type="checkbox"/>       | <input type="checkbox"/>                               | <input type="checkbox"/>     | X         |
| c) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is in non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions that exceed quantitative thresholds for ozone precursors)?  | <input type="checkbox"/>       | <input type="checkbox"/>                               | <input type="checkbox"/>     | X         |

|   | Potentially Significant Impact | Potentially Significant Unless Mitigation Incorporated | Less Than Significant Impact | No Impact |
|---|--------------------------------|--|------------------------------|-----------|
| d) Expose sensitive receptors to substantial pollutant concentrations?  | <input type="checkbox"/>       | <input type="checkbox"/>                               | <input type="checkbox"/>     | X         |
| e) Create objectionable odors affecting a substantial number of people? | <input type="checkbox"/>       | <input type="checkbox"/>                               | <input type="checkbox"/>     | X         |

**IV. BIOLOGICAL RESOURCES.** Would the project:

|   |                          |                          |                          |                          |
|---|--------------------------|--------------------------|--------------------------|--------------------------|
| a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | X                        |
| b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?   | <input type="checkbox"/> | <input type="checkbox"/> | X                        | <input type="checkbox"/> |
| c) Have a substantial adverse effect on federally protected wetlands, as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal wetlands, etc.), through direct removal, filling, hydrological interruption or other means?                                  | <input type="checkbox"/> | X                        | <input type="checkbox"/> | <input type="checkbox"/> |
| d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | X                        |
| e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | X                        |
| f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional or state habitat conservation plan?   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | X                        |

**V. CULTURAL RESOURCES.** Would the project:

|   |                          |                          |                          |   |
|---|--------------------------|--------------------------|--------------------------|---|
| a) Cause a substantial adverse change in the significance of a historical resource as defined in § 15064.5? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | X |
|---|--------------------------|--------------------------|--------------------------|---|



|  | Potentially Significant Impact | Potentially Significant Unless Mitigation Incorporated | Less Than Significant Impact | No Impact |
|--|--------------------------------|--|------------------------------|-----------|
| b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to § 15064.5? | <input type="checkbox"/>       | <input type="checkbox"/>                               | <input type="checkbox"/>     | X         |
| c) Directly or indirectly destroy a unique paleontological resource or site or unique geological feature?      | <input type="checkbox"/>       | <input type="checkbox"/>                               | <input type="checkbox"/>     | X         |
| d) Disturb any human remains, including those interred outside of formal cemeteries?                           | <input type="checkbox"/>       | <input type="checkbox"/>                               | <input type="checkbox"/>     | X         |

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

|  |                          |                          |                          |   |
|--|--------------------------|--------------------------|--------------------------|---|
| a) Expose people or structures to potential substantial adverse effects, including the risk of loss, injury or death, involving:   |                          |                          |                          |   |
| 1) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | X |
| 2) Strong seismic ground shaking?  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | X |
| 3) Seismic-related ground failure, including liquefaction?   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | X |
| 4) Landslides?   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | X |
| b) Result in substantial soil erosion or the loss of topsoil?  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | X |
| c) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | X |
| d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property?   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | X |
| e) Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water?   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | X |

|                                      |  |                                    |              |
|--------------------------------------|--|------------------------------------|--------------|
| Potentially<br>Significant<br>Impact | Potentially<br>Significant<br>Unless<br>Mitigation<br>Incorporated | Less Than<br>Significant<br>Impact | No<br>Impact |
|--------------------------------------|--|------------------------------------|--------------|

|   |
|---|
| <b>VII. HAZARDS AND HAZARDOUS MATERIALS. Would the project:</b> |
|---|

- |   |                          |                          |                          |   |
|---|--------------------------|--------------------------|--------------------------|---|
| a) Create a significant hazard to the public or the environment through the routine transport, use or disposal of hazardous materials?  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | X |
| b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | X |
| c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances or waste within one-quarter mile of an existing or proposed school?  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | X |
| d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code ' 65962.5 and, as a result, would it create a significant hazard to the public or the environment?  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | X |
| e) For a project located within an airport land use plan area or, where such a plan has not been adopted, within two miles of a public airport or a public use airport, would the project result in a safety hazard for people residing or working in the project area? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | X |
| f) For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area?   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | X |
| g) Impair implementation of, or physically interfere with, an adopted emergency response plan or emergency evacuation plan?   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | X |
| h) Expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | X |

|                                      |  |                                    |              |
|--------------------------------------|--|------------------------------------|--------------|
| Potentially<br>Significant<br>Impact | Potentially<br>Significant<br>Unless<br>Mitigation<br>Incorporated | Less Than<br>Significant<br>Impact | No<br>Impact |
|--------------------------------------|--|------------------------------------|--------------|

|  |
|--|
| <b>VIII. HYDROLOGY AND WATER QUALITY. Would the project:</b> |
|--|

|   |                          |                          |                          |   |
|---|--------------------------|--------------------------|--------------------------|---|
| a) Violate any water quality standards or waste discharge requirements?   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | X |
| b) Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | X |
| c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on- or off-site?  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | X |
| d) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site?   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | X |
| e) Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | X |
| f) Otherwise substantially degrade water quality?   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | X |
| g) Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | X |
| h) Place within a 100-year flood hazard area structures which would impede or redirect flood flows?   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | X |
| l) Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of a failure of a levee or dam?  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | X |
| j) Inundation by seiche, tsunami or mudflow?  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | X |

|                                      |  |                                    |              |
|--------------------------------------|--|------------------------------------|--------------|
| Potentially<br>Significant<br>Impact | Potentially<br>Significant<br>Unless<br>Mitigation<br>Incorporated | Less Than<br>Significant<br>Impact | No<br>Impact |
|--------------------------------------|--|------------------------------------|--------------|

**IX. LAND USE AND PLANNING.** Would the project:

|  |                          |                          |                          |   |
|--|--------------------------|--------------------------|--------------------------|---|
| a) Physically divide an established community?   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | X |
| b) Conflict with any applicable land use plan, policy or regulation of an agency with jurisdiction over the project (including, but not limited to, the general plan, specific plan, local coastal program or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | X |
| c) Conflict with any applicable habitat conservation plan or natural community conservation plan?  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | X |

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

|   |                          |                          |                          |   |
|---|--------------------------|--------------------------|--------------------------|---|
| a) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?                                | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | X |
| b) Result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | X |

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

|  |                          |                          |                          |                          |
|--|--------------------------|--------------------------|--------------------------|--------------------------|
| a) Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance or of applicable standards of other agencies?  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | X                        |
| b) Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | X                        |
| c) A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | X                        |
| d) A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?   | <input type="checkbox"/> | <input type="checkbox"/> | X                        | <input type="checkbox"/> |
| e) For a project located within an airport land use plan area or, where such a plan has not been adopted, within two miles of a public airport or a public use airport, would the project expose people residing or working in the project area to excessive noise levels? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | X                        |

|  | Potentially Significant Impact | Potentially Significant Unless Mitigation Incorporated | Less Than Significant Impact | No Impact |
|--|--------------------------------|--|------------------------------|-----------|
| f) For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels? | <input type="checkbox"/>       | <input type="checkbox"/>                               | <input type="checkbox"/>     | X         |

**XII. POPULATION AND HOUSING.** Would the project:

|   |                          |                          |                          |   |
|---|--------------------------|--------------------------|--------------------------|---|
| a) Induce substantial population growth in an area, either directly (e.g., by proposing new homes and businesses) or indirectly (e.g., through extension of roads or other infrastructure)? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | X |
| b) Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | X |
| c) Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | X |

**XIII. PUBLIC SERVICES.** Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the following public services:

|                             |                          |                          |                          |   |
|-----------------------------|--------------------------|--------------------------|--------------------------|---|
| a) Fire protection?         | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | X |
| b) Police protection?       | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | X |
| c) Schools?                 | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | X |
| d) Parks?                   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | X |
| e) Other public facilities? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | X |

**XIV. RECREATION**

|  |                          |                          |   |                          |
|--|--------------------------|--------------------------|---|--------------------------|
| a) Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated? | <input type="checkbox"/> | <input type="checkbox"/> | X | <input type="checkbox"/> |
| b) Does the project include recreational facilities, or require the construction or expansion of recreational facilities, which might have an adverse physical effect on the environment?                      | <input type="checkbox"/> | <input type="checkbox"/> | X | <input type="checkbox"/> |

|                                      |  |                                    |              |
|--------------------------------------|--|------------------------------------|--------------|
| Potentially<br>Significant<br>Impact | Potentially<br>Significant<br>Unless<br>Mitigation<br>Incorporated | Less Than<br>Significant<br>Impact | No<br>Impact |
|--------------------------------------|--|------------------------------------|--------------|

|   |
|---|
| <b>XV. TRANSPORTATION/TRAFFIC.</b> Would the project: |
|---|

|  |                          |                          |                          |   |
|--|--------------------------|--------------------------|--------------------------|---|
| a) Cause an increase in traffic which is substantial in relation to the existing traffic load and capacity of the street system (i.e., result in a substantial increase in either the number of vehicle trips, the volume-to-capacity ratio on roads, or congestion at intersections)? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | X |
| b) Exceed, either individually or cumulatively, a level of service standard established by the county congestion management agency for designated roads or highways?   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | X |
| c) Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks?  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | X |
| d) Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | X |
| e) Result in inadequate emergency access?  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | X |
| f) Result in inadequate parking capacity?  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | X |
| g) Conflict with adopted policies, plans or programs supporting alternative transportation (e.g., bus turnouts, bicycle racks)?  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | X |

|   |
|---|
| <b>XVI. UTILITIES AND SERVICE SYSTEMS.</b> Would the project: |
|---|

|  |                          |                          |                          |                          |
|--|--------------------------|--------------------------|--------------------------|--------------------------|
| a) Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | X                        |
| b) Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | X                        |
| c) Require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?          | <input type="checkbox"/> | <input type="checkbox"/> | X                        | <input type="checkbox"/> |

|  | Potentially Significant Impact | Potentially Significant Unless Mitigation Incorporated | Less Than Significant Impact | No Impact |
|--|--------------------------------|--|------------------------------|-----------|
| d) Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?   | <input type="checkbox"/>       | <input type="checkbox"/>                               | <input type="checkbox"/>     | X         |
| e) Result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand, in addition to the provider's existing commitments? | <input type="checkbox"/>       | <input type="checkbox"/>                               | <input type="checkbox"/>     | X         |
| f) Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?   | <input type="checkbox"/>       | <input type="checkbox"/>                               | <input type="checkbox"/>     | X         |
| g) Comply with federal, state and local statutes and regulations related to solid waste?   | <input type="checkbox"/>       | <input type="checkbox"/>                               | <input type="checkbox"/>     | X         |

|  |
|--|
| <b>XVII MANDATORY FINDINGS OF SIGNIFICANCE</b> |
|--|

|   |                          |                          |                          |   |
|---|--------------------------|--------------------------|--------------------------|---|
| a) Does the project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of rare or endangered plants or animals, or eliminate important examples of the major periods of California history or prehistory? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | X |
| b) Does the project have impacts that are individually limited, but cumulatively considerable? "Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects.  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | X |
| c) Does the project have environmental effects that will cause substantial adverse effects on human beings, either directly or indirectly?  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | X |

## EXPLANATION OF RESPONSES

### IV. BIOLOGICAL RESOURCES

- b. **Would the project have a substantially adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?**
- c. **Would the project have a substantial adverse effect on federally protected wetlands, as defined in Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal wetlands, etc.), through direct removal, filling, hydrological interruption or other means?**

The project will traverse existing wetlands on the south edge of the Union Pacific Railroad right-of-way for a distance of approximately 800', beginning approximately 400' west of Berrellesa Street. The wetlands have formed due to poor drainage along the right-of-way, and are fed by runoff from the property to the north. The US Army Corps of Engineers has determined that the wetlands are jurisdictional wetlands under Section 404 of the Clean Water Act, and have approved the wetland delineation for the project prepared by LSA Associates (January, 2003).

The trail construction affects approximately 11,000 square feet of the wetlands. Avoiding the wetlands by realigning the trail is not possible due to right-of-way restrictions on the south and track setback requirements on the north.

The City and EBRPD staff have identified a mitigation site on EBRPD property within the Martinez Regional Shoreline. The site is located 200' north of the railroad right-of-way, 1900' west of Berrellesa Street. An existing EBRPD maintenance road bisects an existing wetland, crossing a tidal slough channel with a culvert. It is proposed that the existing road and culvert be removed. The road will be relocated onto an existing trail just to the north, with an existing foot bridge carrying the trail over the tidal slough replaced with a vehicle bridge. This work will create 3-4,000 square feet of new wetlands along the old road alignment, and enhance 20,000 square feet of existing wetlands south of the old road through improved tidal circulation.

Portions of the trail will be placed on a raised boardwalk structure, eliminating the need for filling the wetlands. Portions of the trail will also be narrowed to reduce the fill requirement. These design changes will reduce the amount of fill, reducing the wetland impacts to an amount equal to the mitigation being provided on the EBRPD site to the north. The Corps of Engineers has reviewed this proposal and concurs in concept. Submittal of a permit to the Corps will be required, at which time the exact amounts of allowable fill and required length of the raised structure will be determined.

### SOURCE REFERENCES

- 1) Request for Verification of Jurisdictional Delineation, Martinez Bay Trail Corridor, Martinez, CA, LSA Associates, Inc., January 16, 2003



**BIOLOGICAL ASSESSMENT  
MARTINEZ REGIONAL SHORELINE  
MARTINEZ BAY TRAIL CORRIDOR PROJECT**

Steven Bobzien  
Ecological Services Coordinator  
East Bay Regional Park District

August 7, 2003

**PROJECT DESCRIPTION:** The project is part of the San Francisco Bay Trail and is located within Martinez Regional Shoreline (owned by the East Bay Regional Park District), the City of Martinez, and a District easement from the Union Pacific Railroad. The proposed paved trail segment begins at Carquinez Scenic Drive at the Nejedly Staging Area and continues to Berrellesa Street. The trail is approximately 2350 feet long and the width varies from 8 to 10 feet. Some trail sections will have a 2-foot wide aggregate base rock shoulder on both sides. Approximately 700 ft. of the trail alignment is in a eucalyptus dominated woodland with an ephemeral stream. Several large eucalyptus and small live oaks will be removed during the non-nesting season (August – January). Prior to the trees being removed qualified District biologists will conduct breeding bird surveys. A 35 ft long clear span bridge will be used to cross the stream. A 36" culvert will be used where the trail intersects and crosses a small wetland. The bridge and culvert will be installed during the dry season and/or under dry conditions. The proposed trail is located in Contra Costa County at 38°01.242N: 122°08.797W (see map).

The project also includes enhancement of an existing wetlands. The proposed mitigation site is within Martinez Regional Shoreline and bayside of Union Pacific Railroad and located at 38°01.156N: 122°08.657W. Currently an unpaved maintenance road bisects this wetland. This road crosses an existing small partially clogged culvert that restricts flow to the site. Consequently, the majority of the wetland receives minimal tidal flow. The proposed enhancement includes removing this culvert and maintenance road. Minor grading will be performed to restore flow across the old roadbed. Exotic vegetation shall be removed, especially from existing tidal channels, and native vegetation will be planted at various locations within the mitigation sites. The proposed project will replace an existing 4'X10' wooden pedestrian footbridge crossing a tidal slough with a 12'X16' prefabricated vehicle bridge. This will allow the District's maintenance vehicles to utilize the elevated pedestrian trail instead of unpaved old roadbed. Removal of the roadbed will provide 4,130 square feet of restored wetlands. Overall, this restoration will improve tidal and wetland conditions for 30,330 square feet, which should significantly enhance the site for a variety of emergent wetland species.

**BIOLOGICAL CONDITIONS:** This Martinez Regional Shoreline trail project transverse a blue gum eucalyptus (*Eucalyptus globules*) dominated forest with an ephemeral stream and into a highly altered railroad track corridor with some fresh water wetlands habitat. The vast majority of the trail is aligned within the District's easement

along the Union Pacific Railroad corridor. This corridor consists of railroad tracks on a road rock surface and contains a series of narrow wetlands adjacent to a hillside and/or asphalt plant. These seasonal wetlands are highly degraded and support relatively few species. The wetland vegetation is dominated by several grass species, cattails (*Typhus sp.*), willows (*Salix sp.*), and exotic trees. The most abundant invertebrates are water boatmen (*Sigara sp.*) and mosquito larvae. Although mallards, American coots, and gull species may occur in the ponding water, these relatively shallow wetlands are typically dry by July, and we have not observed any amphibians or fish in these waterbodies. A variety of passerines forage in the willows, eucalyptus, and oaks. The species composition in these trees seasonally varies with scrub jays, ruby crowned kinglets, yellow-rumped warblers, white-crowned sparrows and dark-eyed juncos are the most common species. The eucalyptus also provides habitat for nesting raptors such as red-shouldered hawks, red-tailed hawks, American kestrels, and great-horned owls. Qualified District biologist(s) shall conduct raptor surveys prior to construction and nest sites will be avoided.

The biological conditions of the proposed wetland enhancement and mitigation site are frequently inundated by tide or may seasonally pond with fresh water. Tidal water moves up a heavily vegetated channel and passes through a narrow partially clogged culvert. A bare earthen roadbed bisects the site. Otherwise, these areas are covered by brackish marsh vegetation dominated by pickleweed (*Salicornia virginica*), creeping wild rye (*Leymus triticoides*), perennial pepperweed (*Lepidium latifolium*), and salt grass (*Distichlis spicata*) (LSA 2002 report). A California Department of Fish and Game Natural Diversity Database (CNDDDB) search shows that the project enhancement site is northern coastal salt marsh. In addition, CNDDDB has known locations of Mt Diablo fairy lantern (*Calochortus pulchellus*), listed 1B by CNPS, and Diablo helianthella (*Helianthella castanea*), a federal species of concern and listed 1B by CNPS, occurring upslope in terrestrial habitat and over 200 feet from the project site and upslope (see CNDDDB map). We have not observed or detected any state or federally endangered, threatened, or species of concern at this site (see resource inventory checklist). However, improving tidal flow and wetland conditions should significantly enhance the site for a variety of species, and potentially provide habitat for California black rail, a state threatened species and federal species of concern, California clapper rail, a state endangered and federal endangered species, and salt marsh harvest mouse, a state endangered and federal endangered species.

RESOURCE INVENTORY MARTINEZ BAY TRAIL COORIDOR PROJECT WILDLIFE CHECKLIST 2003

| CLASS      | COMMONNAME                    | LATIN NAME                                 | OBS | EXP | BREEDING | STATUS    | COMMENTS  |
|------------|-------------------------------|--|-----|-----|----------|-----------|---|
| Amphibians | Arboreal Salamander           | <i>Aneides lugubris</i>                    |     | yes | yes      |           | Eucalyptus and oak woodlands                      |
| Amphibians | Bullfrog                      | <i>Rana catesbeiana</i>                    |     |     |          |           |   |
| Amphibians | California Newt, Coast Range  | <i>Taricha torosa</i>                      |     |     |          |           |   |
| Amphibians | California Slender Salamander | <i>Batrachoseps attenuatus</i>             |     | yes | yes      |           | Eucalyptus and oak woodlands                      |
| Amphibians | Ensatina, Yellow-eyed         | <i>Ensatina eschscholtzi</i>               |     |     |          |           |   |
| Amphibians | Foothill Yellow-legged Frog   | <i>Rana boylei</i>                         |     |     |          | FSC, CSC  |   |
| Amphibians | Pacific Treefrog              | <i>Hyla regilla</i>                        |     |     |          |           |   |
| Amphibians | Red-legged Frog, California   | <i>Rana aurora draytonii</i>               |     |     |          | FT,CSC    |   |
| Amphibians | Rough-skinned Newt, Northern  | <i>Taricha granulosa</i>                   |     |     |          |           |   |
| Amphibians | Tiger Salamander, California  | <i>Ambystoma tigrinum californiense</i>    |     |     |          | FC,CSC    |   |
| Amphibians | Western Spadefoot Toad        | <i>Scaphiopus hammondi</i>                 |     |     |          | CSC       |   |
| Amphibians | Western Toad, California      | <i>Bufo boreas</i>                         |     |     |          |           |   |
| Birds      | Acorn Woodpecker              | <i>Melanerpes formicivorus</i>             |     |     |          |           |   |
| Birds      | Allen's Hummingbird           | <i>Selasphorus sasin</i>                   |     | yes |          |           | Migrant   |
| Birds      | American Avocet               | <i>Recurvirostra americana</i>             |     |     |          |           |   |
| Birds      | American Bittern              | <i>Botaurus lentiginosus</i>               |     |     |          |           |   |
| Birds      | American Coot                 | <i>Fulica americana</i>                    | yes |     |          |           | Seasonal ponding water                            |
| Birds      | American Crow                 | <i>Corvus brachyrhynchos</i>               |     | yes | yes      |           |   |
| Birds      | American Dipper               | <i>Cinclus mexicanus</i>                   |     |     |          |           |   |
| Birds      | American Goldfinch            | <i>Carduelis tristis</i>                   |     | yes | yes      |           |   |
| Birds      | American Green-winged Teal    | <i>Anas crecca</i>                         |     |     |          |           |   |
| Birds      | American Kestrel              | <i>Falco sparverius</i>                    | yes |     | yes      |           | Potentially nests in eucalyptus and oak woodlands |
| Birds      | American Pipit                | <i>Anthus rubescens</i>                    |     |     |          |           |   |
| Birds      | American Robin                | <i>Turdus migratorius</i>                  | yes |     | yes      |           |   |
| Birds      | American White Pelican        | <i>Pelecanus erythrorhynchos</i>           |     |     |          |           |   |
| Birds      | American Wigeon               | <i>Anas americana</i>                      |     |     |          |           |   |
| Birds      | Anna's Hummingbird            | <i>Calypte anna</i>                        | yes |     | yes      |           |   |
| Birds      | Arctic Loon                   | <i>Gavia arctica</i>                       |     |     |          |           |   |
| Birds      | Ash-throated Flycatcher       | <i>Myiarchus cinerascens</i>               |     |     |          |           |   |
| Birds      | Baird's Sandpiper             | <i>Calidris bairdii</i>                    |     |     |          |           |   |
| Birds      | Bald Eagle                    | <i>Haliaeetus leucocephalus</i>            |     |     |          | FT,SE,CFP |   |
| Birds      | Band-tailed Pigeon            | <i>Columba fasciata</i>                    |     |     |          |           |   |
| Birds      | Bank Swallow                  | <i>Riparia riparia</i>                     |     |     |          | FT,SE     |   |
| Birds      | Barn Swallow                  | <i>Hirundo rustica</i>                     | yes |     |          |           |   |
| Birds      | Barrow's Goldeneye            | <i>Bucephala islandica</i>                 |     |     |          |           |   |
| Birds      | Belted Kingfisher             | <i>Ceryle alcyon</i>                       |     |     |          |           |   |
| Birds      | Bewick's Wren                 | <i>Thryomanes bewickii</i>                 | yes |     | yes      |           | Eucalyptus and oak woodlands                      |
| Birds      | Black Phoebe                  | <i>Sayornis nigricans</i>                  | yes |     | yes      |           |   |
| Birds      | Black Scoter                  | <i>Melanitta nigra</i>                     |     |     |          |           |   |
| Birds      | Black Tern                    | <i>Chlidonias niger</i>                    |     |     |          |           |   |
| Birds      | Black Turnstone               | <i>Arenaria melanocephala</i>              |     |     |          |           |   |
| Birds      | Black-bellied Plover          | <i>Pluvialis squatarola</i>                |     |     |          |           |   |
| Birds      | Black-chinned Hummingbird     | <i>Archilochus alexandri</i>               |     | yes |          |           |   |
| Birds      | Black-chinned Sparrow         | <i>Spizella atrogularis</i>                |     |     |          |           |   |
| Birds      | Black-crowned Night Heron     | <i>Nycticorax nycticorax</i>               |     |     |          |           |   |
| Birds      | Black-headed Grosbeak         | <i>Phenictus melanocephalus</i>            |     | yes |          |           | Eucalyptus and oak woodlands                      |
| Birds      | Black-necked Stilt            | <i>Himantopus mexicanus</i>                |     |     |          |           |   |
| Birds      | Black-throated Gray Warbler   | <i>Dendroica nigrescens</i>                |     |     |          |           |   |
| Birds      | Blue Grosbeak                 | <i>Guiraca caerulea</i>                    |     |     |          |           |   |
| Birds      | Blue-gray Gnatcatcher         | <i>Psaltriparus caerulea</i>               |     |     |          |           |   |
| Birds      | Blue-winged Teal              | <i>Anas discors</i>                        |     |     |          |           |   |
| Birds      | Bonaparte's Gull              | <i>Larus philadelphia</i>                  |     |     |          |           |   |
| Birds      | Brandt's Cormorant            | <i>Phalacrocorax penicillatus</i>          |     |     |          |           |   |
| Birds      | Brewer's Blackbird            | <i>Euphagus cyanocephalus</i>              |     |     |          |           |   |
| Birds      | Brown Creeper                 | <i>Certhia americana</i>                   |     |     |          |           | Eucalyptus and oak woodlands                      |
| Birds      | Brown Pelican                 | <i>Pelecanus occidentalis</i>              |     |     |          | FT,SE,CFP |   |
| Birds      | Brown-headed Cowbird          | <i>Molothrus ater</i>                      |     |     |          |           |   |
| Birds      | Bufflehead                    | <i>Bucephala albeola</i>                   |     |     |          |           |   |
| Birds      | Burrowing Owl                 | <i>Athene (Speotyto) cucularia</i>         |     |     |          | CSC       |   |
| Birds      | Bushit                        | <i>Psaltiriparus minimus</i>               | yes |     | yes      |           | Riparian, eucalyptus, and oak woodlands           |
| Birds      | Bullock's Oriole              | <i>Icterus bullockii</i>                   |     |     |          |           |   |
| Birds      | California Black Rail         | <i>Laterallus jamaicensis coturniculus</i> |     |     |          | ST        |   |
| Birds      | California Clapper Rail       | <i>Rallus longirostris obsoletus</i>       |     |     |          | FE,SE,CFP |   |
| Birds      | California Gull               | <i>Larus californicus</i>                  | yes |     |          |           |   |
| Birds      | California Quail              | <i>Callipepla californica</i>              | yes |     | yes      |           | Eucalyptus and oak woodlands                      |
| Birds      | California Towhee             | <i>Pipilo fuscus</i>                       | yes |     | yes      |           | Eucalyptus and oak woodlands                      |
| Birds      | California Thrasher           | <i>Taxostoma redivivum</i>                 |     |     |          |           |   |
| Birds      | Calliope Hummingbird          | <i>Stelidoptera calliope</i>               |     |     |          |           |   |
| Birds      | Canada Goose                  | <i>Branta canadensis</i>                   | yes |     |          |           | Seasonal ponding water                            |
| Birds      | Canvasback                    | <i>Aythya valisineria</i>                  |     |     |          |           |   |
| Birds      | Canyon Wren                   | <i>Catherpes mexicanus</i>                 |     |     |          |           |   |
| Birds      | Caspian Tern                  | <i>Sterna caspia</i>                       |     |     |          |           |   |
| Birds      | Cattle Egret                  | <i>Bubulcus ibis</i>                       |     |     |          |           |   |
| Birds      | Cedar Waxwing                 | <i>Bombycilla cedrorum</i>                 | yes |     |          |           | Eucalyptus and oak woodlands                      |
| Birds      | Chestnut-backed Chickadee     | <i>Parus rufescens</i>                     | yes |     | yes      |           | Eucalyptus and oak woodlands                      |
| Birds      | Chipping Sparrow              | <i>Spizella passerina</i>                  |     |     |          |           |   |
| Birds      | Cinnamon Teal                 | <i>Anas cyanoptera</i>                     |     |     |          |           |   |
| Birds      | Cliff Swallow                 | <i>Hirundo pyrrhonota</i>                  | yes |     |          |           |   |

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| CLASS | COMMONNAME                  | LATIN NAME                      | OBS | EXP | BREEDING | STATUS    | COMMENTS  |
|-------|-----------------------------|---------------------------------|-----|-----|----------|-----------|---|
| Birds | Common Barn Owl             | <i>Tyto alba</i>                |     | yes | yes      |           | Potentially nests in eucalyptus and oak woodlands |
| Birds | Common Goldeneye            | <i>Bucephala clangula</i>       |     |     |          |           |   |
| Birds | Common Loon                 | <i>Gavia immer</i>              |     |     |          |           |   |
| Birds | Common Merganser            | <i>Mergus merganser</i>         |     |     |          |           |   |
| Birds | Common Moorhen (Gallinule)  | <i>Gallinula chloropus</i>      |     |     |          |           |   |
| Birds | Common Murre                | <i>Uria aalge</i>               |     |     |          |           |   |
| Birds | Common Poorwill             | <i>Phalaenoptilus nuttali</i>   |     |     |          |           |   |
| Birds | Common Raven                | <i>Corvus corax</i>             | yes |     |          |           |   |
| Birds | Common Snipe                | <i>Gallinago gallinago</i>      |     |     |          |           |   |
| Birds | Common Tern                 | <i>Sterna hirundo</i>           |     |     |          |           |   |
| Birds | Common Yellowthroat         | <i>Geothlypis trichas</i>       |     |     |          |           |   |
| Birds | Cooper's Hawk               | <i>Accipiter cooperii</i>       |     |     |          | CSC       |   |
| Birds | Dark-eyed (Oregon) Junco    | <i>Junco hyemalis</i>           | yes |     | yes      |           | Eucalyptus and oak woodlands                      |
| Birds | Double-crested Cormorant    | <i>Phalacrocorax auritus</i>    |     |     |          |           |   |
| Birds | Downy Woodpecker            | <i>Picoides pubescens</i>       |     |     |          |           |   |
| Birds | Dunlin                      | <i>Calidris alpina</i>          |     |     |          |           |   |
| Birds | Dusky Flycatcher            | <i>Empidonax oberholseri</i>    |     |     |          |           |   |
| Birds | Eared Grebe                 | <i>Podiceps nigricollis</i>     |     |     |          |           |   |
| Birds | Elegant Tern                | <i>Sterna elegans</i>           |     |     |          |           |   |
| Birds | Eurasian Wigeon             | <i>Anas penelope</i>            |     |     |          |           |   |
| Birds | European Starling           | <i>Sturnus vulgaris</i>         | yes |     | yes      |           |   |
| Birds | Ferruginous Hawk            | <i>Buteo regalis</i>            |     |     |          | FSC,CSC   |   |
| Birds | Forster's Tern              | <i>Sterna forsteri</i>          |     |     |          |           |   |
| Birds | Fox Sparrow                 | <i>Passerella iliaca</i>        |     |     |          |           |   |
| Birds | Gadwall                     | <i>Anas strepera</i>            |     |     |          |           |   |
| Birds | Glaucous Gull               | <i>Larus hyperboreus</i>        |     |     |          |           |   |
| Birds | Glaucous-winged Gull        | <i>Larus glaucescens</i>        |     |     |          |           |   |
| Birds | Golden Eagle                | <i>Aquila chrysaetos</i>        |     |     |          | FSC,CFP   |   |
| Birds | Golden-crowned Kinglet      | <i>Regulus satrapa</i>          |     |     |          |           |   |
| Birds | Golden-crowned Sparrow      | <i>Zonotrichia atricapilla</i>  | yes |     |          |           | Winter  |
| Birds | Grasshopper Sparrow         | <i>Ammodramus savaanarum</i>    |     |     |          |           |   |
| Birds | Great Blue Heron            | <i>Ardea herodias</i>           |     | yes |          |           | Emergent wetlands                                 |
| Birds | Great Egret                 | <i>Casmerodius albus</i>        |     | yes |          |           | Emergent wetlands                                 |
| Birds | Great Horned Owl            | <i>Bubo virginianus</i>         |     | yes | yes      |           | Potentially nests in eucalyptus and oak woodlands |
| Birds | Greater Roadrunner          | <i>Geococcyx californianus</i>  |     |     |          |           |   |
| Birds | Greater Scaup               | <i>Aythya marila</i>            |     |     |          |           |   |
| Birds | Greater White-fronted Goose | <i>Anser albifrons</i>          |     |     |          |           |   |
| Birds | Greater Yellowlegs          | <i>Tringa melanoleuca</i>       |     |     |          |           |   |
| Birds | Green-backed Heron          | <i>Butorides striatus</i>       |     |     |          |           |   |
| Birds | Hairy Woodpecker            | <i>Picoides villosus</i>        |     |     |          |           |   |
| Birds | Hammond's Flycatcher        | <i>Empidonax hammondi</i>       |     |     |          |           |   |
| Birds | Heermann's Gull             | <i>Larus heermanni</i>          |     |     |          |           |   |
| Birds | Hermit Thrush               | <i>Catharus guttatus</i>        |     | yes | yes      |           | Eucalyptus and oak woodlands                      |
| Birds | Hermit Warbler              | <i>Dendroica occidentalis</i>   |     |     |          |           |   |
| Birds | Herring Gull                | <i>Larus argentatus</i>         |     |     |          |           |   |
| Birds | Hooded Merganser            | <i>Lophodytes cucullatus</i>    |     |     |          |           |   |
| Birds | Hooded Oriole               | <i>Icterus cucullatus</i>       | yes |     |          |           | Eucalyptus and oak woodlands                      |
| Birds | Horned Grebe                | <i>Podiceps auritus</i>         |     |     |          |           |   |
| Birds | Horned Lark                 | <i>Eremophila alpestris</i>     |     |     |          |           |   |
| Birds | House Finch                 | <i>Carpodacus mexicanus</i>     | yes |     | yes      |           | Eucalyptus and oak woodlands                      |
| Birds | House Sparrow               | <i>Passer domesticus</i>        |     |     |          |           |   |
| Birds | House Wren                  | <i>Troglodytes aedon</i>        |     |     |          |           |   |
| Birds | Hutton's Vireo              | <i>Vireo huttoni</i>            |     |     |          |           |   |
| Birds | Killdeer                    | <i>Charadrius vociferus</i>     |     |     |          |           |   |
| Birds | Lark Sparrow                | <i>Chondestes grammacus</i>     |     |     |          |           |   |
| Birds | Lawrence's Goldfinch        | <i>Carduelis lawrencei</i>      |     |     |          |           |   |
| Birds | Lazuli Bunting              | <i>Passerina amoena</i>         | yes |     | yes      |           | Eucalyptus and oak woodlands                      |
| Birds | Least Sandpiper             | <i>Calidris minutilla</i>       |     |     |          |           |   |
| Birds | Least Tern                  | <i>Sterna antillarum browni</i> |     |     |          | FE,SE,CFP |   |
| Birds | Lesser Golden-Plover        | <i>Pluvialis dominica</i>       |     |     |          |           |   |
| Birds | Lesser Goldfinch            | <i>Carduelis psaltria</i>       |     |     |          |           |   |
| Birds | Lesser Scaup                | <i>Aythya affinis</i>           |     |     |          |           |   |
| Birds | Lesser Yellowlegs           | <i>Tringa flavipes</i>          |     |     |          |           |   |
| Birds | Lewis' Woodpecker           | <i>Melanerpes lewis</i>         |     |     |          |           |   |
| Birds | Lincoln's Sparrow           | <i>Melospiza lincolni</i>       |     |     |          |           |   |
| Birds | Loggerhead Shrike           | <i>Lanius ludovicianus</i>      |     |     |          | FSC,CSC   |   |
| Birds | Long-eared Owl              | <i>Asio otus</i>                |     |     |          | CSC       |   |
| Birds | Long-billed Curlew          | <i>Numenius americanus</i>      |     |     |          |           |   |
| Birds | Long-billed Dowitcher       | <i>Limnodromus scolopaceus</i>  |     |     |          |           |   |
| Birds | MacGillivray's Warbler      | <i>Oporornis tolmiei</i>        |     |     |          |           |   |
| Birds | Mallard                     | <i>Anas platyrhynchos</i>       | yes |     |          |           | Seasonal ponding water                            |
| Birds | Marbled Godwit              | <i>Limosa fedoa</i>             |     |     |          |           |   |
| Birds | Marsh Wren                  | <i>Cistothorus palustris</i>    |     |     |          |           |   |
| Birds | Merlin                      | <i>Falco columbarius</i>        |     |     |          | CSC       |   |
| Birds | Mew Gull                    | <i>Larus canis</i>              |     |     |          |           |   |
| Birds | Mountain Bluebird           | <i>Sialia currucoides</i>       |     |     |          |           |   |
| Birds | Mourning Dove               | <i>Zenaidura macroura</i>       | yes |     | yes      |           | Eucalyptus and oak woodlands                      |
| Birds | Nashville Warbler           | <i>Vermivora ruficapilla</i>    |     |     |          |           |   |

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| CLASS | COMMONNAME                    | LATIN NAME                             | OBS | EXP | BREEDING | STATUS  | COMMENTS  |
|-------|-------------------------------|--|-----|-----|----------|---------|---|
| Birds | Northern Oriole               | <i>Icterus galbula</i>                 |     |     |          |         |   |
| Birds | Northern Flicker              | <i>Colaptes auratus</i>                | yes |     |          |         |   |
| Birds | Northern Harrier              | <i>Circus cyaneus</i>                  |     |     |          | CSC     |   |
| Birds | Northern Mockingbird          | <i>Mimus polyglottos</i>               | yes |     | yes      |         |   |
| Birds | Northern Pintail              | <i>Anas acuta</i>                      |     |     |          |         |   |
| Birds | Northern Pygmy-Owl            | <i>Glaucidium gnoma</i>                |     |     |          |         |   |
| Birds | Northern Rough-winged Swallow | <i>Stelgidopteryx serripennis</i>      |     |     |          |         |   |
| Birds | Northern Saw-whet Owl         | <i>Aegolius acadicus</i>               |     |     |          |         |   |
| Birds | Northern Shoveler             | <i>Anas clypeata</i>                   |     |     |          |         |   |
| Birds | Nuttall's Woodpecker          | <i>Picoides nuttallii</i>              |     |     |          |         |   |
| Birds | Oldsquaw                      | <i>Clangula hyemalis</i>               |     |     |          |         |   |
| Birds | Olive-sided Flycatcher        | <i>Contopus borealis</i>               | yes |     | yes      |         | Eucalyptus and oak woodlands                      |
| Birds | Orange-crowned Warbler        | <i>Vermivora celata</i>                |     |     |          |         |   |
| Birds | Osprey                        | <i>Pandion haliaetus</i>               |     |     |          | CSC     |   |
| Birds | Parasitic Jaeger              | <i>Stercorarius parasiticus</i>        |     |     |          |         |   |
| Birds | Pectoral Sandpiper            | <i>Calidris melanotos</i>              |     |     |          |         |   |
| Birds | Pelagic Cormorant             | <i>Phalacrocorax pelagicus</i>         |     |     |          |         |   |
| Birds | Peregrine Falcon              | <i>Falco peregrinus</i>                |     |     |          | SE,CFP  |   |
| Birds | Phainopepla                   | <i>Phainopepla nitens</i>              |     |     |          |         |   |
| Birds | Pied-billed Grebe             | <i>Podilymbus podiceps</i>             |     |     |          |         |   |
| Birds | Pine Siskin                   | <i>Carduelis pinus</i>                 |     |     |          |         |   |
| Birds | Plain Titmouse                | <i>Parus inornatus</i>                 | yes |     | yes      |         |   |
| Birds | Prairie Falcon                | <i>Falco mexicanus</i>                 |     |     |          | CSC     |   |
| Birds | Purple Finch                  | <i>Carpodacus purpureus</i>            |     |     |          |         |   |
| Birds | Red Knot                      | <i>Calidris canutus</i>                |     |     |          |         |   |
| Birds | Red-breasted Merganser        | <i>Mergus serrator</i>                 |     |     |          |         |   |
| Birds | Red-breasted Nuthatch         | <i>Sitta canadensis</i>                |     |     |          |         |   |
| Birds | Red-breasted Sapsucker        | <i>Sphyrapicus ruber</i>               |     |     |          |         |   |
| Birds | Red-necked Grebe              | <i>Podiceps grisegena</i>              |     |     |          |         |   |
| Birds | Red-necked Phalarope          | <i>Phalaropus lobatus</i>              |     |     |          |         |   |
| Birds | Red-shouldered Hawk           | <i>Buteo lineatus</i>                  | yes |     | yes      |         | Potentially nests in eucalyptus and oak woodlands |
| Birds | Red-tailed Hawk               | <i>Buteo jamaicensis</i>               | yes |     | yes      |         | Potentially nests in eucalyptus and oak woodlands |
| Birds | Red-throated Loon             | <i>Gavia stellata</i>                  |     |     |          |         |   |
| Birds | Red-winged Blackbird          | <i>Agelaius phoeniceus</i>             |     |     |          |         |   |
| Birds | Redhead                       | <i>Aythya americana</i>                |     |     |          |         |   |
| Birds | Ring-billed Gull              | <i>Larus delawarensis</i>              | yes |     |          |         |   |
| Birds | Ring-necked Duck              | <i>Aythya collaris</i>                 |     |     |          |         |   |
| Birds | Ring-necked Pheasant          | <i>Phasianus colchicus</i>             |     |     |          |         |   |
| Birds | Rock Dove (Domestic Pigeon)   | <i>Columba livia</i>                   |     |     |          |         |   |
| Birds | Rock Wren                     | <i>Salpinctes obsoletus</i>            |     |     |          |         |   |
| Birds | Ross' Goose                   | <i>Chen rossii</i>                     |     |     |          |         |   |
| Birds | Rough-legged Hawk             | <i>Buteo lagopus</i>                   |     |     |          |         |   |
| Birds | Ruby-crowned Kinglet          | <i>Regulus calendula</i>               | yes |     | yes      |         |   |
| Birds | Ruddy Duck                    | <i>Oxyura jamaicensis</i>              |     |     |          |         |   |
| Birds | Ruddy Turnstone               | <i>Arenaria interpres</i>              |     |     |          |         |   |
| Birds | Rufous Hummingbird            | <i>Selasphorus rufus</i>               |     | yes |          |         | Migrant   |
| Birds | Rufous-crowned Sparrow        | <i>Aimophila ruficeps</i>              |     |     |          |         |   |
| Birds | Rufous-sided Towhee           | <i>Pipilo erythrophthalmus</i>         | yes |     | yes      |         | Eucalyptus and oak woodlands                      |
| Birds | Sage Sparrow                  | <i>Amphispiza belli</i>                |     |     |          |         |   |
| Birds | Sanderling                    | <i>Calidris alba</i>                   |     |     |          |         |   |
| Birds | Sandhill Crane                | <i>Grus canadensis</i>                 |     |     |          |         |   |
| Birds | Savannah Sparrow              | <i>Passerculus sandwichensis</i>       |     |     |          |         |   |
| Birds | Saltmarsh Common Yellowthroat | <i>Geothlypis trichas sinuosa</i>      |     |     |          | CSC     |   |
| Birds | Say's Phoebe                  | <i>Sayornis saya</i>                   |     |     |          |         |   |
| Birds | Scrub Jay                     | <i>Aphelocoma coerulescens</i>         | yes |     | yes      |         |   |
| Birds | Semipalmated Plover           | <i>Charadrius semipalmatus</i>         |     |     |          |         |   |
| Birds | Sharp-shinned Hawk            | <i>Accipiter striatus</i>              |     |     |          | CSC     |   |
| Birds | Short-billed Dowitcher        | <i>Limnodromus griseus</i>             |     |     |          |         |   |
| Birds | Short-eared Owl               | <i>Asio flammeus</i>                   |     |     |          | CSC     |   |
| Birds | Snow Goose                    | <i>Chen caerulescens</i>               |     |     |          |         |   |
| Birds | Snowy Egret                   | <i>Egretta thula</i>                   | yes |     |          |         |   |
| Birds | Snowy Plover                  | <i>Charadrius alexandrinus nivosus</i> |     |     |          |         |   |
| Birds | Solitary Vireo                | <i>Vireo solitarius</i>                |     |     |          |         |   |
| Birds | Song Sparrow                  | <i>Melospiza melodia</i>               | yes |     |          |         |   |
| Birds | Sora                          | <i>Porzana carolina</i>                |     |     |          |         |   |
| Birds | Spotted Sandpiper             | <i>Actitis macularia</i>               |     |     |          |         |   |
| Birds | Stellar's Jay                 | <i>Cyanocitta stelleri</i>             | yes |     | yes      |         |   |
| Birds | Suisun Song Sparrow           | <i>Melospiza melodia</i>               |     |     |          |         |   |
| Birds | Surf Scoter                   | <i>Melanitta perspicillata</i>         |     |     |          |         |   |
| Birds | Surfbird                      | <i>Aphriza virgata</i>                 |     |     |          |         |   |
| Birds | Swainson's Hawk               | <i>Buteo swainsoni</i>                 |     |     |          | ST      |   |
| Birds | Swainson's Thrush             | <i>Catharus ustulatus</i>              |     | yes |          |         | Summer resident                                   |
| Birds | Thayer's Gull                 | <i>Larus thayeri</i>                   |     |     |          |         |   |
| Birds | Townsend's Solitaire          | <i>Myadestes townsendi</i>             |     |     |          |         |   |
| Birds | Townsend's Warbler            | <i>Dendroica townsendi</i>             |     |     |          |         |   |
| Birds | Tree Swallow                  | <i>Tachycineta bicolor</i>             |     |     |          |         |   |
| Birds | Tricolored Blackbird          | <i>Agelaius tricolor</i>               |     |     |          | FSC,CSC |   |
| Birds | Tundra (Whistling) Swan       | <i>Cygnus columbianus</i>              |     |     |          |         |   |

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| CLASS   | COMMONNAME                        | LATIN NAME                              | OBS | EXP | BREEDING | STATUS | COMMENTS |
|---------|-----------------------------------|---|-----|-----|----------|--------|----------|
| Birds   | Turkey Vulture                    | <i>Cathartes aura</i>                   | yes |     |          |        |          |
| Birds   | Varied Thrush                     | <i>Ixoreus naevius</i>                  |     |     |          |        |          |
| Birds   | Vaux's Swift                      | <i>Chaetura vauxi</i>                   |     |     |          |        |          |
| Birds   | Violet-green Swallow              | <i>Tachycineta thalassina</i>           |     |     |          |        |          |
| Birds   | Virginia Rail                     | <i>Rallus limicola</i>                  |     |     |          |        |          |
| Birds   | Wandering Tattler                 | <i>Heteroscelus incanus</i>             |     |     |          |        |          |
| Birds   | Warbling Vireo                    | <i>Vireo gilvus</i>                     |     |     |          |        |          |
| Birds   | Water Pipet                       | <i>Anthus spinoletta</i>                |     |     |          |        |          |
| Birds   | Western Bluebird                  | <i>Sialia mexicana</i>                  |     |     |          |        |          |
| Birds   | Western Flycatcher                | <i>Empidonax difficilis</i>             |     |     |          |        |          |
| Birds   | Western Grebe                     | <i>Aechmophorus occidentalis</i>        |     |     |          |        |          |
| Birds   | Western Gull                      | <i>Larus occidentalis</i>               | yes |     |          |        |          |
| Birds   | Western Kingbird                  | <i>Tyrannus verticalis</i>              |     |     |          |        |          |
| Birds   | Western Meadowlark                | <i>Sturnella neglecta</i>               |     |     |          |        |          |
| Birds   | Western Sandpiper                 | <i>Calidris mauri</i>                   |     |     |          |        |          |
| Birds   | Western Screech-Owl               | <i>Otus kennicottii</i>                 |     |     |          |        |          |
| Birds   | Western Tanager                   | <i>Piranga ludoviciana</i>              |     |     |          |        |          |
| Birds   | Western Wood-Pewee                | <i>Contopus sordidulus</i>              |     |     |          |        |          |
| Birds   | Western Yellow-billed Cuckoo      | <i>Coccyzus americanus occidentalis</i> |     |     |          | SE     |          |
| Birds   | Whimbrel                          | <i>Numenius phaeopus</i>                |     |     |          |        |          |
| Birds   | White-breasted Nuthatch           | <i>Sitta carolinensis</i>               |     |     |          |        |          |
| Birds   | White-crowned Sparrow             | <i>Zonotrichia leucophrys</i>           | yes |     | yes      |        |          |
| Birds   | White-throated Sparrow            | <i>Zonotrichia albicollis</i>           |     |     |          |        |          |
| Birds   | White-throated Swift              | <i>Aeronautes saxatalis</i>             |     |     |          |        |          |
| Birds   | White-tailed Kite                 | <i>Elanus leucurus</i>                  |     |     |          | CFP    |          |
| Birds   | Wild Turkey                       | <i>Meleagris gallopavo</i>              |     |     |          |        |          |
| Birds   | Willet                            | <i>Catoptrophorus semipalmatus</i>      |     |     |          |        |          |
| Birds   | Willow Flycatcher                 | <i>Empidonax traillii</i>               |     |     |          | FE     |          |
| Birds   | Wilson's Phalarope                | <i>Phalaropus tricolor</i>              |     |     |          |        |          |
| Birds   | Wilson's Warbler                  | <i>Wilsonia pusilla</i>                 |     |     |          |        |          |
| Birds   | Winter Wren                       | <i>Troglodytes troglodytes</i>          |     |     |          |        |          |
| Birds   | Wood Duck                         | <i>Aix sponsa</i>                       |     |     |          |        |          |
| Birds   | Wrentit                           | <i>Chamaea fasciata</i>                 |     |     |          |        |          |
| Birds   | Yellow Warbler                    | <i>Dendroica petechia brewsteri</i>     |     |     |          | CSC    |          |
| Birds   | Yellow-billed Magpie              | <i>Pica nuttalli</i>                    |     |     |          |        |          |
| Birds   | Yellow-breasted Chat              | <i>Icteria virens</i>                   |     |     |          |        |          |
| Birds   | Yellow-headed Blackbird           | <i>Xanthocephalus xanthocephalus</i>    |     |     |          |        |          |
| Birds   | Yellow-rumped (Audubon's) Warbler | <i>Dendroica coronata</i>               | yes |     |          |        |          |
| Birds   | Yellow-rumped (Myrtle) Warbler    | <i>Dendroica coronata</i>               | yes |     |          |        |          |
| Mammals | Audubon Cottontail                | <i>Sylvilagus audubonii</i>             |     |     |          |        |          |
| Mammals | Badger                            | <i>Taxidea taxus</i>                    |     |     |          |        |          |
| Mammals | Big Brown Bat                     | <i>Eptesicus fuscus</i>                 |     |     |          |        |          |
| Mammals | Black Rat                         | <i>Rattus rattus</i>                    |     |     |          |        |          |
| Mammals | Black-tailed Hare                 | <i>Lepus californicus</i>               |     | yes | yes      |        |          |
| Mammals | Bobcat                            | <i>Lynx rufus</i>                       |     | yes | yes      |        |          |
| Mammals | Botto Pocket Gopher               | <i>Thomomys bottae</i>                  |     | yes | yes      |        |          |
| Mammals | Brazilian Free-tailed Bat         | <i>Tadarida brasiliensis</i>            |     |     |          |        |          |
| Mammals | Broad-footed Mole                 | <i>Scapanus latimanus</i>               |     |     |          |        |          |
| Mammals | Brush Mouse                       | <i>Peromyscus boylii</i>                |     | yes | yes      |        |          |
| Mammals | Brush Rabbit                      | <i>Sylvilagus bachmani</i>              |     |     |          |        |          |
| Mammals | California Ground Squirrel        | <i>Spermophilus beecheyi</i>            |     |     |          |        |          |
| Mammals | California Meadow Mouse           | <i>Microtus californicus</i>            |     | yes | yes      |        |          |
| Mammals | California Mouse                  | <i>Peromyscus californicus</i>          |     |     |          |        |          |
| Mammals | California Myotis                 | <i>Myotis californicus</i>              |     |     |          |        |          |
| Mammals | California Pocket Mouse           | <i>Perognathus californicus</i>         |     |     |          |        |          |
| Mammals | Virginia Opossum                  | <i>Didelphis marsupialis</i>            |     | yes | yes      |        |          |
| Mammals | Coyote                            | <i>Canis latrans</i>                    |     |     |          |        |          |
| Mammals | Deer Mouse                        | <i>Peromyscus maniculatus</i>           |     | yes | yes      |        |          |
| Mammals | Desert Wood Rat                   | <i>Neotoma lepida</i>                   |     |     |          |        |          |
| Mammals | Dusky-footed Wood Rat             | <i>Neotoma fuscipes</i>                 |     |     |          |        |          |
| Mammals | Fox Squirrel                      | <i>Sciurus niger</i>                    |     |     |          |        |          |
| Mammals | Fringed Myotis                    | <i>Myotis thysanodes</i>                |     |     |          |        |          |
| Mammals | Gray Fox                          | <i>Urocyon cinereoargenteus</i>         |     | yes | yes      |        |          |
| Mammals | Hairy-winged Myotis               | <i>Myotis volans</i>                    |     |     |          |        |          |
| Mammals | Heermann Kangaroo Rat             | <i>Dipodomys heermanni</i>              |     |     |          |        |          |
| Mammals | Hoary Bat                         | <i>Lasiurus cinereus</i>                |     |     |          |        |          |
| Mammals | House Mouse                       | <i>Mus musculus</i>                     |     | yes | yes      |        |          |
| Mammals | Kit Fox, San Joaquin              | <i>Vulpes macrotis mutica</i>           |     |     |          | FE,ST  |          |
| Mammals | Little Pocket Mouse               | <i>Perognathus longimembris</i>         |     |     |          |        |          |
| Mammals | Long-eared Myotis                 | <i>Myotis evotis</i>                    |     |     |          |        |          |
| Mammals | Long-tailed Weasel                | <i>Mustela frenata</i>                  |     |     |          |        |          |
| Mammals | Lump-nosed Bat                    | <i>Plecotus townsendii</i>              |     |     |          |        |          |
| Mammals | Mountain Lion                     | <i>Felis concolor</i>                   |     |     |          |        |          |
| Mammals | Black-tailed Deer                 | <i>Odocoileus hemionus columbarius</i>  | yes |     | yes      |        |          |
| Mammals | Muskrat                           | <i>Ondatra zibethica</i>                |     |     |          |        |          |
| Mammals | Norway Rat                        | <i>Rattus norvegicus</i>                |     |     |          |        |          |
| Mammals | Ornate Shrew                      | <i>Sorex ornatus</i>                    |     |     |          |        |          |
| Mammals | Pallid Bat                        | <i>Antrozous pallidus</i>               |     |     |          | CSC    |          |



Disclaimer: Boundary and property lines shown on this map do not represent a boundary or property line survey. The East Bay Regional Park District makes no representation as to the accuracy of said property lines (or any other lines), and no liability is assumed by reason of reliance thereon. Use of this map for other than its intended purpose requires the written consent of EBRPD.

# MARTINEZ REGIONAL SHORELINE

## Martinez Bay Trail Corridor

### East Bay Regional Parks

Data Sources May Include:  
EBRPD GIS/GPS mapping and digitizing;  
Digital data from USGS, Oakland, EBMUD, ABAG,  
Teale Data Center, Sure!MAPS RASTER, ETAK,  
HJW's Carterra Orthophotography.

**Planning/Stewardship and  
GIS Services**

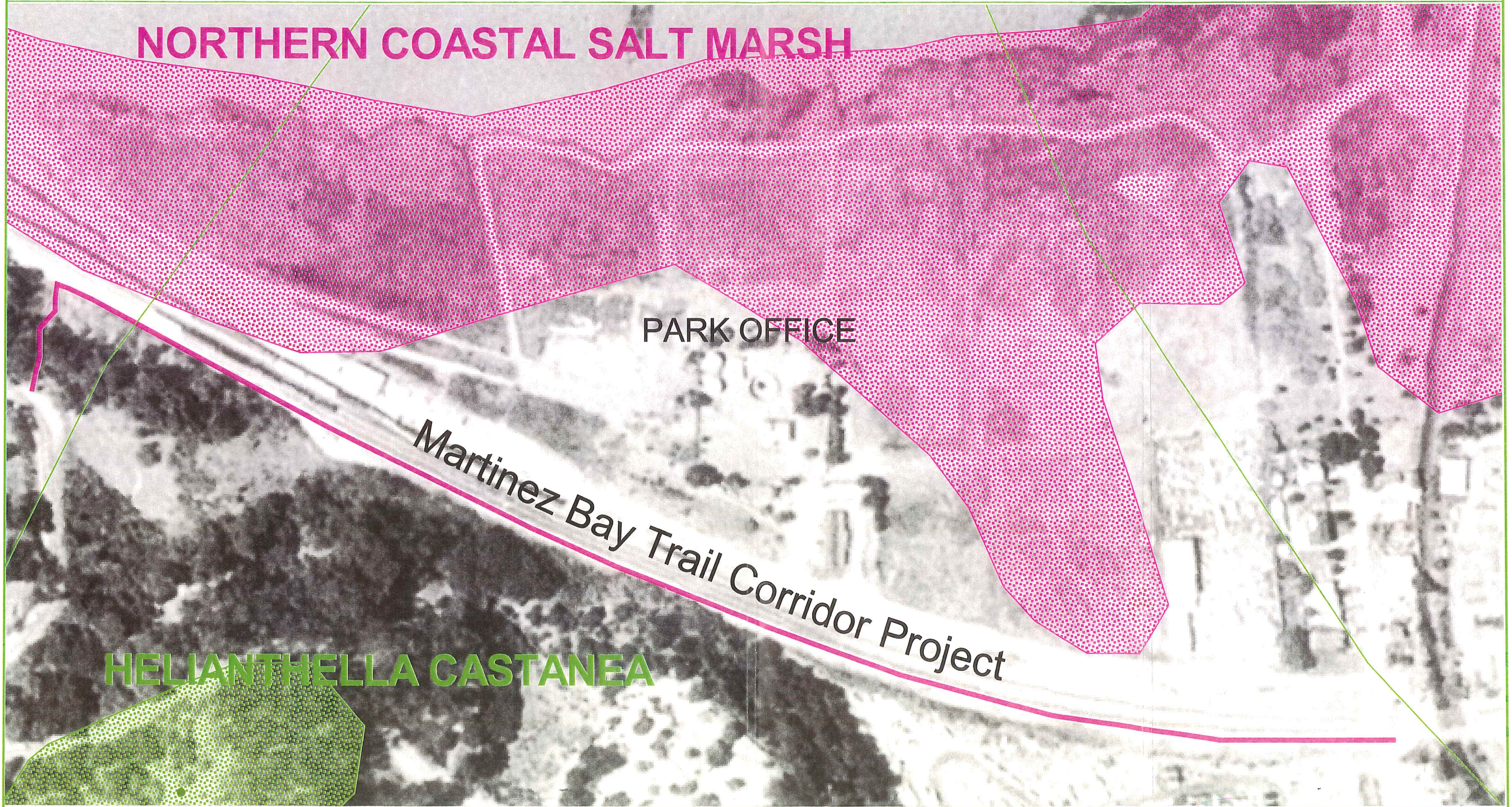


**NORTHERN COASTAL SALT MARSH**

PARK OFFICE

Martinez Bay Trail Corridor Project

**HELIANTHELLA CASTANEA**





Appendix B

**Biological Resources Assessment, May 2020**

Biological Resources Assessment  
for the  
Martinez Bay Trail Project Phase II



Prepared For:

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May 2020

## List of Abbreviated Terms

|                |  |
|----------------|--|
| ac             | acre(s)  |
| BCDC           | Bay Conservation and Development Commission            |
| BSA            | biological survey area                                 |
| Cal-IPC        | California Invasive Plant Council                      |
| CDFG           | California Department of Fish and Game                 |
| CDFW           | California Department of Fish and Wildlife             |
| CEQA           | California Environmental Quality Act                   |
| CESA           | California Endangered Species Act                      |
| CFR            | Code of Federal Regulations                            |
| City           | City of Martinez                                       |
| CNDDDB         | California Natural Diversity Database                  |
| CNPS           | California Native Plant Society                        |
| Corp           | U.S. Army Corps of Engineers                           |
| CPUC           | California Public Utilities Commission                 |
| CRPR           | California Rare Plant Rank                             |
| CWA            | Clean Water Act  |
| EBRPD          | East Bay Regional Park District                        |
| FESA           | Federal Endangered Species Act                         |
| ft             | foot/feet  |
| HCP            | habitat conservation plan                              |
| LSAA           | Lake and Streambed Alteration Agreement                |
| MBTA           | Migratory Bird Treaty Act                              |
| MND            | Mitigated Negative Declaration                         |
| MOU            | Memorandum of Understanding                            |
| NOAA           | National Oceanic and Atmospheric Administration        |
| Porter-Cologne | Porter-Cologne Water Quality Control Act               |
| RWQCB          | Regional Water Quality Control Board                   |
| SBI            | Swaim Biological, Inc.                                 |
| SFBT           | San Francisco Bay Trail                                |
| SFBRWQCB       | San Francisco Bay Regional Water Quality Control Board |
| SNC            | sensitive natural community                            |
| SWRCB          | State Water Resources Control Board                    |
| UPRR           | Union Pacific Railroad                                 |
| USFWS          | U.S. Fish and Wildlife Service                         |
| USGS           | U.S. Geological Survey                                 |

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## List of Preparers

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# 1. Introduction

Swaim Biological Inc. (SBI) has prepared this technical report for the proposed Martinez Bay Trail Project Phase II project, a proposed segment of the San Francisco Bay Trail, located in the City of Martinez, in Contra Costa County (Figure 1). The purpose of this report is to describe the biological resources present within project area, to identify sensitive biological resources known to occur in the Project region, and to evaluate the potential for sensitive resources to occur within the Project area. The potential for the proposed Project to result in impacts on sensitive biological resources also is evaluated, and avoidance, minimization, and mitigation measures are recommended for impacts that could be considered significant per the California Environmental Quality Act (CEQA).

## 1.1 Project Background

In May 2003, an Initial Study/Mitigated Negative Declaration (City of Martinez 2003) was prepared and adopted by the City of Martinez (City) for approval of the Martinez Bay Trail Phase II Project (hereafter referred to as the Original Project). The Original Project was proposed as part of the larger San Francisco Bay Trail (SFBT) which is being developed by the Association of Bay Area Governments in conjunction with local agencies. The Original Project was intended to begin at the East Bay Regional Park District (EBRPD) Nejedly Staging area and to provide a link to the SFBT at the EBRPD Martinez Regional Shoreline parking lot. The Original Project was approved in 2003, a Joint Aquatic Resources Permit Application was completed, and permits were obtained for the Project in 2003-2004. Approximately 700 feet of the first phase of the trail from the Nejedly Staging Area to the Union Pacific Railroad (UPRR) right-of-way was subsequently built. The remainder of the Project was put on hold until an easement was granted by UPRR for the EBRPD to construct the remainder of the Phase II Project. The original Memorandum of Understanding (MOU) between UPRR and EBRPD was signed in 1993, and the Amended and Restated MOU was agreed to on May 3, 2016. This MOU provides recreational trail easements over railroad property, and grants the EBRPD a longitudinal, nonexclusive easement for trail along the UPRR right-of-way easterly to and then across Berrellesa Street.

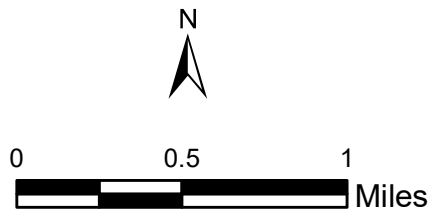
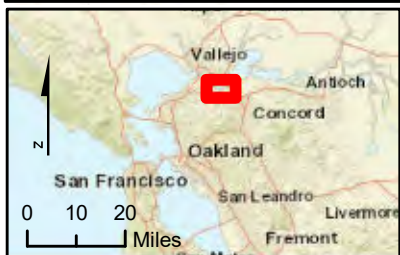
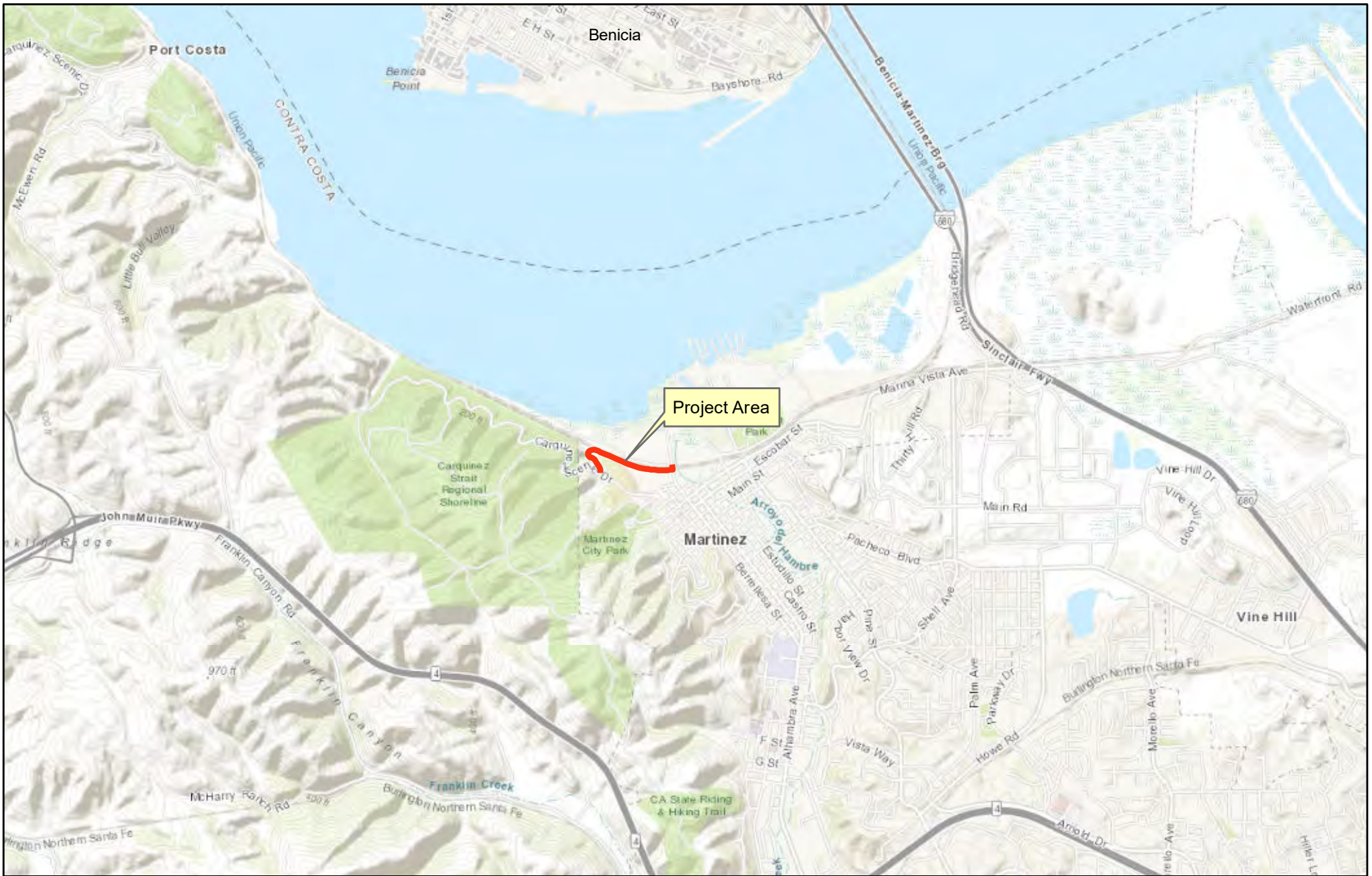
The Original Project was approved in 2003 with the City of Martinez as the Lead Agency. EBRPD has since assumed primary responsibility for the current Martinez Bay Trail Phase II Project (hereafter referred to as the proposed Project). EBRPD, in coordination with the City, is now finalizing Project design and updating previously obtained permits in order to construct the proposed Project. The proposed Project includes minor modifications and as the responsible agency, EBRPD is finalizing the design and providing funding for construction. As a result, EBRPD is filing an Addendum to the previously approved Mitigated Negative Declaration (MND) for review and approval by the EBRPD Board of Directors. The Addendum evaluates whether modifications/refinements to the proposed Project would result in any new or substantially more significant effects or require any new mitigation measures not identified in the 2003 MND.

As in the Original Project, the proposed Project includes improvements to construct approximately 3,100 feet of trail including the addition of a crossing of the UPRR alignment at Berrellesa Street. Due to the similarities in alignment, Project plans, needed work efforts, location, and environmental conditions, the elements of the currently proposed Project have been previously analyzed in the 2003 MND as they were needed to implement the Original Project. The proposed Project does include upgrades to the existing railroad crossing at Berrellesa street to meet current California Public Utilities Commission (CPUC) standards and UPRR requirements. This would include removal and replacement of existing gate arms, and enhanced signage, striping and safety improvements for the UPRR crossing. These enhancements have

been designed to preserve the functionality of the railroad. In addition, the proposed Project would result in paving of an approximately 700-foot portion of trail from the Nejedly Staging Area to the UPRR right-of-way. This section of trail was originally approved to be paved but was instead constructed with aggregate base and is now partly overgrown with upland ruderal vegetation. The Addendum also found that the mitigation that has already been implemented to offset impacts on wetlands was completed and is considered to be appropriate to offset the lost wetland habitat.

## **1.2 Project Location**

The proposed Project is located in the City of Martinez in Contra Costa County, California. The proposed Project will occupy the same area as the Original Project. The proposed trail begins at EBRPD property at the Nedjedly Staging area, extends northerly toward the UPRR right-of-way, then proceeds easterly to Berrellesa Street. At Berrellesa Street the proposed trail crosses the UPRR right-of-way between milepost 31.10 and milepost 31.38 within UPRR's Martinez Subdivision. The balance of the trail then continues north following the easterly right-of-way of Berrellesa Street before terminating at the existing EBRPD Martinez Regional Shoreline parking lot at Granger's Wharf (Figure 1).



East Bay Regional Park District  
 Martinez Bay Trail Project Phase II  
 Biological Resources Assessment  
 Figure 1 - Vicinity Map  
 May 2020



## 1.3 Project Description

### 1.3.1 Overview

The proposed Project is located in the same area and follows the Original Project alignment. The proposed Project includes approximately 3,100 feet of paved trail that will provide connectivity between the Nejedly Staging area at Carquinez Scenic Drive and the SFBT at EBRPD Martinez Regional Shoreline parking lot and will complete a link planned for by the SFBT Plan. The SPBT Plan consists of a 400-mile regional network of bicycle and hiking trails along the shoreline areas of San Francisco and San Pablo Bays. Local cities, counties, and park districts along the trail network have worked closely with the Association of Bay Area Governments in developing the Bay Trail Plan.

The proposed Project is being developed and will be maintained by the EBRPD. A portion of the trail is located in an easement on the UPRR, and within jurisdictional areas of the San Francisco Bay Water Quality Control Board (SFBWQCB), Bay Conservation and Development Commission (BCDC), California Department of Fish and Wildlife (CDFW), and U.S. Army Corps of Engineers (Corps). The proposed Project will include an update to agreements and approvals from regulatory agencies previously obtained in 2003-2004.

### 1.3.2 Proposed Trail Segments and Project Changes

The proposed Project consists of a single trail, but it is defined by four segments. All segments of the proposed Project are in the same location and rights-of-way as the Original Project. Figure 2 shows the proposed Project location and segments.

Segment 1 was previously constructed with aggregate base. An asphalt concrete paved surface was approved in the MND of the Original Project but was not installed since the construction of Segment 2 would happen at an unknown future date and was dependent on obtaining a UPRR easement. Segment 1 begins at the Nejedly Staging area at Carquinez Scenic Drive and extends northwesterly for approximately 800 feet to its terminus approximately 100 feet south of the existing UPRR alignment. Proposed work in this segment includes removal of upland and ruderal vegetation covering the existing gravel trail and resurfacing the trail with asphalt. Vegetation clearing and maintenance will also be required to clear the existing rock lined ditches adjacent to the trail. Minor bridge maintenance will be performed to repair a gap between the existing trail and abutment. No work will occur within the creek or stream crossing to complete this bridge repair. The proposed trail dimensions are consistent with the Original Project and will be approximately 10 feet of pavement with 2-foot aggregate base shoulders. No expansion of any existing facilities is proposed, and work will be within the scope of the Original Project.

Segment 2 is approximately 1,900 feet in length and roughly parallel to the UPRR alignment. This portion of the proposed Project will include trail construction, grading, tree and vegetation removal, and fill of approximately 21,780 square feet (0.5 acres) of jurisdictional wetlands. The Original Project MND specified that mitigation for this loss would occur through the creation and enhancement of 34,380 square feet (0.79 acres) of wetland habitat. This mitigation effort was completed prior to October 2007 at the Martinez Regional Shoreline.

Segment 3 of the Original Project included the installation of a trail crossing, signage, and safety improvements at the UPRR alignment at Berrellesa street. The improvements under the proposed Project will be within the same area and be substantially the same as under the Original Project, but will include minor additional safety enhancements including enhanced signage and striping in order to meet current

CPUC standards and maintain consistency with UPRR requirements and easement conditions. Infrastructure improvements to meet current standards include removal and replacement of both gate arms, and installation of updated signage, striping, and landing pads to meet ADA requirements. The improvements to meet current standard will not change the existing road width and will not create additional motor vehicle travel lanes.

Segment 4 of the both the Original Project and the proposed Project was previously completed by the City and no additional work will occur there as part of the proposed Project. This segment extends northerly from the UPRR right-of-way, on the easterly side of Berrellesa Street. This extension terminates at the existing EBRPD Martinez Regional Shoreline parking lot and connects to a previously completed section of the SFBT.

## 2. Methods

### 2.1 Background Review

For purposes of this report, the Biological Study Area (BSA) includes the Project footprint as well as a surrounding 50-foot buffer. This buffer area was included in this analysis in order to show adjacent sensitive resources that are avoided but could be indirectly impacted by the proposed Project.

Prior to conducting field investigations, SBI biologists reviewed maps and aerial imagery of the BSA and vicinity obtained from the City, U. S. Geological Survey (USGS), National Wetlands Inventory (2020), and Google Earth Pro software (Google Inc. 2020). The background review also included database queries and desktop review of existing environmental documents and publications, including the Biological Assessment (Bobzien 2003) and MND completed for the Project (City 2003). Reports, scientific literature, and technical databases that were reviewed for information relevant to the proposed Project included the following:

- California Natural Diversity Database (CNDDDB) (CDFW 2020);
- California Native Plant Society (CNPS) Online Inventory of Rare and Endangered Plants (CNPS 2020) for the Project region, which is defined as the *Benicia* USGS 7.5-minute quadrangle;
- CNPS Online Manual of California Vegetation (CNPS 2020);
- U.S. Fish and Wildlife Service (USFWS) IPaC Trust Resource Report (USFWS 2020a);
- USFWS National Wetlands Inventory (USFWS 2020b);
- eBird (2020).

This review included federal and state listed plant species, and species included on California Rare Plant Rank (CRPR) 1A, 1B, 2A, 2B, 3 and 4 lists. Biologists also reviewed records of birds reported in nearby areas, such as at the Martinez Regional Shoreline Park, Carquinez Strait Regional Shoreline, and on eBird (2020).

Special-status biological resources are defined as biological resources protected and/or regulated by federal, state, and/or local laws and policies, and include all species that are:

- listed or proposed for listing as threatened or endangered under the federal Endangered Species Act (FESA) or candidates for possible future listing;
- listed or candidates for listing by the State of California as threatened or endangered under the California Endangered Species Act (CESA);
- identified by CDFW as Species of Special Concern;
- listed as Fully Protected under the California Fish and Game Code;
- listed as rare under the California Native Plant Protection Act;
- considered jointly by CDFW and CNPS to be “rare, threatened, or endangered in California” and assigned a CRPR. The CDFW system includes six rarity ranks for categorizing plant species of concern, which are summarized as follows:
  - CRPR 1A - Plants presumed to be extinct in California;
  - CRPR 1B - Plants that are rare, threatened, or endangered in California and elsewhere;
  - CRPR 2A - Plants that are presumed extirpated in California, but more common elsewhere;
  - CRPR 2B - Plants that are rare threatened, or endangered in California, more common elsewhere;
  - CRPR 3 - Plants About Which More Information is Needed (review list)

- considered a locally significant species that is not rare from a statewide perspective but is rare or uncommon in a local context such as within a county or region (CEQA §15125 (c)) or is so designated in local or regional plans, policies, or ordinances (CEQA Guidelines, Appendix G);
  - CRPR 4 plants are addressed here, if applicable;
- otherwise meet the definition of rare or endangered under CEQA §15380 (b) and (d).

Special-status biological resources also include Sensitive Natural Communities (SNC) that are identified by CDFW as having a state (S) rarity rank of 1, 2, or 3 (CDFW 2019a), where S1 is critically imperiled, S2 is imperiled, and S3 is vulnerable. SNCs have high potential to support special-status plant and animal species and can provide important ecological functions such as enhancing flood and erosion control and maintaining water quality. SNCs are described in a hierarchical fashion, with the most detailed describing the specific alliances and associations that determine rarity. For alliances with State ranks of S1-S3, all associations within them are also considered sensitive. Most types of wetlands and riparian communities are considered SNCs due to their limited distribution in California. Additionally, most of these communities are also subject to regulation by the Corps' jurisdiction under Section 404 of the Clean Water Act, by CDFW under Section 1602 of the California Fish and Game Code, and by the Regional Water Quality Control Board under the Porter-Cologne Water Quality Control Act.

## 2.2 Field Investigations

A reconnaissance-level field survey of the BSA was conducted by SBI biologists Bridget Sousa, Ph.D., and Natasha Dvorak, B.A., on May 12, 2020. The purpose of this survey was to characterize existing biological conditions in the BSA, including the presence and distribution of biotic habitats, potentially regulated habitats, and special-status species. Searches for evidence of current or past raptor or Ardeid (i.e., herons and egrets) nesting activity, bat roosting habitat, burrowing owl (*Athene cunicularia*) roosting and nesting habitat (i.e., burrows of California ground squirrels [*Otospermophilus beecheyi*]), suitable habitat for California red-legged frogs (*Rana draytonii*), and nests of the San Francisco dusky-footed woodrat (*Neotoma fuscipes annectens*), a California Species of Special Concern, were also conducted during the field survey.

In addition, a formal wetland delineation was conducted by SBI biologists Ms. Dvorak and Ms. Sousa on May 12, 2020. The biotic habitats and jurisdictional features in the BSA were mapped using a combination of a Trimble R1 GNSS receiver with submeter accuracy, in addition to aerial imagery available from Google Earth Pro software (Google Inc. 2020) and ArcGIS® software (ESRI 2020), and topographic line data provided by Kimley-Horn and Associates, Inc.

## 3. Regulatory Setting

The following discussion identifies federal, state, and local agencies and laws that could be applicable to the proposed Project which pertain to biological resources. Wildlife and botanical resources are regulated at the federal level by the USFWS and at the state level by the CDFW. Waters and wetlands are regulated by multiple agencies and laws, with agencies differing in their wetland definitions and their corresponding jurisdictions. The Corps, CDFW, and Regional Water Quality Control Boards (RWQCB) have varying jurisdiction over aquatic features in the BSA.

## 3.1 Federal Regulations

### 3.1.1 Federal Endangered Species Act

The federal Endangered Species Act of 1973 (16 USC 1531–1544), as amended, protects plants, fish, and wildlife that are listed as endangered or threatened by the USFWS or National Oceanic and Atmospheric Administration’s National Marine Fisheries Service (NOAA Fisheries). Section 9 of the FESA prohibits the “take” of listed fish and wildlife, where “take” is defined as “to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, collect, or attempt to engage in such conduct” (50 Code of Federal Regulations [CFR] 17.3). For plants, this statute prohibits removing, possessing, maliciously damaging, or destroying any listed plant under federal jurisdiction and removing, cutting, digging-up, damaging, or destroying any listed plant in knowing violation of state law (16 United States Code [USC] 1538). FESA does not protect plants growing on private property, unless state laws are violated in the course of harming the listed plant.

The FESA allows for issuance of incidental take permits to private parties either in conjunction with a Habitat Conservation Plan (HCP) or as part of a Section 7 consultation. Under Section 10 of the FESA, a private party may obtain incidental take coverage by preparing an HCP to cover target species within the proposed Project area, identifying impacts to the covered species, and presenting the measures that will be undertaken to avoid, minimize, and mitigate such impacts. Under Section 7 of the FESA, federal agencies are required to consult with USFWS and/or NOAA Fisheries, as applicable, if their actions—including permit approvals or funding—may affect a federally listed species (including plants) or designated critical habitat. If the proposed Project is likely to adversely affect a species, the federal agency will initiate formal consultation with the USFWS and/or NOAA Fisheries and issue a Biological Opinion as to whether a proposed agency action(s) is likely to jeopardize the continued existence of a listed species (jeopardy) or adversely modify critical habitat (adverse modification). As part of the Biological Opinion, the USFWS may issue an incidental take statement allowing take of the species that is incidental to an otherwise authorized activity, provided that the action will not jeopardize the continued existence of the species or adversely modify designated critical habitat.

### 3.1.2 Clean Water Act

The CWA establishes a permit program administered by the U.S. Army Corps of Engineers (Corps) that regulates discharge of dredged or fill materials into waters of the U.S., including wetlands. Guidelines for implementation are referred to as the Section 404(b)(1) Guidelines, developed by the U.S. Environmental Protection Agency (EPA) in conjunction with the Corps (40 C.F.R. Part 230). The Corps requires a permit if a project proposes placement of structures within navigable waters and/or alterations of waters of the U.S. The EPA has the ultimate authority under the CWA and can veto the Corps’ issuance of a permit to fill jurisdictional waters.

Several U.S. Supreme Court cases have challenged the scope and extent of the Corps’ jurisdiction over waters of the U.S. and led to reinterpretations of that authority. The Solid Waste Agency of Northern Cook County v. Army Corps of Engineers (January 9, 2001) decision found that jurisdiction over non-navigable, isolated, intrastate waters could not be based solely on the use of such waters by migratory birds. This reasoning could be extended to suggest that waters need a demonstrable connection with a ‘navigable water’ to be protected under the CWA. The introduction of the term ‘isolated’ led to the consideration of the relative connectivity between waters and wetlands as a jurisdictionally relevant factor. *Rapanos v. United States* (June 2006) further questioned the definition of “waters of the U.S.” and the scope of federal

regulatory jurisdiction over such waters; the case resulted in a split decision that agreed upon the need for a 'significant nexus' with traditional navigable waters.

EPA and the Corps have defined the significant nexus standard as follows:

A significant nexus analysis assesses the flow characteristics and functions of the tributary itself and the functions performed by all wetlands adjacent to the tributary to determine if they significantly affect the chemical, physical, and biological integrity of downstream traditional navigable waters.

Significant nexus analysis includes consideration of hydrologic and ecologic factors including: volume, duration, and frequency of flow; proximity to a traditional navigable water; size of watershed; average annual rainfall; average annual winter snow peak; potential of tributaries to carry pollutants and flood waters to traditional navigable waters; provision of aquatic habitat that supports a traditional navigable water; potential of wetlands to trap and filter pollutants or store flood waters; and maintenance of water quality in traditional navigable waters.

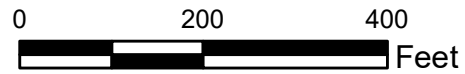
The Corps released guidance in 2007 stating that they and the EPA will take jurisdiction over wetlands adjacent to traditional navigable waters even when they do not have a continuous surface connection to traditional navigable waters. However, they generally do not assert jurisdiction over swales or ditches that drain only uplands and do not carry a relatively permanent flow of water.

### **3.1.3 Rivers and Harbors Act**

Section 10 of the Rivers and Harbors Act (33 U.S.C. 401 et seq.), administered by the Corps, requires permits for all structures (e.g., riprap) and activities (e.g., dredging) within navigable waters of the U.S. (those subject to the ebb and flow of the tide and susceptible to use as means of interstate transport or foreign commerce in their natural condition or by reasonable improvements). The Corps grants or denies permits based on the effects of navigation. Many activities covered under this act are also covered under Section 404 of the CWA.



- |                        |                                    |                                      |
|------------------------|------------------------------------|--------------------------------------|
| Biological Survey Area | <b>Habitats</b>                    | Eucalyptus Grove                     |
| Pedestrian Bridge      | Arroyo Willow Thickets             | Freshwater and Brackish Marshes      |
| Segment 1              | California Sagebrush Scrub         | Low Flow Channel                     |
| Segment 2              | Coast Live Oak Woodland and Forest | Ruderal                              |
| Segment 3              | Creeping Ryegrass Turf             | Wild oats and Annual Brome Grassland |
| Creeks/Drainages (CDD) | Developed                          |                                      |



East Bay Regional Park District  
 Martinez Bay Trail Project Phase II  
 Biological Resources Assessment  
 Figure 2 - Biotic Habitats Map  
 May 2020



East Bay Regional Park District  
 Martinez Bay Trail Project Phase II  
 Martinez, CA  
 May 2020

Figure 3 - Impacts to Wetlands and Other Waters of the U.S. for the Martinez Bay Trail Project



**Legend**

- Map Reference Point
- ▭ Survey Area Boundary (6.68 acres)
- ▭ Permanent Impact Area
- Creeks/Drainages (Contra Costa County)
- Unmapped Drainages
- ▬ Stand alone swale
- ▭ Low Flow Channel
- Wetlands (0.74 acres)**
- ▭ Wetlands (0.14 acres)
- ▭ Adjacent Wetland (0.60 acres)



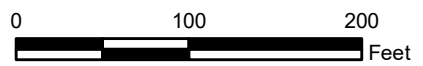
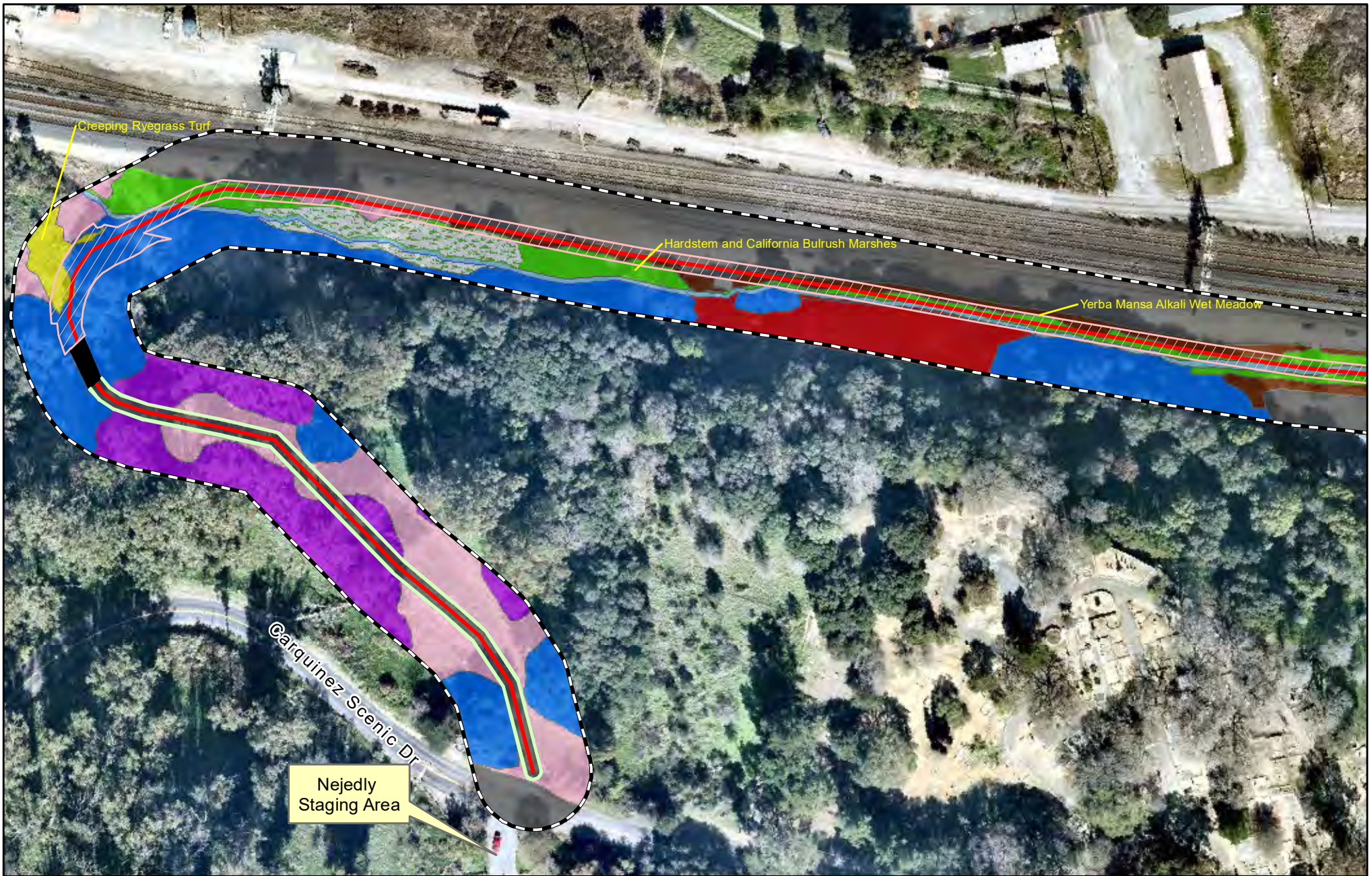
Coordinate System: NAD 1983 UTM Zone 10N  
 Projection: Transverse Mercator  
 Datum: North American 1983  
 Vertical Datum: NAVD88, U.S. Feet  
 1 in = 183 ft

**Created on May 26, 2020**

Delineators: Natasha Dvorak and Bridget Sousa  
 Delineation dates: May 12, 2020

Imagery Data:  
 Feb 14, 2020



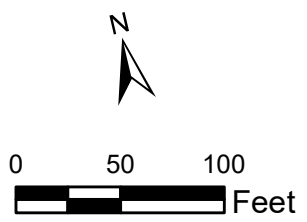


East Bay Regional Park District  
 Martinez Bay Trail Project Phase II  
 Biological Resources Assessment  
 Figure 4.1 - Impacts Map  
 Segment 1 & Segment 2 (West)  
 May 2020





- Martinez Bay Trail
- Biological Survey Area
- Habitats**
- Arroyo Willow Thickets
- California Sagebrush Scrub
- Coast Live Oak Woodland and Forest
- Creeping Ryegrass Turf
- Developed
- Eucalyptus Grove
- Freshwater and Brackish Marshes
- Low Flow Channel
- Ruderal
- Wild oats and Annual Brome Grassland
- Permanent Impacts



East Bay Regional Park District  
 Martinez Bay Trail Project Phase II  
 Biological Resources Assessment  
 Figure 4.2 - Impacts Map  
 Segment 2 (East)  
 May 2020



### **3.1.4 Federal Migratory Bird Treaty Act**

The Migratory Bird Treaty Act (MBTA) of 1918 (16 USC Sections 703–711) protects all migratory birds, including active nests and eggs. Birds protected under the MBTA include all native waterfowl, shorebirds, hawks, eagles, owls, doves, and other common birds such as ravens, crows, sparrows, finches, swallows, and others, including their body parts (for example feathers and plumes), active nests, and eggs. A complete list of protected species can be found in 50 CFR 10.13. Enforcement of the provisions of the federal MBTA is the responsibility of USFWS.

### **3.1.5 Bald and Golden Eagle Protection Act**

The Bald and Golden Eagle Protection Act (16 U.S.C. 668-668c), enacted in 1940, prohibits the import, export, take (which includes molest or disturb), sale, purchase or barter of any bald eagle (*Haliaeetus leucocephalus*) or golden eagle (*Aquila chrysaetos*), including their parts, nests, or eggs. Disturbance is defined as agitating or bothering a bald or golden eagle to a degree that causes, or is likely to cause, based on the best scientific information available, 1) injury to an eagle, 2) a decrease in its productivity, by substantially interfering with normal breeding, feeding, or sheltering behavior, or 3) nest abandonment, by substantially interfering with normal breeding, feeding, or sheltering behavior.

## **3.2 State Regulations**

### **3.2.1 California Endangered Species Act**

Sections 2050–2098 of the California Fish and Game Code (the California Endangered Species Act [CESA]) prohibit the take of state-listed endangered and threatened species unless specifically authorized by the CDFW. The state definition of “take” is to hunt, pursue, catch, capture, or kill a member of a listed species or attempt to do so. CDFW administers CESA and authorizes take through permits or memorandums of understanding issued under Section 2081 of CESA, or through a consistency determination issued under section 2080.1. Section 2090 of CESA requires state agencies to comply with threatened and endangered species protection and recovery and to promote conservation of these species.

### **3.2.2 California Fish and Game Code**

Certain wildlife species are protected by sections of the California Fish and Game Code. For example, Code Section 2000 prohibits take of any bird, mammal, fish, reptile, or amphibian except as provided by other sections of the code.

Fish and Game Code designates certain fish and wildlife species as “fully protected” under Sections 3511 (birds), 4700 (mammals), 5050 (reptiles and amphibians), and 5515 (fish). Fully protected species may not be taken or possessed at any time, and no permits may be issued for incidental take of these species.

Fish and Game Code Section 3503 et seq. states that it is unlawful to take, possess, or needlessly destroy the nest or eggs of any bird, except as otherwise provided by this code or any regulation made pursuant thereto. Section 3503.5 makes it unlawful to take, possess, or destroy any birds in the orders of

Falconiformes or Strigiformes (birds of prey) or to take, possess, or destroy the nest or eggs of any such bird. Raptors (i.e., eagles, hawks, and owls) and their nests are specifically protected under this Section. Section 3503.5 states that it is “unlawful to take, possess, or destroy any birds in the order Falconiformes or Strigiformes (birds of prey) or to take, possess, or destroy the nest or eggs of any such bird except as otherwise provided by this code or any regulation adopted pursuant thereto.”

Section 4150 of the California Fish and Game Code protects bats and other non-game mammals. Take or possession of all non-game mammals or parts thereof is prohibited except as provided otherwise in the code or in accordance with regulations adopted by the commission. “Take” may include any activity resulting in mortality of non-game mammals, or disturbance sufficient to disrupt normal breeding activities, resulting in the death of young (e.g. destruction of a bat maternity colony or roost).

Certain plant species are also protected by sections of the California Fish and Game Code. The Native Plant Protection Act of 1973 (Fish and Game Code Sections 1900–1913) includes provisions that prohibit the taking of endangered or rare native plants. CDFW administers the Native Plant Protection Act of 1973 and generally regards as rare many plant species included on CRPR 1A, 1B, 2A, and 2B of the CNPS Inventory of Rare and Endangered Vascular Plants of California. In addition, some CRPR 3 and 4 plants are considered if the population has local significance in the area and is subject to project impacts.

### **3.2.3 California Department of Fish and Wildlife Species of Concern**

CDFW may confer the designation of “Species of Special Concern” on fish or wildlife species that meet the requirements for formal listing, but have not been formally listed under FESA or CESA, or are considered at risk of qualifying for threatened or endangered status in the future based on known threats. Species of Special Concern is an administrative classification only, but these species should be considered “special-status” for the purposes of CEQA analyses.

### **3.2.4 Porter-Cologne Water Quality Control Act**

The State Water Resources Control Board (SWRCB) and the nine Regional Water Quality Control Boards have jurisdiction over all surface water and groundwater in California, including wetlands, headwaters, and riparian areas. The SWRCB or applicable RWQCB must issue waste discharge requirements for any activity that discharges waste that could affect the quality of state waters. Their authority to regulate activities that could result in a discharge of dredged or fill material comes from the CWA and the Porter-Cologne Water Quality Control Act (Porter-Cologne).

“Waters of the state” is broadly defined as “any surface water or groundwater, including saline waters, within the boundaries of the state,” and include isolated and non-navigable water and wetlands. Because the CWA applies to only certain waters, and Porter-Cologne applies to all waters, California’s jurisdictional reach overlaps and may exceed the boundaries of waters of the U.S.

Projects that impact wetlands or waters of the state must meet RWQCB Waste Discharge Requirements. These requirements may be applied with or in addition to a CWA Section 401 water quality waiver or certification. Water Quality Certification may be required even if areas occur outside of Corps jurisdiction, because California’s jurisdiction over its water resources is much broader than that of the federal government.

### **3.2.5 Regional Water Quality Control Board**

The EPA delegated responsibility for implementation of portions of the CWA, including water quality control planning and control programs, such as the National Pollutant Discharge Elimination System Program, to the State Water Resources Control Board. Section 303(c)(2)(b) of the CWA requires states to adopt water quality standards for all surface waters of the United States based on the water body's designated beneficial use. Where multiple uses exist, water quality standards must protect the most sensitive use. The Porter-Cologne Water Quality Control Act established the State Water Resources Control Board and its regional boards as the principal agencies for coordinating and controlling water quality in California. Specifically, the Porter-Cologne Water Quality Control Act authorizes the State board to adopt, review, and revise policies for all waters of the State (including both surface and groundwaters) and directs the regional boards to develop regional Basin Plans.

Waters of the State are defined as any surface water or groundwater, including saline waters, within the boundaries of the state. Examples include, but are not limited to, rivers, streams, lakes, bays, marshes, mudflats, unvegetated seasonally ponded areas, drainage swales, sloughs, wet meadows, natural ponds, vernal pools, diked baylands, seasonal wetlands, and riparian woodlands. Water quality standards applicable to the proposed project are listed in the San Francisco Bay Basin (Region 2) Water Quality Control Plan (RWQCB 2017).

### **3.2.6 Lake and Streambed Alteration Program**

Fish and Game Code Section 1602 requires any entity to notify CDFW before beginning any activity that may substantially divert or obstruct the natural flow of, or substantially change or use any material from the bed, channel, or bank of any river, stream, or lake. If CDFW determines that the activity may substantially adversely affect fish and wildlife resources, a Lake or Streambed Alteration Agreement (LSAA) would be required. A 1602 LSAA is also required for the removal of riparian vegetation.

Title 14, California Code of Regulations Section 1.72, defines stream as "a body of water that follows at least periodically or intermittently through a bed or channel having banks and that supports fish and other aquatic life. This includes watercourses having surface or subsurface flow that supports or has supported riparian vegetation." This definition includes ephemeral streams, canals, irrigation ditches, dry washes, aqueducts, and other water ways if they support aquatic life, riparian vegetation, or stream dependent terrestrial life (CDFW 1994). This definition also extends CDFW jurisdiction over streams to include riparian habitats that function as part of a watercourse. "Riparian" is defined as "on, or pertaining to, the banks of a stream." Riparian vegetation is defined as "vegetation which occurs in and/or adjacent to a stream and is dependent on, and occurs because of, the stream itself" (CDFW 1994). At minimum, CDFW's jurisdiction includes any stream's bed and bank. Where riparian habitat is present, CDFW's jurisdiction extends to the outer edge of riparian vegetation.

### **3.2.7 Bay Conservation and Development Commission**

The McAteer-Petris Act, first enacted in 1965, created the San Francisco Bay Conservation and Development Commission (BCDC) to protect the Bay and shoreline and provide for appropriate development and public access. The McAteer-Petris Act directs the Commission to oversee permit approvals for placing fill and extracting materials, including dredged material, or changing the use of any land, water, or structure within its jurisdiction. BCDC jurisdiction includes the Bay, shoreline band, saltponds, managed wetlands, and certain waterways. The shoreline development aspect of the Act

ensures that prime shoreline sites are reserved for priority uses, such as ports, water-related industry, airports, wildlife refuges, and water-related recreation. The Act also ensures that public access to the Bay is provided to the maximum extent feasible for each development project, and that shoreline development projects are designed in an attractive and safe manner.

Mean BCDC jurisdiction extends from the Carquinez Straits landward to encompass all marshlands above mean sea level and mean high tide, and farther inland to encompass a shoreline band 100 feet inland from mean high tide. Their jurisdiction includes marshes that are diked and have partial or total interruption from tidal influence. The Mean Higher High Water line for the Bay has been determined by the San Francisco Estuary Institute and is used by BCDC to delineate mean high tide.

### **3.2.8 Sensitive Natural Communities**

Since 1999, CDFW has undertaken the classification and mapping of vegetation throughout the state as part of their Vegetation Classification and Mapping Program. Natural Communities are considered, along with plants and animals, part of the Natural Heritage Program’s “conservation triad” of conservation significance. One purpose of the vegetation classification is to determine the level of rarity and imperilment of vegetation communities. Natural Communities have significance for conservation and CDFW directs that the presence of Sensitive Natural Communities be considered in the environmental review process along with occurrences of special-status plants and animals.

The CDFW ranks Sensitive Natural Communities based on their global (G) and state (S) rankings. Global rankings (G1–G5) reflect the overall rarity and endangerment of a habitat throughout its range. State rankings reflect a community’s condition within California. If a Natural Community is ranked as a G1–G3, all of the vegetative associations within it would also be of high conservation priority. Sensitive Natural Communities are tracked in Rarefind (CDFW 2020) and the CDFW develops and maintains the Vegetation Classification and Mapping Program’s classifications and rankings of all natural communities (CDFW 2019a).

### **3.2.9 California Oak Woodlands Conservation Act and Senate Bill 1334**

The 2001 California Oak Woodlands Conservation Act and the 2004 Senate Bill 1334 protect oak woodlands. The Act recognizes the importance of California’s oak woodlands in enhancing the natural and scenic beauty of the State, increasing the monetary and ecological value of property, and promoting ecological balance. The Senate Bill requires that impacts on oak woodlands be considered during CEQA review.

## **3.3 Local Regulations**

### **3.3.1 City of Martinez Tree Ordinance**

Chapter 8.12.020 of the Martinez Municipal Code states:

No person shall trench, grade or fill within the dripline of any protected tree (as defined below) or cut down, destroy, trim by topping or remove any protected tree on private property within the City without a tree permit, except as provided for in Section 8.12.050.

A protected tree is any one of the following:

1. On all properties within the City:

- a. All oak trees and indigenous trees measuring 20 inches or larger in circumference (approximately 6.5 inches in diameter), measured 4 ½ feet from ground level. Oak trees include but are not limited to: *Quercus agrifolia* (California or Coast Live Oak), *Quercus douglasi* (Blue Oak), *Quercus kelloggii* (California Black Oak) or *Quercus lobata* (Valley Oak). Indigenous trees include but are not limited to: *Sequoia Sempervirens* (Coast Redwood), *Alnus Rhombifolia* (White Alder), *Alnus Oregona* (Red Alder), *Acer Macrophyllum* (Bigleaf Maple), *Aesculus Californica* (California Buckeye), *Arbutus Menziesii* (Madrone), *Umbellularia Californica* (California Bay or Laurel), *Juglans Hindsii* (California Black Walnut), *Platanus racemosa* (California Sycamore), or *Sambucus calliarpa* (Coast Red Elderberry).
  - b. Any tree shown to be preserved on an approved tentative map or development plan or required to be retained as a condition of approval.
  - c. Any tree required to be planted as a replacement for an unlawfully removed tree.
2. On any of the properties specified in Subsection 3 below:
- a. Any tree measuring 20 inches or larger in circumference (approximately 6.5 inches diameter), measured 4 ½ feet from ground level including the oak trees listed above);
  - b. Any multi-stemmed tree with the sum of the circumferences measuring 40 inches or larger, measured 4 ½ feet from ground level;
  - c. and any significant grouping of trees, including groves of four or more trees.
3. Specified properties referred to in Subsection 2 above includes:
- a. Any developed property within any commercial, professional office or industrial district.
  - b. Any undeveloped property within any district.
  - c. Any area designated on the General Plan for recreational purposes or open space.
  - d. Any area designated in the General Plan Open Space element as visually significant riparian or skyline vegetation and where the tree is adjacent to or part of a riparian, foothill woodland or oak savanna area, or cultivated orchard (within the Open space element) designated. Riparian trees include but are not limited to those listed as indigenous trees in subsection A.1.a. above.
- B. Any person proposing to trench, grade or fill within the dripline of any protected tree or cut down, destroy, trim by topping or remove any protected tree shall apply to the City of Martinez Community Development Department for a tree permit, not less than ten days prior to the proposed tree removal or tree alterations.

## 4. Environmental Setting

### 4.1 General Study Area Description

The approximately 6.8-acre BSA is located in the Benicia, California USGS 7.5-minute quadrangle in Contra Costa County, California. Segment 1 of the BSA occurs predominantly within the oak (*Quercus* sp.) and eucalyptus (*Eucalyptus* sp.) woodlands of the Carquinez Strait Regional Shoreline. The northern terminus of Segment 1 is bordered to the north by UPRR tracks, and by coastal scrub habitat to the northwest. Segment 2 of the BSA is bordered to the north by a heavily trafficked 4-track railroad which includes the UPRR Ozol Terminal. Industrial, commercial, and residential development occur immediately north of the railroad tracks, interspersed with coastal tidal marsh and brackish marsh habitat along the western end. Coastal scrub habitat occurs to the west of Segment 2. To the south, the BSA is bordered by the lands of the Carquinez Regional Shoreline (western half) and by commercial development (eastern half). Habitats within the Carquinez Regional Shoreline south of Segment 2 include willow riparian and coastal scrub, backed by oak woodland. Segment 3 of the BSA occurs at the railroad crossing at Berrellesa Street, and is surrounded by industrial, commercial, and residential development. The Arroyo del Hambre, which connects Alhambra Creek to Suisun Bay, occurs approximately 96 feet east of Segment 3.

#### 4.1.1 Climate and Subregion

The BSA is located within the California Floristic Province, San Francisco Bay Area Subregion. The province, which extends from Coos Bay in Oregon to northern Baja California, contains 25% of all plant species in the U.S. and Canada. Of these, 61% are found nowhere else in the world (California Academy of Sciences 2005). The subregion is well-defined physiographically by surrounding peaks and mountain ranges but is less well defined vegetationally because it encompasses a wide variety of vegetation types (Jepson Flora Project 2020). The climate is Mediterranean, characterized by brief wet winters and long dry summers. Coastal temperatures are lower than interior temperatures, and sometimes moderated by fog. Elevations in the BSA range from 9 feet to 64 feet above sea level. The BSA is located within the Suisun Bay Watershed. Headwaters originate within the Carquinez Strait Regional Shoreline and drain to Suisun Bay.

#### 4.1.2 Soils

According to the U. S. Department of Agriculture Web Soil Survey (NRCS 2020), the BSA is comprised of *Omni silty clay*, *Los Gatos loam*, 50 to 75 percent slopes, and *Los Gatos loam*, 30 to 50 percent slopes. These soils are associated with upland slopes and flood plains. They derive from parent material of sedimentary rock residuum and alluvium. Los Gatos loam soils are not hydric; however, Omni silty clay is hydric. Surface soil textures are loam and silty clay.

### 4.2 Biotic Habitats

Reconnaissance-level surveys identified thirteen vegetation communities/land uses in the BSA: developed, ruderal, Eucalyptus grove, wild oats and annual brome grasslands, coast live oak woodland and forest, arroyo willow thickets, California sagebrush scrub, creeping ryegrass turfs, and freshwater and brackish marsh (including yerba mansa alkaline wet meadow, smartweed cocklebur patches, cattail marshes, hardstem and California bulrush marshes, and salt grass flats) (Table 1, Figure 3). Except for California sagebrush scrub, all these habitat types occur in the project footprint. These habitat types are described in



detail below, and representative photographs are presented in Appendix A. Plant species observed during the May 2020 surveys are listed in Appendix B, along with their wetland indicator status designated by the U.S. Army Corps of Engineers Research and Development Center Environmental Laboratory and their ecological impact rating designated by the California Invasive Plant Council (Cal-IPC) (2017).

**Table 1. Biotic Habitats and Acreages**

| Biotic Habitats   | Acreage     |
|---|-------------|
| Developed   | 3.14        |
| Ruderal   | 0.47        |
| Eucalyptus Grove  | 0.45        |
| Wild Oats and Annual Brome Grassland  | 0.49        |
| Creeping Ryegrass Turf*   | 0.052       |
| Coast Live Oak Woodland and Forest  | 0.94        |
| California Sagebrush Scrub  | 0.23        |
| Arroyo Willow Thicket   | 0.13        |
| Freshwater and Brackish Marsh (includes Yerba Mansa Alkali Wet Meadow, Smartweed Cocklebur Patches, Cattail Marshes, Hardstem and California Bulrush Marshes, and Salt Grass Flats) | 0.686       |
| Low Flow Channel  | 0.187       |
| <b>Total</b>  | <b>6.78</b> |

\*Sensitive Natural Community

#### 4.2.1 Developed

**Vegetation.** Developed land in the footprints of Segments 2 and 3 include paved portions of Berrellesa Street, UPRR tracks, and compacted gravel within the UPRR right-of-way (Figure 2, Photo 1). Developed land in the outer edges of the BSA includes asphalt-paved Berrellesa Street and Carquinez Scenic Drive. Areas within the UPRR right-of-way show signs of herbicide application, and vegetation in this area is largely absent.

**Wildlife.** Wildlife species associated with the developed portions of the BSA are those that are tolerant of high levels of human disturbance, including non-native species such as the European starling (*Sturnus vulgaris*), house sparrow (*Passer domesticus*), Eurasian collared dove (*Streptopelia decaocto*), Virginia opossum (*Didelphis virginiana*), and Norway rat (*Rattus norvegicus*). Common native species also utilize this habitat, including the western fence lizard (*Sceloporus occidentalis*), raccoon (*Procyon lotor*), Anna’s hummingbird (*Calypte anna*), house finch (*Haemorhous mexicanus*), killdeer (*Charadrius vociferous*), and mourning dove (*Zenaida macroura*). The paved and gravel surfaces in the are not suitable breeding habitat for most species, and animals occurring in developed habitat in the BSA will be transient foragers and dispersers, rather than residents or breeders.

## 4.2.2 Ruderal

**Vegetation.** Ruderal vegetation occurs in Segment 2. Regular treatment of this area with herbicides to maintain the UPRR right-of-way has resulted a generally depauperate and weakly growing assemblage of plants interspersed with bare ground. Ruderal vegetation in the BSA is dominated by non-native grasses, including ripgut brome (*Bromus diandrus*) and foxtail brome (*Bromus madritensis*), with some native gumplant (*Grindelia stricta*).

**Wildlife.** Because of the limited extent and highly disturbed nature of ruderal habitat in the BSA, this habitat is not expected to support a unique assemblage of wildlife species. Wildlife species that occur in this habitat are similar to those described for the Developed habitat above.

## 4.2.3 Eucalyptus Grove

**Vegetation.** Eucalyptus grove habitat occurs in Segment 1 of the proposed Project (Figure 3, Photo 2). The Eucalyptus grove alliance is dominated by an overstory of Eucalyptus trees. The accumulation of leaf litter and allelopathic chemicals in these groves inhibit other plant growth, resulting in a sparse understory. Understory vegetation in the Eucalyptus grove in the BSA is similar to, and contiguous with the Wild Oats and Annual Brome Grassland described below. It is dominated by non-native grasses and forbs, including wild oats (*Avena* sp.), ripgut brome, bull thistle (*Cirsium vulgare*), and black mustard (*Brassica niger*). These species are ranked as moderately invasive (Cal-IPC 2020).

**Wildlife.** Mature eucalyptus groves may support a variety of wildlife. Birds in particular utilize these groves for foraging and nesting. Cavities and loose bark provide nesting opportunities for native and non-native birds, such as the European starling, Bewick's wren (*Thryomanes bewickii*), and house finch, while large branches can support nesting raptors. A red-shouldered hawk (*Buteo lineatus*) nest with young was observed in a eucalyptus tree just outside the BSA. No other raptor nests were observed in this habitat, but the mature eucalyptus trees throughout this area could provide nesting opportunities for other raptors, including Cooper's hawks (*Accipiter cooperii*), red-tailed hawks (*Buteo jamaicensis*). Eucalyptus flowers provide foraging opportunities for nectivorous birds and insects, including Anna's hummingbirds and honeybees (*Apis* sp.). Shedding bark also provides roosts for bats, such as the Mexican free-tailed bat (*Tadarida brasiliensis*) and California Myotis (*Myotis californicus*). Reptiles and small mammals associated with Wild Oats and Annual Brome Grasslands are also common in Eucalyptus groves.

## 4.2.4 Wild Oats and Annual Brome Grassland

**Vegetation.** Wild oats and annual brome grassland occurs within openings in Eucalyptus grove habitats in the northern portion of the BSA, in Segment 1 (Figure 3, Photo 3). This alliance also characterizes portions of the understory of the Eucalyptus grove and Coast Live Oak Woodland and Forest alliances. Non-native grasses dominate this alliance, including wild oats, ripgut brome, soft brome (*Bromus hordeaceus*), and foxtail brome. Other non-natives are also common in the herbaceous layer, such as black mustard, California burclover (*Medicago polymorpha*), cutleaf geranium (*Geranium dissectum*), and English plantain (*Plantago lanceolata*).

**Wildlife.** The non-native grassland in the BSA provides limited habitat for a relatively small number of species, due to the lack of structural complexity of the vegetation. Wildlife species associated with more extensive grassland habitats in the region, such as the loggerhead shrike (*Lanius ludovicianus*), western

meadowlark (*Sturnella neglecta*), and California ground squirrel (*Otospermophilus beecheyi*) are absent from this small patch of habitat. Most of the bird species occurring in this area nest in adjacent woodland habitats and utilize the grassland only for foraging. Such species include the black phoebe (*Sayornis nigricans*), morning dove, and American crow (*Corvus brachyrhynchos*). In the non-breeding season, a variety of bird species will utilize grassland habitats for foraging, including white-crowned sparrows (*Zonotrichia atricapilla*), savannah sparrows (*Passerculus sandwichensis*), and lesser goldfinch (*Carduelis psaltria*).

Small mammals may also be present in nonnative grassland habitat, including the California field mouse (*Peromyscus californicus*), house mouse (*Mus musculus*), and black rat (*Rattus rattus*). Larger mammals are also likely to occur here, including black-tailed hares (*Lepus californicus*) and striped skunks (*Mephitis mephitis*). Reptiles and amphibians likely to occur in Wild Oats and Annual Brome Grassland include western fence lizards, southern alligator lizards (*Elgaria multicarinata*), gopher snakes (*Pituophis catenifer*), and Sierran tree frogs (*Pseudacris sierra*).

#### 4.2.5 Creeping Ryegrass Turf

**Vegetation.** Only one patch of creeping ryegrass turf occurs in the BSA. It is located immediately south of the pedestrian bridge in Segment 2 (Figure 3, Photo 4). This area is a mesic transitional zone situated between scrub habitat on the western hillside and coast live oak woodland and forest along the intermittent creek to the south and east. Creeping ryegrass turf in the BSA is dominated by the native wild rye species *Leymus cinereus* and/or *Leymus triticoides*. Other native grasses and forbs also occur in the herbaceous layer, such as native brome (*Bromus* sp.), Italian ryegrass (*Festuca perennis*) rushes (*Juncus* sp.), Douglas' sagewort (*Artemisia douglasiana*). Non-natives also occur in the herbaceous layer, including wild oats (*Avena fatua*), poison hemlock (*Conium maculatum*) and teasel (*Dipsacus* sp.). Poison hemlock and teasel are both ranked as moderately invasive (Cal-IPC 2020). Relatively low cover of coyote brush (*Baccharis pilularis*) was also present in this habitat in the BSA.

**Wildlife.** Because of the limited extent of the Creeping ryegrass turf habitat in the BSA, this habitat is not expected to support a unique assemblage of wildlife species. Wildlife species that occur in this habitat are similar to those described for Wild Oats and Annual Brome Grassland above, and Coast Live Oak Woodland and Forest below.

#### 4.2.6 Coast Live Oak Woodland and Forest

**Vegetation.** The overstory of the coast live oak woodland and Forest in the BSA is dominated by coast live oak (*Quercus agrifolia*), with co-occurring California bay (*Umbellularia californica*), California walnut (*Juglans californica*), and willow (*Salix* sp.) (Figure 3, Photo 5). The understory is sparsely vegetated to bare in Segment 1 and becomes lushly vegetated near the pedestrian bridge and east along Segment 2. In Segment 1, isolated stands of poison oak and Himalayan blackberry (*Rubus armeniacus*) occur within wild oats and brome grassland. The understory in Segment 2 supports woody shrubs and vines, including poison oak, California blackberry (*Rubus ursinus*), elderberry (*Sambucus* sp.), and plum (*Prunus* sp.). The herbaceous layer in Segment 2 includes open areas of non-native grasses and lushly vegetated areas supporting a variety of forbs, including fennel (*Foeniculum vulgare*), thimbleberry (*Rubus parviflorus*), soap plant (*Chlorogalum pomeridianum*), and snowberry (*Symphoricarpos* sp.). Fennel is ranked as moderately invasive by Cal-IPC, and Himalayan blackberry is ranked as highly invasive (Cal-IPC 2020). Evidence of

anthropogenic disturbance associated with transient populations and dump sites is also in evidence, with trash scattered beneath the trees in several areas along Segment 2 (Photo 6).

**Wildlife.** The wildlife community within the coast live oak woodland and forest in the BSA is influenced by the proximity of this habitat to the highly disturbed UPRR tracks and urban boundaries of the City. Wildlife occurring here are therefore those species that are tolerant of relatively high levels of anthropogenic noise and human disturbance. Oak dominated woodlands typically support diverse animal communities. Coast live oaks provide abundant food resources, in the form of nuts and invertebrates, and shelter, in the form of cavities, crevices, and branch complexes. A variety of common wildlife species is expected to utilize these woodlands. Leaf litter and woody debris may provide cover and foraging habitat for California slender salamanders (*Batrachoseps attenuatus*), western fence lizards, and other common reptiles. A number of common birds were observed in this habitat during reconnaissance surveys, including acorn woodpeckers (*Melanerpes formicivorus*), California scrub jays (*Aphelocoma californica*), oak titmice (*Baeolophus inornatus*), bushtits (*Psaltriparus minimus*), dark-eyed juncos (*Junco hyemalis*) and lesser goldfinches (*Spinus psaltria*). No raptor nests were observed in this habitat, but mature oaks may provide nesting opportunities for the same species that utilize the adjacent eucalyptus grove. Urban-adapted mammals, such as raccoons, striped skunks, fox squirrels (*Sciurus niger*), and black-tailed deer (*Odocoileus hemionus*) commonly forage in oak woodlands. In addition, small numbers of bats, such as the Mexican free-tailed bat, may roost in crevices and cavities in oak woodlands.

#### **4.2.7 California Sagebrush Scrub**

**Vegetation.** California sagebrush scrub habitat does not occur in the Project footprint but occurs on the hillside forming the western border of Segment 2 (Figure 3, Photo 7). Coyote brush and sagebrush (*Artemisia californica*) dominate the shrub layer in this location. Native grasses and forbs occur at this location, including golden yarrow (*Eriophyllum confertiflorum*), common yarrow (*Achillea millefolium*), native brome, Lonicera, toyon (*Heteromeles arbutifolia*), and coyote mint (*Monardella villosa*). Non-native grasses and forbs also occur in the herbaceous layer, including teasel, Smilo grass (*Stipa miliacea*), and honeysuckle (*Lonicera* sp.).

**Wildlife.** Because of the limited extent of the California sagebrush scrub habitat in the BSA, this habitat is not expected to support a unique suite of wildlife species. Wildlife species that occur in this habitat are similar to those described for Wild Oats and Annual Brome Grassland, and Coast Live Oak Woodland and Forest above.

#### **4.2.8 Arroyo Willow Thicket**

**Vegetation.** One patch of arroyo willow thicket occurs in the BSA, near the western end of Segment 2. This thicket is narrow in extent and is bordered by mature oak woodlands to the south and the UPRR right-of-way to the north. Mature willows are dominant in this habitat and occur intermixed with dense stands of California blackberry (Figure 3, Photo 8). Coyote brush, poison oak, fennel (*Foeniculum vulgare*) and plants associated with adjacent freshwater marsh habitat (described below) occur in the understory.

**Wildlife.** Willow riparian habitat is typically of high value to wildlife and supports a relatively diverse wildlife community. However, the limited extent of the willow thicket on site, and its location adjacent to the UPRR right-of-way limit the potential for wildlife species typically associated with larger, more mature willow stands to occur. Nevertheless, many common wildlife species that are attracted to the adjacent oak

woodlands will also occur here. Common amphibians and reptiles, such as the Sierran chorus frog, ring-necked snake (*Diadophis punctatus*), and western terrestrial garter snake (*Thamnophis elegans*), and California alligator lizard (*Elgaria multicarinata*) may occur here. Migrating birds, such as the orange-crowned warbler (*Oreothlypis celata*), ruby-crowned kinglet (*Regulus calendula*), and yellow-rumped warbler (*Setophaga coronata*) may forage in willows on site. Some bird species that nest in the adjacent oak woodlands may also nest in these willows; however, willow-associated nesters, like the yellow warbler (*Setophaga petechia*), are not expected to occur in such small stands. Urban adapted mammals are likely to traverse these willows, and common small mammals like field mice may also occur here.

#### 4.2.9 Freshwater and Brackish Marsh

**Vegetation.** Freshwater and brackish marsh habitats were identified along Segment 2 in the BSA, and a formal wetland delineation survey was conducted by SBI in May 2020. Five suballiances of freshwater and brackish marsh were identified in the BSA: Yerba Mansa Alkaline Wet Meadow, Smartweed Cocklebur Patch, Cattail Marsh, Hardstem and California Bulrush Marsh, and Saltgrass Flats. Two of these suballiances are considered Sensitive Natural Communities: Yerba Mansa Alkaline Wet Meadow (s2), and Hardstem and California Bulrush Marshes (S3).

##### *Yerba Mansa Alkaline Wet Meadow*

This suballiance has rarity listing of S2 which indicates that it is fairly rare and threatened. This habitat type occurred in only one location in the BSA, in a ponded segment of the low flow channel. Early growth of *Anemopsis californica* at approximately 30% cover was observed in this location during the aquatic resources delineation, with the remaining cover composed of algal matting, mud, or water.

##### *Smartweed Cocklebur Patches*

CNPS describes the Smartweed Cocklebur Patches community as *Polygonum lapathifolium* and/or *Xanthium strumarium* or other knotweed species being dominant or co-dominant in the herbaceous layer with *Bidens frondosa*, *Cuscuta pentagona*, *Echinochloa* spp., *Eleocharis macrostachya*, *Euthamia occidentalis*, *Helianthus annuus*, *Phyla nodiflora* and *Polygonum* spp. Membership rules require greater than 50% relative cover in the herbaceous layer. It has a rarity listing of S5 which indicates it is a fairly secure vegetation community. Common cocklebur (*Xanthium strumarium*) occurs particularly in disturbed areas such as seasonally flooded streamsides and alluvial flats. Within the BSA, Smartweed Cocklebur Patches occur in the open herbaceous areas downstream as a stand-alone species or in conjunction with *Juncus*, *Carex*, *Cyperus*, *Elymus*, *Rumex*, *Distichlis*, and *Grindelia*, among others.

##### *Cattail Marshes*

CNPS describes the Cattail Marshes community as *Typha angustifolia*, *Typha domingensis* or *Typha latifolia* being dominant or co-dominant in the herbaceous layer with *Agrostis stolonifera*, *Argentina egedii*, *Cyperus* spp., *Distichlis spicata*, *Echinochloa crus-galli*, *Eleocharis macrostachya*, *Equisetum telmateia*, *Juncus* spp., *Lemna minuta*, *Lepidium latifolium*, *Oenanthe sarmentosa*, *Persicaria lapathifolia*, *Persicaria punctata*, *Phragmites australis*, *Schoenoplectus americanus*, *Schoenoplectus californicus*, *Typha xglauca* and *Xanthium strumarium*. Emergent trees may be present at low cover, including *Salix* spp. It has a rarity listing of S5 which indicates it is a fairly secure vegetation community. Membership rules require greater than 50% relative cover in the herbaceous layer. Within the BSA this community is comprised of the non-native narrowleaf cattail (*Typha angustifolia*) and tends to occur in the open herbaceous areas downstream as exclusive patches.

### *Hardstem and California Bulrush Marsh*

This suballiance is considered a Sensitive Natural Community and has a rarity listing of S3, which indicates it is moderately rare and threatened. It occurs primarily as an understory community beneath the arroyo willow thicket within the low flow channel, becoming most prominent at the downstream end.

### *Salt Grass Flats*

CNPS describes the Salt Grass Flats community as *Distichlis spicata*, *Juncus acutus* and/or *Juncus cooperi* being dominant or co-dominant in the herbaceous layer with *Agrostis viridis*, *Ambrosia chamissonis*, *Anemopsis californica*, *Atriplex prostrata*, *Batis maritima*, *Bromus diandrus*, *Cotula coronopifolia*, *Eleocharis palustris*, *Frankenia salina*, *Hordeum brachyantherum*, *Hordeum murinum*, *Jaumea carnosa*, *Juncus acutus*, *Juncus arcticus*, *Juncus cooperi*, *Lepidium latifolium*, *Leymus triticoides*, *Limonium californicum*, *Muhlenbergia asperifolia*, *Parapholis strigosa*, *Pascopyrum smithii*, *Poa secunda*, *Puccinellia nuttalliana*, *Sarcocornia pacifica*, *Sporobolus airoides* or *Triglochin maritima*. Emergent shrubs may be present at low cover. It has a rarity listing of S4 which indicates it is not an at-risk vegetation community. Membership rules vary between requiring greater than 30% or 50% relative cover in the herbaceous layer. Within the BSA this community comprises the seasonal wetland at the downstream terminus of the low-flow channel.

**Wildlife.** Marsh habitats in the BSA are limited in extent and subject to high levels of anthropogenic disturbance. Most wildlife species associated with more extensive marshes, such as the Virginia rail (*Rallus limicola*) and marsh wren (*Cistothorus palustris*), are not expected to be present. Wildlife occurring in these wetlands are most likely to be those occurring in adjacent habitats, such as oak woodlands and willow thickets. However, common wildlife species that inhabit smaller wetlands and are tolerant of human disturbance may occur in this habitat. Sierran chorus frog tadpoles were observed in pools of standing water, and a ring-necked snake was observed in wetland habitats. Bird species occurring in adjacent habitats may use wetland waters for drinking and bathing, and wading birds like the great blue heron (*Ardea herodias*) and snowy egret (*Egretta thula*) may occasionally forage here. Common, urban adapted mammals may also hunt here, including domestic cats (*Felis domesticus*), raccoons and Virginia opossums.

## **4.3 Wildlife Movement**

Wildlife movement in the BSA may take many forms, including short range movements within territories or home ranges, dispersal to new habitats, or migratory movements over longer distances. Drainages, creeks, and riparian zones are often used by wildlife as movement corridors because these features can provide access through a landscape and protective cover. Portions of the BSA are contiguous with undeveloped land to the south and west, and drainages within the BSA provide a linkage between coastal marsh habitat and upland grasslands and woodlands, although the value of this linkage is greatly diminished for most wildlife species by the presence of railroad tracks at the border between these habitats. Further, the location of the BSA in the northeastern corner of open space, limits its utility as a movement corridor. Most animals would not be able to continue through the BSA to additional suitable habitat due to the presence of dense urban development to the east and railroad tracks to the north.

Wetland and riparian habitats often serve as high quality movement pathways for a variety of wildlife. The wetlands in the BSA are limited in extent, provide minimal cover, and are subject to high levels of disturbance from railroad activity and transient human populations. They do not provide a connection to upstream aquatic habitats and lack any downstream connections. Their disturbed nature and limited

extent, especially in comparison to nearby marshes, make them of limited value to migrating birds, and dispersing mammals, reptiles, and amphibians. Animals utilizing the wetlands for movement are likely those tolerant of higher levels of disturbance and able to utilize the wooded edge and railroad tracks for movement, such as feral cats, raccoons, and Virginia opossums.

## 5. Special-Status Species and Sensitive Habitats

### 5.1 Special-status Plant Species

The CNPS (2020) and CNDDDB (2020) identify 36 special-status plant species as potentially occurring in the project region for species in CRPR 1, 2, 3 and 4 species. The potential for these species to occur in the BSA is addressed in Table 2. Most of the potentially occurring special-status plant species were determined to be absent from the proposed Project due to the lack of suitable habitat types, lack of specific microhabitat or edaphic requirements (e.g., serpentine or alkaline soils), or the species' elevational range is outside the elevational range of the proposed Project. The CNDDDB (2020) has identified five federally and/or state protected plant species within 5-miles of the BSA: Congdon's tarplant (*Centromadia parryi ssp. congdonii*), Santa Cruz tarplant (*Holocarpha macradenia*), soft bird's beak (*Chloropyron molle ssp. molle*), Carquinez goldbush (*Isocoma arguta*), pallid manzanita (*Arctostaphylos pallida*), and Mason's lilaepsis (*Lilaeopsis masonii*). Pallid manzanita and soft bird's beak are not expected to occur in the BSA, as suitable habitat and soils are not present. There is a low potential Contra Costa goldfields and Santa Cruz tarplant to occur in the BSA, as minimal habitat is present to support these species. Suitable habitat for Congdon's tarplant and Mason's lilaepsis occurs in the BSA, and these species have a low to moderate potential to occur in the BSA. Both species are discussed in greater detail below. Mount Diablo Helianthella and Mount Diablo Fairy Lantern have been observed in close proximity to the BSA and are also discussed below.

#### 5.1.1 Mt. Diablo Helianthella (*Helianthella castanea*), CRPR 1B.2

Mt. Diablo helianthella is a perennial herb that is endemic to California. It has a CRPR rating of 1B.2, indicating it is rare and endangered. It has a blooming period between March and June. It occurs in a variety of vegetation communities, including the riparian woodland and valley and foothill grassland communities that occur within the BSA, and prefers a microhabitat of rocky axonal soils (young soils formed in recent floodplains, without well-developed subsoils) often in partial shade. Occurrences in Marin and San Francisco counties are believed extirpated, leaving extant populations only in Alameda, Contra Costa, and San Mateo counties. An extant occurrence is located south and uphill from the Nejedly Staging Area, just 100 feet west of the BSA.

The species was not observed during the reconnaissance survey nor during the Aquatic Resources Delineation. However, rare plant surveys that will be conducted for the project will document its presence if detected in the BSA.

#### 5.1.2 Congdon's Tarplant (*Centromadia parryi ssp. congdonii*), CRPR 1B.1

Congdon's Tarplant is an annual herb that is endemic to California. It has a CRPR rating of 1B.1, indicating it is seriously endangered. It has a blooming period between May and November. It occurs only in alkaline soils within valley and foothill grassland. Occurrences are known from Alameda, Contra Costa, Monterey, Santa Clara, San Luis Obispo, and San Mateo counties. It is believed to be extirpated from Santa Cruz and Solano counties. Several extant occurrences are located in the Waterbird Regional Preserve, the nearest of which is 2.4 miles east of the BSA.



The species was not observed during the reconnaissance survey nor during the Aquatic Resources Delineation. However, rare plant surveys are in process and will document its presence if detected in the BSA.

### **5.1.3 Mt. Diablo Fairy Lantern (*Calochortus pulchellus*), CRPR 1B.2**

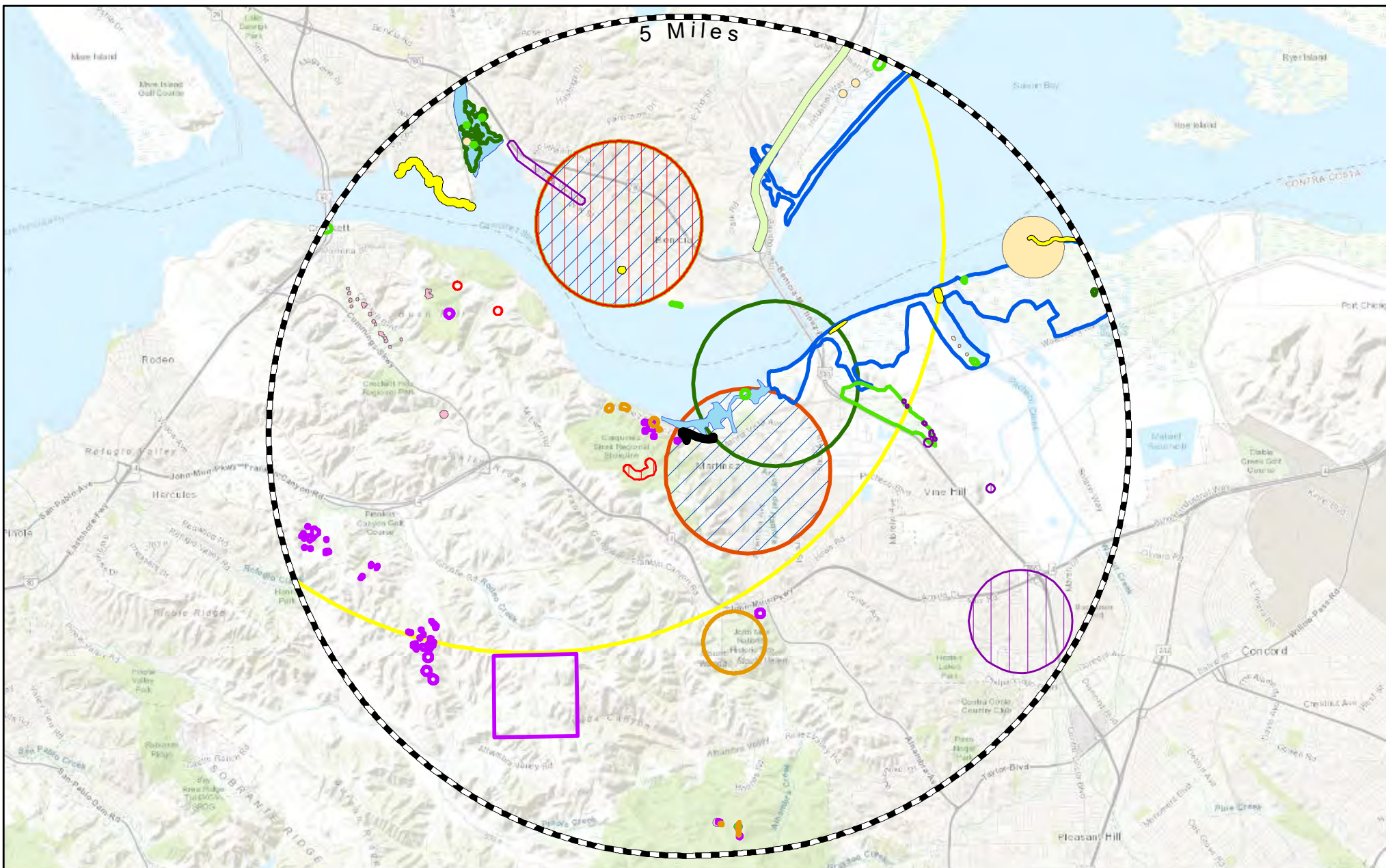
Mt. Diablo Fairy Lantern is a perennial bulbiferous herb that is endemic to California. It has a CRPR rating of 1B.2, indicating it is rare and endangered. It has a blooming period between April and June. It occurs in a variety of vegetation communities, including the riparian woodland and valley and foothill grassland communities that occur within the BSA. Occurrences are only known from Alameda, Contra Costa, and Solano counties. Several extant occurrences are located in the coastal hills of the Carquinez Strait Regional Shoreline Park, the nearest of which is just 0.3 miles west of the BSA.

The species was not observed during the reconnaissance survey nor during the Aquatic Resources Delineation. However, rare plant surveys are in process and will document its presence if detected in the BSA.

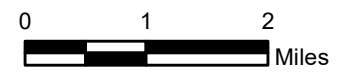
### **5.1.4 Mason's Lilaeopsis (*Lilaeopsis masonii*), State Rare, CRPR 1B.1**

Mason's lilaeopsis is a perennial rhizomatous herb that is endemic to California. It is a California Rare plant and has a CRPR rating of 1B.1, indicating it is seriously endangered. It has a blooming period between April and November. It occurs in freshwater or brackish marshes and swamps and riparian scrub. Occurrences are known from Alameda, Contra Costa, Marin, Napa, Sacramento, San Joaquin, Solano, and Yolo counties. Several extant occurrences are located in the marshes ringing San Pablo and Suisun Bays, the nearest of which is occurs 1.9 miles east of the BSA at Payton Slough.

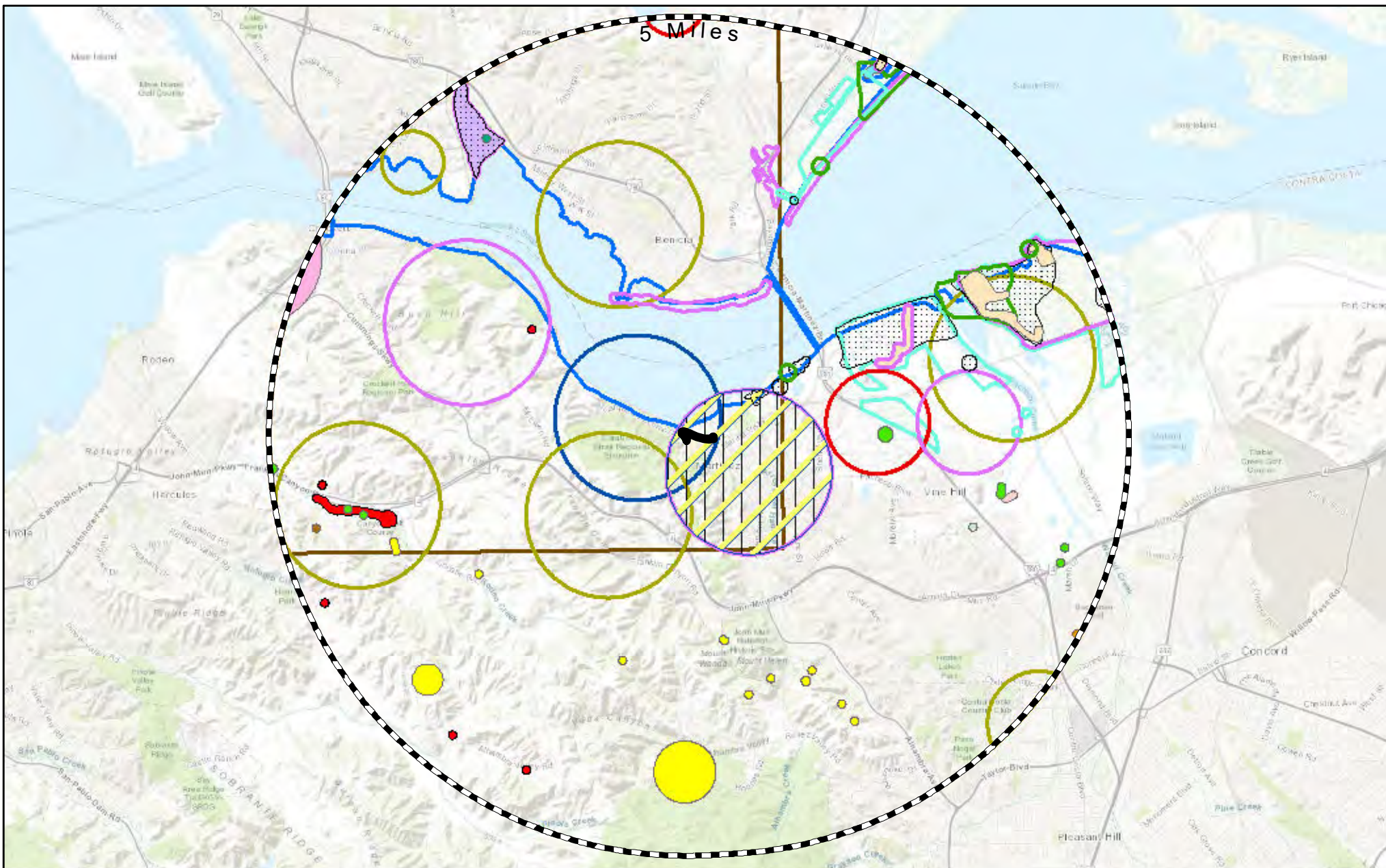
The species was not observed during the reconnaissance survey. However, rare plant surveys will document its presence if detected in the BSA.



- |                            |                             |                          |
|----------------------------|-----------------------------|--------------------------|
| Biological Survey Area     | Delta tule pea              | bent-flowered fiddleneck |
| CNDDDB - Plant Occurrences | Diablo helianthella         | big tarplant             |
| CDFW - May 2020            | Jepson's coyote-thistle     | long-styled sand-spurrey |
| Bolander's water-hemlock   | Marin knotweed              | oval-leaved viburnum     |
| Carquinez goldenbush       | Mason's lilaeopsis          | saline clover            |
| Coastal Brackish Marsh     | Mt. Diablo fairy-lantern    | soft salty bird's-beak   |
| Congdon's tarplant         | Northern Coastal Salt Marsh | western leatherwood      |
|                            | Suisun Marsh aster          |                          |



East Bay Regional Park District  
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 Figure 5 - CNDDDB Plant Records  
 May 2020



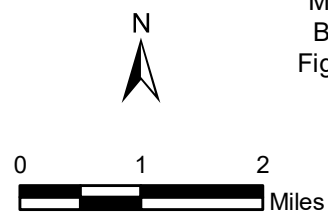
**Biological Survey Area**  
**CNDDB - Wildlife Occurrences**  
**CDFW - May 2020**

- Alameda whipsnake
- American peregrine falcon
- Bridges' coast range shoulderband
- California Ridgway's rail

- California black rail
- California linderella
- California red-legged frog
- Cooper's hawk
- Sacramento splittail
- Suisun shrew

- Suisun song sparrow
- big free-tailed bat
- burrowing owl
- longfin smelt
- northern harrier
- obscure bumble bee
- salt-marsh harvest mouse

- saltmarsh common yellowthroat
- tricolored blackbird
- western bumble bee
- western pond turtle
- yellow rail



East Bay Regional Park District  
 Martinez Bay Trail Project Phase II  
 Biological Resources Assessment  
 Figure 6 - CNDDB Wildlife Records  
 May 2020

## 5.2 Sensitive Natural Communities, Vegetation Alliances, and Habitats

Sensitive Natural Communities (SNCs) are vegetation Alliances that are ranked by CDFW as having a rarity value of S1-S3<sup>1</sup>. CDFW guidance states that SNCs should be evaluated during CEQA review. Non-rare Alliances that have rare Associations within them (Associations are a subset of Alliances) are also subject to CEQA review. CDFW updated their rare plant survey protocols in 2018 to include SNCs (CDFW, 2019d) and other associated guidance has been released as recently as August 2019 (Rapid Assessment and Relevé Protocol; CDFW 2019e); Survey of California Vegetation Classification and Mapping Standards (CDFW 2019f); Survey of California Vegetation Classification and Mapping Project Deliverables (CDFW 2019g).

Two legacy<sup>2</sup> SNCs in the CNDDDB were reported within 5-miles of the BSA-- Northern Coastal Salt Marsh and Coastal Brackish Marsh-- with Northern Coastal Salt Marsh identified as potentially occurring in the project region (CDFW 2020). Northern Coastal Salt Marsh is characterized by Holland (1986) as occurring along sheltered inland margins of bays, often co-dominated by pickleweed (*Salicornia* spp.), California cordgrass (*Spartina foliosa*), and sometimes saltgrass (*Distichlis spicata*). Pickleweed and cordgrass were not observed in the BSA, and further, the wetlands in Segment 2 receive only freshwater inputs from rainfall and the upstream watershed. Northern Coastal Salt Marsh does not occur in the BSA. Fragmented remnants of Coastal Brackish Marsh occur in lower reaches of the low-flow channel, characterized by *Carex* spp., *Schoenoplectus* sp., *Bolboschoenus* sp., narrowleaf cattail (*Typha angustifolia*), and *Juncus* spp.

SBI biologists observed three SNCs within the BSA that are not reported in the CNDDDB: Creeping Ryegrass Turf (S3), Yerba Mansa Alkaline Wet Meadow (S2), and Hardstem and California Bulrush Marshes (S3). The following Alliance descriptions are sourced from the Manual of California Vegetation Online (CNPS 2019b). Sensitivity rankings for Alliances and Associations are sourced from CDFW's California Sensitive Natural Communities list (CDFW 2019b).

### 5.2.1 Creeping Ryegrass Turfs (S3)

CNPS describes the Creeping Ryegrass Turfs community as *Leymus cinereus* and/or *Leymus triticoides* (= *Elymus triticoides*) being dominant or co-dominant in the herbaceous layer with *Ambrosia psilostachya*, *Anemopsis californica*, *Aristida purpurea*, *Avena fatua*, *Bromus* spp., *Danthonia unispicata*, *Distichlis spicata*, *Elymus elymoides*, *Hordeum* spp., *Juncus arcticus*, *Lolium perenne* (= *Festuca perennis*), *Poa secunda* or *Triglochin maritima*. Emergent trees and shrubs may be present at low cover. Membership rules vary from 30% to 50% relative cover in the herbaceous layer. It has a rarity listing of S3 which indicates it is moderately rare and threatened. In the BSA, there is a 0.052 acre stand where *Elymus triticoides* is dominant in the herbaceous layer at greater than 50% relative cover. Co-occurring species include *Avena* sp., *Bromus* sp., and *Festuca perennis*. A few scattered coyote brush shrubs are present. The Creeping

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<sup>1</sup> S1: Fewer than 6 viable occurrences worldwide/ statewide, and/ or up to 518 hectares; S2: 6-20 viable occurrences worldwide/ statewide, and/ or more than 518-2,590 hectares; S3: 21-100 viable occurrences worldwide/ statewide, and/or more than 2,590-12,950 hectares; 0.1: Very threatened; 0.2: Threatened.

<sup>2</sup> CDFW stopped adding Natural Community occurrences to the CNDDDB in the mid-1990s due to lack of funding, but those added up to that point remain in the database and are valid occurrence records.

Ryegrass Turfs community continues under the edge of the riparian canopy and stretches uphill toward the California sagebrush community just beyond the BSA, as shown in Figure 2.

### 5.2.2 Yerba Mansa Alkali Wet Meadow (S2)

CNPS describes the Yerba Mansa Alkali Wet Meadow community as *Anemopsis californica*, *Helianthus nuttallii*, *Solidago confinis* and/or *Solidago spectabilis* being dominant or co-dominant in the herbaceous layer with *Ambrosia psilostachya*, *Bromus hordeaceus*, *Carex praegracilis*, *Carpobrotus edulis*, *Cirsium occidentale*, *Distichlis spicata*, *Euthamia occidentalis*, *Holocarpha virgata*, *Hordeum murinum* ssp. *leporinum*, *Juncus arcticus*, *Juncus cooperi*, *Juncus rugulosus*, *Lactuca serriola*, *Leymus triticoides*, *Lolium perenne*, *Medicago polymorpha*, *Rumex crispus*, *Schoenoplectus americanus*, *Sisyrinchium bellum* and *Sporobolus airoides*. Membership rules require 30% cover in the herbaceous layer. It has a rarity listing of S2 which indicates it is fairly rare and threatened. In the lower reaches of the low flow channel there is a ponded segment measuring approximately 100 square feet that, at the time of the aquatic resource delineation, exclusively supported the early growth of *Anemopsis californica* at approximately 30% cover. The remaining cover was algal matting, mud, or water.

### 5.2.3 Hardstem and California Bulrush Marshes (S3)

CNPS describes the Hardstem and California Bulrush Marshes community as *Schoenoplectus acutus* and/or *Schoenoplectus californicus* being dominant or co-dominant in the herbaceous layer with *Apocynum cannabinum*, *Azolla filiculoides*, *Bolboschoenus maritimus*, *Calystegia sepium*, *Eichhornia crassipes*, *Euthamia occidentalis*, *Hibiscus lasiocarpus*, *Hoita macrostachya*, *Hydrocotyle ranunculoides*, *Leersia oryzoides*, *Ludwigia peploides*, *Lycopus americanus*, *Persicaria punctata*, *Phragmites australis*, *Sparganium eurycarpum*, *Triglochin* spp., *Typha angustifolia*, *Typha domingensis*, *Typha latifolia* and *Urtica dioica*. Membership rules require that *Schoenoplectus acutus* or *Schoenoplectus californicus* > 50% cover in the herbaceous layer or > 30% relative cover if codominant with *Typha* spp. It has a rarity listing of S3 which indicates it is moderately rare and threatened. The Hardstem and California Bulrush Marsh alliance occurs as an understory community beneath the arroyo willow thicket extending downstream to the open herbaceous area.

## 5.3 Special-Status Animal Species

Queries were conducted for the BSA in the USFWS's IPaC database, and for the BSA plus a 5-mile buffer in the CNDDDB (CDFW 2020). These queries identified 29 special-status wildlife species known to occur in the search area (Figure 6). The potential for occurrence and legal status of special-status animal species known to occur, or potentially occurring, in the BSA region are presented in Table 3. Most of the special-status species listed in Table 3 are not expected to occur in the BSA because it lacks suitable habitat, is outside the known range of the species, or is isolated from the nearest known extant populations by significant barriers to movement (e.g., dense urban development, major roadways, Suisun Bay, or otherwise unsuitable habitat).

For some of these, such as the California least tern (*Sterna antillarum browni*), western snowy plover (*Charadrius nivosus nivosus*), and vernal pool fairy shrimp (*Branchinecta lynchi*), suitable habitat is not present in the BSA and these species were determined to have no potential to occur. Some species, such as the San Bruno elfin butterfly (*Callophrys mossii bayensis*), foothill yellow-legged frog (*Rana boylei*), California tiger salamander (*Ambystoma californiense*), giant garter snake (*Thamnophis gigas*), and

California legless lizard (*Anniella pulchra*) occur within the query's geographic area, but the project is not within their current respective ranges. The creek and drainage do not provide habitat for special-status fishes such as Sacramento splittail (*Pogonichthys macrolepidotus*) or longfin smelt (*Spirinchus thaleichthys*) due to their intermittent nature, shallow waters, and lack of connection to Suisun Bay. The Bridge's coast-range shoulderband snail (*Helminthoglypta nickliniana bridgesi*), obscure bumblebee (*Bombus caliginosus*), California linderiella (*Linderiella occidentalis*), Cooper's hawk (*Accipiter cooperi*), and northern harrier (*Circus hudsonius*) were identified by the CNDDDB search but are not included in Table 3 because their present status does not require CEQA review (i.e., they are not special-status as defined in this report) (CDFW 2020).

No monarch butterflies (*Danaus plexippus*) were observed in the BSA during the reconnaissance survey. While large winter roosts have been recorded elsewhere in Contra Costa County and across Suisun Bay at Mare Island, none are known to occur along the southern shores of San Pablo or Suisun Bays. Monarch butterflies may occur in small numbers as migrants, but large winter roosts were determined to be absent from the BSA.

The California red-legged frog, San Francisco common yellowthroat, Suisun song sparrow, and San Francisco dusky-footed woodrat have a low potential to occur in the BSA and are discussed below, along with the remaining special-status species that have potential to occur. Species that were historically present or are known to occur in close proximity to the BSA (e.g., Ridgway's rail, black rail), are also discussed.

Four bird species that are considered California Species of Special Concern when they are breeding may occur in the BSA as nonbreeding transients, foragers, or migrants, but they have not been recorded nesting in, or very close to, the BSA. These include the northern harrier (*Circus cyaneus*), yellow warbler, and yellow breasted chat (*Icteria virens*), and short-eared owl (*Asio flammeus*). Because these species are considered Species of Special Concern only when nesting, they are not "special-status species" when they occur as nonbreeding visitors to the BSA.

Several species that are considered special-status species in all circumstances could occasionally occur in the BSA as nonbreeding foragers: the American peregrine falcon (*Falco peregrinus anatum*) and golden eagle, which are State fully protected species; bald eagle (*Haliaeetus leucocephalus*), State listed as endangered and fully protected by the state; and tricolored blackbird (*Agelaius tricolor*), State listed as threatened. These species are not expected to nest on or immediately adjacent to the BSA and would be affected very little, if at all, by the proposed Project.

The California red-legged frog (*Rana draytonii*), California Ridgway's rail (*Rallus obsoletus obsoletus*), California black rail (*Laterallus jamaicensis coturniculus*), San Francisco common yellowthroat (*Geothlypis trichas sinuosa*), Suisun song sparrow (*Melospiza melodia maxillaris*), white-tailed kite (*Elanus leucurus*), pallid bat (*Antrozous pallidus*), western red bat (*Lasiurus blossevillii*), and San Francisco dusky-footed woodrat (*Neotoma fuscipes annectens*) are addressed in greater detail below because these species can potentially breed or occur within or immediately adjacent to the BSA and/or may be significantly affected by the proposed Project activities.

Table 2. Special-Status Plant Species with Potential to Occur in the BSA

| Scientific Name                         | Common Name | Status† | Blooming Period | General Habitat Preferences  | Potential to Occur in BSA  |
|---|-------------|---------|-----------------|--|--|
| Sensitive Natural Communities           |             |         |                 |  |  |
| CNDDDB Legacy <sup>3†</sup> Communities |             |         |                 |  |  |
| Coastal Brackish Marsh                  |             | S3.2    | —               | Now described as the following Alliances: <i>Argentina egedii</i> , <i>Atriplex prostrata</i> - <i>Cotula coronopifolia</i> , <i>Bolboschoenus maritimus</i> , <i>Carex obnupta</i> , <i>Eleocharis macrostachya</i> , <i>Grindelia</i> ( <i>camporum</i> , <i>stricta</i> ), <i>Juncus arcticus</i> ( <i>var. balticus</i> , <i>mexicanus</i> ), <i>Juncus lescurii</i> , <i>Juncus patens</i> , <i>Oenanthe sarmentosa</i> , <i>Ruppia</i> ( <i>cirrhusa</i> , <i>maritima</i> ), <i>Stuckenia</i> ( <i>pectinata</i> ) - <i>Potamogeton</i> spp., <i>Typha</i> ( <i>angustifolia</i> , <i>domingensis</i> , <i>latifolia</i> ). | <i>Typha angustifolia</i> , <i>Juncus</i> spp., <i>Grindelia</i> sp., <i>Eleocharis</i> sp., and <i>Carex</i> spp. occur separately or in various associations in portions of the low-flow channel in the BSA. |
| Northern Maritime Chaparral             |             | S1.2    | —               | Now described as the following Alliances: <i>Adenostoma fasciculatum</i> , <i>Arctostaphylos hookeri</i> , <i>Arctostaphylos montana</i> , <i>Arctostaphylos</i> ( <i>nummularia</i> , <i>sensitiva</i> ), <i>Ceanothus thyrsiflorus</i> , <i>Chrysolepis chrysophylla</i> , <i>Quercus berberidifolia</i> .   | No Northern Maritime Chaparral occurs in the BSA.  |

<sup>3</sup> Legacy data: "At the time funding for the Natural Communities part of the CNDDDB program was halted in the mid-1990s, approximately 2,500 occurrences of 96 sensitive natural community types had been entered in CNDDDB, all based on Holland's classification. No new occurrences have been added since then, and our focus is now on completing an updated statewide classification, element ranking, and map. Once the entire state is classified and mapped, we will be able to review the existing occurrences in CNDDDB and update them individually by existence, type, and global and state rarity ranking. We think it imprudent to remove these Holland-based elements from the CNDDDB before assessing them and reclassifying them in terms of the currently accepted state and national standards for vegetation classification. Their existence should be addressed in the environmental review processes of CEQA and its equivalents, along with occurrences of plants and animals tracked by the CNDDDB." (CDFW 2020).

†Ranks are reported in the CNDDDB (CDFW 2020); Alliances and Associations may have separate rankings.

| Scientific Name   | Common Name                            | Status† | Blooming Period | General Habitat Preferences   | Potential to Occur in BSA   |
|---|--|---------|-----------------|---|---|
| <b>Sensitive Natural Communities per Manual of California Vegetation</b>  |  |         |                 |   |   |
| <i>Leymus cinereus</i> -<br><i>Leymus triticoides</i><br>Herbaceous Alliance  | Creeping<br>Ryegrass Turfs             | S3      | —               | <i>Leymus cinereus</i> and/or <i>Leymus triticoides</i> (= <i>Elymus triticoides</i> ) is dominant or co-dominant in the herbaceous layer with <i>Ambrosia psilostachya</i> , <i>Anemopsis californica</i> , <i>Aristida purpurea</i> , <i>Avena fatua</i> , <i>Bromus</i> spp., <i>Danthonia unispicata</i> , <i>Distichlis spicata</i> , <i>Elymus elymoides</i> , <i>Hordeum</i> spp., <i>Juncus arcticus</i> , <i>Lolium perenne</i> , <i>Poa secunda</i> or <i>Triglochin maritima</i> . Emergent trees and shrubs may be present at low cover. Membership rules vary from 30% to 50% relative cover in the herbaceous layer.  | <b>Present.</b> This community is present at the north pedestrian bridge footing, continuing north across the grassy slope and east under the riparian canopy along the stream channel. |
| <i>Anemopsis californica</i> -<br><i>Helianthus nuttallii</i> -<br><i>Solidago spectabilis</i><br>Alkaline Wet<br>Meadows | Yerba Mansa<br>Alkaline Wet<br>Meadows | S2      | —               | <i>Anemopsis californica</i> , <i>Helianthus nuttallii</i> , <i>Solidago confinis</i> and/or <i>Solidago spectabilis</i> is dominant or co-dominant in the herbaceous layer with <i>Ambrosia psilostachya</i> , <i>Bromus hordeaceus</i> , <i>Carex praegracilis</i> , <i>Carpobrotus edulis</i> , <i>Cirsium occidentale</i> , <i>Distichlis spicata</i> , <i>Euthamia occidentalis</i> , <i>Holocarpha virgata</i> , <i>Hordeum murinum</i> ssp. <i>leporinum</i> , <i>Juncus arcticus</i> , <i>Juncus cooperi</i> , <i>Juncus rugulosus</i> , <i>Lactuca serriola</i> , <i>Leymus triticoides</i> , <i>Lolium perenne</i> , <i>Medicago polymorpha</i> , <i>Rumex crispus</i> , <i>Schoenoplectus americanus</i> , <i>Sisyrinchium bellum</i> and <i>Sporobolus airoides</i> . Membership rules require 30% cover in the herbaceous layer. | <b>Present.</b> This community is restricted to a small area (100 sq. ft.) near the middle in the low flow channel.   |



| Scientific Name   | Common Name                             | Status† | Blooming Period | General Habitat Preferences   | Potential to Occur in BSA   |
|---|---|---------|-----------------|---|---|
| <i>Schoenoplectus (acutus, californicus)</i><br>Marshes | Hardstem and California Bulrush Marshes | S3      | —               | <i>Schoenoplectus acutus</i> and/or <i>Schoenoplectus californicus</i> is dominant or co-dominant in the herbaceous layer with <i>Apocynum cannabinum</i> , <i>Azolla filiculoides</i> , <i>Bolboschoenus maritimus</i> , <i>Calystegia sepium</i> , <i>Eichhornia crassipes</i> , <i>Euthamia occidentalis</i> , <i>Hibiscus lasiocarpus</i> , <i>Hoita macrostachya</i> , <i>Hydrocotyle ranunculoides</i> , <i>Leersia oryzoides</i> , <i>Ludwigia peploides</i> , <i>Lycopus americanus</i> , <i>Persicaria punctata</i> , <i>Phragmites australis</i> , <i>Sparganium eurycarpum</i> , <i>Triglochin spp.</i> , <i>Typha angustifolia</i> , <i>Typha domingensis</i> , <i>Typha latifolia</i> and <i>Urtica dioica</i> . Membership rules require that <i>Schoenoplectus acutus</i> or <i>Schoenoplectus californicus</i> > 50% cover in the herbaceous layer or > 30% relative cover if codominant with <i>Typha</i> spp. | <b>Present.</b> This community is present as an understory community beneath the arroyo willow thicket, becoming most dense at the downstream end as the overstory canopy declines. It is restricted to a small area (300 sq. ft.) within the low flow channel. |
| <b>Plants</b>   |   |         |                 |   |   |
| <i>Amsinckia lunaris</i>                                | bent-flowered fiddleneck                | 1B.2    | Mar-Jun         | Cismontane woodland, valley and foothill grassland, and coastal bluff scrub; damp rock and soil on outcrops and cliffs within broadleaved upland forest, lower montane coniferous forest and north coast coniferous forest; often on acidic substrates. Known elevations are between 325-3280 ft elevation.   | <b>Not Expected.</b> Only one record within 5-miles of the BSA, at Briones Regional Park. Elevations in the BSA are lower than known occurrences.   |
| <i>Androsace elongata ssp. acuta</i>                    | California androsace                    | 4.2     | Mar-Jun         | Prefers dry grassy slopes within Chaparral, Cismontane woodland, Coastal scrub, Meadows and seeps, Pinyon and juniper woodland, Valley and foothill grassland   | <b>Low to Moderate.</b> Suitable vegetation communities occur in the BSA. No occurrences are reported north of the City of Concord.   |

| Scientific Name                                 | Common Name              | Status†    | Blooming Period | General Habitat Preferences  | Potential to Occur in BSA  |
|---|--------------------------|------------|-----------------|--|--|
| <i>Arctostaphylos pallida</i>                   | pallid manzanita         | FT/SE 1B.1 | Dec-Mar         | Siliceous shale, sandy or gravelly soils in broadleaved upland forest, closed-cone coniferous forest, chaparral, cismontane woodland, and coastal scrub within the Diablo Range at known elevations between 605-1525 ft. elevation. Perennial evergreen shrub. | <b>Not Expected.</b> Suitable shale, sandy or gravelly soils are absent from the BSA. Further, no manzanita shrubs were observed in the BSA during reconnaissance surveys.   |
| <i>Atriplex coronata</i> var. <i>coronata</i>   | crownscale               | 4.2        | Mar-Oct         | Alkaline, often clay soils in chenopod scrub, valley and foothill grassland, and vernal pools.   | <b>Low.</b> Alkaline soils are minimally present in the BSA. No occurrences are reported west of Mt. Diablo.   |
| <i>Blepharizonia plumosa</i>                    | big tarplant             | 1B.1       | Jul-Oct         | Valley and foothill grassland, usually clay soils  | <b>Not Expected.</b> Grassland habitat is very limited in the BSA. The only observation within 5-miles of the BSA dates from a 1917 museum record and is vaguely located as "Benicia".   |
| <i>Calochortus pulchellus</i>                   | Mt. Diablo fairy-lantern | 1B.2       | Apr-Jun         | Occurs on north-facing wooded slopes in riparian woodland, and valley and foothill grassland, rarely within chaparral, at elevations between 100-2755 ft.  | <b>Not Expected.</b> North-facing wooded slopes are minimally present in the BSA and are predominantly <i>Eucalyptus</i> groves. Several records of the species occur in the coastal hills of the Carquinez Strait Regional Shoreline Park, the nearest of which is located 0.3 miles west of the BSA. |
| <i>Calochortus umbellatus</i>                   | Oakland star-tulip       | 4.2        | Mar-May         | Often serpentine soils in broadleaved upland forest, chaparral, cismontane woodland, lower montane coniferous forest, and valley and foothill grassland at elevations of 328-2,297 ft.   | <b>Not Expected.</b> Suitable serpentine habitat is absent from the BSA and the BSA is outside the elevational range of the species. No records of the species occur within 5-miles of the BSA.  |
| <i>Castilleja ambigua</i> var. <i>ambigua</i>   | johnny-nip               | 4.2        | Mar-Aug         | Coastal bluff scrub, Coastal prairie, Coastal scrub, Marshes and swamps, Valley and foothill grassland, Vernal pools margins   | <b>Not Expected.</b> No records of the species occur within 5-miles of the BSA. Suitable habitat is minimally present within the BSA.  |
| <i>Centromadia parryi</i> ssp. <i>congdonii</i> | Congdon's tarplant       | 1B.1       | May-Oct(Nov)    | Often alkaline soils in chaparral, coastal prairie, meadows and seeps, coastal salt marshes and swamps, and vernal mesic valley and foothill grassland, at elevations of 3-750 ft.   | <b>Not Expected.</b> Alkaline soils are minimally present within the BSA. Four records occurs within 5-miles of the BSA, the nearest of which is located 2.4 miles east at the Waterbird Regional Preserve.  |
| <i>Chloropyron molle</i> ssp. <i>molle</i>      | soft bird's-beak         | FE/SR 1B.2 | Jun-Nov         | Marshes and swamps (coastal salt)  | <b>Not Expected.</b> Coastal salt marsh habitat is absent from the BSA.  |

| Scientific Name                              | Common Name              | Status† | Blooming Period   | General Habitat Preferences   | Potential to Occur in BSA  |
|--|--------------------------|---------|-------------------|---|--|
| <i>Cicuta maculata</i> var. <i>bolanderi</i> | Bolander's water-hemlock | 2B.1    | Jul-Sep           | Marshes and swamps Coastal, fresh or brackish water   | <b>Low to Moderate.</b> Potentially suitable habitat is present in the BSA. The only records of the species within 5-miles of the BSA date from 1900 and 1938, and are located in Benicia and "Near Martinez".       |
| <i>Cirsium andrewsii</i>                     | Franciscan thistle       | 1B.2    | Mar-Jul           | Broadleafed upland forest, Coastal bluff scrub, Coastal prairie, Coastal scrub; mesic, sometimes serpentine soils   | <b>Not Expected.</b> Suitable serpentine soils are absent from the BSA.  |
| <i>Dirca occidentalis</i>                    | western leatherwood      | 1B.2    | Jan-Mar(Apr)      | Broadleafed upland forest, Closed-cone coniferous forest, Chaparral, Cismontane woodland, North Coast coniferous forest, Riparian forest, Riparian woodland; mesic soils        | <b>Low to Moderate.</b> Potentially suitable habitat is present. All known occurrences of the species in the vicinity are associated with the areas around Cummings Skyway near Crockett, 2.9 miles west of the BSA. |
| <i>Eleocharis parvula</i>                    | small spikerush          | 4.3     | (Apr)Jun-Aug(Sep) | Marshes and swamps  | <b>Low to Moderate.</b> Potentially suitable habitat is present. No records of the species occur within 5-miles of the BSA.  |
| <i>Eryngium jepsonii</i>                     | Jepson's coyote thistle  | 1B.2    | Apr-Aug           | Occurs in wetlands below 1,640 ft elevation on moist clay soil.   | <b>Moderate.</b> The nearest occurrence is located 0.5 miles southwest of the BSA in annual grasslands associated with the Carquinez Strait Regional Shoreline Park.   |
| <i>Extriplex joaquinana</i>                  | San Joaquin spearscale   | 1B.2    | Apr-Oct           | Chenopod scrub, Meadows and seeps, Playas, Valley and foothill grassland; alkaline soils  | <b>Not Expected.</b> Alkaline soils are minimally present within the BSA. No records of the species occur within 5-miles of the BSA.   |
| <i>Fissidens pauperculus</i>                 | minute pocket moss       | 1B.2    |                   | North Coast coniferous forest (damp coastal soil)   | <b>Not Expected.</b> Coniferous forest habitat with damp soils is absent from the BSA. No records of the species occur within 5-miles of the BSA.  |
| <i>Fritillaria liliacea</i>                  | fragrant fritillary      | 1B.2    | Feb-Apr           | Often serpentinite soils in cismontane woodland, coastal prairie, coastal scrub, and valley and foothill grassland, at elevations of 10- 1,345 ft.                              | <b>Not Expected.</b> No suitable serpentine soils are present in the BSA. No records of the species occur within 5-miles of the BSA.   |
| <i>Helianthella castanea</i>                 | Diablo helianthella      | 1B.2    | Mar-Jun           | Broadleafed upland forest, Chaparral, Cismontane woodland, Coastal scrub, Riparian woodland, Valley and foothill grassland; usually rocky, axonal soils. Often in partial shade | <b>Moderate.</b> Suitable habitat is present in the BSA. Several records occur on the coastal hillsides of the Carquinez Strait Regional Shoreline Park, with the nearest located ~100 feet west of the BSA.         |

| Scientific Name                                  | Common Name             | Status†       | Blooming Period      | General Habitat Preferences  | Potential to Occur in BSA   |
|--|-------------------------|---------------|----------------------|--|---|
| <i>Holocarpha macradenia</i>                     | Santa Cruz tarplant     | FT/SE<br>1B.1 | Jun-Oct              | Occurs in coastal prairie, coastal scrub and valley and foothill grasslands, in areas with light sandy soil, or sandy clay between 30-720 ft. elevation.                 | <b>Low.</b> Grassland habitat is minimally present in the BSA. No records of the species occur within 5-miles of the BSA.   |
| <i>Iris longipetala</i>                          | coast iris              | 4.2           | Mar-May              | Coastal prairie, Lower montane coniferous forest, Meadows and seeps; mesic soils   | <b>Low.</b> Potentially suitable habitat is minimally present within the BSA. No records of the species occur within 5-miles of the BSA.  |
| <i>Isocoma arguta</i>                            | Carquinez goldenbush    | 1B.1          | Aug-Dec              | Generally found in wetlands within valley and foothill grassland, usually within alkali flats or other mineral-rich soils of the Suisun Slough at elevations of 3-65 ft. | <b>Low to Moderate.</b> Potentially suitable habitat is present within the BSA. The only CNDDB record within 5-miles of the BSA dates from 1968, and is based on a site named in, "A California Flora and Supplement."  |
| <i>Lasthenia conjugens</i>                       | Contra Costa goldfields | FE/–<br>1B.1  | Mar-Jun              | Mesic habitats including cismontane woodland, alkaline playas, valley and foothill grasslands, and vernal pools, at elevations of 0- 1,542 ft.                           | <b>Low.</b> Potentially suitable habitat is minimally present within the BSA. No records of the species occur within 5-miles of the BSA.  |
| <i>Lathyrus jepsonii</i><br><i>var. jepsonii</i> | Delta tule pea          | 1B.2          | May-Jul<br>(Aug-Sep) | Low elevation marshes and swamps (freshwater and brackish)   | <b>Low to Moderate.</b> Potentially suitable habitat is present within the BSA. Nine records of the species occur within 5-miles of the BSA, with the nearest located 0.6 miles northeast of the BSA at the Martinez Regional Shoreline Park. Additional records occur at the Waterbird Regional Preserve, 1.7 miles east of the BSA. |
| <i>Lilaeopsis masonii</i>                        | Mason's lilaeopsis      | –/SR<br>1B.1  | Apr-Nov              | Marshes and swamps (brackish or freshwater), Riparian scrub  | <b>Low to Moderate.</b> Potentially suitable habitat is present within the BSA. The nearest known occurrence is located 1.9 miles east of the BSA, at Payton Slough.  |
| <i>Meconella oregana</i>                         | Oregon meconella        | 1B.1          | Mar-Apr              | Coastal prairie and scrub between 820-2035 ft. elevation.  | <b>Not Expected.</b> Known in California from only 9 occurrences – 4 of which occur in the San Francisco Bay Area, in the Oakland/ Berkeley hills. No records of the species occur within 5-miles of the BSA, and the BSA is outside the elevational range of the species.  |
| <i>Micropus amphibolus</i>                       | Mt. Diablo cottonweed   | 3.2           | Mar-May              | Broadleafed upland forest, Chaparral, Cismontane woodland, Valley and foothill grassland; rocky soils  | <b>Low.</b> Potentially suitable habitat is minimally present within the BSA.   |

| Scientific Name   | Common Name                     | Status† | Blooming Period       | General Habitat Preferences   | Potential to Occur in BSA   |
|---|---------------------------------|---------|-----------------------|---|---|
| <i>Monardella antonina</i><br><i>ssp. antonina</i>      | San Antonio Hills<br>monardella | 3       | Jun-Aug               | Chaparral and cismontane woodland at elevations of 1050-3281 ft.  | <b>Not Expected.</b> Potentially suitable habitat is minimally present within the BSA. No records of the species occur within 5-miles of the BSA. Elevations in the BSA are lower than at reported occurrences.       |
| <i>Navarretia gowenii</i>                               | Lime Ridge<br>navarretia        | 1B.1    | May-Jun               | Chaparral at elevations of 591-1001 ft.   | <b>Not Expected.</b> Potentially suitable habitat is minimally present within the BSA. No records of the species occur within 5-miles of the BSA. Elevations in the BSA are lower than at reported occurrences.       |
| <i>Polygonum marinense</i>                              | Marin<br>knotweed               | 3.1     | (Apr)May-<br>Aug(Oct) | Marshes and swamps (coastal salt or brackish)   | <b>Not Expected.</b> Potentially suitable habitat is present within the BSA.  |
| <i>Ranunculus lobbii</i>                                | Lobb's aquatic<br>buttercup     | 4.2     | Feb-May               | Cismontane woodland, North Coast coniferous forest, Valley and foothill grassland, Vernal pools; mesic soils                          | <b>Not expected.</b> Waters in the BSA are saline or alkaline. No records of the species occur within 5-miles of the BSA  |
| <i>Spergularia macrotheca</i> var.<br><i>longistyla</i> | long-styled<br>sand-spurrey     | 1B.2    | Feb-<br>May(Jun)      | Alkaline marshes, mud flats, meadows, and hot springs between 0-670 ft. elevation.  | <b>Not Expected.</b> Potentially suitable habitat is minimally present within the BSA. The only record occurring within 5-miles of the BSA dates from a 1900 museum collection.                                       |
| <i>Streptanthus albidus</i><br><i>ssp. peramoenus</i>   | most beautiful<br>jewelflower   | 1B.2    | (Mar)Apr-<br>Sep(Oct) | Chaparral, Cismontane woodland, Valley and foothill grassland; serpentine soils   | <b>Not Expected.</b> No serpentine soils are present in the BSA.  |
| <i>Symphyotrichum lentum</i>                            | Suisun Marsh<br>aster           | 1B.2    | (Apr)May-<br>Nov      | Marshes and swamps (brackish and freshwater)  | <b>Moderate.</b> Suitable habitat is present within the BSA. The nearest records are located 3.1 miles east of the BSA at Pacheco Creek.  |
| <i>Trifolium hydrophilum</i>                            | saline clover                   | 1B.2    | Apr-Jun               | Salt marsh and swamp, vernal pool or other wetlands within valley and foothill grassland on alkaline soils at elevations of 0-985 ft. | <b>Not Expected.</b> Salt marsh and alkaline wetlands are not present in the BSA. The only record occurring within 5-miles of the BSA dates from a 1938 museum collection and is located across the Bay near Benicia. |

| Scientific Name            | Common Name          | Status† | Blooming Period | General Habitat Preferences  | Potential to Occur in BSA  |
|----------------------------|----------------------|---------|-----------------|--|--|
| <i>Viburnum ellipticum</i> | oval-leaved viburnum | 2B.3    | May-Jun         | Chaparral, cismontane woodland, and lower montane coniferous forest at elevations of 705-4,595 ft. | <b>Not Expected.</b> Potentially suitable habitat is minimally present within the BSA. The only record within 5-mile of the BSA occurs at Briones Regional Park. Elevations in the BSA are lower than at reported occurrences. |

**California Rare Plant Rank (CRPR) Designation:** (1A) Presumed extinct in California; (1B) Rare, threatened, or endangered in California and elsewhere; (2) Rare, threatened, or endangered in California, but more common elsewhere; (3) More information is needed; (4) Limited distribution, watch list. **Threat Ranks:** 0.1 Seriously threatened in California (more than 80% of occurrences threatened / high degree and immediacy of threat); 0.2 Fairly threatened in California (20 to 80% occurrences threatened / moderate degree and immediacy of threat); 0.3 Not very threatened in California (less than 20% of occurrences threatened / low degree and immediacy of threat or no current threats known).

Table 3. Special-Status Animal Species with Potential to Occur in the BSA

| Scientific Name                   | Common Name                   | USFWS <sup>a</sup> /<br>CDFW <sup>b</sup> | General Habitat   | Potential to Occur   |
|-----------------------------------|-------------------------------|---|---|--|
| <b>Invertebrates</b>              |                               |   |   |  |
| <i>Bombus occidentalis</i>        | western bumble bee            | —/SC                                      | Wet/moist meadows with abundant floral resources, roadside areas, and other areas containing forage species preferred by bumble bees (USFS 2018).   | <b>Not Expected.</b> Current California populations are mostly restricted to high elevation sites in the Sierra Nevada, with only a few observations of the species on the northern California coast (Xerces Society 2008). May occur in grassland and scrub areas and forest openings. Not expected in low-diversity eucalyptus groves and annual grasslands.   |
| <i>Branchinecta conservation</i>  | conservancy fairy shrimp      | FE/—                                      | Ephemeral freshwater and playa pools in the Central Valley and the San Francisco Bay Area   | <b>Not Expected.</b> The BSA is outside the species' known range.  |
| <i>Branchinecta lynchi</i>        | vernal pool fairy shrimp      | FT/—                                      | Vernal pools and ditches in the Central Valley.   | <b>Not Expected.</b> No suitable vernal pool habitat is present, and the BSA is outside the species' range.  |
| <i>Callophrys mossii bayensis</i> | San Bruno elfin butterfly     | FE/—                                      | Rocky outcrops and cliffs in coastal scrub on the San Francisco Peninsula. Host plant is <i>Sedum spathulifolium</i> .  | <b>Not Expected.</b> The BSA is outside of species' known range.   |
| <i>Danaus plexippus</i>           | monarch butterfly             | FC/—                                      | Requires milkweed for larval host plant, and late-blooming plants for adult nectar during migration. Overwinters in dense groves of trees, usually eucalyptus, pine, and cypress. Requires very specific microclimatic conditions at overwintering sites, including dappled sunlight, high humidity, fresh water, and an absence of freezing temperatures and high winds. | <b>Not Expected (overwintering).</b> While potentially suitable habitat is present in eucalyptus woodlands, overwintering monarchs are not known to occur in the BSA. The nearest known active overwintering site occurs 8.8 miles northwest of the BSA, on Mare Island. Within Contra Costa County, only two overwintering locations are known, of which only one is known to be active (Xerces Society 2016). The active overwintering site occurs at Point Pinole, eleven miles southwest of the BSA. |
| <i>Speyeria callippe callippe</i> | Callippe silverspot butterfly | FE/—                                      | Grasslands supporting its host plant, <i>Viola pedunculata</i> . Uses a variety of nectar plant species found in grassland and coastal scrub communities, with ridgelines and hilltops forming an important habitat component.  | <b>Not Expected.</b> While the species historically occurred in the grasslands of Contra Costa County, it is no longer extant in the County. Since the late 1980s, the species has only been recorded in San Mateo, Alameda, and Sonoma Counties. Further, the species' larval host plant was not observed in the BSA during reconnaissance surveys.   |

| Scientific Name                    | Common Name                  | USFWS <sup>a</sup> /<br>CDFW <sup>b</sup> | General Habitat  | Potential to Occur   |
|------------------------------------|------------------------------|---|--|--|
| <i>Syncaris pacifica</i>           | California freshwater shrimp | FE/SE                                     | Low gradient streams with moderate to heavy riparian cover. Occasionally in isolated pools of minimal cover when water levels are low. Endemic to Marin, Napa and Sonoma Counties. | <b>Not Expected.</b> No suitable perennial stream habitat is present, and the BSA is outside the species' range.   |
| <b>Fish</b>                        |                              |   |  |  |
| <i>Archoplites interruptus</i>     | Sacramento perch             | —/SSC                                     | Found mostly in alkaline lakes, reservoirs, and farm ponds. Often associated with submerged vegetation or other objects in the nearshore area of warm water lakes and ponds.       | <b>Not Expected.</b> No suitable aquatic habitat is present in the BSA.  |
| <i>Hypomesus transpacificus</i>    | Delta smelt                  | FT/SE                                     | Shallow tidal waters of the Sacramento and San Joaquin River Delta.  | <b>Not Expected.</b> No suitable tidal aquatic habitat is present in the BSA, and the BSA is outside the species' range.   |
| <i>Pogonichthys macrolepidotus</i> | Sacramento splittail         | —/SSC                                     | Confined to the Delta, Suisun Bay and associated marshes, slow moving rivers sections, and dead-end sloughs. Requires flooded vegetation for spawning and foraging for young.      | <b>Not Expected.</b> No suitable aquatic habitat is present in the BSA.  |
| <i>Spirinchus thaleichthys</i>     | longfin smelt                | FC/ST                                     | Spawns in fresh water in the upper end of the San Francisco Bay; occurs year-round in the Suisun Bay.  | <b>Not Expected.</b> No suitable aquatic habitat is present in the BSA.  |
| <b>Amphibians</b>                  |                              |   |  |  |
| <i>Ambystoma californiense</i>     | California tiger salamander  | FT/ST                                     | Breeds in vernal pools and seasonal wetlands; uses small mammal burrows in suitable uplands during the dry season.   | <b>Not Expected.</b> The only record of the species in 5-miles of the BSA dates from 1920 and is believed to be extirpated (CNDDDB 2020). Further, the BSA is outside of the known range of the species (California Herps 2020). |



| Scientific Name         | Common Name   | USFWS <sup>a</sup> /<br>CDFW <sup>b</sup> | General Habitat   | Potential to Occur  |
|-------------------------|---|---|---|---|
| <i>Rana boylei</i>      | foothill yellow-legged frog<br>West/Central Coast Clade | —/SE                                      | Rocky streams in open areas with riffles and cobble-sized stones in coast ranges  | <b>Not Expected.</b> No suitable breeding habitat occurs in the BSA, as streams in this area lack the riffles and cobble-sized stones preferred by the species. The only observation of the species within 5-miles of the BSA dates from 1939 and is believed to be extirpated (CNDDDB 2020). Further, foothill yellow-legged frogs are likely absent from Contra Costa County, as eight of the nine CNDDDB records from the county are museum specimens collected between 1891 and 1953 and the most recent observation is of dubious veracity (Bonham 2019). Suitable dispersal habitat may be present in the BSA, but given the rarity of the species in Contra Costa County, ephemeral nature of the streams and wetlands, and lack of suitable breeding habitat in the BSA, the species is not expected to occur in the BSA. |
| <i>Rana draytonii</i>   | California red-legged frog                              | FT/SSC                                    | Lowlands and foothills in or near permanent sources of deep water with dense, shrubby or emergent riparian vegetation. Requires 11 to 20 weeks of permanent water for larval development and must have access to upland habitat.  | <b>Low.</b> Aquatic habitat in the BSA would provide marginal or low-quality breeding habitat as they are shallow, narrow, sparsely vegetated, and typically dry by July. Although CNDDDB records of red-legged frogs occur within 5-miles of the BSA, no records are present within two miles of the BSA which is near the maximum distance that frogs can disperse from breeding sites during a single season (USFWS 2010). No suitable habitat occurs north or east of the BSA due to the presence of tidal salt marsh and dense urban development therefore it is unlikely that frogs would move through the BSA from open space areas to the south or west. Further, the location of the wetlands in the BSA near urban development greatly increases the likelihood for red-legged frog predator species to occur.          |
| <b>Reptiles</b>         |   |   |   |   |
| <i>Anniella pulchra</i> | northern California legless lizard                      | —/SSC                                     | Sparsely vegetated areas of beach dunes, chaparral, pine-oak woodlands, desert scrub, sandy washes, and stream terraces with sycamores, cottonwoods, or oaks. Requires loose soils that are warm and moist. Typically found under surface objects such as rocks, boards, driftwood, and logs. | <b>Not Expected.</b> The BSA is outside of the species' range (California Herps 2020).  |

| Scientific Name                          | Common Name                         | USFWS <sup>a</sup> /<br>CDFW <sup>b</sup> | General Habitat  | Potential to Occur  |
|--|-------------------------------------|---|--|---|
| <i>Emys marmorata</i>                    | western pond turtle                 | —/SSC                                     | Permanent and intermittent freshwater aquatic habitats including rivers, streams, lakes, ponds, marshes, and vernal pools. Prefers habitats with abundant basking sites, underwater refugia, and standing or slow moving water. Nesting sites are on sandy banks and bars or in fields or sunny spots up to a few hundred meters from water. | <b>Not Expected.</b> Wetland habitat in the BSA is shallow, lacks underwater refugia and basking sites, and occurs adjacent to highly disturbed urban development. Further, wetlands in the BSA are not connected to suitable stream or pool habitat. Thus, the species is not expected to occur in the BSA.  |
| <i>Masticophis lateralis euryxanthus</i> | Alameda whipsnake (= striped racer) | FT/ST                                     | Chaparral, northern coastal sage scrub, coastal sage, and grassland communities.   | <b>Low.</b> Scrub habitat in and adjacent to the BSA is limited in extent, highly fragmented, and surrounded by oak and eucalyptus woodland. All observations of the species in the vicinity of the BSA occur south of State Route 4, with the nearest located approximately 2.4 miles south of the BSA. Although patches of scrub habitat large enough to support the Alameda whipsnake are present within about 0.5-mile of the BSA, larger areas containing high-quality habitat are separated from the BSA by State Route 4 which poses at least a partial barrier to movement for the species. Due to the limited availability and isolated nature of the suitable habitat in the BSA and the presence of movement barriers between the BSA and core habitat containing records of the species, the Alameda whipsnake has a low potential to occur in the BSA. |
| <i>Thamnophis gigas</i>                  | giant garter snake                  | FT/ST                                     | Associated with aquatic habitats. Often occurs in or near agricultural wetlands and other waterways such as irrigation and drainage canals; sloughs; ponds; small lakes; lowgradient streams; rice fields; freshwater marshes; and adjacent uplands in the Sacramento and Central Valleys.   | <b>Not Expected.</b> The BSA is outside of the species' range and suitable habitat is absent.   |
| <b>Birds</b>                             |                                     |   |  |   |

| Scientific Name           | Common Name          | USFWS <sup>a</sup> /<br>CDFW <sup>b</sup> | General Habitat  | Potential to Occur   |
|---------------------------|----------------------|---|--|--|
| <i>Agelaius tricolor</i>  | tricolored blackbird | —/ST                                      | Nests colonially in extensive emergent vegetation and agricultural fields. Within agricultural fields, closely associated with stands of triticale and Himalayan blackberry ( <i>Rubus armeniacus</i> )  | <b>Not Expected (nesting).</b> Dense emergent habitat sufficient to support a nesting colony of tricolored blackbirds is absent from the BSA. Limited foraging habitat for this species occurs in the wetlands bordering the railroad tracks. Tidal marshes located north of the BSA may provide suitable foraging habitat for wintering birds; however, the species has not been observed either as a forager or breeder in these marshes (Mount Diablo Audubon Society 2009, eBird 2020). Only two breeding records occur within 5-miles of the BSA. The nearest occurrence is located 1.4 miles east of the BSA, at sewage treatment ponds. This location was abandoned after tule removal in the 1980s. The second record occurs 4.9 miles north of the BSA, across the Carquinez Straights, at Lake Herman. |
| <i>Aquila chrysaetos</i>  | golden eagle         | —/FP                                      | Avoiding developed areas, they are found in open areas of native vegetation, mountains up to 12,000 feet, canyonlands, rimrock terrain, and riverside cliffs and bluffs. Nest in large trees in oak savannah, and on cliffs and steep escarpments in chaparral, forest, and other vegetated areas. | <b>Not Expected (nesting).</b> High quality nesting habitat for golden eagles includes large trees located near extensive open grasslands where small-medium mammal prey, particularly ground squirrels, are abundant. Suitably large trees are present in the BSA; however, the BSA is not located near the extensive grasslands the species prefers, and no ground squirrel colonies were observed in the BSA. Further, there is no record of golden eagle nesting in or near the BSA (Mount Diablo Audubon Society 2009); golden eagles exhibit nest site fidelity and often return to the same nest sites. The potential for a pair of eagles to nest in or near the BSA is therefore considered unlikely.   |
| <i>Asio flammeus</i>      | short-eared owl      | —/SSC                                     | Occupies a variety of open habitats with sufficient rodent prey concentrations. Nests on dry ground in open areas with dense herbaceous cover. May occur in salt and freshwater marshes, grasslands, agricultural fields, and pastures.  | <b>Not Expected (nesting).</b> Suitable open marsh or grassland habitat is absent from the BSA. Marshes north of the BSA may provide breeding and foraging habitat, but the species is not expected to occur in the BSA except as a transient.   |
| <i>Athene cunicularia</i> | burrowing owl        | —/SSC                                     | Open arid and semiarid grassland, agricultural, and ruderal habitats where ground squirrel or other burrows are present.   | <b>Not Expected.</b> No suitably open grassland habitat occurs in the BSA, and no ground squirrel colonies or other burrows were observed during surveys.  |

| Scientific Name                   | Common Name               | USFWS <sup>a</sup> /<br>CDFW <sup>b</sup> | General Habitat   | Potential to Occur   |
|-----------------------------------|---------------------------|---|---|--|
| <i>Charadrius nivosus nivosus</i> | western snowy plover      | FT/SSC (nesting)                          | Breeds above the high tide line on coastal beaches, sand spits, dune-backed beaches, sparsely vegetated dunes, beaches at creek and river mouths, and salt pans at lagoons and estuaries. Less common nesting habitat includes bluff-backed beaches, dredged material disposal sites, salt pond levees, dry salt ponds, and river bars. | <b>Not Expected (nesting).</b> No suitable beach habitat is present in the BSA.  |
| <i>Circus hudsonius</i>           | northern harrier          | —/SSC (nesting)                           | Occurs in sloughs; wet meadows; marshlands; swamps; prairies; plains; grasslands; shrublands; large forest openings; or low woody or herbaceous vegetation. Nests on the ground in dense clumps of vegetation, such as grasses or rushes.   | <b>Not Expected (nesting).</b> Suitable open grassland or marsh nesting habitat is absent from the BSA. Individuals may occasionally forage in grasslands and marsh habitat near the BSA.  |
| <i>Coturnicops noveboracensis</i> | yellow rail               | —/SSC                                     | Sedge marshes and meadows with moist soil or shallow standing water and densely vegetated montane sedges.   | <b>Not Expected (nesting).</b> The BSA is outside of the known breeding range of the species. Considered an extremely rare winter visitor in the San Francisco Bay region, with single birds occasionally observed in the Suisun Marsh (Heath 2008).   |
| <i>Elanus leucurus</i>            | white-tailed kite         | —/FP                                      | Nests in tall shrubs and trees, forages in grasslands, marshes, and ruderal habitats.   | <b>Low (nesting).</b> White-tailed kites have frequently been observed in marsh habitats north of the BSA (eBird 2020), however large isolated trees or shrubs suitable for kite nesting are absent from the BSA, and the species has not been recorded breeding in the vicinity (Mt. Diablo Audubon Society 2009). A lack of isolated trees surrounded by open foraging habitat, combined with high levels of human disturbance associated with park trails and railroads limit nesting opportunities for the species in this area. |
| <i>Falco peregrinus anatum</i>    | American peregrine falcon | —/FP                                      | Nests near water on ledges of rocky cliffs or buildings. Also found along rivers and coastlines or in cities/urban areas.   | <b>Not Expected (nesting).</b> No suitable cliff habitat or tall buildings are present in the BSA. The nearest known nesting records are located on the Carquinez Bridge and the Mare Island Bridge (Napa-Solano Audubon Society 2014). While individuals may occasionally forage in the vicinity, they are not expected to breed in or near the BSA.  |

| Scientific Name                   | Common Name                       | USFWS <sup>a</sup> /<br>CDFW <sup>b</sup> | General Habitat   | Potential to Occur  |
|-----------------------------------|-----------------------------------|---|---|---|
| <i>Geothlypis trichas sinuosa</i> | San Francisco common yellowthroat | —/SSC (nesting)                           | Nests in herbaceous vegetation in densely vegetated brackish and freshwater marshes, moist floodplains, and woody swamps.   | <b>Low (nesting).</b> The nearest known breeding records of the species are located in extensive tidal marshes 2.1 miles east of the BSA. High quality nesting habitat in the form of dense marsh vegetation occurs north of the BSA in the Martinez Regional Shoreline Park, and the species is frequently observed there in the breeding season (eBird 2020). Records of common yellowthroats breeding outside of marsh habitats in the Bay Area are typically associated with dense herbaceous cover contiguous with marsh habitat. Because riparian habitat and dense herbaceous cover are limited, and the BSA is not contiguous with marsh habitat, the species has a low chance of nesting in the BSA. |
| <i>Haliaeetus leucocephalus</i>   | bald eagle                        | D/SE, FP                                  | Breeding habitats are mainly in mountain and foothill forests and woodlands near reservoirs, lakes, and rivers. Most breeding territories are in northern California. | <b>Not Expected (nesting).</b> The only known nesting account in Contra Costa County is located at San Pablo Reservoir. This was the first known bald eagle nest for the County, and the species was not known to breed in the County prior to this account (Grinnell and Miller 1927, Mt. Diablo Audubon Society 2009). Trees in the BSA are large enough to support bald eagle nesting; however, the species prefers to nest near large bodies of fresh water, such as lakes or reservoirs, and none are present in or near the BSA.  |
| <i>Icteria virens</i>             | yellow-breasted chat              | —/SSC (nesting)                           | Nests in dense stands of willow and other riparian habitat.   | <b>Not Expected (nesting).</b> No breeding records of the yellow-breasted chat are known from the vicinity and the species is a very rare breeder in the County, with records occurring only in the County's far northeastern corner (Mount Diablo Audubon Society 2009). Historically, the species is only known to occur as far west as the center of the County. Suitably dense stands of riparian habitat are not present in the BSA. Therefore, the species is not expected to occur in the BSA.   |

| Scientific Name                            | Common Name               | USFWS <sup>a</sup> /<br>CDFW <sup>b</sup> | General Habitat  | Potential to Occur  |
|--|---------------------------|---|--|---|
| <i>Laterallus jamaicensis coturniculus</i> | California black rail     | ST/FP                                     | Salt marshes of San Francisco Bay and Suisun Marsh, and some freshwater inland marshes of the Sacramento Bay-Delta.  | <b>Not Expected.</b> The limited extent and sparse vegetation of the wetlands in the BSA are not suitable habitat for the species. The nearest records of black rails occur in marshes 0.6 miles northeast of the BSA (CDFW 2020) and rails have also been heard calling in the restored portions of the tidal marshes about 500 feet north of the BSA (Jaramillo 2015). However, heavily traveled railroad tracks and developed areas separate the BSA from suitable habitat to the north. Therefore, project activities are not expected to affect the species, either directly or indirectly.  |
| <i>Melospiza melodia maxillaris</i>        | Suisun song sparrow       | —/SSC                                     | Permanent resident of tidal salt marshes of Suisun Bay. Forages and nests in emergent vegetation. The Suisun subspecies occurs along the shores of Suisun Bay from Martinez eastward.  | <b>Low (nesting).</b> The BSA is located within the range of the Suisun song sparrow, and individuals were heard singing in marshes immediately north of the BSA during reconnaissance surveys. Breeding individuals have been recorded in tidal marshes north of the BSA (eBird 2020, CDFW 2020). Riparian habitat in Segment 2 of the BSA supports shrub and herbaceous vegetation suitable to Suisun song sparrow nesting. However, the narrow extent of riparian habitat, proximity to high levels of disturbance associated with the railroad, and the availability of high-quality habitat nearby limit the likelihood that the species will nest in the BSA. |
| <i>Melospiza melodia samuelis</i>          | San Pablo song sparrow    | —/SSC                                     | Permanent resident of tidal salt marshes of the San Pablo Bay. Forages and nests in emergent vegetation. The San Pablo subspecies occurs in salt marshes along the shores of San Pablo Bay, including Richmond and Pinole, southeast to Point San Pablo. | <b>Not Expected (nesting).</b> The BSA is outside of the known range of the subspecies. Song sparrows occurring in the BSA are assumed to be the Suisun subspecies.   |
| <i>Rallus obsoletus obsoletus</i>          | California Ridgway's rail | FE/SE,FP                                  | Salt and brackish marshes of San Francisco Bay.  | <b>Not Expected (nesting).</b> No suitable salt or brackish marsh habitat occurs in the BSA. The nearest records of Ridgway's rails occur in marshes 0.6 miles northeast of the BSA (CDFW 2020) and the species has been observed in the restored tidal marshes at Martinez Regional Shoreline, about 500 feet north of the BSA (Jaramillo 2015). However, heavily traveled railroad tracks and developed areas separate the BSA from suitable habitat to the north. Therefore, project activities are not expected to affect the species, either directly or indirectly.   |

| Scientific Name                 | Common Name           | USFWS <sup>a</sup> /<br>CDFW <sup>b</sup> | General Habitat  | Potential to Occur   |
|---------------------------------|-----------------------|---|--|--|
| <i>Setophaga petechia</i>       | yellow warbler        | —/SSC                                     | Nests in riparian habitat with a mature overstory of cottonwood and sycamore, a midstory of box elder and willow and a dense understory of vines, blackberries and forbs.  | <b>Not Expected (nesting).</b> The species typically nests in riparian corridors with a mature overstory and dense understory. Yellow warblers are generally absent from riparian zones that are limited, discontinuous, or lacking sufficient understory cover (Santa Clara Valley Audubon Society 2007). Willow riparian habitat in the BSA lacks the complexity preferred by the species, is limited in extent, and subject to high levels of disturbance associated with railroad operations. Further, the species has only rarely been observed breeding in the County and known nesting records occur more than five miles from the BSA at Tilden Regional Park and the San Pablo Reservoir (Mount Diablo Audubon Society 2009). It is therefore not expected that the species will nest in the BSA. |
| <i>Sterna antillarum browni</i> | California least tern | FE/SE (nesting colony)                    | Nests on barren and sparsely vegetated sandy or gravelly substrate within marine and estuarine shores and abandoned salt ponds. Nesting colonies placed in areas of low human and predatory disturbance.   | <b>Not Expected (nesting).</b> No suitably barren shoreline habitat is present in the BSA. No nesting colonies have been recorded in the vicinity (CDFW 2020).   |
| <b>Mammals</b>                  |                       |   |  |  |
| <i>Antrozous pallidus</i>       | Pallid bat            | —/SSC                                     | Regionally found in low elevation arid or semi-arid areas near water. Their day roost is often in a warm horizontal opening (e.g. rock cracks, attics); the night roost is often in the open, near foliage; and the hibernation roost is often in buildings, caves, or cracks in rocks.                        | <b>Low.</b> The pedestrian bridge in the BSA lacks crevices or other structures that retain heat and provides only low-quality night roost habitat for the species. Eucalyptus with exfoliating bark, cracks, and crevices provide suitable roost habitat for pallid bats. Small numbers of bats may utilize tree roost habitat in the BSA. No documented occurrences are present within 5 miles (CDFW 2020).  |
| <i>Lasiurus blossevillii</i>    | western red bat       | —/SSC                                     | Typically solitary, roosting primarily in the foliage of trees or shrubs. Day roosts are commonly in edge habitats adjacent to streams or open fields, in orchards, and sometimes in urban areas. There may be an association with intact riparian habitat (particularly willows, cottonwoods, and sycamores). | <b>Low.</b> Suitable roosting habitat occurs in the BSA where dense foliage clusters are present in woodland habitat. No documented occurrences are present within 5 miles (CDFW 2020).  |

| Scientific Name                    | Common Name                        | USFWS <sup>a</sup> /<br>CDFW <sup>b</sup> | General Habitat  | Potential to Occur   |
|------------------------------------|------------------------------------|---|--|--|
| <i>Neotoma fuscipes annectens</i>  | San Francisco dusky-footed woodrat | —/SSC                                     | Builds large stick nests in a variety of habitats, including riparian areas, oak woodlands, and scrub.   | <b>Low.</b> Suitable habitat occurs throughout the BSA in riparian oak woodland, willow riparian, and scrub habitats. Reconnaissance-level surveys did not detect any woodrat nests in the BSA, however the presence of dense stands of poison oak and blackberry may have concealed nests. Due to the availability of moderate quality habitat throughout the BSA, and the limitations of the survey, there is a low probability that the species may occur in the BSA. |
| <i>Nyctinomops macrotis</i>        | Big free-tailed bat                | —/SSC                                     | Roosts in desert and arid grassland areas where rocky out-crops, canyons, or cliffs provide ideal roosts. Occasionally in buildings.   | <b>Not Expected.</b> No suitable arid, rocky habitat is present in the BSA and the species' range does not include northern California. Observations in the project vicinity are considered vagrants or extralimital records. The only documented occurrence within 5-miles dates from a 1979 museum specimen whose locality was vaguely recorded as "Martinez".   |
| <i>Reithrodontomys raviventris</i> | Salt marsh harvest mouse           | FE/SE                                     | Salt and brackish marshes of San Francisco Bay. Primary habitat dominated by pickleweed ( <i>Salicornia pacifica</i> ), with adjacent upland grasslands providing refugia during flooding.             | <b>Not Expected.</b> The species has been recorded throughout marshes east of I-680, and potentially suitable marsh habitat is available north of the BSA at the Martinez Regional Shoreline. The BSA lacks suitable marsh habitat and is separated from nearby marshes by heavily traveled railroad tracks. The species' dependence on cover to escape predation, combined with the heavy use of the railroad tracks prevent it from occurring in the BSA.              |
| <i>Sorex ornatus sinuosus</i>      | Suisun shrew                       | —/SSC                                     | Salt and brackish marshes along the north shore of San Pablo and Suisun Bays. Prefers areas of low, dense vegetation contiguous with vegetated uplands that provide refugia during high tides.         | <b>Not Expected.</b> No suitable marsh habitat is present on site and the BSA is outside the known distribution of the species.  |
| <i>Taxidea taxus</i>               | American badger                    | —/SSC                                     | Permanent resident found throughout most of the state, except in the northern North Coast area. Most abundant in drier open stages of most shrub, forest, and herbaceous habitats, with friable soils. | <b>Not Expected.</b> No suitably extensive grassland habitat is present in the BSA.  |

Key to Abbreviations:

Status: Federally Endangered (FE); Federally Threatened (FT); Federal Candidate (FC); Federally Delisted (D); State Endangered (SE); State Threatened (ST); State Candidate (SC); State Fully Protected (SP); California Species of Special Concern (CSSC).



### 5.3.1 Federal and State Endangered and Threatened Species

#### 5.3.1.1 California Red-legged Frog (*Rana draytonii*)

The California red-legged frog is federally listed as threatened and is also considered a Species of Special Concern by the CDFW (USFWS 1996; CDFW 2019f). Critical habitat was designated for the species in 2010 (USFWS 2010).

The California red-legged frog is the largest native frog in the western United States (Wright and Wright 1949) and can range from 1.75 to 5.25 inches in length (Stebbins 2003). Its back is typically brown, gray, olive, or reddish brown with prominent dorsolateral folds and many small black flecks around whitish centers (Stebbins 2003). Larvae are dark brown and yellow with darker spotting and range from 0.6 to 3.1 inches in length (Storer 1925). Historically, the range of the California red-legged frog extended from along the California coast near Elk Creek in Mendocino County and inland from around Redding in Shasta County, south to Baja California (Jennings and Hayes 1985; Hayes and Krempels 1986). Although California red-legged frogs are still locally abundant in portions of the Central Coast and San Francisco Bay Area, their current range has been reduced by an estimated 70 percent from its former extent within California (USFWS 2002).

The California red-legged frog uses a variety of habitat types, including aquatic, riparian and upland areas. It predominantly inhabits permanent and semi-permanent water bodies including ponds, streams, and wetlands, but also occurs in seasonal creeks and drainages. Breeding habitat consists of wetlands, ponds, and other still or slow-moving aquatic habitat including as backwaters of streams and creeks. Other aquatic habitats including pools in intermittent creeks, seeps, and springs may provide shelter, predator avoidance, foraging opportunities, and aquatic dispersal habitat. During summer months California red-legged frogs may take refuge in cool, moist areas including pools in stream channels, exposed roots, dense vegetation, rodent burrows, and soil crevices near breeding sites during times when water is not available. Upland and dispersal habitat can include grassland, forest, riparian areas, and agricultural fields (USFWS 2010).

The BSA is located outside of designated critical habitat for the California red-legged frog (USFWS 2010). Seven records of red-legged frogs occur within 5-miles of the BSA. The nearest recorded observation of the California red-legged frog was an unknown number of individuals observed in 2000 at a pond adjacent to the former Port Costa Brick Company, 2.2 miles northwest of the BSA (CDFW 2020). The second observation was of six frogs observed in 1998 in Telephone Creek, immediately north of State Route 4, 4.4 miles southwest of the BSA. This location is connected, via an underpass of State Route 4, to Rodeo Creek, where breeding red-legged frogs were documented in the early 2000s (CDFW 2020).

The wetlands located in the BSA near the railroad tracks provide marginal or extremely low-quality breeding habitat for the California red-legged frog. Red-legged frog breeding sites are normally associated with relatively deep (greater than 2 feet) fresh water with shrubby or emergent riparian vegetation (Hayes and Jennings 1988), and hold water for a minimum of 20 weeks in all but the driest of years (USFWS 2010). Larvae typically metamorphose between July and September (USFWS 2002). The wetlands in the BSA typically dry by July (Bobzien 2003), and during the May field survey they contained water less than two feet deep. Emergent vegetation within the wetlands and edge cover were sparse during the field survey. The relatively narrow width of the wetlands (less than six feet across in most areas) and their proximity to developments which promote the presence of urban adapted predators, such as striped skunks (*Mephitis mephitis*), possums, and raccoons would make any California red-legged frogs or their eggs highly

susceptible to predation. Areas containing deep water or dense aquatic vegetation that would allow frogs to escape from predators were absent. The ephemeral creek within the BSA is dry most of the year, and characteristics associated with red-legged frog presence, including dense vegetation, undercut banks, and exposed roots, were absent from the creek.

A small number of ponds that may be suitable to support breeding occur within about one mile of the BSA, which is reflective of the average dispersal distance for the species, although frogs are capable of moving distances of up to two miles (Bulger, et al 2003, USFWS 2010). Historic aerial imagery indicates that some of these ponds maintain sufficient hydroperiods to support breeding red-legged frogs, although most do so only in particularly wet years (Google Earth 2020). All ponds within potential dispersal distance are located to the south and west of the BSA, within open space areas which are contiguous with the BSA. No suitable habitat for red-legged frogs occurs north or east of the BSA, due to the presence of tidal salt marsh and dense urban development.

Due to the marginal nature of the habitat onsite and the distance to known occurrences, the California red-legged frog has a low potential to occur the BSA. They are most likely to occur in the BSA during rain events and periods of wet weather when frogs tend to make overland movements away from breeding ponds and aquatic non-breeding habitats. If present, frogs would be most likely to use the wetlands, drainage ditches, and nearby leaf litter and dense vegetation. During the summer months, California red-legged frogs are less likely to occur in the BSA.

### **5.3.1.2 Alameda Whipsnake (=Striped Racer) (*Masticophis lateralis euryxanthus*)**

The Alameda whipsnake (*Masticophis lateralis euryxanthus*, AWS) is listed as threatened under the ESA and CESA (USFWS 1997, CDFW 2019). Management Units, including Recovery Units and Critical Habitat Units, have been designated for the whipsnake (USFWS 2002b, 2006).

The Alameda whipsnake inhabits portions of Alameda and Contra Costa Counties (Jennings 1983; USFWS 2005c; Stebbins and McGinnis 2012; Richmond et al. 2016) and was first described as a subspecies by Riemer (1954) from individuals found in the Berkeley Hills. The primary cause of the decline of the Alameda whipsnake is the loss of habitat from human activities, and the alteration of suitable habitat from permanent loss as well as succession to oak bay woodland in the absence of natural disturbance and fire regimes (USFWS 2005c, 2011). Urban development and associated highway and road development have potentially fragmented and/or reduced the connectivity between metapopulations of this species. The loss of habitat to non-native invasive tree and shrub species represent one of the primary threats to the Alameda whipsnake (USFWS 2011). Eucalyptus and other non-native trees, and broom often degrade and displace suitable AWS habitat on a landscape scale (USFWS 2002b, 2006, 2011).

The Alameda whipsnake is most closely associated with scrub and chaparral communities, but also uses adjacent habitats, including grasslands, open woodlands, woodland edges, and open riparian scrub (Stebbins 2003; Swaim 1994; USFWS 2005c). Telemetry data (Swaim 1994) showed that home ranges of Alameda whipsnakes were centered on coastal scrub communities and that their home ranges included a mosaic of scrub/woodland/grassland habitats. Within their home ranges whipsnakes have areas of concentrated use which can include spatial and temporal overlap of multiple whipsnakes (Swaim 1994). Swaim (1994) called these areas of concentrated use by multiple AWS “core areas” and called habitat in these areas of overlap and concentrated use “core type habitat”. The microhabitat in core areas consisted of scrub and to a lesser degree, immediately adjacent grassland, with aspects ranging from northeast, southeast, south, or southwest facing slopes.

Alameda whipsnake prey on lizards, other snakes, frogs, and birds (Stebbins 1985 2003; Swaim 1994; Shafer and Hein 2005) with fence lizards being a primary prey species (Stebbins 1985, 2003; Swaim 1994). Rock outcrops within and in very close proximity to scrub and chaparral likely enhance the habitat for AWS because they provide secure cover and promote abundant lizard populations (Swaim 1994). However, rock outcrops are not present at all study areas where whipsnakes have been documented. Trapping surveys have documented breeding populations of AWS in scrub patches as small as ½ acre, when the patch occurs on core type aspects embedded in grassland /open woodland mosaic with other patches of scrub of similar or larger size nearby (Swaim Biological, Inc. [SBI] 2011).

The BSA is not located within designated critical habitat for the Alameda whipsnake (USFWS 2006). The CNDDDB contains 12 recorded observations of the Alameda whipsnake within five miles, and the nearest records are located less than four miles from the BSA on property owned by the John Muir National Historic Site and Muir Heritage Trust (CDFW 2020). Other nearby occurrences include records from the Franklin Canyon area and the hills west of Alhambra Avenue (CDFW 2020). All of the records of the whipsnake within 5 miles of the BSA are located on the south side of State Route 4 which would pose at least a partial barrier to movement. Although no records are present north of State Route 4, suitable habitat including patches of scrub with adjacent grassland and woodlands are visible on aerial imagery within about 0.5-mile of the BSA. Within the BSA, high quality habitat consisting of scrub or chaparral with rock outcrops is absent and the eucalyptus woodland, seasonal wetlands, and ruderal habitats that comprise a large portion of the BSA generally provide low quality Alameda whipsnake habitat. The small amounts of scrub habitat in and adjacent to the BSA are limited in extent and highly fragmented, and no impacts to scrub habitat are anticipated from project activities. Due to the limited availability and isolated nature of the suitable habitat in the BSA as well as the presence of significant barriers to movement between the BSA and both core habitat and known records of the species, the Alameda whipsnake has a low potential to occur in the BSA.

### **5.3.1.3 California Ridgway's Rail (*Rallus obsoletus obsoletus*) and California Black Rail (*Laterallus jamaicensis coturniculus*)**

#### **California Ridgway's Rail**

The California Ridgway's rail, formerly the California clapper rail, is federally and State listed as endangered (USFWS 1970, CDFW 2019f). In addition, the species is fully protected under the California Fish and Game Code (Section 3511). Critical habitat for this species has not been proposed or designated.

One of the largest rail species, the California Ridgway's rail is a medium sized marsh bird with a compact body and short wings. Ridgway's rails are opportunistic predators of a variety of invertebrates, including crustaceans, aquatic insects, minnows, grasshoppers, small vertebrates, and seeds (Test 1942). California Ridgway's rails breed from mid-March through August, with peak nesting in late April to mid-May (Eddleman and Conway 2020). Nests are placed in dense marsh cover, often near the edges of tidal sloughs. The species' semiprecocial young leave the nest soon after hatching and follow parents on foraging bouts until independence at about 5 to 6 weeks of age (Eddleman and Conway 2020).

The California Ridgway's rail is endemic to the marshes of the San Francisco Bay. The subspecies once bred in coastal marshes in Humboldt, Monterey and San Luis Obispo Counties, but has been extirpated from all locations outside the San Francisco Bay (Harding-Smith 1993). This secretive species is found primarily in the intertidal zone and sloughs of brackish marshes dominated by pickleweed, Pacific cordgrass, marsh gumplant, saltgrass, and jaumea (*Jaumea carnosa*). Continuity of marsh habitat with upland refugia is an important habitat component, as upland habitats provide protection from predation during high tides.

Due to its secretive nature, nests and young of the species are rarely observed. Instead, breeding is often inferred in areas where the species is observed during the breeding season. Nesting extends from mid-March through early August, with peak activity in mid-May (Degroot 1927, Eddleman and Conway 2020). In Contra Costa County, Ridgway's rails have been observed in marshes east of the BSA during the breeding season. The nearest record of Ridgway's rail occurs 1.1 miles north-northeast of the BSA, in marshes east of the Martinez Marina (CDFW 2020). This occurrence is marked as a breeding record, likely because the individual was detected during the breeding season (CDFW 2020). Additional CNDDDB records, several during the breeding season, occur in the marshes of Suisun Bay, at Waterfront Park and the Point Edith Wildlife Area. North of the BSA, the species has been observed in the restored portions of the tidal marshes of the Martinez Regional Shoreline located west of Alhambra Creek (Jaramillo 2015).

### **California Black Rail**

The California black rail was State listed as threatened in 1971 and is fully protected under the California Fish and Game Code (Section 3511).

The California black rail is North America's smallest rail. Little is known about the species' diet, but it is presumed to be an opportunistic forager of crustaceans, insects, and seeds (Eddleman et al. 2020). Black rails breed from early March to July. Nests are concealed in clumps of vegetation, often pickleweed, near the upper limits of tidal inundation. Black rail young are semiprecocial and leave the nest within 24 hours of hatching (Eddleman et al. 2020). Time to independence is not known.

Black rails are most abundant in extensive tidal marshes with some freshwater input (Evens et al. 1991). They nest primarily in pickleweed-dominated marshes with patches or borders of bulrushes, often near the mouths of creeks. The California black rail occurs only in marshes and are most common in the extensive tidal marshes of the San Pablo Bay and associated rivers (Evans et al. 1991). As with the Ridgway's rail, the availability of upland refugial habitat contiguous with core marsh habitat is important for predation avoidance during marsh inundation.

More secretive than even the Ridgway's rail, black rails are more often heard than seen, and breeding is typically inferred from the presence of calling birds during the nesting season. Pair formation is thought to occur as early as late February (Eddleman et al. 2020) and nesting may continue through late July, with a peak in mid May (Flores and Eddleman 1993, Eddleman et al. 2020).

In Contra Costa County black rails have been observed in marshes east of the BSA during the breeding season. The nearest record for black rail occurs 1.1 miles north-northeast of the BSA, in marshes east of the Martinez Marina, where the species is presumed to be nesting (CDFW 2020). Additional breeding season records occur in the marshes of Suisun Bay, at Waterfront Park and the Point Edith Wildlife Area. North of the BSA, the species has been heard calling in the restored portions of the tidal marshes of the Martinez Regional Shoreline west of Alhambra Creek (Jaramillo 2015).

### **Potential for Rails to Occur in the BSA**

Although both the California Ridgway's rail and California black rail have been observed in the tidal marshes north of the BSA where estuarine and riverine wetlands were restored beginning in 2000, the restored portions of the marsh are located at least 500 feet from the BSA (CWMW 2020). Furthermore, the restored tidal marsh areas are separated from the BSA by the UPRR Ozol Terminal, and in some areas, by buildings and hardscape associated with the Martinez Pumping Station, Martinez Homing Pigeon Club, and other commercial and residential development. The BSA itself lacks suitable marsh habitat capable of supporting either species, and neither Ridgway's rails nor black rails are expected to occur in the BSA. Indirect

disturbance to rails from noise associated with construction activity is unlikely to occur both due to the distance between the BSA and the nearest tidal marsh habitat, and to the baseline level of disturbance associated with the railroad terminal where train cars and locomotives on long manifest trains are frequently rearranged and switched into smaller, individual trains ("UPRR Reducing Times" 2020). Other tidal and non-tidal marsh habitats north of the railroad tracks are also subject to disturbance from pedestrians and bicyclists along the trails at the Martinez Regional Shoreline. These factors make it unlikely for either Ridgway's or black rails to occur in the BSA, and for indirect effects on either species to occur.

### **5.3.2 California Species of Special Concern**

#### **5.3.2.1 San Francisco Common Yellowthroat (*Geothlypis trichas sinuosa*)**

The San Francisco common yellowthroat is considered a Species of Special Concern by CDFW. The San Francisco common yellowthroat is one of approximately 13 subspecies of the common yellowthroat in North America. Two subspecies may occur in the Martinez area, the protected *sinuosa* subspecies and the more common *arizela* subspecies. Specimens collected from Martinez in 1960 were identified as the *sinuosa* subspecies (Marshall and Dedrick 1993), and common yellowthroats nesting in the area are likely of the special-status *sinuosa* subspecies. Since subspecies cannot be reliably distinguished in the field, presence of the protected *sinuosa* subspecies is assumed based on presence within its known breeding range, which includes the marshes south of the Carquinez Strait and San Pablo Bay.

The San Francisco common yellowthroat is the smallest of this diminutive warbler species. Its breeding range remains largely unchanged from historical records, but loss of riparian and marsh habitat has greatly reduced the availability of suitable habitat within that range (Gardali and Evens 2008). The San Francisco common yellowthroat occurs year-round in the tidal marshes of the San Pablo Bay. It nests in brackish or freshwater marshes and woody swamps, typically on the boundaries between moist and upland habitats. In tidal marsh habitat, San Francisco common yellowthroats were most common in areas with a relatively high cover of rushes (*Scirpus* sp.), peppergrass (*Lepidium latifolium*) and *Juncus* (Gardali and Evens 2008). Open cup nests are built in dense, concealing vegetation, often near the ground in grasses, forbs, cattails, tules, and some shrubs (e.g. coyote brush). Nesting occurs from early March through late June (Mount Diablo Audubon Society 2009).

San Francisco common yellowthroats are common in the marshes near the BSA, with the nearest records occurring in the marshes immediately north of the BSA (eBird 2020) and in extensive tidal marshes 2.1 miles east of the BSA (CDFW 2020). No suitable tidal marsh habitat occurs in the BSA; however, stands of rushes interspersed with dense blackberry in the BSA may provide lower quality nesting habitat for the species. Nevertheless, the quality of this habitat is further reduced by its narrow extent, relatively low cover of rushes, proximity to high levels of disturbance, and separation from tidal marsh habitat. There is therefore a low likelihood of the subspecies foraging or nesting in the BSA.

#### **5.3.2.2 Suisun Song Sparrow (*Melospiza melodia maxillaris*)**

The Suisun song sparrow is considered a Species of Special Concern by CDFW. The Suisun song sparrow is one of three subspecies of song sparrow that breed only in salt marsh habitats of the San Francisco Bay Area (Spautz and Nur 2008). This subspecies occurs year-round in the tidal salt and brackish marshes of the Carquinez Strait and Suisun Bay, with the greatest densities estimated along the Martinez shoreline (Spautz and Nur 2008). High quality habitat for the Suisun song sparrow consists of large areas of tidal salt marsh with dense vegetation, some shrub cover (especially gumplant and coyote brush), and adjacent upland

habitat (Spautz et al 2006). Nesting begins in mid March and continues through mid August (Mount Diablo Audubon Society 2009). Nests are built in concealing vegetation with secure support for the nest. A variety of plant substrates may be used, including pickleweed, coyote brush, and garden plantings. Nests may be placed near the ground or as high as 12 feet in shrubs (Arcese et al. 2020).

The distribution of the Suisun song sparrow remains relatively unchanged from historical records; however, the availability of marsh habitat has substantially decreased (Spautz and Nur 2008). Suisun song sparrows are common in the marshes near the BSA, with the nearest records occurring in the marshes immediately north of the BSA (eBird 2020, CDFW 2020). Suisun song sparrows were also heard singing in marsh habitat north of the BSA during reconnaissance surveys. No suitable tidal marsh habitat occurs in the BSA; however, the species has been recorded nesting along the upland edges of large marshes, especially where shrubs are present. Riparian habitat in Segment 2 of the BSA supports shrub and herbaceous vegetation suitable to Suisun song sparrow nesting. However, the narrow extent of suitable nesting habitat, proximity to high levels of disturbance, separation from tidal marsh habitat, and the availability of high-quality habitat nearby limit the likelihood that the species will nest in the BSA. There is therefore a low likelihood of the species foraging or breeding in the BSA.

### **5.3.2.3 Pallid bat (*Antrozous pallidus*)**

The pallid bat is considered a Species of Special Concern by CDFW; it is not federally listed. Pallid bats are listed as a species of medium to high level of concern and in need of conservation action by the Western Bat Working Group.

Pallid bats occur in a variety of habitats in California, including low desert, oak woodland, and coastal redwood forests. In northern California, the species is typically associated with oak savannah habitat (Pierson and Rainey 1998). Pallid bat day-roosting habitat typically includes rocky outcrops, cliffs, large-diameter live and snag trees, and spacious crevices with access to open habitats for foraging. Pallid bats may also roost in caves, mines, bridges, barns, porches, bat boxes, stone piles, rags, baseboards, rocks, and on the ground. Day roosts are generally warm and out of reach from ground predators. Day roosts may consist of single- or mixed-sex colonies in crevices or man-made structures. Numbers of individuals in a day roost range from a few individuals to over a hundred (Barbour and Davis 1969). Breeding colonies are formed in the spring. Young are dependent on their mothers for at least six weeks and do not gain full independence until the fall, when colonies disperse (Pierson and Rainey 1998). Pallid bats are sensitive to disturbance at roost sites and may abandon a roost if repeatedly disturbed (Pierson and Rainey 1998).

Pallid bats have been documented using bridge structures for roosting and the pedestrian bridge structure in the BSA may provide low quality night roost habitat for a small number of bats. In addition, pallid bats may roost in the loose bark, leaves, and crevices of mature eucalyptus and oaks in the BSA. No cavities capable of supporting a large colony were observed in the BSA during reconnaissance surveys and no records of the species occur within 5-miles of the BSA (CDFW 2020). In general, pallid bats have a moderate likelihood to occur in relatively small numbers within suitable tree roost habitat observed within the BSA.

### **5.3.2.4 Western Red Bat (*Lasiurus blossevillii*)**

The western red bat is considered a Species of Special Concern by CDFW. It is not listed under FESA or CESA.

Western red bats can be found throughout California's lower elevations, with many records concentrated in the Central Valley. Like some bats found in California, western red bats make regional movements between their winter and maternity roosts seasonally. As a foliage roosting bat, the western red bat is

closely associated with well-developed riparian habitats but will also utilize other habitats (e.g. orchard trees, eucalyptus, tamarisk, etc.) that provide suitable dense clusters of leaves creating suitable roosting sites. Of note, this species has been observed roosting on the ground within leaf clutter. The western red bat is a solitary roosting bat that will often have two pups per year.

Dense foliage clusters observed in eucalyptus groves in the BSA provide potentially suitable western red bat roost habitat, though there are no western red bat records within 5 miles of the BSA. Western red bat roosts are small and consist of just one to a few individuals. Given the limited extent of the BSA, it is therefore unlikely to support many individuals of this solitary roosting bat. Based on the presence of potentially suitable roost habitat within and adjacent to the BSA, western red bats have a low likelihood to occur.

### **5.3.2.5 San Francisco Dusky-footed Woodrat (*Neotoma fuscipes annectens*)**

The San Francisco dusky-footed woodrat is one of 11 woodrat subspecies and is state protected as a California Species of Special Concern. It can be found throughout the San Francisco Bay Area within mixed coniferous forests and oak and riparian woodlands. It can be abundant in areas with dense shrub cover and is strongly associated with structurally complex habitats, such as riparian corridors. Woodrats are usually conspicuous where they occur due to their large stick-pile houses which they construct on the ground, in rocky outcrops, and in trees from sticks and other debris. Houses may be reused by successive generations and some can grow to be six feet or more in height, while others are well-hidden and easily overlooked. Houses are used for rearing young, protection from predators, resting, food storage, thermal protection, and social interaction (Vestal 1938). Each house is typically inhabited by one male or one female with young (Carraway and Verts 1991) but individuals may use multiple satellite houses within a home range. Dusky-footed woodrat houses are also used by a wide variety of native amphibians, small mammals, reptiles, and insects. Dusky-footed woodrats are mostly nocturnal. They forage in trees and on the ground for a wide variety of nuts, fruits, fungi, foliage, and some forbs (Linsdale and Tevis 1951). Reproduction typically occurs between September and December and between February and July, peaking in April and May.

No woodrat houses were observed during focused surveys conducted on May 12, 2020. However, due to the availability of moderate quality habitat throughout the BSA and presence of dense stands of poison oak and blackberry, there is a low probability that the species may occur in the BSA.

### **5.3.3 State Fully Protected Species**

#### **5.3.3.1 White-tailed Kite (*Elanus leucurus*)**

The white-tailed kite is a California Fully Protected species. The species is also protected under California Fish and Game Code, the MBTA, and as a "bird of prey" under the Raptor Recovery Act.

The white-tailed kite occurs in nearly all lowlands in California, except the southeast deserts. The core of the white-tailed kite's breeding range in the U.S. is California, with nearly all areas up to the western Sierra Nevada foothills and southeast deserts occupied (Dunk 1995). They require relatively open habitat for foraging, and trees (isolated or within stands) for nesting and roosting. White-tailed kite nests are built in trees or shrubs and are composed of small twigs lined with grass, hay or leaves (Dunk 1995). White-tailed kites breed in lowland grasslands, agriculture, wetlands, oak-woodland and savannah habitats, and riparian areas associated with open areas. The presence of prey species, particularly voles, may be the most

important determinant of habitat quality for white-tailed kites (Dunk and Cooper 1994, Skonieczny and Dunk 1997).

White-tailed kites have frequently been observed in marsh habitats north of the BSA (eBird 2020). The species has not been recorded breeding in the vicinity, although the reasons why are not clear (Mt. Diablo Audubon Society 2009). A lack of isolated trees surrounded by open foraging habitat, combined with high levels of human disturbance associated with park trails and UPRR tracks, may limit nesting opportunities for the species in this area. Therefore, white-tailed kites are not expected to nest in the BSA and have a low likelihood to occur as a transient or forager.

### **5.3.4 Migratory Bird Treaty Act and California Fish and Game Code**

Certain birds are protected under the MBTA and/or California Fish and Game Code. High quality nesting and foraging habitat for a variety of species is present throughout the BSA in all vegetation communities. Reconnaissance level surveys detected active nesting or evidence of recent nesting (e.g., adults feeding fledglings) for several species, including: red-shouldered hawk, common raven, oak titmouse, Bewick's wren, Anna's hummingbird, wild turkey, house finch, and European starling. Numerous other common bird species may occur seasonally or nest in the BSA.



## 6. Impacts and Mitigation Measures

Potential impacts resulting from the proposed Project are depicted on Figure 4. Permanent and temporary impact acreages are presented for each biotic habitat type in Table 4.

The proposed Project has the potential to adversely impact the following species, if they occur in the BSA: California red-legged frog, California Ridgway's rail, California black rail, San Francisco common yellowthroat, Suisun song sparrow, white-tailed kite, pallid bat, western red bat, San Francisco dusky-footed woodrat, and nesting birds. Potential project impacts on these species are discussed below and AMMs are proposed to avoid and minimize impacts.

**Table 4. Impacts Within Each Biotic Habitat Type<sup>4</sup>**

| Biotic Habitats                      | Acreage           |                   |
|--------------------------------------|-------------------|-------------------|
|                                      | Permanent Impacts | Temporary Impacts |
| Developed                            | 0.15              | –                 |
| Ruderal                              | 0.17              | –                 |
| Eucalyptus Grove                     | –                 | 0.01              |
| Wild Oats and Annual Brome Grassland | 0.02              | 0.03              |
| Creeping Ryegrass Turf               | 0.014             | –                 |
| Coast Live Oak Woodland and Forest   | 0.09              | <0.01             |
| California Sagebrush Scrub           | 0.02              | –                 |
| Arroyo Willow Thicket                | –                 | –                 |
| Freshwater and Brackish Marsh        | 0.363             | –                 |
| Low Flow Channel                     | 0.125             | –                 |
| <b>Total</b>                         | <b>0.949</b>      | <b>0.04</b>       |

<sup>4</sup> Figures subject to rounding error. Wetlands and Sensitive Natural Communities are estimated to 0.001 acre; all other habitats are estimated to 0.01 acre.

## 6.1 Impacts on Special-Status Plant Species

The following impact analysis describes the potential adverse effects of the proposed Project on special-status plant species and Sensitive Natural Communities. Table 2 lists the potentially occurring special-status plant species, along with their listing status and potential to occur in the BSA.

### 6.1.1 Impacts on Rare Plants

Rare plant surveys will be conducted according to CDFW's 2018 Protocols for Surveying and Evaluating Impacts to Special Status Native Plant Populations and Sensitive Natural Communities and will document presence if detected in the BSA. No rare plants were observed during the reconnaissance survey or the Aquatic Resources Delineation. If rare plants are present in the BSA they could be directly and permanently impacted during staging and construction by blading, grading, and trail establishment activities. If not destroyed by the construction footprint, they could be directly and temporarily impacted during staging and construction by trampling or staging materials on top of them. Rare plant surveys are critical to preventing these types of impacts by identifying their presence in the BSA. If rare plants are identified in the BSA, the following AMM would reduce potentially significant impacts to less than significant:

**AMM BIO-1. Rare Plant Avoidance.** Rare plant individuals and/or populations would be avoided by trail construction. To prevent accidental impacts, rare plant areas would be clearly marked with high visibility flagging or fencing prior to the start of construction activities, and the flagging or fencing would be maintained around the rare plant areas for the duration of construction.

**AMM BIO-2. Coordination with Agencies.** If avoidance is infeasible, the appropriate agencies will be contacted to identify appropriate relocation and compensation strategies. These agencies are usually CDFW and CNPS, but may also include USFWS, RWQCB, and BCDC based on rare plant legal status and whether the growing location overlaps with aquatic resource jurisdiction.

## 6.2 Impacts on Sensitive Natural Communities

Three SNCs are present in the BSA and will be directly and permanently impacted during staging and construction by blading, grading, and trail establishment activities. While certain types of rare plant individuals and vegetation communities are difficult to successfully relocate and reestablish, these three SNCs are likely to survive transplantation and successfully colonize their new areas. These areas are relatively small, especially the Yerba Mansa Alkali Wet Meadow which is approximately 100 square feet. The Hardstem and California Bulrush Marshes community is approximately 300 square feet. The Creeping Ryegrass Turf community is approximately 2,000 square feet (0.05 acre). By requiring relocation of these communities, the following AMM will reduce potentially significant impacts to Less Than Significant:

**AMM BIO-3. Sensitive Natural Communities Avoidance.** In advance of construction mobilization, the project proponent will flag portions of the project area containing sensitive natural communities for avoidance.

**AMM BIO-4. Sensitive Natural Communities Relocation/Replanting.** If avoidance of SNCs is not possible, plants that are characteristic of the SNCs that would be affected by project activities will be relocated before or in timely conjunction with construction activities. It may be feasible to relocate plants from each of the SNCs to areas along the trail margins where they already occur. The excavated SNCs will be replanted

promptly to ensure they survive and do not die from exposure and desiccation, with the location and timing of transplantation will be determined in consultation with CDFW.

## 6.3 Impacts on Special-status Wildlife

The following general avoidance and minimization measures are recommended to reduce the potential impacts on special-status wildlife:

**AMM BIO-5. Worker Environmental Awareness Program.** Before any ground-disturbing activities begin, a Qualified Biologist, defined as a person who possesses, at a minimum, a bachelor's degree in biological sciences, zoology, botany, ecology, or another closely-related field, and who is familiar with the special-status species that could occur in the project area, will conduct a training session for all onsite project personnel. At a minimum, the training will include a description of the California red-legged frog, California Ridgway's Rail, California black rail, white-tailed kite, San Francisco common yellowthroat, Suisun song sparrow, pallid bat, and western red bat, the importance of these species, the measures that are being implemented to avoid and minimize impacts as they relate to the Project, and the boundaries within which work may occur.

**AMM BIO-6. Delineation of Work Area.** The boundaries of the work area where natural vegetation occurs shall be clearly staked or otherwise delineated on the Plansto prevent workers or equipment from inadvertently straying from the work area. All construction personnel, equipment, and vehicle movement shall be confined to designated construction and staging areas.

**AMM BIO-7. Prevention of Entrapment.** All excavated, steep-walled holes or trenches will be covered at the end of each workday with plywood or similar materials. If this is not possible, one or more escape ramps constructed of earth fill or wooden planks will be established in the hole. Before such holes or trenches are filled, they will be thoroughly inspected for any animals.

**AMM BIO-8. No Monofilament Plastic.** Plastic monofilament netting (erosion control matting) or similar material will not be used because wildlife may become entangled or trapped in it. Acceptable substitutes include coconut coir matting or tackifier hydroseeding compounds.

**AMM BIO-9. Biological Monitoring.** A Qualified Biologist will remain on-site during clearing and grubbing, tree removal, initial grading, and any vegetation removal in wetland or riparian habitat. Prior to commencement of the above construction activities, the Qualified Biologist will survey the Project footprint to ensure no special-status species are within the work area. If any special-status species are found in areas where they could be impacted by work activities, work activities will be halted until the animal leaves the work area on its own.

### 6.3.1 Impacts on the California Red-Legged Frog (Less than Significant with Mitigation)

No suitable California red-legged frog breeding habitat is present in the BSA, and the BSA does not provide connectivity between known or potential breeding ponds. However, the BSA is contiguous with areas of open habitat that could support the species, and individual frogs could disperse into the BSA from those occupied habitats. Due to the high levels of human disturbance, distance from known breeding ponds, and limited extent of the wetlands on site, red-legged frogs are unlikely to occur in the BSA. Nevertheless, wetland and riparian habitats in the BSA provide potentially suitable habitat for the species, particularly during the wet, winter months.

If California red-legged frogs were present in work areas, implementation of the proposed Project could potentially result in the injury or mortality of individual frogs. For example, individuals could be directly harmed by equipment, or indirectly exposed to greater predation or desiccation risk if project activities cause individuals to move away from cover. Implementation of the proposed Project is not expected to cause a substantive increase human activity, disturbance, lighting, or noise over current conditions in the vicinity. Given the low potential for occurrence of California red-legged frogs in the BSA, and because take would be minimized via implementation of the general AMMs above and the species specific AMMs below, no compensatory mitigation is warranted, and the Project will have a less than significant impact on the species.

**AMM BIO-10. Seasonal Avoidance.** To the extent feasible, initial grading, tree removal, and vegetation removal within riparian or wetland habitats should be restricted to the dry season (i.e., April 15 through October 15). No vegetation removal or ground disturbing activities should occur in riparian or wetland habitats during or within 24 hours following a rainfall event of 0.1 inches or more.

**AMM BIO-11. Pre-Activity Survey.** The Qualified Biologist will survey the work area immediately prior to vegetation removal in wetland or riparian habitats, and prior to all initial ground disturbance and tree removal activities. If California red-legged frogs are found, work will not proceed until the animal has moved out of the work area on its own.

### **6.3.2 Impacts on Alameda Whipsnake (Less than Significant with Mitigation)**

Scrub habitat in and adjacent to the BSA is limited in extent and highly fragmented. Eucalyptus woodland, seasonal wetland, and ruderal habitats that comprise a large portion of the BSA generally provide low quality habitat for Alameda whipsnakes. In addition, core habitat for the species, as well as all observations of Alameda whipsnakes, occur south of State Route 4. Due to the high levels of human disturbance, distance from core habitat, and limited extent of suitable scrub habitat, Alameda whipsnakes are unlikely to occur in the BSA. Nevertheless, the BSA is contiguous with areas of open habitat that could support the species and habitats in the BSA may provide low-quality habitat for the species.

If Alameda whipsnakes were present in work areas, implementation of the proposed Project could potentially result in the injury or mortality of individual snakes. For example, individuals could be directly harmed by equipment, or indirectly exposed to greater predation risk if project activities cause individuals to move away from cover. Implementation of the proposed Project is not expected to cause a substantive increase human activity, disturbance, lighting, or noise over current conditions in the vicinity. Given the low potential for occurrence of Alameda whipsnakes in the BSA, and because take would be minimized via implementation of the general AMMs above and the species specific AMMs below, no compensatory mitigation is warranted, and the proposed Project will have a less than significant impact on the species.

**AMM BIO-12. Pre-Activity Survey.** A Qualified Biologist will survey the work area immediately prior to initial ground disturbance, vegetation removal, and tree removal activities. If Alameda whipsnakes are found, work will not proceed until the animal has moved out of the work area on its own or the Qualified Biologist has otherwise cleared that it is ok to proceed.

### **6.3.3 Impacts on the San Francisco Common Yellowthroat and Suisun Song Sparrow (Less than Significant with Mitigation)**

The San Francisco common yellowthroat and Suisun song sparrow, both California Species of Special Concern are known to occur near the BSA year-round. In addition, both species have been recorded in

nearby marshes during the breeding season, are presumed to nest there, and have similar nesting habitat preferences. Thus the San Francisco common yellowthroat and Suisun song sparrow were assessed together, because impacts on these species from the proposed Project would be similar.

Construction of Segment 2 of the proposed Project would result in the loss of marginally suitable nesting and foraging habitat for the San Francisco common yellowthroat and Suisun song sparrow. In addition, noise, ground disturbance, and other activities associated with project implementation could cause individuals to move away from work areas. However, few, if any, pairs of either species are expected to nest in the BSA. In the unlikely event that either species did establish a nest in the BSA, then AMMs protecting nesting birds presented below (Section 6.3.7) would avoid and minimize any impacts on nests of these subspecies to less than significant levels.

#### **6.3.4 Impacts on the White-Tailed Kite (Less than Significant)**

The white-tailed kite, a California Fully Protected Species, is known to occur in marshes immediately north of the BSA. The lack of isolated trees surrounded by open foraging habitat, combined with high levels of human disturbance associated with park trails and railroads, makes it unlikely that the species will nest in and near the BSA. While the species is frequently observed foraging over marshes north of the BSA, suitable open foraging habitat is also absent from the BSA. Nevertheless, due to the proximity of the BSA to high quality marsh habitat and frequent observations of the species nearby, we cannot rule out the possibility that non-breeding white-tailed kites may occasionally occur in the BSA. Noise and disturbance caused by proposed activities could potentially disturb a foraging or resting kite, causing it to move away from work areas. No suitable open nesting habitat will be lost as a result of project implementation. Therefore, the potential disturbance of an individual white-tailed kite would not constitute a significant impact on this species under CEQA.

#### **6.3.5 Impacts on the Pallid Bat and Western Red Bat (Less than Significant with Mitigation)**

Pallid and western red bats may forage throughout the BSA, and the pedestrian bridge and vegetation in the BSA provide suitable day and night-roosting habitat for these species. No evidence of a large colony of pallid bats was detected in the BSA during the reconnaissance-level survey, but the presence of a small colony of this species cannot be ruled out. Bridge repair and vegetation removal activities have the potential to result in the loss of a small colony of pallid bats and/or the loss of a small number of western red bats. Vegetation removal and bridge repair could result in the direct injury or mortality of individual bats, could subject bats to physiological stress from being disturbed during torpor, or could subject bats to increased risk of predation when flushed from roosts during the day. In addition, disturbance of maternity roosts could result in abandonment by dependent young.

Few trees are scheduled for removal, and most are not large enough to provide suitable roosting for either bat species. However, there is some potential for project activities to impact roosting bats and bat roost habitat. Implementation of the mitigation measures listed below would largely avoid impacts on roosting bats and reduce any remaining impacts to a less than significant level.

The following measures would reduce the potential for impacts on roosting bats in the BSA.

**AMM BIO-13. Seasonal Bat Avoidance.** The removal of any trees containing suitable bat roosting habitat should be scheduled to avoid the maternity roost season. To the extent feasible, activities should be restricted to the period between August 31 and April 15.

**AMM BIO-14. Bat Roost Deterrent/Exclusion Plan.** If seasonal avoidance is not possible and roosting bats or signs of roosting bats are observed, a qualified biologist should develop a roost deterrent and/or roost exclusion plan. The deterrent/exclusion plan should include measures to avoid bats potentially using bat tree roost habitat within the BSA, if necessary.

**AMM BIO-15. Bat Roost Habitat Survey.** Prior to the start of work, the pedestrian bridge and all vegetation scheduled for removal should be surveyed to determine if potential bat roost habitat is present and if 2-phase tree removal or other avoidance measures are necessary to avoid impacts on bats.

**AMM BIO-16. Pre-Construction Surveys.** Prior to the start of work, the pedestrian bridge, trees, leaf clusters, or similar structures in the BSA should be thoroughly inspected by a qualified biologist for the presence of wildlife, including roosting bats, prior to being removed. Any bat observed in the BSA should be allowed to leave on its own.

**AMM BIO-17. Biological Monitoring During Vegetation removal.** A biological monitor should be present during tree removal and any clearing of riparian vegetation. The onsite biologist should inspect all bat roost habitat (e.g. crevice, and foliage habitat types) for roosting bats prior to trimming or removal activities.

### **6.3.6 Impacts on San Francisco Dusky-footed Woodrat (Less than Significant with Mitigation)**

No nests of the San Francisco dusky-footed woodrat were observed during the focused survey conducted May 12, 2020. However, the presence of dense stands of blackberry and poison oak may have obscured the presence of nests. Due to the presence of suitable habitat in the BSA, there is a low potential for individuals to occur in the area prior to construction.

If present, woodrats and their nests could be directly impacted through nest removal, relocation, or destruction, and indirectly impacted through exposure to predation, adverse weather, unfamiliar or marginal habitats, or territories already occupied by other woodrats after they are displaced from their nests. AMMs are proposed below to avoid and minimize adverse impacts of project activities. With the implementation of these AMMs, impacts on San Francisco dusky-footed woodrats from Project construction would be less than significant.

The following measure would minimize impacts on San Francisco dusky-footed woodrat.

**AMM BIO-18. Woodrat House Survey.** Prior to the start of Project activities, a survey of the BSA will be conducted for woodrat houses.

**AMM BIO-19. Woodrat and House Relocation Plan.** If woodrat houses are found and cannot be avoided, a San Francisco dusky-footed woodrat relocation plan will be prepared and submitted to CDFW before any woodrat houses are disturbed. The Plan would establish buffers and avoidance measures and establish a relocation protocol for woodrat houses.

### **6.3.7 Impacts on Nesting Birds Protected by the MBTA and CFGC (Less than Significant with Mitigation)**

Plan activities will not significantly reduce overall nesting habitat available for birds. Vegetation removal is planned along Segment 2 of the BSA only. While wetland and riparian vegetation is typically of high value

to nesting birds, the narrow extent, highly disturbed nature, and location adjacent to heavily utilized railroad tracks reduces the area's suitability for nesting birds.

Implementation of the proposed project could result in the incidental loss of eggs or nestlings through direct destruction or disturbance of active nests, or by causing abandonment of nests. Most of the species likely to nest in the BSA, such as Bewick's wrens (*Thryomanes bewickii*), oak titmice (*Baeolophus inornatus*), and Anna's hummingbirds, are locally and regionally abundant. Due to the low magnitude of the potential impact of Project activities on these species, and their local and regional abundance, this type of impact would not be considered significant under CEQA. Nevertheless, implementation of the AMMs presented below will avoid and minimize adverse impacts of Project activities on nesting birds.

**AMM BIO-20. Seasonal Avoidance.** Project activities should be scheduled to avoid the nesting bird season. For project planning purposes, the nesting bird season in the San Francisco Bay Area for birds protected under the MBTA is often identified by regulatory agencies as February 1 through August 31. Plan to conduct activities between September 1 – January 31 and do not initiate activities at any time if nesting birds are present (hummingbirds and raptors, for example, may nest earlier if weather conditions are mild, and could be present outside of the guidance period).

If seasonal avoidance is not possible, the following measures would minimize potential impacts on nesting birds.

**AMM BIO-21. Pre-Construction Nesting Bird Surveys.** Within 10-days prior to the start of work at each Segment, a Qualified Biologist should conduct a visual survey of the area for nesting birds within the work areas to be disturbed and including a perimeter buffer of 100 feet for non-raptor migratory birds and 300 feet for raptors. All nest avoidance requirements of the Migratory Bird Treaty Act should be observed (e.g., establishing appropriate protection buffers around active nests until young have fledged). A Qualified Biologist should resurvey the BSA if a halt in project activities of 10-days or more occurs. All nests identified during pre-construction surveys should be determined "inactive" by a Qualified Biologist prior to removal. No eagle nests should be removed without approval from USFWS.

**AMM BIO-22. No Project Activities within Nest Buffers.** If seasonal avoidance is not possible and nesting birds are present, a Qualified Biologist will establish temporary buffers around the nest. Project activities will not occur within the buffer areas until the nest has fledged or has otherwise become inactive.

**AMM BIO-23. Biological Monitoring for Compliance and Nest Buffer Avoidance.** A Qualified Biologist should monitor all identified nesting birds within the survey area for long enough to determine whether project activities will result in observable signs of disturbance to the nest. Nest buffers may need to be adjusted to a greater distance if disturbance is. Conversely, buffer size may be decreased in consultation with CDFW if project activities do not result in disturbance.

## 6.4 Impacts on Jurisdictional Waters and Wetlands (Less than Significant with Mitigation)

Wetlands are protected at federal, state, and local levels, and are considered sensitive environmental resources. They provide unique habitat functions, are of high value for wildlife, and support plant species adapted to wetland hydrology. Wetlands in the BSA are generally of low value to wildlife and plants due to their narrow extent and location adjacent to UPRR tracks.

Removal of jurisdictional wetland habitat in Segment 2 of the BSA will occur as a result of the proposed Project, and up to 0.5 acres may be affected. Impacts on wetlands were mitigated through the improvement and creation of 0.79 acres of wetland habitat off site. This mitigation effort was completed prior to October 2007, at the Martinez Regional Shoreline. With the completed mitigation and the incorporation of the measures below, this impact is considered less than significant.

AMM Bio-24. Avoid Wetlands and Other Waters to the Extent Feasible. Prior to the start of construction, areas containing wetlands and other waters within the project area that can be avoided by construction will be flagged for avoidance.

AMM Bio-25. Dry Season Work. Construction activities that will result in impacts to wetlands will occur during the dry season (April 15 to October 15) to the extent feasible.

AMM Bio-26 Equipment Refueling. Refueling of equipment and vehicles will be conducted at least 100 feet from any wetlands or other waters unless otherwise approved by a Qualified Biologist.

## **6.5 Impacts on Wildlife Movement (Less than Significant)**

Environmental corridors provide linkages between different habitats while also providing cover. Development that fragments natural habitats can impact wildlife in two ways: first, smaller habitat patches are able to support fewer animals; and second, connectivity between the remaining patches may be reduced by loss of cover or other alterations to the environment.

Project activities could affect the movement patterns of native resident or migratory wildlife species during implementation but would not isolate separate habitat areas or block critical movement. The new section of the Martinez Bay Trail is not expected to inhibit wildlife movement after completion. Chain link fencing installed along the railroad tracks is not expected to inhibit the movement of smaller animals. Fencing may inhibit the movement of medium and large mammals between upland and adjacent urban and marsh habitats. However, the species affected are primarily black-tailed deer and common, urban adapted predators, such as feral cats, striped skunks, and raccoons.

The wetland habitats in the BSA serve as a movement pathway for semi-aquatic and terrestrial species, providing vegetative cover and foraging opportunities. Common, urban adapted species may also use this corridor. Small mammals, such as mice and shrews, may utilize this habitat to move longitudinally through the BSA, but are not expected to move north from the BSA across the railroad tracks. The proposed Project will convert the majority of the wetlands in the BSA to developed areas, and installation of chain link fencing will create a barrier to dispersal for medium and large mammals. However, fencing is not expected to inhibit the movement of smaller animals, such as frogs, snakes and birds. Further, many of the wildlife species utilizing these wetlands are acclimated to high levels of disturbance and fragmented landscapes in the vicinity, and this is not expected to result in significant impacts on the movement of individual animals. Therefore, the proposed Project would not interfere substantially with the movement of any native resident or migratory wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites, and this impact is determined to be less than significant.



## **6.6 Local Policies or Ordinances Protecting Biological Resources**

### **6.6.1 City of Martinez Tree Protection Ordinance (Less than Significant)**

The plans for the proposed Project, including tree removal, were approved by the City of Martinez. The proposed Project is therefore exempt from compliance with the City of Martinez Tree Ordinance under the following provision:

Any tree whose removal was specifically approved as a part of an approved development plan, subdivision or other discretionary project.

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## Appendix A. Photos of the Study Area from May 2020



Photo 1. Developed habitat adjacent to the UPRR railroad tracks.



Photo 2. Eucalyptus woodland habitat in Segment 1 of the BSA.





**Photo 3.** Wild Oats and Annual Brome grassland habitat in Segment 1 of the BSA.



**Photo 4.** Native *Elamus* sp. grasses growing north of pedestrian bridge in Segment 1.



**Photo 5.** Coast Live Oak Woodland and Forest in Segment 1 of the BSA.



**Photo 6.** Debris pile within Coast Live Oak Woodland and Forest in the BSA.



**Photo 7.** California Sagebrush Scrub habitat occurring near the western boundary of Segment 2.



**Photo 8.** Arroyo willow thicket located in Segment 2 of the BSA.



**Photo 9.** Ornamental palm trees growing beside freshwater and brackish marsh in the eastern half of Segment 2.



**Photo 10.** Emergent vegetation in freshwater and brackish marsh habitat growing beside oak woodland in Segment 2.

## Appendix B. List of Plants Observed During May 2020 Field Surveys

| Genus               | Species              | Common Name              | Wetland Indicator Status <sup>a</sup> | Cal-IPC Rating                    |
|---------------------|----------------------|--------------------------|---------------------------------------|-----------------------------------|
| <i>Achillea</i>     | <i>millefolium</i>   | yarrow                   | NL                                    |                                   |
| <i>Aesculus</i>     | <i>californica</i>   | buckeye                  | NL                                    |                                   |
| <i>Ageratina</i>    | <i>adenophora</i>    | thoroughwort             | FACU                                  | Moderate<br>Federal: Noxious Weed |
| <i>Anemopsis</i>    | <i>californica</i>   | yerba mansa              | OBL                                   |                                   |
| <i>Artemisia</i>    | <i>californica</i>   | California sage          | NL                                    |                                   |
| <i>Asclepias</i>    | <i>fascicularis</i>  | narrowleaf milkweed      | FAC                                   |                                   |
| <i>Avena</i>        | <i>barbata</i>       | wild oat                 | NL                                    | Moderate                          |
| <i>Avena</i>        | <i>fatua</i>         | wild oat                 | NL                                    | Moderate                          |
| <i>Baccharis</i>    | <i>pilularis</i>     | coyote brush             | NL                                    |                                   |
| <i>Baccharis</i>    | <i>salicifolia</i>   | mulefat                  | FAC                                   |                                   |
| <i>Brachypodium</i> | <i>distachyon</i>    | false brome              | NL                                    | Moderate                          |
| <i>Brassica</i>     | <i>nigra</i>         | black mustard            | UPL                                   | Moderate                          |
| <i>Briça</i>        | <i>minor</i>         | little rattlesnake grass | FAC                                   | Naturalized                       |
| <i>Bromus</i>       | <i>diandrus</i>      | ripgut brome             | NL                                    | Moderate                          |
| <i>Bromus</i>       | <i>hordeaceus</i>    | soft chess               | FACU                                  | Limited                           |
| <i>Bromus</i>       | <i>madritensis</i>   | foxtail brome            | UPL                                   | Naturalized                       |
| <i>Calystegia</i>   | sp.                  | morning glory            | NL                                    |                                   |
| <i>Carex</i>        | species              | sedge                    | FACW-OBL                              |                                   |
| <i>Carduus</i>      | <i>pycnocephalus</i> | Italian thistle          | UPL                                   | Moderate                          |
| <i>Centaurea</i>    | <i>melitensis</i>    | tochalote                | NL                                    | Moderate                          |
| <i>Centaurea</i>    | <i>solstitialis</i>  | yellow star thistle      | NL                                    | High                              |
| <i>Chenopodium</i>  | <i>murale</i>        | nettle leaf goosefoot    | FACU                                  | Naturalized                       |
| <i>Chlorogallum</i> | <i>pomeridianum</i>  | soap root                | NL                                    |                                   |
| <i>Claytonia</i>    | sp.                  | miner's lettuce          | FAC?                                  |                                   |
| <i>Cirsium</i>      | <i>vulgare</i>       | bull thistle             | NL                                    | Moderate                          |
| <i>Conium</i>       | <i>maculatum</i>     | poison hemlock           | FACW                                  | Moderate                          |

| <b>Genus</b>            | <b>Species</b>        | <b>Common Name</b>      | <b>Wetland Indicator Status<sup>a</sup></b> | <b>Cal-IPC Rating</b> |
|-------------------------|-----------------------|-------------------------|---|-----------------------|
| <i>Cotoneaster</i>      | <i>francheti?</i>     | cotoneaster             | NL  | Moderate              |
| <i>Cynosurus</i>        | <i>echinatus</i>      | hedgehog dogtail grass  | NL  | Moderate              |
| <i>Cyperus</i>          | <i>eragrostis</i>     | tall flat sedge         | FACW  |                       |
| <i>Digitaria</i>        | <i>sanguinalis</i>    | hairy crabgrass         | FACU  | Naturalized           |
| <i>Diplacus</i>         | <i>aurantiacus</i>    | bush monkeyflower       | FACU  |                       |
| <i>Dipsacus</i>         | <i>sativus</i>        | Indian teasel           | NL  | Moderate              |
| <i>Distichlis</i>       | <i>spicata</i>        | saltgrass               | FAC   |                       |
| <i>Dittrichia</i>       | <i>graveolens</i>     | stinkwort               | NL  | Moderate              |
| <i>Elymus</i>           | <i>glaucus</i>        | blue wild rye           | FACU  |                       |
| <i>Elymus (=Leymus)</i> | <i>triticoides</i>    | beardless Lyme grass    | FAC   |                       |
| <i>Epilobium</i>        | <i>ciliatum</i>       | FACW                    | FACW  |                       |
| <i>Epilobium</i>        | <i>densiflorum</i>    | dense-flower willowherb | FACW  |                       |
| <i>Eriophyllum</i>      | <i>confertiflorum</i> | yellow yarrow           | NL  |                       |
| <i>Erodium</i>          | <i>botrys</i>         | storksbill              | FACU  | Naturalized           |
| <i>Erodium</i>          | <i>cicutarium</i>     | storksbill              | NL  | Limited               |
| <i>Escholschzja</i>     | <i>californica</i>    | California poppy        | NL  |                       |
| <i>Eucalyptus</i>       | sp.                   | Eucalyptus              | NL  | Limited               |
| <i>Festuca</i>          | <i>myuros</i>         | 6-week's grass          | NL  | Moderate              |
| <i>Festuca</i>          | <i>perennis</i>       | Italian rye grass       | FAC   | Moderate              |
| <i>Foeniculum</i>       | <i>vulgare</i>        | fennel                  | NL  | High                  |
| <i>Frangula</i>         | <i>californica</i>    | California coffeeberry  | NL  |                       |
| <i>Fritillaria?</i>     | sp.                   |                         | NL  |                       |
| <i>Galium</i>           | <i>aparine</i>        | bedstraw                | FACU  |                       |
| <i>Genista</i>          | <i>monspessulana</i>  | French broom            | NL  | High                  |
| <i>Geranium</i>         | <i>dissectum</i>      | wild geranium           | NL  | Limited               |
| <i>Geranium</i>         | <i>molle</i>          | cranebill               | NL  | Naturalized           |
| <i>Geranium</i>         | <i>purpureum</i>      | herb robert             | NL  | Limited               |
| <i>Glyceria?</i>        | <i>occidentalis</i>   | western manna grass     | OBL?  | Naturalized           |
| <i>Grindelia</i>        | sp.                   | gumplant                | FACW  |                       |
| <i>Helenium</i>         | <i>bigelovii</i>      | Bigelow's sneezeweed    | FACW  |                       |

| Genus                 | Species                       | Common Name             | Wetland Indicator Status <sup>a</sup> | Cal-IPC Rating                             |
|-----------------------|-------------------------------|-------------------------|---------------------------------------|--|
| <i>Helenium</i>       | <i>puberulum</i>              | sneezeweed              | FACW                                  |  |
| <i>Helminthotheca</i> | <i>echioides</i>              | bristly oxtongue        | FACU                                  | Limited                                    |
| <i>Heteromeles</i>    | <i>arbutifolia</i>            | toyon                   | NL                                    |  |
| <i>Holcus</i>         | <i>lanatus</i>                | velvet grass            | FAC                                   | Moderate                                   |
| <i>Hordeum</i>        | <i>jubatum</i>                | foxtail barley          | FAC                                   |  |
| <i>Hordeum</i>        | <i>marinum</i>                | seaside barley          | FAC                                   | Moderate                                   |
| <i>Hordeum</i>        | <i>murinum</i>                | mouse barley            | FACU                                  | Moderate                                   |
| <i>Iris</i>           | <i>pseudacorus</i>            | yellow iris             | OBL                                   | Limited                                    |
| <i>Juglans</i>        | <i>hindsii</i>                | walnut                  | FAC                                   |  |
| <i>Juncus</i>         | <i>sp. mexicanus, patens?</i> | rush                    | FAC?                                  |  |
| <i>Lactuca</i>        | <i>serriola</i>               | prickly lettuce         | FACU                                  | Naturalized                                |
| <i>Lamium</i>         | <i>purpureum</i>              | henbit                  | NL                                    | Naturalized                                |
| <i>Lathyrus</i>       | <i>latifolius</i>             | everlasting pea         | NL                                    | Naturalized                                |
| <i>Lepidium</i>       | <i>latifolium</i>             | perennial pepperweed    | FAC                                   | High                                       |
| <i>Lilium?</i>        | <i>pardalinum</i>             | leopard lily            | FACW                                  |  |
| <i>Lonicera</i>       | <i>hispidula</i>              | pink honeysuckle        | FACU                                  |  |
| <i>Lotus</i>          | <i>corniculatus</i>           | bird's foot trefoil     | FAC                                   | Naturalized                                |
| <i>Lytbrum</i>        | <i>hyssopifolia</i>           | hyssop loosestrife      | OBL                                   | Limited                                    |
| <i>Madia</i>          | <i>sativa</i>                 | coastal tarweed         | NL                                    |  |
| <i>Medicago</i>       | <i>lupulina</i>               | black medic             | FAC                                   | Naturalized                                |
| <i>Medicago</i>       | <i>polymorpha</i>             | burclover               | FACU                                  | Limited                                    |
| <i>Melilotus</i>      | <i>indicus</i>                | Indian sweet clover     | FACU                                  | Naturalized                                |
| <i>Monardella</i>     | sp.                           | coyote mint             | NL                                    |  |
| <i>Oxalis</i>         | <i>corniculata</i>            | creeping wood sorrel    | FACU                                  | Naturalized                                |
| <i>Pentagramma</i>    | <i>triangularis</i>           | goldback fern           | NL                                    |  |
| <i>Phalaris</i>       | sp.                           | grass                   | FACU?                                 | Some species Native,<br>others Naturalized |
| <i>Phoenix</i>        | <i>canariensis</i>            | Canary Island palm      | NL                                    | Limited                                    |
| <i>Phyla</i>          | <i>nodiflora</i>              | turkey tangle fog fruit | FACW                                  |  |
| <i>Plantago</i>       | <i>coronopus</i>              | cut leaf plantain       | NL                                    | Naturalized                                |
| <i>Plantago</i>       | <i>lanceolata</i>             | English plantain        | FAC                                   | Limited                                    |

| <b>Genus</b>          | <b>Species</b>      | <b>Common Name</b>     | <b>Wetland Indicator Status<sup>a</sup></b> | <b>Cal-IPC Rating</b> |
|-----------------------|---------------------|------------------------|---|-----------------------|
| <i>Polypogon</i>      | <i>monspeiensis</i> | rabbitsfoot grass      | FACW  | Limited               |
| <i>Polystichum</i>    | sp.                 | sword fern             | FACU?                                       |                       |
| <i>Prunus</i>         | sp.                 | plum                   | FACU?                                       | Limited?              |
| <i>Quercus</i>        | <i>agrifolia</i>    | coast live oak         | NL  |                       |
| <i>Ranunculus</i>     | sp.                 | buttercup              | FACU to OBL                                 |                       |
| <i>Rosa</i>           | <i>californica?</i> | California rose        | FAC   |                       |
| <i>Rumex</i>          | <i>crispus</i>      | curly dock             | FAC   | Limited               |
| <i>Rumex</i>          | <i>pulcher</i>      | fiddle dock            | FAC   | Naturalized           |
| <i>Rubus</i>          | <i>armeniacus</i>   | Himalayan blackberry   | FAC   | High                  |
| <i>Rubus</i>          | <i>parviflorus</i>  | western thimbleberry   | FAC   |                       |
| <i>Rubus</i>          | <i>ursinus</i>      | California blackberry  | FAC   |                       |
| <i>Salix</i>          | <i>laevigata</i>    | red willow             | FACW  |                       |
| <i>Salix</i>          | <i>lasiolepis</i>   | arroyo willow          | FACW  |                       |
| <i>Sambucus</i>       | <i>nigra</i>        | black elderberry       | FACU  |                       |
| <i>Silybum</i>        | <i>marianum</i>     | milk thistle           | NL  | Limited               |
| <i>Solanum</i>        | sp.                 | nightshade             | FACU?                                       |                       |
| <i>Sonchus</i>        | <i>asper</i>        | spiny sow-thistle      | FAC   | Naturalized           |
| <i>Sonchus</i>        | <i>oleraceus</i>    | common sow thistle     | UPL   | Naturalized           |
| <i>Spergularia</i>    | <i>bocconi</i>      | Boccone's sand spurry  | FACW  | Naturalized           |
| <i>Stachys</i>        | <i>bullata</i>      | hedgenettle            | NL  |                       |
| <i>Stipa</i>          | <i>miliacea</i>     | Smilo grass            | NL  | Limited               |
| <i>Symphoricarpos</i> | <i>albus</i>        | common snowberry       | FACU  |                       |
| <i>Torilis</i>        | <i>arvensis</i>     | stickweed              | NL  | Moderate              |
| <i>Toxicodendron</i>  | <i>diversilobum</i> | poison oak             | FACU  |                       |
| <i>Trichostemma</i>   | <i>lanceolatum</i>  | vinegarweed            | FACU  |                       |
| <i>Trifolium</i>      | <i>hirtum</i>       | rose clover            | NL  | Limited               |
| <i>Trifolium</i>      | <i>tomentosum</i>   | wooly clover           | NL  | Naturalized           |
| <i>Typha</i>          | <i>angustifolia</i> | narrow-leaf cattail    | OBL   | Naturalized           |
| <i>Umbellularia</i>   | <i>californica</i>  | California bay laurel  | FAC   |                       |
| <i>Urtica</i>         | <i>urens</i>        | annual stinging nettle | NL  |                       |



| <b>Genus</b>    | <b>Species</b>    | <b>Common Name</b> | <b>Wetland Indicator Status<sup>a</sup></b> | <b>Cal-IPC Rating</b> |
|-----------------|-------------------|--------------------|---|-----------------------|
| <i>Vicia</i>    | <i>sativa</i>     | garden vetch       | FACU  | Naturalized           |
| <i>Vicia</i>    | <i>villosa</i>    | spring vetch       | NL  | Naturalized           |
| <i>Xanthium</i> | <i>strumarium</i> | rough cocklebur    | FAC   |                       |

Sources: Environmental Laboratory 1987; U.S. Army Corps of Engineers 2012; Baldwin et al. 2012; Lichvar, et al., 2014; 2016; 2018.

<sup>a</sup> Indicator Status Definitions:

- OBL = Obligate, almost always occurs in wetlands (>99% probability of occurrence)
- FACW = Facultative wetland, usually occurs in wetlands (66%–99% probability)
- FAC = Facultative, equally likely to occur in wetlands or nonwetlands (34%–66% probability)
- FACU = Facultative upland, usually occurs in nonwetlands but occasionally in wetlands (1%–33% probability)
- UPL = Obligate upland, almost never occurs in wetlands (<1% probability)
- NI = No indicator (insufficient information to assign an indicator status)
- ~ = unsure as to FAC or FACU (plant not identifiable to species in its current condition)
- = unsure as to FAC, FACU, or UPL (plant not identifiable to species in its current condition)

Appendix C

**Preliminary Delineation of Waters of the United States, June 2020**

Preliminary Delineation of Waters of the United States, Including Wetlands, for the  
**MARTINEZ BAY TRAIL PROJECT PHASE II**

**CONTRA COSTA COUNTY, CALIFORNIA**



**Prepared for Kimley-Horn and Associates**

Preliminary Delineation of Waters of the United States, Including Wetlands,  
for the

## Martinez Bay Trail Project Phase II

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## Acronyms and Abbreviations

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|       |   |
|-------|---|
| ACOE  | U.S. Army Corps of Engineers                    |
| BCDC  | Bay Conservation and Development Commission     |
| BMP   | best management practice                        |
| cfs   | cubic feet per second                           |
| Corps | U.S. Army Corps of Engineers                    |
| EBRPD | East Bay Regional Parks District                |
| ercon | erosion-control mat                             |
| FACU  | Facultative Upland                              |
| FACW  | Facultative Wetland                             |
| GPS   | Global Positioning Satellites                   |
| NRCS  | Natural Resources Conservation Service          |
| NWI   | National Wetland Inventory                      |
| NWPL  | National Wetland Plant List                     |
| OBL   | Obligate  |
| OHWM  | ordinary high water mark                        |
| PJD   | Preliminary Jurisdictional Determination        |
| ROW   | right-of-way                                    |
| RPW   | Relatively Permanent Waters                     |
| TNW   | Traditional Navigable Waters                    |
| UPRR  | Union Pacific Railroad                          |
| USFWS | U.S. Fish and Wildlife Service                  |
| UTM   | Universal Transverse Mercator coordinate system |
| WETS  | Climate Analysis for Wetlands                   |

# Martinez Bay Trail Project Phase II, Preliminary Delineation of Waters of the United States, Including Wetlands

## Summary

Aquatic resources within the study area consist of an isolated swale; three unnamed intermittent drainages that merge into a single drainage, and then into a wetland tributary; an abutting wet meadow; seasonal wetlands abutting the wetland tributary; a saltgrass flat seasonal wetland, and riparian overstory. Except for the isolated swale these features are tributary to the Carquinez Straits, a Traditional Navigable Waters (TNW) (U.S. Army Corps of Engineers, Sacramento District, 2018).

The Aquatic Resources Delineation Area (ARDA) encompasses 6.68 acres and includes the project footprint plus a 50-foot buffer. A total of 1.327 acre/1873 linear feet of potentially jurisdictional waters and wetlands were identified within the study area, allocated by federal/state agency jurisdiction as shown in **Table 1- Summary of Wetlands and Other Waters in the Delineation Area**.

**Table 1. Summary of Wetlands and Other Waters in the Delineation Area**

| Aquatic Resource Type         | Aquatic Resource Size (acre)<br>Required for all resources | Aquatic Resource Size (linear feet)<br>Required for only stream channels |
|-------------------------------|--|--|
|                               |  |  |
| Federal- Corps- Waters        | 0.161  | 1165   |
| Federal- Corps- Wetlands      | 0.842  | --   |
| State- CDFW and RWQCB- Waters | 0.589  | 1873   |
| State- RWQCB- Wetlands        | 0.738  | --   |
| State- CDFW- Riparian         | 1.074  | --   |
| State- BCDC- *Shoreline Band  | 0.656  | 320  |
| <b>Total</b>                  | <b>1.327</b>   | <b>1873</b>  |

\*Numbers reflect jurisdictional overlap/areas already calculated as part of the total. Maximum acreage is State waters + State wetlands = 1.327 acre/1873 linear feet.

This delineation of waters and wetlands has been conducted in accordance with the 2008 "A Field Guide to the Identification of the Ordinary High Water Mark (OHWM) in the Arid West Region of the Western United States"

and per the guidance of the 1987 "Corps of Engineers Wetland Delineation Manual" and the 2008 "Arid West Regional Supplement (Version 2.0)".

## Introduction

In May 2003, an Initial Study/Mitigated Negative Declaration (City of Martinez 2003) was prepared and adopted by the City of Martinez (City) for approval of the Martinez Bay Trail Phase II Project (hereafter referred to as the Original Project). The Original Project was proposed as part of the larger San Francisco Bay Trail (SFBT) which is being developed by the Association of Bay Area Governments in conjunction with local agencies. The Original Project was intended to begin at the East Bay Regional Park District (EBRPD) Nejedly Staging area and to provide a link to the SFBT at the EBRPD Martinez Regional Shoreline parking lot. The Original Project was approved in 2003, a Joint Aquatic Resources Permit Application was completed, and permits were obtained for the Project in 2003-2004. Approximately 700 feet of the first phase of the trail from the Nejedly Staging Area to the Union Pacific Railroad (UPRR) right-of-way was subsequently built. The remainder of the Project was put on hold until an easement was granted by UPRR for the EBRPD to construct the remainder of the Phase II Project. A restated and Amended MOU was agreed to on May 3, 2016 after the original Memorandum of Understanding (MOU) between UPRR and EBRPD was signed in 1993.

The proposed trail dimensions are consistent with the Original Project and will be approximately 10 feet of pavement with 2-foot aggregate base shoulders. No expansion of any existing facilities is proposed, and work will be within the scope of the Original Project. As in the Original Project, the proposed Project includes improvements to construct approximately 3,100 feet of trail including the addition of a crossing of the UPRR alignment at Berrellesa Street. The proposed Project would result in paving of an approximately 700-foot portion of trail from the Nejedly Staging Area to the UPRR right-of-way that is currently constructed with aggregate base. This section of trail was originally approved to be paved but was instead constructed with aggregate base and is now partly overgrown with upland ruderal vegetation. The Addendum also found that the mitigation that has already been implemented to offset impacts on wetlands was completed and is considered to be appropriate to offset the lost wetland habitat.

## Contact Information

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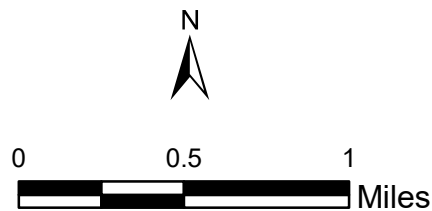
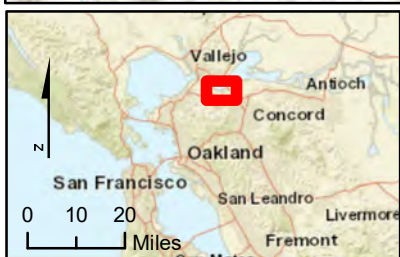
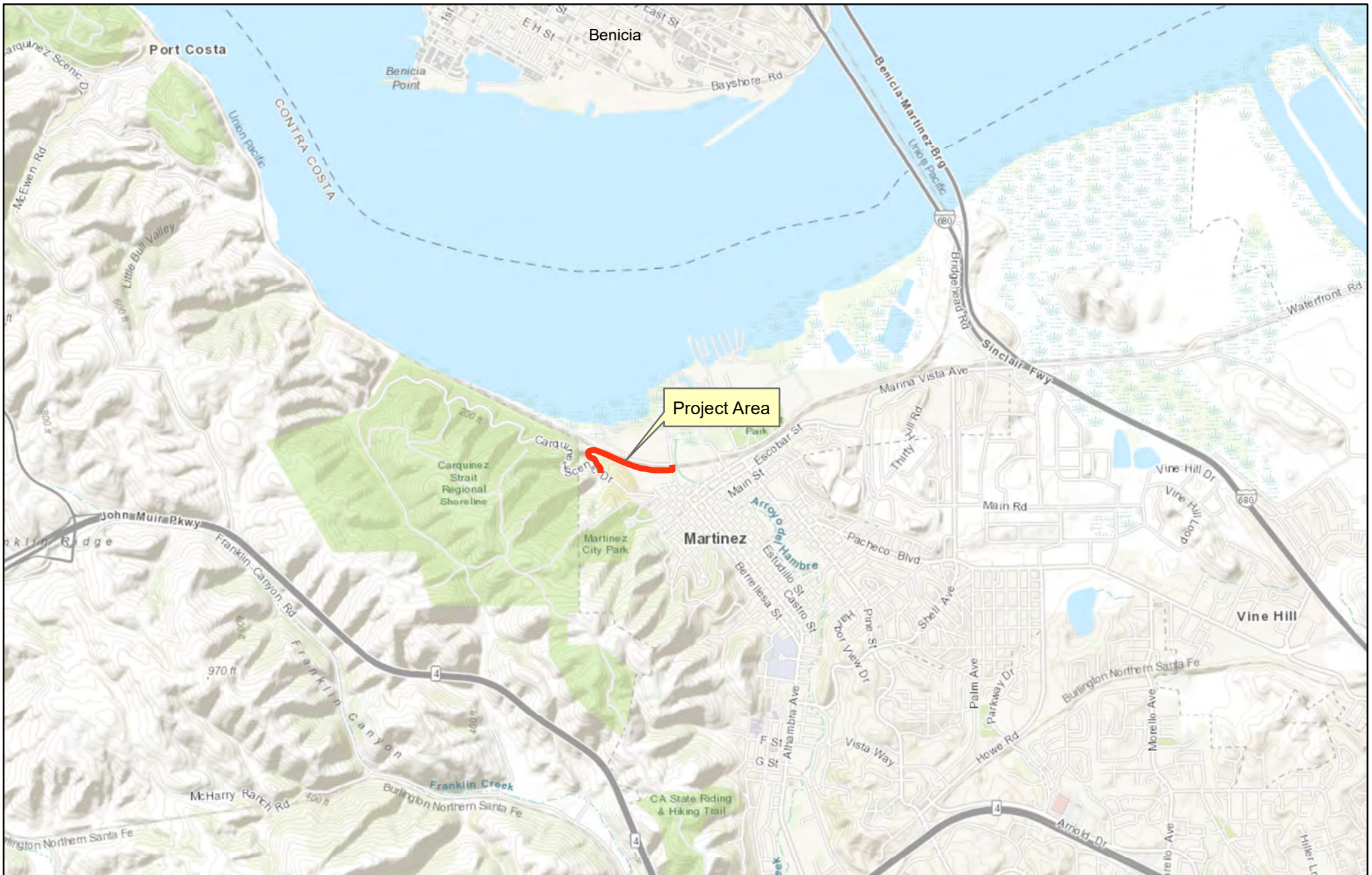
### Delineation Preparer

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## Site Description and Location

The proposed Project is located in the City of Martinez in Contra Costa County, California, beginning at EBRPD property at the Nejedly Staging area, extending northerly toward the UPRR right-of-way, then proceeding easterly to Berrellesa Street. At Berrellesa Street the proposed trail crosses the UPRR right-of-way between milepost 31.10 and milepost 31.38 within UPRR's Martinez Subdivision. The balance of the trail then continues north following the easterly right-of-way of Berrellesa Street before terminating at the existing EBRPD Martinez Regional Shoreline parking lot at Granger's Wharf (**Figure 1**). Segment 1 begins at the Nejedly Staging area at Carquinez Scenic Drive and extends northwesterly for approximately 800 feet to its terminus approximately 100 feet south of the existing UPRR alignment. Proposed work in this segment includes removal of upland and ruderal vegetation covering the existing gravel trail and resurfacing the trail with asphalt. Vegetation clearing and maintenance will also be required to clear the existing





East Bay Regional Park District  
Martinez Bay Trail Project Phase II

Figure 1 - Project Location  
May 2020

rock lined ditches adjacent to the trail. Minor bridge maintenance will be performed to repair a gap between the existing trail and abutment.

Segment 2 is approximately 1,900 feet in length and roughly parallel to the UPRR alignment. This portion of the proposed Project will include trail construction, grading, tree and vegetation removal, and fill of less than 0.5-acre of jurisdictional wetlands. The Original Project MND required mitigation for this loss through the creation of 3,000 to 4,000 square feet (0.06 to 0.09 acres) of wetland habitat and enhancement of 27,000 square feet (0.62 acres) of existing wetland habitat. This mitigation effort was completed prior to October 2007 and was implemented at the Martinez Regional Shoreline.

## Driving Directions

**Driving directions** from the U.S. Army Corps of Engineers' Sacramento District Office located at 1325 J Street, Sacramento, CA 95814 are as follows:

|   |
|---|
| Get on I-80 W.<br>(45 mi)   |
| Use the right 2 lanes to take exit 40 for I-680 toward Benicia/San Jose.<br>(15 mi)                   |
| Take exit 56 for Marina Vista Rd. toward Waterfront Rd.<br>Turn left on Marina Vista Ave.<br>(1.8 mi) |
| Turn right onto Talbart St.<br>(500 feet)   |
| Turn left onto Carquinez Scenic Drive.<br>(2 mi)  |
| <b>Make a left turn into the Nejedly Staging Area, Martinez, CA 94553.</b><br>(1.7 mi)                |

## Precipitation and Growing Season

Per the nearest Climate Analysis for Wetlands (WETS) station with sufficient data (the Martinez Water Plant at elevation 40 feet) and based on 50 years of annual rainfall totals (AgAcis, 2020), the average annual rainfall in the ARDA is 19.28 inches. 2019 was the last year to measure average at 19.86 inches, with 2017 being much higher (29.5 inches) and 2013 and 2015 being much lower (7.87 and 5.77 inches, respectively). The growing season was identified as ranging from 315 to 334 days. WETS data is provided in Appendix F.

## Vegetation

Vegetation within the study area was assessed to the level required for classification under California's expression of the National Vegetation Classification based on *A Manual of California Vegetation, Second Edition* (2009) and the California Natural Community List (CDFW, 2020). During the May 2020 delineation, 13 vegetation communities were observed in the ARDA. Appendix B provides a list of plants observed in the delineation area, including their wetland indicator status per the National Wetland Plant List v3.4 (Lichvar, et al., 2018).

## Developed

Developed land in the footprints of Segments 2 and 3 include paved portions of Berrellesa Street, UPRR tracks, and compacted gravel within the UPRR right-of-way. Developed land in the outer edges of the ARDA includes asphalt-paved Berrellesa Street and Carquinez Scenic Drive. Areas within the UPRR right-of-way show signs of herbicide application, and vegetation in this area is largely absent.

## Ruderal

Ruderal vegetation occurs in Segment 2. Regular treatment of this area with herbicides to maintain the UPRR right-of-way has resulted a generally depauperate and weakly growing assemblage of plants interspersed with bare ground. Ruderal vegetation in the ARDA is dominated by non-native grasses, including ripgut brome (*Bromus diandrus*) and foxtail brome (*Bromus madritensis*), with some native gumplant (*Grindelia stricta*).

## Eucalyptus Grove

Eucalyptus grove habitat occurs in the upper portion of the ARDA between the Nejedly Staging Area and the pedestrian bridge. The Eucalyptus grove alliance is dominated by an overstory of Eucalyptus trees. The accumulation of leaf litters and allelopathic chemicals in these groves inhibit other plant growth, resulting in a sparse understory. Understory vegetation in the Eucalyptus grove in the ARDA is similar to and contiguous with the Wild Oats and Annual Brome Grassland. It is dominated by non-native grasses and forbs, including wild oats (*Avena* sp.), ripgut brome, bull thistle (*Cirsium vulgare*), and black mustard (*Brassica nigra*). These species are ranked as moderately invasive (Cal-IPC 2020).

## Wild Oats and Annual Brome Grassland

Wild Oats and Annual Brome grassland occurs within openings in Eucalyptus grove habitats in the northern portion of the ARDA. This alliance also characterizes portions of the understory of the Eucalyptus grove and Coast Live Oak Woodland and Forest alliances. Non-native grasses dominate this alliance, including wild oats, ripgut brome, soft brome (*Bromus hordeaceus*), and foxtail brome. Other non-natives are also common in the herbaceous layer, such as black mustard, California burclover (*Medicago polymorpha*), cutleaf geranium (*Geranium dissectum*), and English plantain (*Plantago lanceolata*).

## Creeping Ryegrass Turf

One patch of Creeping Ryegrass Turf occurs in the ARDA. It is located immediately north of the pedestrian bridge, spans the grassy slope, and briefly follows the riparian corridor. This area is a mesic transitional zone situated between scrub habitat on the western hillside and Coast Live Oak Woodland and Forest along the intermittent creek to the south and east. Creeping Ryegrass Turf in the ARDA is dominated by the native wild rye species *Elymus* (= *Leymus*) *triticoides*. Other native grasses and forbs also occur in the herbaceous layer, such as native brome (*Bromus* sp.), Italian ryegrass (*Festuca perennis*) rushes (*Juncus* sp.), and mugwort (*Artemisia douglasiana*). Non-natives also occur in the herbaceous layer, including wild oats (*Avena fatua*), poison hemlock (*Conium maculatum*) and teasel (*Dipsacus* sp.). Poison hemlock and teasel are both ranked as moderately invasive (Cal-IPC 2020). Relatively low cover of coyote brush (*Baccharis pilularis*) was also present in this habitat in the ARDA.

## Coast Live Oak Woodland and Forest

The overstory of the Coast Live Oak woodland and forest in the ARDA is dominated by coast live oak (*Quercus agrifolia*), with co-occurring California bay (*Umbellularia californica*), California walnut (*Juglans californica*), and willow (*Salix* sp.). The understory is sparsely vegetated to bare, and becomes more densely vegetated near the pedestrian bridge and east. Isolated stands of poison oak and Himalayan blackberry (*Rubus*

*armeniacus*) occur within wild oats and brome grassland. The understory supports woody shrubs and vines, including poison oak, California blackberry (*Rubus ursinus*), elderberry (*Sambucus* sp.), and plum (*Prunus* sp.). The herbaceous layer includes open areas of non-native grasses and densely vegetated areas supporting a variety of forbs, including fennel (*Foeniculum vulgare*), thimbleberry (*Rubus parviflorus*), soap plant (*Chlorogalum pomeridianum*), and snowberry (*Symphoricarpos* sp.). Fennel is ranked as moderately invasive by Cal-IPC, and Himalayan blackberry is ranked as highly invasive (Cal-IPC 2020). Anthropogenic disturbance is also evident, with trash scattered beneath the trees in several areas.

### **California Sagebrush Scrub**

California sagebrush scrub habitat does not occur in the Project footprint, but occurs on the hillside forming the western border. Coyote brush and sagebrush (*Artemisia californica*) dominate the shrub layer in this location. Native grasses and forbs occur at this location, including golden yarrow (*Eriophyllum confertiflorum*), common yarrow (*Achillea millefolium*), native brome, *Lonicera*, toyon (*Heteromeles arbutifolia*), and coyote mint (*Monardella villosa*). Non-native grasses and forbs also occur in the herbaceous layer, including teasel, Smilo grass (*Stipa miliacea*), and honeysuckle (*Lonicera* sp.).

### **Arroyo Willow Thicket**

One patch of arroyo willow thicket occurs in the ARDA. This thicket is narrow in extent, and is bordered by mature oak woodlands to the south and the UPRR right-of-way to the north. Mature willows are dominant in this habitat, and occur intermixed with dense stands of California blackberry. Coyote brush, poison oak, fennel (*Foeniculum vulgare*) and plants associated with adjacent freshwater marsh habitat (described below) occur in the understory.

### **Freshwater and Brackish Marsh**

Five alliances of freshwater and brackish marsh were identified in the ARDA: Yerba Mansa Alkaline Wet Meadow, Smartweed Cocklebur Patch, Cattail Marsh, Hardstem and California Bulrush Marsh, and Saltgrass Flats. Two of these are considered Sensitive Natural Communities: Yerba Mansa Alkaline Wet Meadow and Hardstem and California Bulrush Marshes, which are designated by CDFW as S2 and S3 communities, respectively.

#### ***Yerba Mansa Alkaline Wet Meadow***

This alliance has rarity listing of S2 which indicates it is fairly rare and threatened. This habitat type occurred in only one location in the ARDA, in a ponded segment of the low flow channel. Early growth of *Anemopsis californica* at approximately 30% cover was observed in this location during the aquatic resources delineation, with the remain cover composed of cocklebur, algal matting, mud, or water.

#### ***Smartweed Cocklebur Patches***

CNPS describes the Smartweed Cocklebur Patches community as *Polygonum lapathifolium* and/or *Xanthium strumarium* or other knotweed species being dominant or co-dominant in the herbaceous layer with *Bidens frondosa*, *Cuscuta pentagona*, *Echinochloa* spp., *Eleocharis macrostachya*, *Euthamia occidentalis*, *Helianthus annuus*, *Phyla nodiflora* and *Polygonum* spp. Membership rules require greater than 50% relative cover in the herbaceous layer. It has a rarity listing of S5 which indicates it is a fairly secure vegetation community. Common cocklebur (*Xanthium strumarium*) occurs particularly in disturbed areas such as seasonally flooded streambanks and alluvial flats. Within the ARDA, Smartweed Cocklebur Patches occur in the open herbaceous areas downstream as a stand-alone species or in conjunction with *Juncus*, *Carex*, *Cyperus*, *Elymus*, *Rumex*, *Distichlis*, and *Grindelia*, among others.

### **Cattail Marshes**

CNPS describes the Cattail Marshes community as *Typha angustifolia*, *Typha domingensis* or *Typha latifolia* being dominant or co-dominant in the herbaceous layer with *Agrostis stolonifera*, *Argentina egedii*, *Cyperus spp.*, *Distichlis spicata*, *Echinochloa crus-galli*, *Eleocharis macrostachya*, *Equisetum telmateia*, *Juncus spp.*, *Lemna minuta*, *Lepidium latifolium*, *Oenanthe sarmentosa*, *Persicaria lapathifolia*, *Persicaria punctata*, *Phragmites australis*, *Schoenoplectus americanus*, *Schoenoplectus californicus*, *Typha xglauca* and *Xanthium strumarium*. Emergent trees may be present at low cover, including *Salix* spp. It has a rarity listing of S5 which indicates it is a fairly secure vegetation community. Membership rules require greater than 50% relative cover in the herbaceous layer. Within the ARDA this community is comprised of the non-native narrowleaf cattail (*Typha angustifolia*), and tends to occur in the open herbaceous areas downstream as exclusive patches.

### **Hardstem and California Bulrush Marsh**

This alliance is considered a Sensitive Natural Community and has a rarity listing of S3, which indicates it is moderately rare and threatened. It occurs primarily as an understory community beneath the arroyo willow thicket, becoming most prominent at the downstream end.

### **Salt Grass Flats**

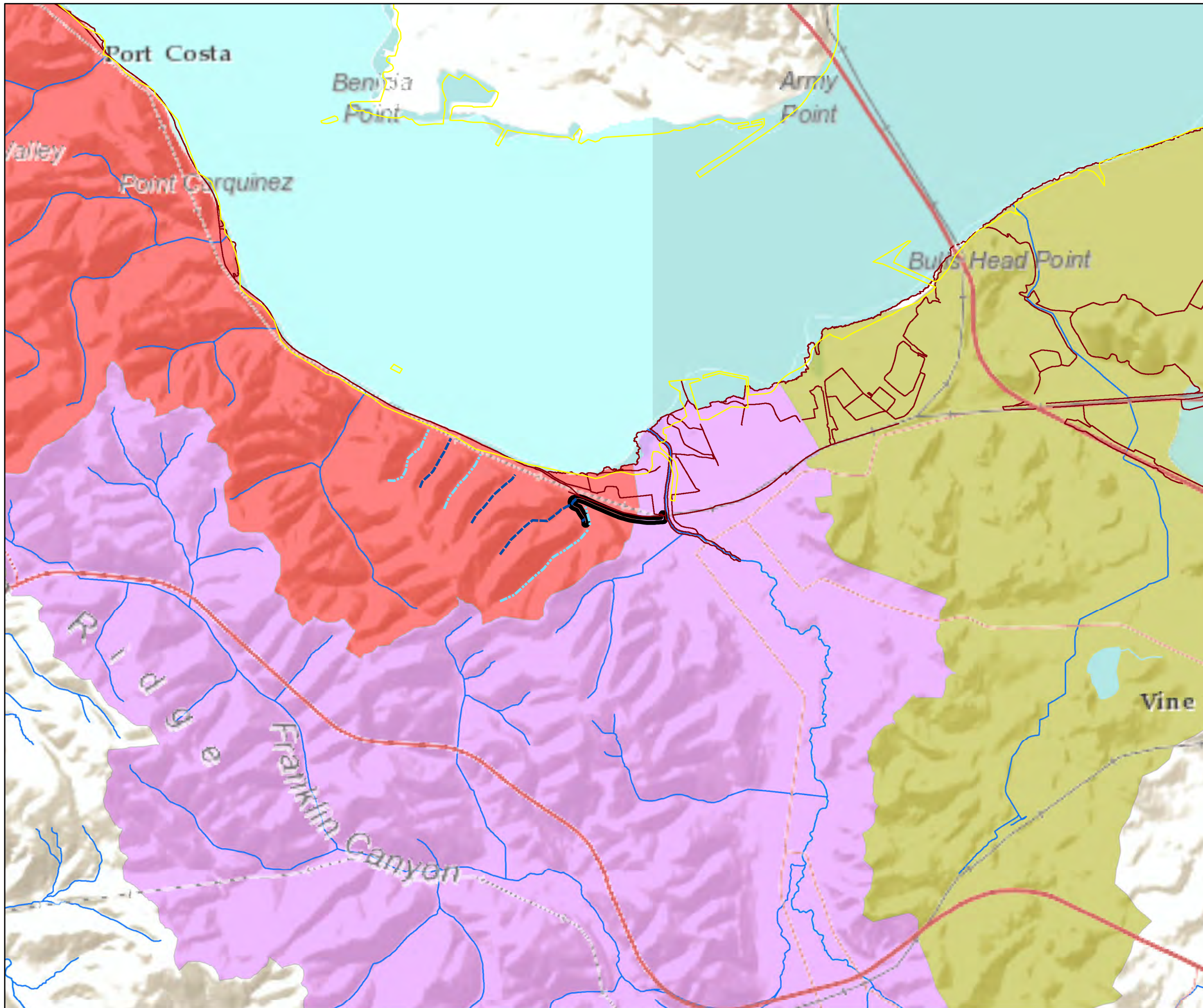
CNPS describes the Salt Grass Flats community as *Distichlis spicata*, *Juncus acutus* and/or *Juncus cooperi* being dominant or co-dominant in the herbaceous layer with *Agrostis viridis*, *Ambrosia chamissonis*, *Anemopsis californica*, *Atriplex prostrata*, *Batis maritima*, *Bromus diandrus*, *Cotula coronopifolia*, *Eleocharis palustris*, *Frankenia salina*, *Hordeum brachyantherum*, *Hordeum murinum*, *Jaumea carnosa*, *Juncus acutus*, *Juncus arcticus*, *Juncus cooperi*, *Lepidium latifolium*, *Leymus triticoides*, *Limonium californicum*, *Muhlenbergia asperifolia*, *Parapholis strigosa*, *Pascopyrum smithii*, *Poa secunda*, *Puccinellia nuttalliana*, *Sarcocornia pacifica*, *Sporobolus airoides* or *Triglochin maritima*. Emergent shrubs may be present at low cover. It has a rarity listing of S4 which indicates it is not an at-risk vegetation community. Membership rules vary between requiring greater than 30% or 50% relative cover in the herbaceous layer. Within the ARDA this community comprises the seasonal wetland at the downstream terminus of the low-flow channel.

## **Hydrology**











The ARDA traverses two watersheds in northwestern Contra Costa County. Located at the base of the easternmost Franklin Hills, the proposed project begins at the Nejedly Staging Area in the Carquinez Drainages Watershed and ends approximately 0.5-mile downhill (northeast) at the junction of the Union Pacific Railroad (UPRR) tracks and Berrellesa Street in the Alhambra Creek Watershed (**Figure 2- Hydrology; Appendix A Delineation Maps**). Site elevation ranges from 50 feet above sea level (ASL) at the Nejedly Staging Area to less than 10 feet ASL along the tracks. Slopes and canyons throughout the area typically drain relatively rapidly after storm events (EBRPD, 1993). Prior to construction of the UPRR track (pre-1939), the bayside slopes and canyons in Franklin Hills, including the ARDA, discharged in an alluvial, braided fashion directly into the marshes buffering Carquinez Strait. The opposite (southwestern) side of the Franklin Hills drains in part to the Alhambra Creek Watershed via Franklin Creek before joining with Alhambra Creek and finally the Carquinez Strait. Alhambra Creek is located on the other side of Berrellesa Street where the proposed project ends.

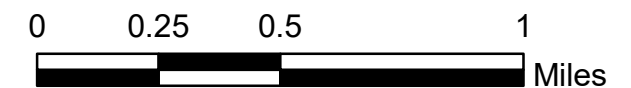
Most or all of the aquatic resources in the ARDA are hydrologically fed by the drainages originating in the Carquinez Drainages Watershed. Two of these drainages (IS-1 and IS-2) are included as unnamed creeks in the Contra Costa County Department of Conservation and Development hydrology GIS dataset, but the remainder are not named or mapped in national, state, or county stream datasets. Three of them are mapped by EBRPD on their Carquinez Strait Regional Shoreline Park map, including one drainage in the ARDA (IS-1). This appears to be consistent with intermittent stream lines on topographical maps. One of the unmapped drainages (IS-3)

Figure 2 - Watershed/Hydrology  
Martinez Bay Trail Project



**Legend**

-  Aquatic Resources Delineation Area
-  Water Bodies (DCD)
- Franklin Hills Drainages
  -  EBRPD
  -  Unmapped
  -  HYD CDD Creeks/Drainages
-  BCDC Contra Costa shoreline
-  NOAA USA medium shoreline
- Watersheds (PWD)
  -  Alhambra Creek
  -  Carquinez Straits Drainages
  -  Peyton Slough



Coordinate System: NAD 1983 UTM Zone 10N  
Projection: Transverse Mercator  
Datum: North American 1983  
Vertical Datum: NAVD88, U.S. Feet  
1 in = 2,083 ft

crossed by the Phase I pedestrian bridge, shortly before being joined by the second longer drainage (IS-1 + IS-2) mapped by EBRPD that originates far uphill from the Nejedly Staging Area. After the confluence (IS-4) it wraps around the eastern base of the slopes, rather than empty into the Bay marsh as all of the bayside Franklin Hills drainages once did before the railroad tracks truncated the natural hydrological system. Now the velocity of the funneled water has transformed what was once a likely ephemeral drainage to the bay (EBRPD, 1993) into a relatively deep low-flow channel parallel to the UPRR tracks, that includes a riparian floodplain and overstory canopy for some of its reach. This feature conveys flows around the base of the hills and into at least one storm drain inlet (DI) (Appendix A). Extra flow volume and/or road runoff and sheet flow from the steep hillsides continues to supply water to the feature downstream of the inlet, but eventually it transitions into a saltgrass-flat seasonal wetland. Other culverts and drains may be present but were not observed. This is the human-altered system that moves water through the ARDA, underneath and around the UPRR tracks presumably to outlets in Alhambra Creek and/or shoreline marshes.

From the Nejedly Staging Area, two drainages (IS-1 and IS-2) pass under Carquinez Scenic Drive and straddle the Martinez Bay Trail on the downhill (north) side of the road. The drainage to the left (west) (IS-2) extends approximately 100 feet farther downhill before ending abruptly where it is crossed by the trail (see Appendix A, point **A**). A buried culvert under the trail may be present at this location, since there is a rockpile on the other side of the trail in a straight trajectory to the drainage on the right (east) (IS-1) (point **B**) that appears to have been placed there to prevent erosion. That drainage (IS-1) continues until its confluence with another drainage (IS-3) crossed by the pedestrian bridge (point **C**), shortly after which the previously-discussed DI is located (point **D**). What remains of the flow and/or additional UPRR runoff and hillside sheet flow continues to the east (IS-4, WT-1).

The drainages in the upper ARDA are an overstory of coast live oak (*Quercus agrifolia*) and California bay laurel (*Umbellularia californica*). The short drainage (IS-2) has only an overstory of coast live oak, and a dense thicket understory of poison oak (*Toxicodendron diversilobum*), coyote brush (*Baccharis pilularis*), poison hemlock (*Conium maculatum*), Himalayan blackberry (*Rubus armeniacus*), wild teasel (*Dipsacus sativus*), *Juncus*, and various native and non-native forbs and grasses. An early-growth *Fritillaria* or *Lilium* was observed at the transition from riparian Coast Live Oak Woodland and Forest to Wild Oats and Annual Brome Grassland. A channel was implied by topography but was not fully visible due to the presence of dense vegetation and poison oak.

The longer EBRPD-mapped drainage (IS-1) has an overstory of both coast live oak and California bay laurel, and lacks a shrub layer. The minimal herbaceous layer consists of *Juncus*, Italian thistle (*Carduus pycnocephalus*), and sparse new grasses. The channel is unvegetated with a soil and dense leaf litter substrate; occasional boulders are present. The bed measures approximately 2 feet wide and the top of bank is approximately 5 feet wide. This reach of the feature was briefly explored to understand the hydrology of the ARDA as a whole, but was mostly outside of the delineation area.

The unmapped drainage that flows under the pedestrian bridge (IS-3) supports a dense overstory of coast live oak and California bay laurel upstream of the bridge, and a dense overstory of native coast live oak, bay laurel, willows (*Salix* spp.), black walnut (*Juglans hindsii*), elderberry (*Sambucus nigra*), and California buckeye (*Aesculus californica*), along with non-native *Prunus* sp., common fig (*Ficus carica*), and Canary Island date palm (*Phoenix canariensis*) downstream of the bridge. Coyote brush and poison oak are the dominant shrub layer, present along the outer riparian edges with poison hemlock and wild teasel. The herbaceous layer is dense and relatively diverse throughout, but dominated by an unidentified rhizomatous grass (no inflorescence present) thought to be *Glyceria*. Upstream of the bridge the drainage has a clearly defined channel bed and bank, while the sloping topography on all sides obscures the top-of-bank. Under the pedestrian bridge, the feature widens to two or three times its upstream width and continues to widen downstream. The channel bed fades until it reestablishes itself as the low-flow channel paralleling the UPRR tracks (IS-4). This interim area is hummocky (point **E**), and a clear demarcation between channel and upland is not present. In a former delineation this area was mapped

as a separate wetland. In this delineation the area is mapped as an adjacent wetland and it forms part of the Creeping Ryegrass Turfs vegetation community.

Once the drainage reaches the blockage formed by the railroad tracks it is joined by channelized flow from uphill/uptrack. This flow collects at the lowest point, forming the low flow channel (S-4, WT-1). A relatively expansive riparian floodplain is present upslope (south), wherein IS-1 soon joins via an indiscernible confluence. Drainage patterns in the vegetation indicate that flows are well-distributed and significant enough to flatten vegetation throughout the confluence, but lack enough volume or concentration to form a channel. The DI is located in the vicinity and probably serves to divert most of the flows underground and away from the site from this point on (point D).

The low flow channel narrows as it passes behind an UPRR control building (point F) and remains fairly narrow thereafter. The riparian canopy ends, and the steep slope uphill transitions to coastal scrub for approximately 215 feet. Coast live oak woodland resumes briefly again for approximately 150 feet, before the drainage permanently diverts from the Franklin Hills to continue east along the UPRR tracks (point G) until it fades into saltgrass flats. There is no tree overstory or shrub canopy for the remainder of its length. The low flow channel is characterized as a wetland tributary from this point on. The amount of open water versus emergent wetland vegetation changes many times, no doubt seasonally as well. Heavy algal matting and pools with Sierran treefrog breeding (*Pseudacris sierra*) and invertebrates suggest the features retain water for long periods of time. Emergent vegetation includes yerba mansa, rough cocklebur, narrowleaf cattail, dock (*Rumex* sp.), saltgrass, *Bolboschoenus*, *Schoenoplectus*, *Juncus*, *Carex*, *Cyperus*, *Elymus*, and *Grindelia*, among others.

The low flow channel/wetland tributary terminates in a saltgrass flat seasonal wetland, approximately 215 feet before Berellesa Street. No surface water is present, and the saltgrass comprises 100% vegetative cover.

## Soils

The NRCS Web Soil Survey (USDA, 2020) was consulted to determine the soil types occurring within the ARDA. **Table 2** lists the Soil Map Units in the Delineation Area. **Figure 3- Soils in the Delineation Area** provides a map of soil types overlaid on study area imagery. The NRCS Web Soil Survey is provided in **Appendix E**. Mapped soils within the study area are Los Gatos loam 30% to 50% slopes, Los Gatos loam 50% to 75% slopes, and Omni silty clay, as described below.

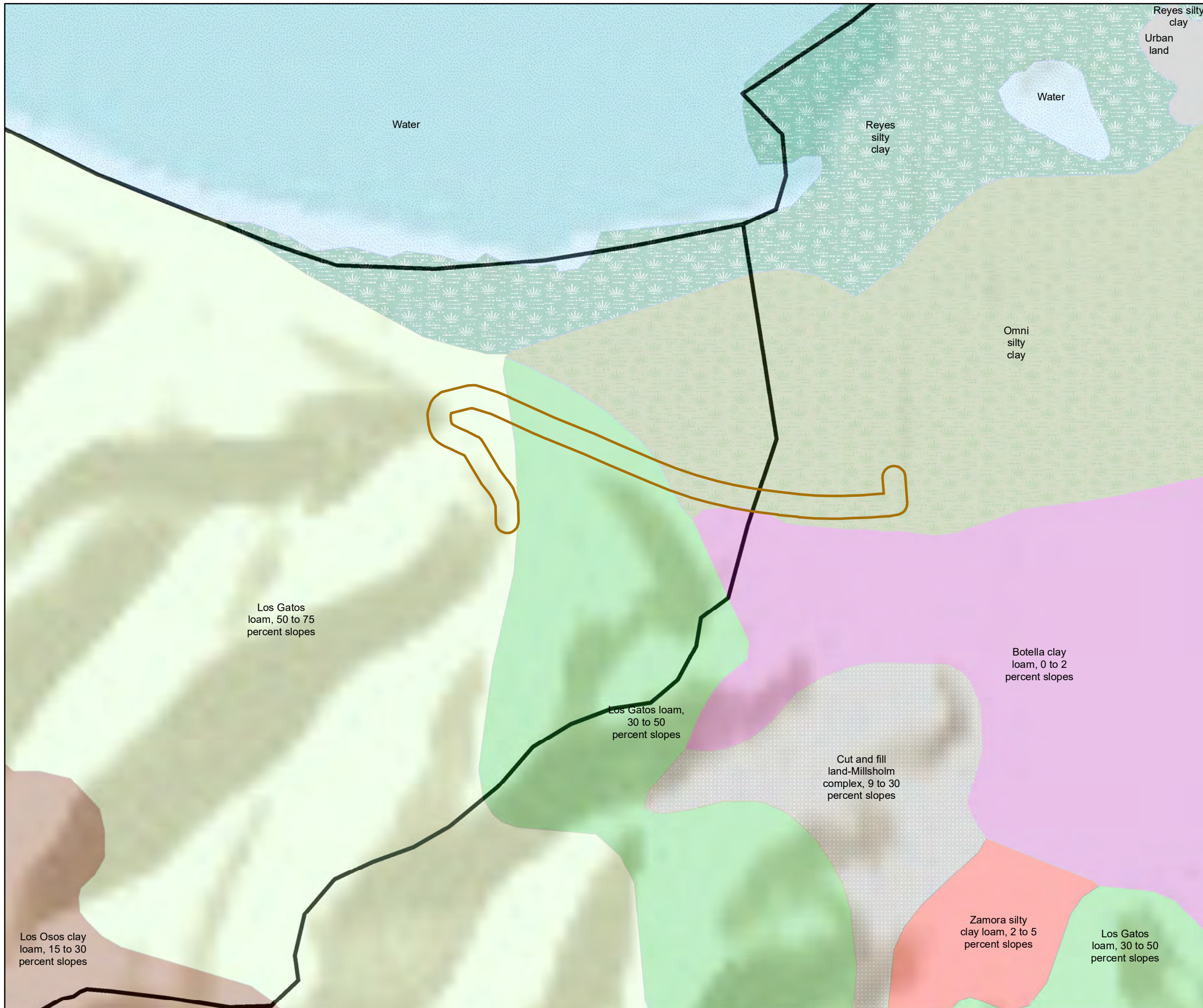
**Table 2. Soil Map Units in the Web Soil Survey Area**

| Soil Map Unit                                 | Soil Map Units in Web Soil Survey Area (Acres) |
|---|--|
| Los Gatos loam (LeF), 30 to 50 percent slopes | 1.5  |
| Los Gatos loam (LeG), 50 to 75 percent slopes | 2.3  |
| Omni silty clay (Ob)                          | 2.3  |
| <b>Total</b>                                  | <b>6.1 acres</b>                               |

Source: NRCS, 2020



East Bay Regional Park District  
 Martinez Bay Trail Project Phase II  
 Martinez, CA  
 May 2020  
 Figure 3 - Soils  
 Martinez Bay Trail Project

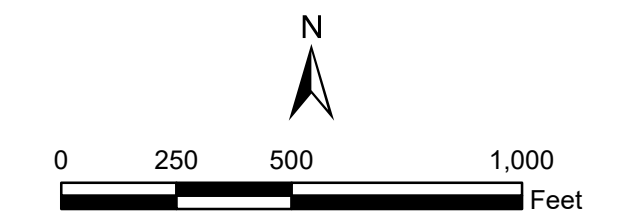


**Legend**

- Aquatic Resources Delineation Area
- Watersheds (PWD)
- Creeks Drainages (CDD)

**Soils (USDA)**

- Botella clay loam, 0 to 2 percent slopes
- Cut and fill land-Millsholm complex, 9 to 30 percent slopes
- Lodo clay loam, 30 to 50 percent slopes
- Lodo clay loam, 9 to 30 percent slopes
- Los Gatos loam, 30 to 50 percent slopes
- Los Gatos loam, 50 to 75 percent slopes
- Los Osos clay loam, 15 to 30 percent slopes
- Los Osos clay loam, 30 to 50 percent slopes
- Omni silty clay
- Reyes silty clay
- Urban land
- Water
- Zamora silty clay loam, 2 to 5 percent slopes



Coordinate System: NAD 1983 UTM Zone 10N  
 Projection: Transverse Mercator  
 Datum: North American 1983  
 Vertical Datum: NAVD88, U.S. Feet  
 1 in = 417 ft

**Created on May 26, 2020**

### **Los Gatos loam (LeF), 30 to 50 percent slopes**

Los Gatos loam 30 to 50 percent slopes is mapped in 25% of the ARDA. In the NRCS map unit, Los Gatos loam 30 to 50 percent slopes occur between elevations of 500 and 2,000 feet in areas with a mean annual precipitation of 18 to 25 inches and a frost-free period of 260 to 300 days. Los Gatos loam and similar soils comprise 85 percent of the soil type, with minor components forming the remaining 15 percent. This soil is found on upland slopes and results from residuum weathered from sedimentary rock. Within the typical soil

profile depth of a routine wetland delineation (0 to 18 inches), the texture of the soil is loam and clay loam. The runoff potential is high and soils are well drained, with the water table more than 80 inches deep and at least 20 inches to reach lithic bedrock. Due to its high runoff potential, this soil type has no associated frequency of flooding or ponding. This soil type is not hydric, nor are any of its minor components. Minor soil components include Dibble, Los osos, Millsholm, and Vallecitos.

### **Los Gatos loam (LeF), 50 to 75 percent slopes**

Los Gatos loam 50 to 75 percent slopes is mapped in 38% of the ARDA. In the NRCS map unit, Los Gatos loam 50 to 75 percent slopes occur between elevations of 500 and 2,000 feet in areas with a mean annual precipitation of 18 to 25 inches and a frost-free period of 260 to 300 days. Los Gatos loam and similar soils comprise 85 percent of the soil type, with minor components forming the remaining 15 percent. This soil is found on upland slopes and results from residuum weathered from sedimentary rock. Within the typical soil profile depth of a routine wetland delineation (0 to 18 inches), the texture of the soil is loam and clay loam. The runoff potential is high and soils are well drained, with the water table more than 80 inches deep and at least 20 inches to reach lithic bedrock. Due to its high runoff potential, this soil type has no associated frequency of flooding or ponding. Minor soil components include Gaviota, Millsholm, Los osos, and Rock outcrop.

### **Omni silty clay (Ob)**

Omni silty clay is mapped in 37% of the ARDA. In the NRCS map unit, Omni silty clay occurs between elevations of 10 and 100 feet in areas with a mean annual precipitation of 14 to 16 inches and a frost-free period of 260 to 300 days. Omni silty clay and similar soils comprise 85 percent of the soil type, with minor components forming 10 percent. This soil is found on flood plains and results from alluvium derived from sedimentary rock. Within the typical soil profile depth of a routine wetland delineation (0 to 18 inches), the texture of the soil is silty clay and clay. The runoff potential is medium and soils are poorly drained, with the water table about 30 to 48 inches deep and at least 80 inches to any restrictive bedrock feature. Due to its medium runoff potential, this soil type has a rare frequency of flooding and an occasional frequency of ponding. Soil salinity is moderately to strongly saline. Minor soil components are Reyes and Marcuse. This soil and all of its components are hydric.

## **Delineation Methods**

Field preparation included a desktop review of current and historical satellite imagery available on Google Earth, a query of the National Wetland Inventory (NWI) database (USFWS, 2020), a query of the NRCS Web Soil Survey (NRCS, 2020a) and NRCS State Soil Data Access [SDA] Hydric Soils List (NRCS, 2020b), and familiarization with materials published by the Corps including updated National Wetland Plant Lists (Lichvar et al., 2018). Satellite imagery of the study area was reviewed for 1939, 1993, and from 2002 through 2018 to understand past hydrology, explore historical wetland features, and identify areas of current ponding. Standard texts were consulted during the course of the delineation (Hickman, 1993; Munz and Keck, 1973; Sawyer, et. al., 2009).

A delineation was conducted on May 12, 2020 by SBI biologists N. Dvorak and B. Sousa. Due to permit restrictions on UPRR property no wetland soil pits were dug, and features were delineated based on NRCS Web Soil Survey maps, vegetation, and hydrology. Some features exhibit characteristics of both waters and wetlands, and they were [otherwise] evaluated according to methods described in the Corps' 1987 Wetlands Delineation Manual

and 2008 Regional Supplement [for the] Arid West in addition to the 2008 A Field Guide to the Identification of the Ordinary High Water Mark (OHWM) in the Arid West Region of the Western United States. Global Positioning Satellite (GPS) coordinates were obtained in the field using a Trimble with sub-meter accuracy, and locations were also marked on printed aerials as determined visually in the field by the delineator.

Mapping data was geo-referenced relative to GPS coordinates, aerials marked up in the field, and best-available GIS satellite imagery of the study area to create the most feasible accurate map representation of ground conditions. Stream length and area measurements for aquatic resources were calculated from feature polygons using ArcGIS software.



# Results

Aquatic resources within the study area consist of an isolated swale; three unnamed intermittent drainages (IS-1, IS-2, and IS-3) that merge into a single intermittent drainage (IS-4), and then into a wetland tributary (WT-1); an ephemeral ditch (ED-1); an abutting wet meadow (AW-1), seasonal wetlands abutting the wetland tributary (AW-2 and SW-1), and riparian overstory. Except for the isolated swale these features are tributary to the Carquinez Strait, a Traditional Navigable Waters (TNW) (U.S. Army Corps of Engineers, Sacramento District, 2018). A total of 0.161 acre/1165 linear feet of potentially jurisdictional waters and 0.842 acre/2624 linear feet of potentially jurisdictional wetlands occurs within the ARDA. Features are depicted on **Aquatic Resources Delineation Maps in Appendix A** and calculated in **Table 3- Waters of the U.S. and Wetlands in the Delineation Area**.

**Table 3. Waters of the US and Wetlands in the ARDA**

| Aquatic Resource Name  | Aquatic Resources Classification |  | Aquatic Resource Size (acre) Required for all resources | Aquatic Resource Size (linear feet) Required for only stream channels |
|--|----------------------------------|--|---|---|
|  | Cowardin                         | Location (lat/long)                              |   |   |
| IS-1<br>Unnamed/EBRPD-mapped                                     | R4SB                             | 38.018632, -122.146846<br>38.019867, -122.146886 | 0.002<br>4' width used for this reach                   | 24  |
| IS-2<br>Unnamed/CDD mapped                                       | R4SB                             | 38.019198, -122.146846<br>38.019059, -122.147090 | 0.007<br>4' width used for this reach                   | 79  |
| IS-3<br>Unnamed/Unmapped   | R4SB                             | 38.019987, -122.148239<br>38.020268, -122.147815 | 0.092<br>10' width used for this reach                  | 408   |
| ED-1<br>Unnamed/Unmapped Ditch                                   | R4SBCx?                          | 38.020522, -122.148056<br>38.020297, -122.147777 | 0.007<br>4' width used for this reach                   | 79  |
| IS-4<br>Unnamed Low Flow Channel continuation of IS1+IS2+IS3+ED1 | R4SBCx?                          | 38.020297, -122.147777<br>38.019364, -122.145562 | 0.053<br>4' width used for this reach                   | 575   |
| <b>Total Non-Wetland Waters of the US</b>                        |                                  |  | <b>0.161</b>  | <b>1165</b>   |
| AW-1<br>Adjacent Wetland Creeping Ryegrass Turf                  | PFO3E                            | 38.020123, -122.148-86<br>38.020291, -122.147875 | 0.052   | --  |
| AW-2<br>Adjacent Wetlands - Seasonal                             | PUS5E                            | 38.019831, -122.146193<br>38.018984, -122.142880 | 0.540   | --  |
| WT-1<br>Wetland Tributary/Emergent Wetland                       | PEM1E                            | 38.019790, -122.146087<br>38.018984, -122.142880 | 0.110   | --  |
| SW-1<br>Saltgrass Flat   | PEM1E                            | 38.018984, -122.142880<br>38.019552, -122.143125 | 0.140   | --  |
| <b>Total Wetlands</b>  |                                  |  | <b>0.842</b>  | <b>--</b>   |

Cowardin wetland classification codes. Source: Cowardin et al, 1979: R4SBC: Riverine, Intermittent Streambed, Seasonally Flooded; R4SBCx: Riverine, Intermittent Streambed, Seasonally Flooded, Excavated?; PFO3E: Palustrine, Forested Broad-Leaved Evergreen, Seasonally Flooded/Saturated; PUS5E: Palustrine, Unconsolidated Shore, Vegetated, Seasonally Flooded/Saturated; PEM1E: Palustrine, Emergent, Persistent, Seasonally Flooded/Saturated

## Waters of the U.S.

### Intermittent Stream 1 (IS-1)

IS-1 is an unnamed Franklin Hills tributary that historically drained to Carquinez Strait. It is mapped by EBRPD on its Carquinez Regional Shoreline Park Map, and appears to be marked as an intermittent drainage on topographical maps. It begins relatively far uphill from the Nejedly Staging Area and flows northeast to the Carquinez Strait. Stream hydrology was not explored for the full length of the feature, and no surface water was observed during the ARD. But based upon the relatively extensive tree overstory, combined with the possible mapping as an intermittent drainage on topographical maps and its inclusion on EBRPD maps, the feature was characterized in this report as having intermittent flow. Soils are mapped by the NRCS Web Soil Survey as Los Gatos loam (LeF) 30 to 50 percent slopes. This soil type is well drained, has a high runoff classification, and is not associated with ponding or flooding. The soil type is not hydric. Overstory trees were coast live oak (*Quercus agrifolia*) and California bay laurel (*Umbellularia californica*). California bay laurel is a facultative (FAC) wetland species, equally likely to occur in wetlands and nonwetlands. No shrubs were present, and few herbaceous species. IS-1 would likely be categorized as Cowardin code R4SBC: Riverine Intermittent Streambed.



Photo 1. IS-1 upstream from its confluence with IS-4 in the ARDA.

## Intermittent Stream 2 (IS-2)

IS-2 is an unnamed Franklin Hills tributary to IS-1. Like IS-1, it originates uphill from the Nejedly Staging Area and follows a different course before passing under Carquinez Scenic Drive and merging shortly thereafter with IS-1. Within the ARDA it forms a small triangle of dense vegetation, bordered on the east by the existing graveled Martinez Bay Trail. Stream hydrology was not explored for the full length of the feature, and no surface water was observed during the ARD. But based upon the relatively extensive tree overstory and dense understory vegetation, along with it being a convex bowl-shaped feature, it was characterized in this report as having intermittent flow. As described in *Hydrology*, it appears to be culverted under the trail nearly all the way to IS-1. Soils are mapped by the NRCS Web Soil Survey as Los Gatos loam (LeF) 30 to 50 percent slopes. This soil type is well drained, has a high runoff classification, and is not associated with ponding or flooding. The soil type is not hydric. Overstory trees were coast live oak (*Quercus agrifolia*) and there was a dense understory of poison oak (FACU), coyote brush (NL), wild teasel (FAC), poison hemlock (FACW), native and non-native blackberry (FAC), and an assortment of grasses and forbs. Also observed was an unflowering *Fritillaria* or *Lilium* species, which could be the special-status Marin checker lily (*Fritillaria lanceolata* var. *tristulis*). IS-2 can be categorized as Cowardin code R4SB: Riverine Intermittent Streambed.



Photo 2. IS-2 in the ARDA. This feature occurs in a topographical depression and may be culverted beneath the existing graveled Martinez Bay Trail.

### Intermittent Stream 3 (IS-3)

IS-3 is an unnamed and unmapped Franklin Hills tributary that historically drained to the Carquinez Strait. Like IS-1 and IS-2, it originates uphill from the ARDA but follows a different course before passing under the pedestrian bridge. Stream hydrology was not explored for the full length of the feature, but due to surface water in its lower reach it is categorized here as an intermittent stream. Farther downstream it is joined by ED-1 and the combined drainage of IS-1 and IS-2 to form IS-4. Soils are mapped by the NRCS Web Soil Survey as Los Gatos loam (LeG) 50 to 75 percent slopes. This soil type is well drained, has a very high runoff classification, and is not associated with ponding or flooding. The soil type is not hydric. Overstory trees were coast live oak, California bay laurel, black walnut (FAC riparian), elderberry (FACU), arroyo willow (FACW), red willow (*Salix laevigata*, FACW), and wild plum (*Prunus* sp.). Along the riparian margins are poison oak (FACU), coyote brush (NL), wild teasel (FAC), poison hemlock (FACW), native and non-native blackberry (FAC), and an assortment of grasses and forbs including the Creeping Ryegrass Turf (*Elymus triticoides*) adjacent wetland discussed below. IS-3 can be categorized as Cowardin code R4SB: Riverine Intermittent Streambed.



Photo 3. IS-3 viewed from the pedestrian bridge looking upstream.



Photo 4. Hummocky area where ED-1 meets IS-3.



### Pedestrian Bridge Backfill

Minor bridge maintenance will be performed to repair a gap between the existing trail and abutment. The pedestrian bridge wingwall is currently located in the streambed at its downhill end. At its uphill end, flow appears to have eroded the soil away from both sides of the footing/wingwall, resulting in the need for maintenance.



Photo 5. Area requiring fill.



Photo 6. OHWM shown on the wingwall and channel bank.



Photo 7. Area requiring fill. The dominant vegetation is native *Elymus glaucus* (FACU).



Photo 8. View from IS-3 bank next to pedestrian bridge, looking downstream. OHWM is shown and also scour marks are visible from high flows at top of bank.

## Ephemeral Ditch 1 (ED-1)

ED-1 is an unnamed and unmapped roadside ditch that begins approximately 100 feet upstream from its confluence with IS-3. It begins abruptly, probably receiving both sheet flow from the adjacent steep hill and runoff from the UPRR ROW. It is unvegetated in its upper extent and lightly vegetated at its lower extent before entering the hummocky riparian zone and joining with IS-3. Soils are mapped by the NRCS Web Soil Survey as Los Gatos loam (LeG) 50 to 75 percent slopes, but adjusted for map scale are more likely to be Omni silty clay (Ob), a hydric soil. Hydrology indicators included saturation (A3), water marks (B1), sediment deposits (B2), surface soil cracks (B6), inundation visible on aerial imagery (B7), and water-stained leaves (B9). ED-1 can be categorized as Cowardin code R4SBCx: Riverine Intermittent Streambed Seasonally Flooded Excavated.



Photo 9. The start of ED-1 outside of (northwest of) the ARDA.



Photo 10. ED-1 as it enters the ARDA. There is no vegetation in the channel, which is filled with dry cracked mud, sticks, and dead leaves. The adjacent area to the left was not considered a wetland because it is primarily *Digitaria sanguinalis* (FACU) and upland grasses.



Photo 11. ED-1 as it continues into the ARDA. The markup depicts the topography and channel depth. The channel becomes vegetated in this section.

## Intermittent Stream 4 (IS-4)

IS-4 is an unnamed and unmapped intermittent low-flow channel paralleling the UPRR tracks. It is formed by the confluence of IS-1, IS-2, IS-3, and ED-1, and probably due to the UPRR was routed away from Carquinez marshes and was directed instead along the base of the hills. A large drainage inlet (DI) was located here, and judging from the greatly-reduced low flow channel and riparian floodplain at this location it appears to drain the majority of the flow, routing it underground and away from the UPRR ROW either to Alhambra Creek or directly to the marshes on the northern bayside. Soils are mapped by the NRCS Web Soil Survey as Los Gatos loam (LeF) 30 to 50 percent slopes, but adjusted for map scale are more likely to be Omni silty clay (Ob), a hydric soil. Hydrology indicators included surface water (A1), saturation (A3), water-stained leaves (B9), and drainage patterns (B10). Vegetation varies from arroyo willow and blackberry thickets to *Hardstem and California Bulrush Marsh*, a CDFW-designated S3 SNC. This becomes the transition zone from IS-4 to WT-1. IS-4 can be categorized as Cowardin code R4SBC: Riverine Intermittent Streambed Seasonally Flooded, and the low-flow channel may have been excavated in the past.



Photo 12. IS-4 is the combined flow of ED-1, IS-1, IS-2, and IS-3. It is a low-flow channel within the riparian floodplain, paralleling the railroad tracks. The channel bed varies from vegetated to unvegetated. This photo shows a large (approximately 20' x 10') unvegetated saturated area where water pools beneath the blackberry and willow overstory.



Photo 13. IS-4 as it continues through the ARDA. The markup depicts the topography and channel depth, with the riparian floodplain shown in the right half of the photo, and the steep hill leading to the Alhambra Cemetery.



Photo 14. IS-4 as it continues through the ARDA, in an area where tules comprise emergent vegetation. The markup depicts the topography and channel depth, with the riparian floodplain show in the far right of the photo.

## Wetlands

Wetlands were identified at 4 locations exhibiting vegetation and hydrology. As with all features in this ARDA, soil pits were not dug because of UPRRR permit restrictions. Soils are presumed where vegetation and hydrology are present. "Adjacent wetlands" are wetlands that abut or have a direct hydrological surface connection to other "waters of the United States" (i.e., IS-3) in a typical year. A "wetland tributary" is a linear stream feature that, usually in the absence of an overstory, exhibits a greater surface coverage in the channel by emergent vegetation than by open water.

### Adjacent Wetland 1 (AW-1) Creeping Ryegrass Turf

AW-1 occurs on the north side of IS-3, beginning at the pedestrian-bridge landing where it fans out across the slope to the north and follows the downstream riparian channel. AW-1 is an *Elymus* (= *Leymus*) *triticoides* and *Elymus glaucus* Creeping Ryegrass Turf community, which is both a CDFW-designated Sensitive Natural Community (S3) and a facultative/facultative-upland wetland community. This community co-occurs with native and non-native upland and facultative wetland grasses, with *E. triticoides* comprising greater than 30% of the relative herbaceous cover. As a rhizomatous grass, the percent coverage varies in density but *Elymus* generally meets or exceeds 50% across the mapped area. The *Elymus* (= *Leymus*) *triticoides* forming the AW-1 SNC is facultative, meaning it is equally likely to occur in uplands or wetlands, and the *Elymus glaucus* is FACU. Another dominant co-occurring species is *Festuca perennis* (= *Lolium perenne*), also a FAC plant. Together these species make up the majority of the herbaceous vegetative cover. The area meets the Wetland Determination Data Form vegetation criteria by meeting the Dominance Test and the Prevalence Index.



Photo 15. Creeping Ryegrass Turf, comprised mostly of *Elymus triticoides* (FAC), *Elymus glaucus* (FACU), and *Festuca perenne* (FAC). The mapped community appears to receive hydrology from sheet flow from the adjacent steep hillside and stormwater high flows from IS-3, with much of it occurring as riparian understory.

AW-1 soils are mapped by the NRCS Web Soil Survey as Los Gatos loam (LeG) 50 to 75 percent slopes. This soil type is well drained, has a very high runoff classification, and is not associated with ponding or flooding. The soil type is not hydric. However, soils at the base of Franklin Hills are mapped as Omni silty clay (Ob), a hydric soil. AW-1 probably descends across soil types, with LeG at its uphill extent and Ob at its lowland extent.

AW-1 has no primary hydrology indicators. Secondary hydrology indicators were drift deposits (B3) and drainage patterns (B10). The hydrology influencing the Creeping Ryegrass Turf community as an adjacent wetland primarily relates to its position and density under the riparian canopy, following the northern riparian edge of IS-3 which is a hummocky feature of indeterminate bank boundary. It also appears to receive sheet flow from the northwesternmost hillslope, which has an assemblage of coastal scrub plants, ties into ED-1 at the base of the slope, and may have seep/groundwater influence. Creeping Ryegrass Turf was not observed elsewhere in the ARDA nor within any line-of-sight areas.

AW-1 can be categorized as Cowardin code PF03E: Palustrine<sup>1</sup> Forested Broad-Leaved Evergreen Seasonally Flooded/Saturated.

### Adjacent Wetlands 2 (AW-2), Seasonal

AW-2 includes all wetlands on either side of IS-4, which is the intermittent low-flow channel that runs parallel to the railroad tracks. The channel itself averages 4 feet wide, with narrower and wider areas along its reach. The channel is bordered by a relatively narrow margin of seasonal wetland plants, typically saltgrass (FAC), rushes (FAC, FACW, OBL), gumplant (*Grindelia* sp., FACW), bird's foot trefoil (FAC), and rabbitsfoot grass (*Polypogon* sp., FACW, OBL). Where topography permits, an upland community of non-native oats, bromes, and foxtail barley grasses buffers AW-2 from the barren (maintained/herbicide-treated) railroad track corridor.



Photo 16. Markup shows the open water and receded channel versus the adjacent seasonal wetland. The adjacent wetland is comprised of *Distichlis spicata* (FAC), *Lotus corniculatus* (FAC), rushes (FAC, FACW, OBL), *Grindelia* sp. (FACW) and *Polypogon* spp. (FACW, OBL).

<sup>1</sup> Relating to a system of inland, nontidal wetlands characterized by the presence of trees, shrubs, and emergent vegetation.



AW-2 soils are mapped by the NRCS Web Soil Survey as Omni silty clay (Ob), a hydric soil. AW-2 has multiple primary and secondary hydrology indicators: saturation (A3), drift deposits (B3), inundation visible on aerial imagery (B7), drainage patterns (B10), and saturation visible on aerial imagery (C9).

AW-2 can be categorized as Cowardin code PUS5E: Palustrine Unconsolidated Shore Vegetated Seasonally Flooded/Saturated.

### Wetland Tributary 1 (WT-1)

IS-4 ends and WT-1 begins as the drainage rounds the steep base of the hills before heading east toward Alhambra Creek. In the transition from IS-4 to WT-1 the channel supports Hardstem and California Bulrush Marshes, a CDFW-designated SNC (S3). Hardstem bulrush or California bulrush is dominant or co-dominant in the herbaceous layer; bordering the channel is dense growth of California and Himalayan blackberry, arroyo willow, and coyote brush.



Photo 17. Photo shows the arroyo willow thicket and the understory of tules that becomes very dense as it emerges from the riparian canopy into the open area.

The riparian and shrub overstories cease with the hills, and emergent wetlands form begin to form within the channel. Emergent wetland vegetation varies by segment. There is a small patch of *Yerba Mansa Alkali Wet Meadow*, a CDFW-designated SNC (S2). Yerba mansa is an OBL wetland plant. To form a SNC it must comprise at least 30% relative cover, a membership rule it appeared to meet due to "runners" that formed a network over the channel. The population is likely to expand and contract seasonally and from year to year. It co-occurred with cocklebur. Emergent vegetation in other segments of the WT-1 include cocklebur, narrowleaf cattail (*Typha*

*angustifolia*), and bulrush (*Schoenoplectus* sp.). Some segments are open water, with at least one large pooled area containing abundant Sierran treefrog tadpoles. Other segments are saturated and unvegetated, with thick algal mats covering the channel bed.



Photo 18. Top left corner- *Anemopsis californica* patch. Top right corner- Adjacent wetland relative to the receding channel of open water, with emergent vegetation in the receding zone. Bottom left corner- bulrush emergents. Bottom right corner- *Typha angustifolia* patch and the drying channel.

WT-1 soils are mapped by the NRCS Web Soil Survey as Los Gatos loam 30 to 50 percent slopes (LeF) and as Omni silty clay (Ob), a hydric soil. Adjusting for map scale, it is presumed that soils are entirely Ob. WT-1 has multiple primary and secondary hydrology indicators: surface water (A1), saturation (A3), drift deposits (B3), inundation visible on aerial imagery (B7), water stained leaves (B9), aquatic invertebrates (B13), drainage patterns (B10), and saturation visible on aerial imagery (C9).

WT-1 can be characterized as Cowardin code PEM1E: Palustrine Emergent Persistent Seasonally Flooded/Saturated.

### Seasonal Wetland 1 (SW-1), Saltgrass Flat

As WT-1 extends toward Alhambra Creek it transitions into a saltgrass flat that is SW-1. SW-1 soils are mapped by the NRCS Web Soil Survey as Omni silty clay (Ob), a hydric soil. No soil pits were dug. Saltgrass is a FAC species and has an equal chance of occurring in wetlands or uplands. Based on the mapped soil type and 100% vegetative coverage by saltgrass, combined with secondary hydrology indicators of drainage patterns (B10) and saturation visible on aerial imagery (C9), this feature is determined to be a seasonal wetland.

SW-1 can be characterized as Cowardin code PEM1E: Palustrine Emergent Persistent Seasonally Flooded/Saturated.



Photo 19. WT-1 ends into the saltgrass flat (SW-1).

## Waters of the State

Waters of the State include waters that are potentially jurisdictional to CDFW under their Lake and Streambed Alteration Program, waters and wetlands that are potentially jurisdictional to RWQCB under their 401 Regional Water Quality Certification Program, and waters and wetlands that are potentially jurisdictional to BCDC because they are located in their shoreline band. Features that are potentially jurisdictional and their acreages are identified in **Table 4. Waters of the State**.

### California Department of Fish and Wildlife

Waters of the State that are potentially jurisdictional to CDFW under their Lake and Streambed Alteration Program are IS-1, IS-2, IS-3, ED-1, IS-4, and WT-1, totaling 0.428 acre and 1873 linear feet in the ARDA as shown in Table 4. Riparian habitat is also potentially jurisdictional and was calculated to comprise 1.074 acre in the ARDA.

### Regional Water Quality Control Board

Waters of the State that are potentially jurisdictional to RWQCB under their 401 Regional Water Quality Certification Program are IS-1, IS-2, IS-3, ED-1, IS-4, and WT-1. Wetlands that are potentially jurisdictional to RWQCB under their 401 Regional Water Quality Certification Program are AW-1, AW-2, and SW-1. These total 1.166 acres in the ARDA as shown in Table 4.

### Bay Conservation and Development Commission

Waters and wetlands that are potentially jurisdictional to BCDC under their Shoreline Development program are portions of IS-3, ED-1, IS-4, WT-1, AW-1, AW-2, and SW-1 that occur within 100 feet inland of the Mean Higher High Water (MHHW) mark. The National Oceanic and Atmospheric Administration publishes a national GIS dataset that includes the MHHW mark, but BCDC uses a local dataset compiled by the San Francisco Estuary Institute. According to the latter dataset, a total of 0.656 acre/320 linear feet of BCDC shoreline band occurs in the ARDA, as shown in Table 4.

**Table 4. Waters of the State**

| Aquatic Resource Name          | Aquatic Resources Classification |  | Aquatic Resource Size (acre) Required for all resources | Aquatic Resource Size (linear feet) Required for only stream channels |
|--------------------------------|----------------------------------|--|---|---|
|                                | Cowardin                         | Location (lat/long)                              |   |   |
| IS-1<br>Unnamed/EBRPD-mapped   | R4SB                             | 38.018632, -122.146846<br>38.019867, -122.146886 | 0.003<br>8' width used for this reach                   | 24  |
| IS-2<br>Unnamed/CDD mapped     | R4SB                             | 38.019198, -122.146846<br>38.019059, -122.147090 | 0.014<br>8' width used for this reach                   | 79  |
| IS-3<br>Unnamed/Unmapped       | R4SB                             | 38.019987, -122.148239<br>38.020268, -122.147815 | 0.191<br>2' width used for this reach                   | 408   |
| ED-1<br>Unnamed/Unmapped Ditch | R4SBCx?                          | 38.020522, -122.148056<br>38.020297, -122.147777 | 0.007<br>5' width used for this reach                   | 79  |

| Aquatic Resource Name   | Aquatic Resources Classification |  | Aquatic Resource Size (acre) Required for all resources | Aquatic Resource Size (linear feet) Required for only stream channels |
|---|----------------------------------|--|---|---|
|   | Cowardin                         | Location (lat/long)                              |   |   |
| IS-4<br>Unnamed Low Flow Channel<br>continuation of IS1+IS2+IS3+ED1 | R4SBCx?                          | 38.020297, -122.147777<br>38.019364, -122.145562 | 0.104<br>8' width used for this reach                   | 575   |
| WT-1<br>Wetland Tributary/Emergent<br>Wetland                       | PEM1E                            | 38.019790, -122.146087<br>38.018984, -122.142880 | 0.109   | 708   |
| Riparian  | --                               | --   | [1.074]*  | --  |
| <b>Total Waters of the State under CDFW and RWQCB Jurisdiction*</b> |                                  |  | <b>0.428</b>  | <b>1873</b>   |
| AW-1<br>Adjacent Wetland Creeping<br>Ryegrass Turf                  | PFO3E                            | 38.020123, -122.148-86<br>38.020291, -122.147875 | 0.052   | --  |
| AW-2<br>Adjacent Wetlands - Seasonal                                | PUS5E                            | 38.019831, -122.146193<br>38.018984, -122.142880 | 0.543   | --  |
| SW-1<br>Saltgrass Flat  | PEM1E                            | 38.018984, -122.142880<br>38.019552, -122.143125 | 0.143   | --  |
| <b>Total State Wetlands under RWQCB Jurisdiction</b>                |                                  |  | <b>0.738</b>  | <b>--</b>   |
| Shoreline Band  | E2EM1                            |  | 0.656   | 320   |
| <b>Total BCDC Shoreline Band</b>                                    |                                  |  | <b>0.656</b>  | <b>320</b>  |

\* Excludes Riparian. Cowardin wetland classification codes. Source: Cowardin et al, 1979:

**R4SBC:** Riverine, Intermittent Streambed, Seasonally Flooded; **R4SBCx:** Riverine, Intermittent Streambed, Seasonally Flooded, Excavated?; **PFO3:** Palustrine, Forested Broad-Leaved Evergreen, Seasonally Flooded/Saturated; **PUS5E:** Palustrine, Unconsolidated Shore, Vegetated, Seasonally Flooded/Saturated; **PEM1E:** Palustrine, Emergent, Persistent, Seasonally Flooded/Saturated; **E2EM1:** Estuarine Intertidal Emergent Persistent

## Features Considered to be Non-Jurisdictional

The stand-alone swale (point **G**) is considered to be non-jurisdictional. It appears to be a small slump, or potentially a manmade channel dug to reduce the velocity of sheet flow down the hill. It may or may not overflow into the northwesternmost ED-1 (point **H**). No soil pit was dug. Vegetation included wild rye (*Elymus triticoides*) and non-native upland grasses.

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# Appendix A Delineation Map/s

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Appendix A includes an overview map and detail maps of all delineated aquatic resources (“Aquatic Resources Delineation Map”) in accordance with the *Final Map and Drawing Standards for the South Pacific Division Regulatory Program* (Mapping Standards). Photo points are identified on the overview map in Appendix D, Site Photographs Map.

Aquatic resources that the requestor believes are not jurisdictional are identified on *Appendix A Delineation Map/s* as "Stand alone Swale".

To avoid cluttering the Aquatic Resources Delineation Map/s, the requested reference block identifying the individual(s) who conducted the delineation, date(s) of the maps, and date(s) of any revisions is provided here as follows:

|                      |  |
|----------------------|--|
| Delineation date:    | May 12, 2020   |
| Delineators:         | Natasha Dvorak/ Swaim Biological, Inc.<br>Bridget Sousa/ Swaim Biological, Inc.  |
| GIS & Map Preparers: | Chris Swaim/ Swaim Biological, Inc.<br>Natasha Dvorak/ Swaim Biological, Inc.  |
| Map Imagery Data:    | Aerial Imagery provided by Kimley-Horn<br>Local Imagery date: February 14, 2020  |
| Date Maps Prepared:  | Field delineation results were mapped in GIS in May and June 2020.<br>Reports maps were prepared in May and June 2020. |

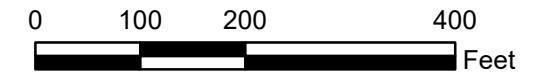
East Bay Regional Park District  
 Martinez Bay Trail Project Phase II  
 Martinez, CA  
 May 2020

Appendix A - Delineation of Wetlands  
 and Other Waters of the U.S. for the  
 Martinez Bay Trail Project



**Legend**

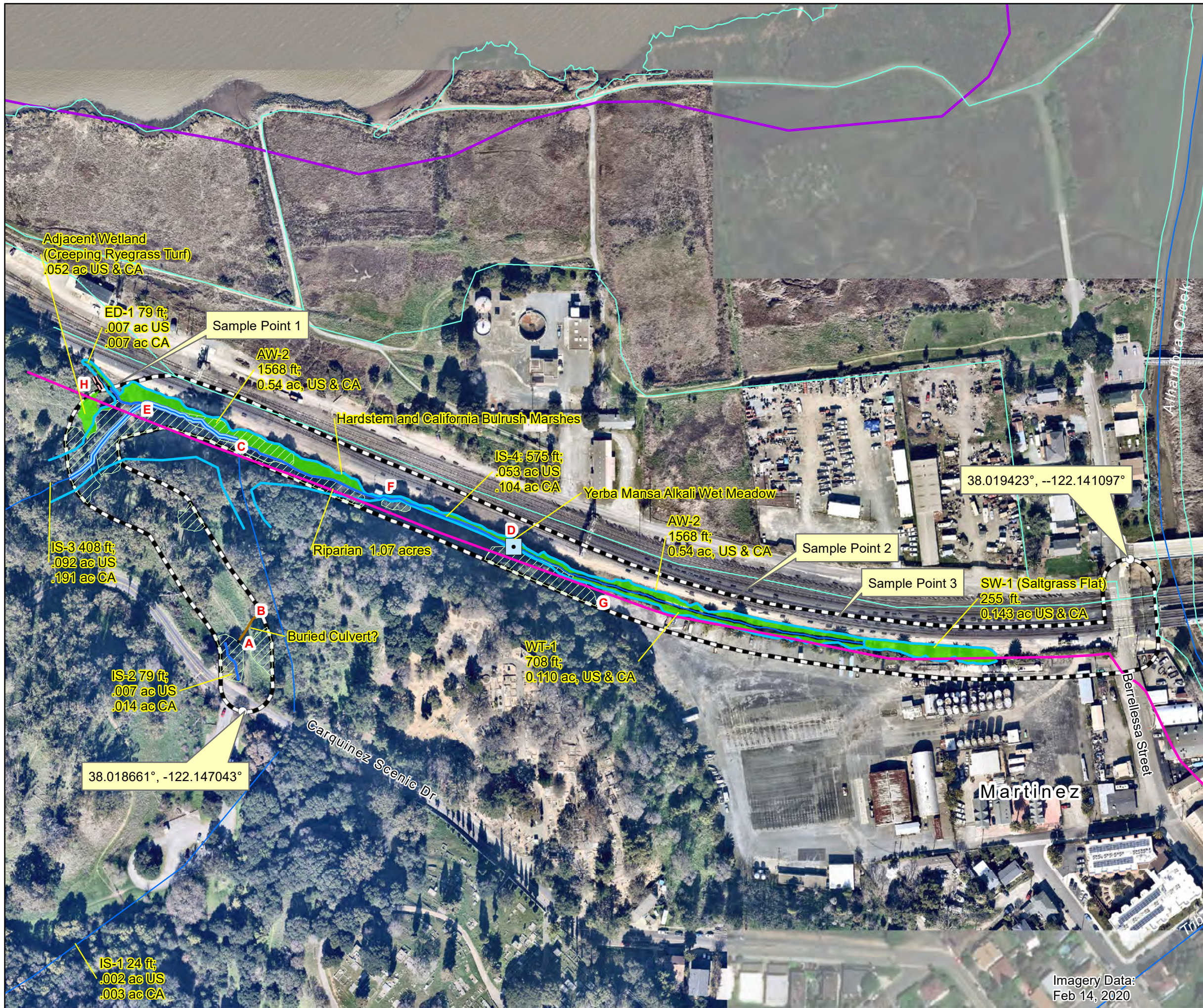
- Map Reference Point
  - Drainage\_inlet
  - BCDC Shoreline band
  - NOAA USA medium shoreline
  - Creeks/Drainages
  - ▭ Survey Area Boundary (6.68 acres)
  - Riparian Floodplain Boundary
- Waters**
- Waters (0.161 acre)
  - 100-ft BCDC Shoreline Band Buffer
  - ▨ Stand alone swale
  - ▨ Riparian (1.074 acres)
  - Wetlands (0.747 acre)



Coordinate System: NAD 1983 UTM Zone 10N  
 Projection: Transverse Mercator  
 Datum: North American 1983  
 Vertical Datum: NAVD88, U.S. Feet  
 1 in = 183 ft

**Created on May 26, 2020**  
 Made in accordance with the  
 Updated Map and Drawing Standards for the  
 South Pacific Division Regulatory Program,  
 as amended on February 10, 2016, by:  
 Natasha Dvorak and Chris Swaim  
 Swaim Biological, Incorporated  
 4435 First Street #312  
 Livermore, CA 94551

Delineators: Natasha Dvorak and Bridget Sousa  
 Delineation dates: May 12, 2020



Imagery Data:  
 Feb 14, 2020



## Appendix B

# Plant Species Observed in the Delineation Area

| <b>Genus</b>        | <b>Species</b>       | <b>Common Name</b>       | <b>Wetland Indicator Status<sup>a</sup></b> | <b>Cal-IPC Rating</b>             |
|---------------------|----------------------|--------------------------|---|-----------------------------------|
| <i>Achillea</i>     | <i>millefolium</i>   | yarrow                   | NL  |                                   |
| <i>Aesculus</i>     | <i>californica</i>   | buckeye                  | NL  |                                   |
| <i>Ageratina</i>    | <i>adenophora</i>    | thoroughwort             | FACU  | Moderate<br>Federal: Noxious Weed |
| <i>Anemopsis</i>    | <i>californica</i>   | yerba mansa              | OBL   |                                   |
| <i>Artemisia</i>    | <i>californica</i>   | California sage          | NL  |                                   |
| <i>Asclepias</i>    | <i>fascicularis</i>  | narrowleaf milkweed      | FAC   |                                   |
| <i>Avena</i>        | <i>barbata</i>       | wild oat                 | NL  | Moderate                          |
| <i>Avena</i>        | <i>fatua</i>         | wild oat                 | NL  | Moderate                          |
| <i>Baccharis</i>    | <i>pilularis</i>     | coyote brush             | NL  |                                   |
| <i>Baccharis</i>    | <i>salicifolia</i>   | mulefat                  | FAC   |                                   |
| <i>Brachypodium</i> | <i>distachyon</i>    | false brome              | NL  | Moderate                          |
| <i>Brassica</i>     | <i>nigra</i>         | black mustard            | UPL   | Moderate                          |
| <i>Briza</i>        | <i>minor</i>         | little rattlesnake grass | FAC   | Naturalized                       |
| <i>Bromus</i>       | <i>diandrus</i>      | ripgut brome             | NL  | Moderate                          |
| <i>Bromus</i>       | <i>hordeaceus</i>    | soft chess               | FACU  | Limited                           |
| <i>Bromus</i>       | <i>madritensis</i>   | foxtail brome            | UPL   | Naturalized                       |
| <i>Calystegia</i>   | sp.                  | morning glory            | NL  |                                   |
| <i>Carex</i>        | species              | sedge                    | FACW-OBL                                    |                                   |
| <i>Carduus</i>      | <i>pycnocephalus</i> | Italian thistle          | UPL   | Moderate                          |
| <i>Centaurea</i>    | <i>melitensis</i>    | totalote                 | NL  | Moderate                          |
| <i>Centaurea</i>    | <i>solstitialis</i>  | yellow star thistle      | NL  | High                              |
| <i>Chenopodium</i>  | <i>murale</i>        | nettle leaf goosefoot    | FACU  | Naturalized                       |
| <i>Chlorogallum</i> | <i>pomeridianum</i>  | soap root                | NL  |                                   |
| <i>Claytonia</i>    | sp.                  | miner's lettuce          | FAC?  |                                   |
| <i>Cirsium</i>      | <i>vulgare</i>       | bull thistle             | NL  | Moderate                          |

| <b>Genus</b>            | <b>Species</b>        | <b>Common Name</b>      | <b>Wetland Indicator Status<sup>a</sup></b> | <b>Cal-IPC Rating</b> |
|-------------------------|-----------------------|-------------------------|---|-----------------------|
| <i>Conium</i>           | <i>maculatum</i>      | poison hemlock          | FACW  | Moderate              |
| <i>Cotoneaster</i>      | <i>francheti?</i>     | cotoneaster             | NL  | Moderate              |
| <i>Cynosurus</i>        | <i>echinatus</i>      | hedgehog dogtail grass  | NL  | Moderate              |
| <i>Cyperus</i>          | <i>eragrostis</i>     | tall flat sedge         | FACW  |                       |
| <i>Digitaria</i>        | <i>sanguinalis</i>    | hairy crabgrass         | FACU  | Naturalized           |
| <i>Diplacus</i>         | <i>aurantiacus</i>    | bush monkeyflower       | FACU  |                       |
| <i>Dipsacus</i>         | <i>sativus</i>        | Indian teasel           | NL  | Moderate              |
| <i>Distichlis</i>       | <i>spicata</i>        | saltgrass               | FAC   |                       |
| <i>Dittrichia</i>       | <i>graveolens</i>     | stinkwort               | NL  | Moderate              |
| <i>Elymus</i>           | <i>glaucus</i>        | blue wild rye           | FACU  |                       |
| <i>Elymus (=Leymus)</i> | <i>triticoides</i>    | beardless Lyme grass    | FAC   |                       |
| <i>Epilobium</i>        | <i>ciliatum</i>       | FACW                    | FACW  |                       |
| <i>Epilobium</i>        | <i>densiflorum</i>    | dense-flower willowherb | FACW  |                       |
| <i>Eriophyllum</i>      | <i>confertiflorum</i> | yellow yarrow           | NL  |                       |
| <i>Erodium</i>          | <i>botrys</i>         | storksbill              | FACU  | Naturalized           |
| <i>Erodium</i>          | <i>cicutarium</i>     | storksbill              | NL  | Limited               |
| <i>Escholschzia</i>     | <i>californica</i>    | California poppy        | NL  |                       |
| <i>Eucalyptus</i>       | sp.                   | Eucalyptus              | NL  | Limited               |
| <i>Festuca</i>          | <i>myuros</i>         | 6-week's grass          | NL  | Moderate              |
| <i>Festuca</i>          | <i>perennis</i>       | Italian rye grass       | FAC   | Moderate              |
| <i>Foeniculum</i>       | <i>vulgare</i>        | fennel                  | NL  | High                  |
| <i>Frangula</i>         | <i>californica</i>    | California coffeeberry  | NL  |                       |
| <i>Fritillaria?</i>     | sp.                   |                         | NL  |                       |
| <i>Galium</i>           | <i>aparine</i>        | bedstraw                | FACU  |                       |
| <i>Genista</i>          | <i>monspessulana</i>  | French broom            | NL  | High                  |
| <i>Geranium</i>         | <i>dissectum</i>      | wild geranium           | NL  | Limited               |
| <i>Geranium</i>         | <i>molle</i>          | cranebill               | NL  | Naturalized           |
| <i>Geranium</i>         | <i>purpureum</i>      | herb robert             | NL  | Limited               |
| <i>Glyceria?</i>        | <i>occidentalis</i>   | western manna grass     | OBL?  | Naturalized           |
| <i>Grindelia</i>        | sp.                   | gumplant                | FACW  |                       |

| <b>Genus</b>          | <b>Species</b>                | <b>Common Name</b>      | <b>Wetland Indicator Status<sup>a</sup></b> | <b>Cal-IPC Rating</b>                      |
|-----------------------|-------------------------------|-------------------------|---|--|
| <i>Helenium</i>       | <i>bigelovii</i>              | Bigelow's sneezeweed    | FACW  |  |
| <i>Helenium</i>       | <i>puberulum</i>              | sneezeweed              | FACW  |  |
| <i>Helminthotheca</i> | <i>echioides</i>              | bristly oxtongue        | FACU  | Limited                                    |
| <i>Heteromeles</i>    | <i>arbutifolia</i>            | toyon                   | NL  |  |
| <i>Holcus</i>         | <i>lanatus</i>                | velvet grass            | FAC   | Moderate                                   |
| <i>Hordeum</i>        | <i>jubatum</i>                | foxtail barley          | FAC   |  |
| <i>Hordeum</i>        | <i>marinum</i>                | seaside barley          | FAC   | Moderate                                   |
| <i>Hordeum</i>        | <i>murinum</i>                | mouse barley            | FACU  | Moderate                                   |
| <i>Iris</i>           | <i>pseudacorus</i>            | yellow iris             | OBL   | Limited                                    |
| <i>Juglans</i>        | <i>hindsii</i>                | walnut                  | FAC   |  |
| <i>Juncus</i>         | <i>sp. mexicanus, patens?</i> | rush                    | FAC?  |  |
| <i>Lactuca</i>        | <i>serriola</i>               | prickly lettuce         | FACU  | Naturalized                                |
| <i>Lamium</i>         | <i>purpureum</i>              | henbit                  | NL  | Naturalized                                |
| <i>Lathyrus</i>       | <i>latifolius</i>             | everlasting pea         | NL  | Naturalized                                |
| <i>Lepidium</i>       | <i>latifolium</i>             | perennial pepperweed    | FAC   | High                                       |
| <i>Lilium?</i>        | <i>pardalinum</i>             | leopard lily            | FACW  |  |
| <i>Lonicera</i>       | <i>hispidula</i>              | pink honeysuckle        | FACU  |  |
| <i>Lotus</i>          | <i>corniculatus</i>           | bird's foot trefoil     | FAC   | Naturalized                                |
| <i>Lythrum</i>        | <i>hyssopifolia</i>           | hyssop loosestrife      | OBL   | Limited                                    |
| <i>Madia</i>          | <i>sativa</i>                 | coastal tarweed         | NL  |  |
| <i>Medicago</i>       | <i>lupulina</i>               | black medic             | FAC   | Naturalized                                |
| <i>Medicago</i>       | <i>polymorpha</i>             | burclover               | FACU  | Limited                                    |
| <i>Melilotus</i>      | <i>indicus</i>                | Indian sweet clover     | FACU  | Naturalized                                |
| <i>Monardella</i>     | <i>sp.</i>                    | coyote mint             | NL  |  |
| <i>Oxalis</i>         | <i>corniculata</i>            | creeping wood sorrel    | FACU  | Naturalized                                |
| <i>Pentagramma</i>    | <i>triangularis</i>           | goldback fern           | NL  |  |
| <i>Phalaris</i>       | <i>sp.</i>                    | grass                   | FACU?                                       | Some species Native,<br>others Naturalized |
| <i>Phoenix</i>        | <i>canariensis</i>            | Canary Island palm      | NL  | Limited                                    |
| <i>Phyla</i>          | <i>nodiflora</i>              | turkey tangle fog fruit | FACW  |  |
| <i>Plantago</i>       | <i>coronopus</i>              | cut leaf plantain       | NL  | Naturalized                                |

| <b>Genus</b>          | <b>Species</b>       | <b>Common Name</b>    | <b>Wetland Indicator Status<sup>a</sup></b> | <b>Cal-IPC Rating</b> |
|-----------------------|----------------------|-----------------------|---|-----------------------|
| <i>Plantago</i>       | <i>lanceolata</i>    | English plantain      | FAC   | Limited               |
| <i>Polypogon</i>      | <i>monspeliensis</i> | rabbitsfoot grass     | FACW  | Limited               |
| <i>Polystichum</i>    | sp.                  | sword fern            | FACU?                                       |                       |
| <i>Prunus</i>         | sp.                  | plum                  | FACU?                                       | Limited?              |
| <i>Quercus</i>        | <i>agrifolia</i>     | coast live oak        | NL  |                       |
| <i>Ranunculus</i>     | sp.                  | buttercup             | FACU to OBL                                 |                       |
| <i>Rosa</i>           | <i>californica?</i>  | California rose       | FAC   |                       |
| <i>Rumex</i>          | <i>crispus</i>       | curly dock            | FAC   | Limited               |
| <i>Rumex</i>          | <i>pulcher</i>       | fiddle dock           | FAC   | Naturalized           |
| <i>Rubus</i>          | <i>armeniacus</i>    | Himalayan blackberry  | FAC   | High                  |
| <i>Rubus</i>          | <i>parviflorus</i>   | western thimbleberry  | FAC   |                       |
| <i>Rubus</i>          | <i>ursinus</i>       | California blackberry | FAC   |                       |
| <i>Salix</i>          | <i>laevigata</i>     | red willow            | FACW  |                       |
| <i>Salix</i>          | <i>lasiolepis</i>    | arroyo willow         | FACW  |                       |
| <i>Sambucus</i>       | <i>nigra</i>         | black elderberry      | FACU  |                       |
| <i>Silybum</i>        | <i>marianum</i>      | milk thistle          | NL  | Limited               |
| <i>Solanum</i>        | sp.                  | nightshade            | FACU?                                       |                       |
| <i>Sonchus</i>        | <i>asper</i>         | spiny sow-thistle     | FAC   | Naturalized           |
| <i>Sonchus</i>        | <i>oleraceus</i>     | common sow thistle    | UPL   | Naturalized           |
| <i>Spergularia</i>    | <i>bocconi</i>       | Boccone's sand spurry | FACW  | Naturalized           |
| <i>Stachys</i>        | <i>bullata</i>       | hedgenettle           | NL  |                       |
| <i>Stipa</i>          | <i>miliacea</i>      | Smilo grass           | NL  | Limited               |
| <i>Symphoricarpos</i> | <i>albus</i>         | common snowberry      | FACU  |                       |
| <i>Torilis</i>        | <i>arvensis</i>      | stickweed             | NL  | Moderate              |
| <i>Toxicodendron</i>  | <i>diversilobum</i>  | poison oak            | FACU  |                       |
| <i>Trichostemma</i>   | <i>lanceolatum</i>   | vinegarweed           | FACU  |                       |
| <i>Trifolium</i>      | <i>hirtum</i>        | rose clover           | NL  | Limited               |
| <i>Trifolium</i>      | <i>tomentosum</i>    | woolly clover         | NL  | Naturalized           |
| <i>Typha</i>          | <i>angustifolia</i>  | narrow-leaf cattail   | OBL   | Naturalized           |
| <i>Umbellularia</i>   | <i>californica</i>   | California bay laurel | FAC   |                       |

| <b>Genus</b>    | <b>Species</b>    | <b>Common Name</b>     | <b>Wetland Indicator Status<sup>a</sup></b> | <b>Cal-IPC Rating</b> |
|-----------------|-------------------|------------------------|---|-----------------------|
| <i>Urtica</i>   | <i>urens</i>      | annual stinging nettle | NL  |                       |
| <i>Vicia</i>    | <i>sativa</i>     | garden vetch           | FACU  | Naturalized           |
| <i>Vicia</i>    | <i>villosa</i>    | spring vetch           | NL  | Naturalized           |
| <i>Xanthium</i> | <i>strumarium</i> | rough cocklebur        | FAC   |                       |

Sources: Environmental Laboratory 1987; U.S. Army Corps of Engineers 2012; Baldwin et al. 2012; Lichvar, et al., 2014; 2016; 2018.

<sup>a</sup> Indicator Status Definitions:

- OBL = Obligate, almost always occurs in wetlands (>99% probability of occurrence)
- FACW = Facultative wetland, usually occurs in wetlands (66%–99% probability)
- FAC = Facultative, equally likely to occur in wetlands or nonwetlands (34%–66% probability)
- FACU = Facultative upland, usually occurs in nonwetlands but occasionally in wetlands (1%–33% probability)
- UPL = Obligate upland, almost never occurs in wetlands (<1% probability)
- NI = No indicator (insufficient information to assign an indicator status)
- ~ = unsure as to FAC or FACU (plant not identifiable to species in its current condition)
- = unsure as to FAC, FACU, or UPL (plant not identifiable to species in its current condition)

**Appendix C**  
**Routine Wetland Delineation Data Forms**

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WETLAND DETERMINATION DATA FORM - Arid West Region

Project/Site: Martinez Bay Trail City/County: Martinez, Contra Costa Sampling Date: 5/12/2020  
 Applicant/Owner: EBRPD/Kimley-Horn State: CA Sampling Point: WET-1  
 Investigator(s): N. Dvorak, B. Sousa Section, Township, Range: none mapped  
 Landform (hillslope, terrace, etc.): modified toe of slope Local relief (concave, convex, none): CONCAVE Slope (%): 1-2%  
 Subregion (LRR): Arid West Lat: 38.020179 Long: -122.177977 Datum: lat/long 86  
 Soil Map Unit Name: Los Gatos loam 50-75% slopes LeS NWI classification: \_\_\_\_\_  
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes \_\_\_\_\_ No X (If no, explain in Remarks.)  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ✓  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

|                                 |                    |   |
|---------------------------------|--------------------|---|
| Hydrophytic Vegetation Present? | Yes _____ No _____ | Is the Sampled Area within a Wetland? Yes _____ No <u>X</u> |
| Hydric Soil Present?            | Yes _____ No _____ |   |
| Wetland Hydrology Present?      | Yes _____ No _____ |   |

Remarks: below average rainfall year. This feature has been consistently modified for 80+ years, and is subject to UPRR ROW maintenance - veg clearing, gravel fill, draining.

VEGETATION - Use scientific names of plants.

| Tree Stratum (Plot size: _____)                                       | Absolute % Cover | Dominant Species? | Indicator Status | Dominance Test worksheet:  |                              |
|---|------------------|-------------------|------------------|--|------------------------------|
| 1 _____   |                  |                   |                  | Number of Dominant Species That Are OBL, FACW, or FAC:   | <u>1</u> (A)                 |
| 2 _____   |                  |                   |                  | Total Number of Dominant Species Across All Strata:  | <u>2</u> (B)                 |
| 3 _____   |                  |                   |                  | Percent of Dominant Species That Are OBL, FACW, or FAC:  | <u>50%</u> (AB)              |
| 4 _____   |                  |                   |                  | Prevalence Index worksheet:  |                              |
| = Total Cover   |                  |                   |                  | Total % Cover of:  | Multiply by:                 |
| Sealing/Shrub Stratum (Plot size: _____)                              |                  |                   |                  | OBL species  | <u>0</u> x 1 = <u>0</u>      |
| 1 _____   |                  |                   |                  | FACW species   | <u>5</u> x 2 = <u>10</u>     |
| 2 _____   |                  |                   |                  | FAC species  | <u>26</u> x 3 = <u>108</u>   |
| 3 _____   |                  |                   |                  | FACU species   | <u>40</u> x 4 = <u>160</u>   |
| 4 _____   |                  |                   |                  | UPL species  | <u>1</u> x 5 = <u>20</u>     |
| 5 _____   |                  |                   |                  | Column Totals:   | <u>85</u> (A) <u>298</u> (B) |
| = Total Cover   |                  |                   |                  | Prevalence Index = B/A = <u>3.5</u>  |                              |
| Herb Stratum (Plot size: <u>5'</u> )                                  |                  |                   |                  | Hydrophytic Vegetation Indicators:   |                              |
| 1 <u>Digitaria sanguinalis</u>  | <u>40</u>        | <u>Y</u>          | <u>FACU</u>      | — Dominance Test is >50%   |                              |
| 2 <u>Elytrea perennis</u>   | <u>30</u>        | <u>Y</u>          | <u>FAC</u>       | — Prevalence Index is <= 3.0 <sup>1</sup>  |                              |
| 3 <u>Conium maculatum</u>   | <u>3</u>         | <u>N</u>          | <u>FACW</u>      | — Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)           |                              |
| 4 <u>Xanthoxylum strumarium</u>                                       | <u>3</u>         | <u>N</u>          | <u>FAC</u>       | — Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)  |                              |
| 5 <u>Helminthotheca ichthalea</u>                                     | <u>3</u>         | <u>N</u>          | <u>FAC</u>       | —  |                              |
| 6 <u>Taraxacum arvensis</u>   | <u>3</u>         | <u>N</u>          | <u>NL</u>        | —  |                              |
| 7 <u>Polygonum monspeliensis</u>                                      | <u>2</u>         | <u>N</u>          | <u>FACW</u>      | —  |                              |
| 8 <u>Cydasurus echinatus</u>  | <u>1</u>         | <u>N</u>          | <u>NL</u>        | —  |                              |
| = Total Cover   |                  |                   |                  | <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic. |                              |
| Woody Vine Stratum (Plot size: _____)                                 |                  |                   |                  | Hydrophytic Vegetation Present? Yes _____ No <u>X</u>  |                              |
| 1 _____   |                  |                   |                  | —  |                              |
| 2 _____   |                  |                   |                  | —  |                              |
| = Total Cover   |                  |                   |                  | —  |                              |
| % Bare Ground in Herb Stratum <u>15</u> % Cover of Biotic Crust _____ |                  |                   |                  | —  |                              |

Remarks: Area adjacent to ED-1. Dominated by FAC + FACU species.

**SOIL**

Sampling Point: WET-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

| Depth (inches) | Matrix        |   | Redox Features |   |                   |                  | Texture | Remarks  |
|----------------|---------------|---|----------------|---|-------------------|------------------|---------|--|
|                | Color (moist) | % | Color (moist)  | % | Type <sup>1</sup> | Loc <sup>2</sup> |         |  |
| /              |               |   |                |   |                   |                  |         |  |
|                |               |   |                |   |                   |                  |         | No soil pits dug. Tire rut peds examined. Soil was likely imported fill. A few redox concentrations. |

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. <sup>2</sup>Location: PL=Pore Lining, M=Matrix

|  |   |  |
|--|---|--|
| <b>Hydric Soil Indicators:</b> (Applicable to all LRRs, unless otherwise noted.)<br><input type="checkbox"/> Histosol (A1)<br><input type="checkbox"/> Histic Epipedon (A2)<br><input type="checkbox"/> Black Histic (A3)<br><input type="checkbox"/> Hydrogen Sulfide (A4)<br><input type="checkbox"/> Stratified Layers (A5) (LRR C)<br><input type="checkbox"/> 1 cm Muck (A9) (LRR D)<br><input type="checkbox"/> Depleted Below Dark Surface (A11)<br><input type="checkbox"/> Thick Dark Surface (A12)<br><input type="checkbox"/> Sandy Mucky Mineral (S1)<br><input type="checkbox"/> Sandy Gleyed Matrix (S4) | <input type="checkbox"/> Sandy Redox (S5)<br><input type="checkbox"/> Stripped Matrix (S6)<br><input type="checkbox"/> Loamy Mucky Mineral (F1)<br><input type="checkbox"/> Loamy Gleyed Matrix (F2)<br><input type="checkbox"/> Depleted Matrix (F3)<br><input type="checkbox"/> Redox Dark Surface (F6)<br><input type="checkbox"/> Depleted Dark Surface (F7)<br><input type="checkbox"/> Redox Depressions (F8)<br><input type="checkbox"/> Vernal Pools (F9) | <b>Indicators for Problematic Hydric Soils<sup>3</sup>:</b><br><input type="checkbox"/> 1 cm Muck (A9) (LRR C)<br><input type="checkbox"/> 2 cm Muck (A10) (LRR B)<br><input type="checkbox"/> Reduced Vertic (F18)<br><input type="checkbox"/> Red Parent Material (TF2)<br><input type="checkbox"/> Other (Explain in Remarks) |
|--|---|--|

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

**Restrictive Layer (if present):**  
 Type: \_\_\_\_\_  
 Depth (inches): \_\_\_\_\_

Hydric Soil Present? Yes \_\_\_\_\_ No X

Remarks: \* were observed in the matrix but were considered to be less than 2% and not prominent.

**HYDROLOGY**

**Wetland Hydrology Indicators:**

|   |  |  |
|---|--|--|
| <b>Primary Indicators (minimum of one required; check all that apply)</b><br><input type="checkbox"/> Surface Water (A1)<br><input type="checkbox"/> High Water Table (A2)<br><input type="checkbox"/> Saturation (A3)<br><input type="checkbox"/> Water Marks (B1) (Nonriverine)<br><input type="checkbox"/> Sediment Deposits (B2) (Nonriverine)<br><input type="checkbox"/> Drift Deposits (B3) (Nonriverine)<br><input type="checkbox"/> Surface Soil Cracks (B6)<br><input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)<br><input type="checkbox"/> Water-Stained Leaves (B9) | <input type="checkbox"/> Salt Crust (B11)<br><input type="checkbox"/> Biotic Crust (B12)<br><input type="checkbox"/> Aquatic Invertebrates (B13)<br><input type="checkbox"/> Hydrogen Sulfide Odor (C1)<br><input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3)<br><input type="checkbox"/> Presence of Reduced Iron (C4)<br><input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)<br><input type="checkbox"/> Thin Muck Surface (C7)<br><input type="checkbox"/> Other (Explain in Remarks) | <b>Secondary Indicators (2 or more required)</b><br><input type="checkbox"/> Water Marks (B1) (Riverine)<br><input type="checkbox"/> Sediment Deposits (B2) (Riverine)<br><input type="checkbox"/> Drift Deposits (B3) (Riverine)<br><input type="checkbox"/> Drainage Patterns (B10)<br><input type="checkbox"/> Dry-Season Water Table (C2)<br><input type="checkbox"/> Crayfish Burrows (C8)<br><input checked="" type="checkbox"/> Saturation Visible on Aerial Imagery (C9)<br><input type="checkbox"/> Shallow Aquitard (D3)<br><input type="checkbox"/> FAC-Neutral Test (D5) |
|---|--|--|

**Field Observations:**

Surface Water Present? Yes \_\_\_\_\_ No X Depth (inches): \_\_\_\_\_

Water Table Present? Yes \_\_\_\_\_ No X Depth (inches): \_\_\_\_\_

Saturation Present? (includes capillary fringe) Yes \_\_\_\_\_ No X Depth (inches): \_\_\_\_\_

Wetland Hydrology Present? Yes \_\_\_\_\_ No X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: \* maybe visible in 5/2005 Google Earth historical imagery.



**Appendix D**  
**Site Photographs Map**

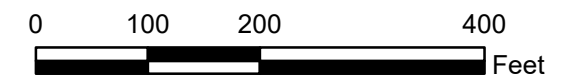
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Appendix D  
Overview Map for Site Photographs  
Martinez Bay Trail Project



**Legend**

- Photo Locations
- Survey Area Boundary (6.68 acres)



Coordinate System: NAD 1983 UTM Zone 10N  
Projection: Transverse Mercator  
Datum: North American 1983  
Vertical Datum: NAVD88, U.S. Feet  
1 in = 171 ft

**Created on May 26, 2020**

**Appendix E**  
**Soil Survey and Hydric Soil Information**

---



United States  
Department of  
Agriculture

**NRCS**

Natural  
Resources  
Conservation  
Service

A product of the National  
Cooperative Soil Survey,  
a joint effort of the United  
States Department of  
Agriculture and other  
Federal agencies, State  
agencies including the  
Agricultural Experiment  
Stations, and local  
participants

# Custom Soil Resource Report for Contra Costa County, California



# Preface

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Soil surveys contain information that affects land use planning in survey areas. They highlight soil limitations that affect various land uses and provide information about the properties of the soils in the survey areas. Soil surveys are designed for many different users, including farmers, ranchers, foresters, agronomists, urban planners, community officials, engineers, developers, builders, and home buyers. Also, conservationists, teachers, students, and specialists in recreation, waste disposal, and pollution control can use the surveys to help them understand, protect, or enhance the environment.

Various land use regulations of Federal, State, and local governments may impose special restrictions on land use or land treatment. Soil surveys identify soil properties that are used in making various land use or land treatment decisions. The information is intended to help the land users identify and reduce the effects of soil limitations on various land uses. The landowner or user is responsible for identifying and complying with existing laws and regulations.

Although soil survey information can be used for general farm, local, and wider area planning, onsite investigation is needed to supplement this information in some cases. Examples include soil quality assessments (<http://www.nrcs.usda.gov/wps/portal/nrcs/main/soils/health/>) and certain conservation and engineering applications. For more detailed information, contact your local USDA Service Center (<https://offices.sc.egov.usda.gov/locator/app?agency=nrcs>) or your NRCS State Soil Scientist ([http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/contactus/?cid=nrcs142p2\\_053951](http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/contactus/?cid=nrcs142p2_053951)).

Great differences in soil properties can occur within short distances. Some soils are seasonally wet or subject to flooding. Some are too unstable to be used as a foundation for buildings or roads. Clayey or wet soils are poorly suited to use as septic tank absorption fields. A high water table makes a soil poorly suited to basements or underground installations.

The National Cooperative Soil Survey is a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local agencies. The Natural Resources Conservation Service (NRCS) has leadership for the Federal part of the National Cooperative Soil Survey.

Information about soils is updated periodically. Updated information is available through the NRCS Web Soil Survey, the site for official soil survey information.

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# How Soil Surveys Are Made

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Soil surveys are made to provide information about the soils and miscellaneous areas in a specific area. They include a description of the soils and miscellaneous areas and their location on the landscape and tables that show soil properties and limitations affecting various uses. Soil scientists observed the steepness, length, and shape of the slopes; the general pattern of drainage; the kinds of crops and native plants; and the kinds of bedrock. They observed and described many soil profiles. A soil profile is the sequence of natural layers, or horizons, in a soil. The profile extends from the surface down into the unconsolidated material in which the soil formed or from the surface down to bedrock. The unconsolidated material is devoid of roots and other living organisms and has not been changed by other biological activity.

Currently, soils are mapped according to the boundaries of major land resource areas (MLRAs). MLRAs are geographically associated land resource units that share common characteristics related to physiography, geology, climate, water resources, soils, biological resources, and land uses (USDA, 2006). Soil survey areas typically consist of parts of one or more MLRA.

The soils and miscellaneous areas in a survey area occur in an orderly pattern that is related to the geology, landforms, relief, climate, and natural vegetation of the area. Each kind of soil and miscellaneous area is associated with a particular kind of landform or with a segment of the landform. By observing the soils and miscellaneous areas in the survey area and relating their position to specific segments of the landform, a soil scientist develops a concept, or model, of how they were formed. Thus, during mapping, this model enables the soil scientist to predict with a considerable degree of accuracy the kind of soil or miscellaneous area at a specific location on the landscape.

Commonly, individual soils on the landscape merge into one another as their characteristics gradually change. To construct an accurate soil map, however, soil scientists must determine the boundaries between the soils. They can observe only a limited number of soil profiles. Nevertheless, these observations, supplemented by an understanding of the soil-vegetation-landscape relationship, are sufficient to verify predictions of the kinds of soil in an area and to determine the boundaries.

Soil scientists recorded the characteristics of the soil profiles that they studied. They noted soil color, texture, size and shape of soil aggregates, kind and amount of rock fragments, distribution of plant roots, reaction, and other features that enable them to identify soils. After describing the soils in the survey area and determining their properties, the soil scientists assigned the soils to taxonomic classes (units). Taxonomic classes are concepts. Each taxonomic class has a set of soil characteristics with precisely defined limits. The classes are used as a basis for comparison to classify soils systematically. Soil taxonomy, the system of taxonomic classification used in the United States, is based mainly on the kind and character of soil properties and the arrangement of horizons within the profile. After the soil



## Custom Soil Resource Report

scientists classified and named the soils in the survey area, they compared the individual soils with similar soils in the same taxonomic class in other areas so that they could confirm data and assemble additional data based on experience and research.

The objective of soil mapping is not to delineate pure map unit components; the objective is to separate the landscape into landforms or landform segments that have similar use and management requirements. Each map unit is defined by a unique combination of soil components and/or miscellaneous areas in predictable proportions. Some components may be highly contrasting to the other components of the map unit. The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The delineation of such landforms and landform segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, onsite investigation is needed to define and locate the soils and miscellaneous areas.

Soil scientists make many field observations in the process of producing a soil map. The frequency of observation is dependent upon several factors, including scale of mapping, intensity of mapping, design of map units, complexity of the landscape, and experience of the soil scientist. Observations are made to test and refine the soil-landscape model and predictions and to verify the classification of the soils at specific locations. Once the soil-landscape model is refined, a significantly smaller number of measurements of individual soil properties are made and recorded. These measurements may include field measurements, such as those for color, depth to bedrock, and texture, and laboratory measurements, such as those for content of sand, silt, clay, salt, and other components. Properties of each soil typically vary from one point to another across the landscape.

Observations for map unit components are aggregated to develop ranges of characteristics for the components. The aggregated values are presented. Direct measurements do not exist for every property presented for every map unit component. Values for some properties are estimated from combinations of other properties.

While a soil survey is in progress, samples of some of the soils in the area generally are collected for laboratory analyses and for engineering tests. Soil scientists interpret the data from these analyses and tests as well as the field-observed characteristics and the soil properties to determine the expected behavior of the soils under different uses. Interpretations for all of the soils are field tested through observation of the soils in different uses and under different levels of management. Some interpretations are modified to fit local conditions, and some new interpretations are developed to meet local needs. Data are assembled from other sources, such as research information, production records, and field experience of specialists. For example, data on crop yields under defined levels of management are assembled from farm records and from field or plot experiments on the same kinds of soil.

Predictions about soil behavior are based not only on soil properties but also on such variables as climate and biological activity. Soil conditions are predictable over long periods of time, but they are not predictable from year to year. For example, soil scientists can predict with a fairly high degree of accuracy that a given soil will have a high water table within certain depths in most years, but they cannot predict that a high water table will always be at a specific level in the soil on a specific date.

After soil scientists located and identified the significant natural bodies of soil in the survey area, they drew the boundaries of these bodies on aerial photographs and

## Custom Soil Resource Report

identified each as a specific map unit. Aerial photographs show trees, buildings, fields, roads, and rivers, all of which help in locating boundaries accurately.

# Soil Map

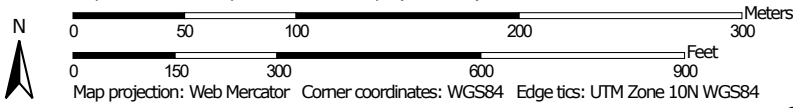
---

The soil map section includes the soil map for the defined area of interest, a list of soil map units on the map and extent of each map unit, and cartographic symbols displayed on the map. Also presented are various metadata about data used to produce the map, and a description of each soil map unit.

# Custom Soil Resource Report Soil Map




Map Scale: 1:3,390 if printed on A landscape (11" x 8.5") sheet.




### MAP LEGEND

**Area of Interest (AOI)**

 Area of Interest (AOI)




















**Soils**







 Soil Map Unit Polygons

 Soil Map Unit Lines


 Soil Map Unit Points

**Special Point Features**






-  Blowout
-  Borrow Pit
-  Clay Spot
-  Closed Depression
-  Gravel Pit
-  Gravelly Spot
-  Landfill
-  Lava Flow
-  Marsh or swamp
-  Mine or Quarry
-  Miscellaneous Water
-  Perennial Water
-  Rock Outcrop
-  Saline Spot
-  Sandy Spot
-  Severely Eroded Spot
-  Sinkhole
-  Slide or Slip
-  Sodic Spot

-  Spoil Area
-  Stony Spot
-  Very Stony Spot
-  Wet Spot
-  Other
-  Special Line Features


**Water Features**

 Streams and Canals

**Transportation**

-  Rails
-  Interstate Highways
-  US Routes
-  Major Roads
-  Local Roads

**Background**

 Aerial Photography

### MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service  
 Web Soil Survey URL:  
 Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Contra Costa County, California  
 Survey Area Data: Version 16, Sep 17, 2019

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Apr 25, 2019—Apr 29, 2019

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

## Map Unit Legend

| Map Unit Symbol                    | Map Unit Name                           | Acres in AOI | Percent of AOI |
|------------------------------------|---|--------------|----------------|
| LeF                                | Los Gatos loam, 30 to 50 percent slopes | 1.5          | 24.6%          |
| LeG                                | Los Gatos loam, 50 to 75 percent slopes | 2.3          | 38.1%          |
| Ob                                 | Omni silty clay                         | 2.3          | 37.2%          |
| <b>Totals for Area of Interest</b> |   | <b>6.1</b>   | <b>100.0%</b>  |

## Map Unit Descriptions

The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions, along with the maps, can be used to determine the composition and properties of a unit.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Other minor components, however, have properties and behavioral characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. If included in the database for a given area, the contrasting minor components are identified in the map unit descriptions along with some characteristics of each. A few areas of minor components may not have been observed, and consequently they are not mentioned in the descriptions, especially where the pattern was so complex that it was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic classes but rather to separate the landscape into landforms or landform segments that have similar use and management requirements. The

## Custom Soil Resource Report

delineation of such segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, however, onsite investigation is needed to define and locate the soils and miscellaneous areas.

An identifying symbol precedes the map unit name in the map unit descriptions. Each description includes general facts about the unit and gives important soil properties and qualities.

Soils that have profiles that are almost alike make up a *soil series*. Except for differences in texture of the surface layer, all the soils of a series have major horizons that are similar in composition, thickness, and arrangement.

Soils of one series can differ in texture of the surface layer, slope, stoniness, salinity, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. Most of the areas shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Alpha silt loam, 0 to 2 percent slopes, is a phase of the Alpha series.

Some map units are made up of two or more major soils or miscellaneous areas. These map units are complexes, associations, or undifferentiated groups.

A *complex* consists of two or more soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. Alpha-Beta complex, 0 to 6 percent slopes, is an example.

An *association* is made up of two or more geographically associated soils or miscellaneous areas that are shown as one unit on the maps. Because of present or anticipated uses of the map units in the survey area, it was not considered practical or necessary to map the soils or miscellaneous areas separately. The pattern and relative proportion of the soils or miscellaneous areas are somewhat similar. Alpha-Beta association, 0 to 2 percent slopes, is an example.

An *undifferentiated group* is made up of two or more soils or miscellaneous areas that could be mapped individually but are mapped as one unit because similar interpretations can be made for use and management. The pattern and proportion of the soils or miscellaneous areas in a mapped area are not uniform. An area can be made up of only one of the major soils or miscellaneous areas, or it can be made up of all of them. Alpha and Beta soils, 0 to 2 percent slopes, is an example.

Some surveys include *miscellaneous areas*. Such areas have little or no soil material and support little or no vegetation. Rock outcrop is an example.

## Contra Costa County, California

### LeF—Los Gatos loam, 30 to 50 percent slopes

#### Map Unit Setting

*National map unit symbol:* h99r  
*Elevation:* 500 to 2,000 feet  
*Mean annual precipitation:* 18 to 25 inches  
*Mean annual air temperature:* 55 degrees F  
*Frost-free period:* 260 to 300 days  
*Farmland classification:* Not prime farmland

#### Map Unit Composition

*Los gatos and similar soils:* 85 percent  
*Minor components:* 15 percent  
*Estimates are based on observations, descriptions, and transects of the mapunit.*

#### Description of Los Gatos

##### Setting

*Landform:* Upland slopes  
*Landform position (two-dimensional):* Backslope  
*Landform position (three-dimensional):* Side slope  
*Down-slope shape:* Convex  
*Across-slope shape:* Convex  
*Parent material:* Residuum weathered from sedimentary rock

##### Typical profile

*H1 - 0 to 8 inches:* loam  
*H2 - 8 to 27 inches:* clay loam  
*H3 - 27 to 30 inches:* unweathered bedrock

##### Properties and qualities

*Slope:* 30 to 50 percent  
*Depth to restrictive feature:* 20 to 40 inches to lithic bedrock  
*Natural drainage class:* Well drained  
*Runoff class:* High  
*Capacity of the most limiting layer to transmit water (Ksat):* Moderately high (0.20 to 0.57 in/hr)  
*Depth to water table:* More than 80 inches  
*Frequency of flooding:* None  
*Frequency of ponding:* None  
*Available water storage in profile:* Low (about 4.5 inches)

##### Interpretive groups

*Land capability classification (irrigated):* 6e  
*Land capability classification (nonirrigated):* 6e  
*Hydrologic Soil Group:* C  
*Ecological site:* STEEP LOAMY (R015XD116CA)  
*Hydric soil rating:* No

#### Minor Components

##### Dibble

*Percent of map unit:* 4 percent  
*Hydric soil rating:* No



## Custom Soil Resource Report

### **Los osos**

*Percent of map unit:* 4 percent  
*Hydric soil rating:* No

### **Millsholm**

*Percent of map unit:* 4 percent  
*Hydric soil rating:* No

### **Vallecitos**

*Percent of map unit:* 3 percent  
*Hydric soil rating:* No

## **LeG—Los Gatos loam, 50 to 75 percent slopes**

### **Map Unit Setting**

*National map unit symbol:* h99s  
*Elevation:* 500 to 2,000 feet  
*Mean annual precipitation:* 18 to 25 inches  
*Mean annual air temperature:* 55 degrees F  
*Frost-free period:* 260 to 300 days  
*Farmland classification:* Not prime farmland

### **Map Unit Composition**

*Los gatos and similar soils:* 85 percent  
*Minor components:* 15 percent  
*Estimates are based on observations, descriptions, and transects of the mapunit.*

### **Description of Los Gatos**

#### **Setting**

*Landform:* Upland slopes  
*Landform position (two-dimensional):* Backslope  
*Landform position (three-dimensional):* Side slope  
*Down-slope shape:* Convex  
*Across-slope shape:* Convex  
*Parent material:* Residuum weathered from sedimentary rock

#### **Typical profile**

*H1 - 0 to 8 inches:* loam  
*H2 - 8 to 27 inches:* clay loam  
*H3 - 27 to 30 inches:* unweathered bedrock

#### **Properties and qualities**

*Slope:* 50 to 75 percent  
*Depth to restrictive feature:* 20 to 40 inches to lithic bedrock  
*Natural drainage class:* Well drained  
*Runoff class:* High  
*Capacity of the most limiting layer to transmit water (Ksat):* Moderately high (0.20 to 0.57 in/hr)  
*Depth to water table:* More than 80 inches  
*Frequency of flooding:* None

## Custom Soil Resource Report

*Frequency of ponding:* None

*Available water storage in profile:* Low (about 4.5 inches)

### **Interpretive groups**

*Land capability classification (irrigated):* 7e

*Land capability classification (nonirrigated):* 7e

*Hydrologic Soil Group:* C

*Ecological site:* VERY STEEP LOAMY (R015XD119CA)

*Hydric soil rating:* No

### **Minor Components**

#### **Gaviota**

*Percent of map unit:* 4 percent

*Hydric soil rating:* No

#### **Millsholm**

*Percent of map unit:* 4 percent

*Hydric soil rating:* No

#### **Los osos**

*Percent of map unit:* 4 percent

*Hydric soil rating:* No

#### **Rock outcrop**

*Percent of map unit:* 3 percent

*Hydric soil rating:* No

## **Ob—Omni silty clay**

### **Map Unit Setting**

*National map unit symbol:* h9b7

*Elevation:* 10 to 100 feet

*Mean annual precipitation:* 14 to 16 inches

*Mean annual air temperature:* 59 degrees F

*Frost-free period:* 260 to 300 days

*Farmland classification:* Farmland of statewide importance

### **Map Unit Composition**

*Omni and similar soils:* 85 percent

*Minor components:* 10 percent

*Estimates are based on observations, descriptions, and transects of the mapunit.*

### **Description of Omni**

#### **Setting**

*Landform:* Flood plains

*Landform position (three-dimensional):* Talf

*Down-slope shape:* Linear

*Across-slope shape:* Linear

*Parent material:* Alluvium derived from sedimentary rock

## Custom Soil Resource Report

### Typical profile

*H1 - 0 to 8 inches:* silty clay

*H2 - 8 to 38 inches:* clay

*H3 - 38 to 60 inches:* stratified loamy sand to sandy clay loam to clay loam

### Properties and qualities

*Slope:* 0 to 2 percent

*Depth to restrictive feature:* More than 80 inches

*Natural drainage class:* Poorly drained

*Runoff class:* Medium

*Capacity of the most limiting layer to transmit water (Ksat):* Moderately low to moderately high (0.06 to 0.20 in/hr)

*Depth to water table:* About 30 to 48 inches

*Frequency of flooding:* Rare

*Frequency of ponding:* Occasional

*Calcium carbonate, maximum in profile:* 5 percent

*Salinity, maximum in profile:* Moderately saline to strongly saline (8.0 to 16.0 mmhos/cm)

*Available water storage in profile:* Moderate (about 7.6 inches)

### Interpretive groups

*Land capability classification (irrigated):* 3w

*Land capability classification (nonirrigated):* 4w

*Hydrologic Soil Group:* D

*Hydric soil rating:* Yes

### Minor Components

#### Reyes

*Percent of map unit:* 5 percent

*Landform:* Marshes

*Hydric soil rating:* Yes

#### Marcuse

*Percent of map unit:* 5 percent

*Landform:* Rims

*Landform position (three-dimensional):* Rise

*Hydric soil rating:* Yes

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**Appendix F**  
**WETS Table**

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WETS Table

| WETS Station: MARTINEZ WATER PLANT, CA |              |              |               |            |                             |                             |                                     |              |
|--|--------------|--------------|---------------|------------|-----------------------------|-----------------------------|-------------------------------------|--------------|
| Requested years: 1971 - 2020           |              |              |               |            |                             |                             |                                     |              |
| Month                                  | Avg Max Temp | Avg Min Temp | Avg Mean Temp | Avg Precip | 30% chance precip less than | 30% chance precip more than | Avg number days precip 0.10 or more | Avg Snowfall |
| Jan                                    | 55.6         | 38.2         | 46.9          | 3.90       | 1.50                        | 4.73                        | 7                                   | 0.0          |
| Feb                                    | 61.1         | 41.0         | 51.1          | 3.65       | 1.60                        | 4.45                        | 7                                   | 0.0          |
| Mar                                    | 66.2         | 43.8         | 55.0          | 2.92       | 1.25                        | 3.50                        | 6                                   | 0.0          |
| Apr                                    | 71.9         | 45.8         | 58.8          | 1.26       | 0.45                        | 1.52                        | 3                                   | 0.0          |
| May                                    | 78.8         | 49.3         | 64.0          | 0.46       | 0.11                        | 0.40                        | 1                                   | 0.0          |
| Jun                                    | 85.5         | 53.0         | 69.3          | 0.10       | 0.00                        | 0.08                        | 0                                   | 0.0          |
| Jul                                    | 89.0         | 54.2         | 71.6          | 0.02       | 0.00                        | 0.00                        | 0                                   | 0.0          |
| Aug                                    | 87.8         | 54.1         | 71.0          | 0.05       | 0.00                        | 0.00                        | 0                                   | 0.0          |
| Sep                                    | 84.6         | 52.8         | 68.7          | 0.18       | 0.00                        | 0.16                        | 1                                   | 0.0          |
| Oct                                    | 76.3         | 48.5         | 62.4          | 0.91       | 0.30                        | 0.99                        | 2                                   | 0.0          |
| Nov                                    | 64.1         | 42.6         | 53.4          | 2.39       | 0.94                        | 2.89                        | 5                                   | 0.0          |
| Dec                                    | 56.0         | 37.8         | 46.9          | 3.43       | 1.57                        | 4.14                        | 7                                   | 0.0          |
| Annual:                                |              |              |               |            | 14.94                       | 22.30                       |                                     |              |
| Average                                | 73.1         | 46.8         | 59.9          | -          | -                           | -                           | -                                   | -            |
| Total                                  | -            | -            | -             | 19.28      |                             |                             | 39                                  | 0.0          |

| GROWING SEASON DATES      |                |                |                         |
|---------------------------|----------------|----------------|-------------------------|
| Years with missing data:  | 24 deg = 3     | 28 deg = 4     | 32 deg = 4              |
| Years with no occurrence: | 24 deg = 45    | 28 deg = 28    | 32 deg = 2              |
| Data years used:          | 24 deg = 47    | 28 deg = 46    | 32 deg = 46             |
| Probability               | 24 F or higher | 28 F or higher | 32 F or higher          |
| 50 percent *              | No occurrence  | No occurrence  | 1/30 to 12/11: 315 days |
| 70 percent *              | No occurrence  | No occurrence  | 1/21 to 12/21: 334 days |

\* Percent chance of the growing season occurring between the Beginning and Ending dates.

| STATS TABLE - total precipitation (inches) |      |      |      |      |      |      |      |      |      |      |      |      |       |
|--|------|------|------|------|------|------|------|------|------|------|------|------|-------|
| Yr   | Jan  | Feb  | Mar  | Apr  | May  | Jun  | Jul  | Aug  | Sep  | Oct  | Nov  | Dec  | Annl  |
| 1970                                       |      | 1.43 | 1.41 | 0.20 | 0.00 | 0.07 | 0.00 | 0.00 | 0.00 | 0.00 | 5.82 | 6.37 | 15.75 |
| 1971                                       | 1.96 | 0.16 | 2.62 | 0.81 | 0.27 | 0.00 | 0.00 | 0.00 | 0.08 | 0.01 | 0.88 | 3.84 | 10.63 |
| 1972                                       | 1.00 | 1.66 | 0.32 | 0.79 | 0.00 | 0.14 | 0.00 | 0.00 | 0.43 | 2.99 | 5.16 | 2.21 | 14.70 |
| 1973                                       | 9.31 | 5.11 | 1.76 | 0.14 | T    | 0.00 | 0.00 | 0.00 | 0.21 | 1.58 | 5.73 | 4.05 | 27.89 |
| 1974                                       | 2.39 | 1.09 | 5.02 | 1.80 | T    | 0.00 | 0.28 | 0.00 | 0.00 | 0.89 | 0.64 | 2.06 | 14.17 |
| 1975                                       | 1.40 | 4.89 | 5.90 | 1.71 | 0.00 | 0.02 | 0.16 | 0.03 | T    | 1.57 | 0.18 | 0.52 | 16.38 |
| 1976                                       | 0.35 | 2.02 | 0.92 | 0.46 | 0.00 | 0.00 | 0.00 | 0.58 | 0.76 | 0.48 | 0.70 | 1.53 | 7.80  |
| 1977                                       | 1.57 | 1.20 | 1.63 | 0.05 | 0.61 | 0.00 | 0.00 | 0.00 | 0.64 | 0.08 | 2.72 | 4.63 | 13.13 |

|      |       |       |       |       |       |       |      |      |      |       |       |       |       |
|------|-------|-------|-------|-------|-------|-------|------|------|------|-------|-------|-------|-------|
| 1978 | 8.03  | 3.72  | 5.73  | 2.67  | 0.08  | 0.00  | 0.00 | 0.00 | 0.13 | 0.00  | 1.14  | 0.68  | 22.18 |
| 1979 | 5.90  | 4.50  | 3.62  | 1.16  | 0.46  | 0.00  | 0.00 | 0.00 | 0.00 | 1.20  | 2.58  | 4.86  | 24.28 |
| 1980 | 5.18  | 7.51  | 2.55  | 1.23  | 0.17  | 0.02  | 0.18 | 0.00 | 0.00 | 0.20  | 0.06  | 1.94  | 19.04 |
| 1981 | 4.97  | 1.00  | 3.45  | 0.20  | 0.11  | 0.00  | 0.00 | 0.00 | 0.18 | 2.05  | 6.42  | 3.77  | 22.15 |
| 1982 | 8.51  | 2.33  | 5.55  | 4.10  | 0.00  | 0.03  | 0.00 | 0.02 | 1.00 | 2.19  | 5.51  | 3.00  | 32.24 |
| 1983 | 6.40  | 6.09  | 9.10  | 2.72  | 0.25  | 0.00  | 0.00 | 0.71 | 0.95 | 0.62  | 6.65  | 5.60  | 39.09 |
| 1984 | 0.33  | 1.74  | 1.18  | 0.64  | 0.01  | 0.05  | 0.00 | 0.11 | 0.15 | 1.63  | 6.01  | 1.37  | 13.22 |
| 1985 | 0.76  | 2.10  | 3.68  | 0.04  | 0.03  | 0.08  | 0.02 | 0.00 | 0.28 | 0.90  | 3.67  | 2.67  | 14.23 |
| 1986 | 3.83  | 11.70 | 5.66  | 0.78  | 0.38  | 0.00  | 0.04 | 0.00 | 0.75 | 0.03  | 0.11  | 1.56  | 24.84 |
| 1987 | 2.46  | 3.33  | 2.11  | 0.06  | 0.14  | 0.00  | 0.00 | 0.00 | 0.00 | 1.46  | 1.29  | 3.91  | 14.76 |
| 1988 | 4.62  | 0.37  | T     | 2.65  | 0.40  | 0.44  | 0.00 | 0.00 | 0.00 | 0.32  | 2.54  | M3.06 | 14.40 |
| 1989 | 1.18  | 1.23  | 4.97  | 0.41  | 0.05  | 0.11  | 0.00 | 0.11 | 1.23 | 1.56  | 1.80  | 0.00  | 12.65 |
| 1990 | 3.18  | 3.36  | 1.35  | 0.30  | 1.81  | 0.00  | 0.00 | 0.00 | 0.15 | 0.18  | 0.34  | 1.35  | 12.02 |
| 1991 | 0.41  | 3.16  | 6.82  | 0.36  | 0.12  | 0.35  | 0.00 | 0.05 | 0.02 | 2.00  | 0.65  | 2.01  | 15.95 |
| 1992 | 1.69  | 6.39  | 2.83  | 0.18  | 0.00  | 0.22  | 0.00 | 0.00 | 0.00 | 1.12  | 0.13  | 6.29  | 18.85 |
| 1993 | 9.67  | 4.19  | 1.85  | 0.62  | 0.57  | 0.44  | 0.00 | 0.00 | 0.00 | 0.28  | 2.50  | 2.32  | 22.44 |
| 1994 | 1.98  | 3.80  | 0.27  | 0.86  | 1.47  | 0.06  | 0.00 | 0.00 | 0.00 | 0.80  | 6.86  | 2.40  | 18.50 |
| 1995 | 10.38 | 0.13  | 10.00 | 0.83  | 1.08  | 1.37  | 0.00 | 0.00 | 0.00 | 0.00  | 0.04  | 5.91  | 29.74 |
| 1996 | 5.55  | 5.93  | 2.24  | 1.37  | 1.76  | 0.00  | 0.00 | 0.00 | 0.00 | 0.67  | 2.22  | 6.82  | 26.56 |
| 1997 | 8.14  | 0.19  | 0.28  | 0.07  | 0.40  | 0.19  | T    | 0.65 | 0.05 | 0.81  | 6.32  | 2.46  | 19.56 |
| 1998 | 7.19  | 12.18 | 2.03  | 1.31  | 2.66  | T     | 0.00 | 0.00 | 0.12 | 0.43  | 2.35  | 1.60  | 29.87 |
| 1999 | 2.72  | 5.31  | 1.92  | 1.94  | 0.07  | 0.00  | 0.00 | 0.00 | 0.01 | 0.42  | 1.41  | 0.37  | 14.17 |
| 2000 | 6.55  | 7.75  | 1.91  | 0.86  | 1.10  | 0.12  | 0.00 | T    | 0.07 | 1.74  | 1.04  | 0.77  | 21.91 |
| 2001 | 2.82  | 7.21  | 1.13  | 1.07  | 0.00  | 0.20  | 0.00 | 0.00 | 0.21 | 0.25  | 3.77  | 7.04  | 23.70 |
| 2002 | 1.07  | 1.47  | 2.00  | 0.26  | 1.08  | 0.00  | 0.00 | 0.00 | 0.00 | 0.00  | 2.50  | 10.31 | 18.69 |
| 2003 | 1.58  | 1.17  | 1.48  | 3.49  | 0.60  | 0.00  | 0.00 | 0.00 | 0.10 | 0.00  | 1.39  | 6.11  | 15.92 |
| 2004 | 2.07  | 5.10  | 0.63  | 0.06  | 0.08  | 0.00  | 0.00 | 0.00 | 0.09 | 2.47  | 2.94  | 5.09  | 18.53 |
| 2005 | 4.11  | 3.48  | 2.75  | 1.49  | 1.35  | 0.14  | 0.00 | 0.00 | 0.00 | 0.12  | 1.56  | 10.85 | 25.85 |
| 2006 | 2.30  | 2.03  | 5.70  | 4.33  | 0.55  | T     | 0.00 | 0.00 | 0.00 | 0.19  | 1.84  | 2.41  | 19.35 |
| 2007 | 0.44  | 3.85  | 0.25  | 0.73  | 0.28  | 0.00  | 0.05 | 0.00 | 0.04 | 1.98  | 0.72  | 2.23  | 10.57 |
| 2008 | 7.79  | 1.98  | 0.03  | 0.05  | 0.01  | 0.00  | 0.00 | 0.00 | 0.00 | 0.15  | 2.13  | 2.02  | 14.16 |
| 2009 | 1.05  | 6.18  | 2.62  | 1.39  | 0.66  | T     | T    | 0.00 | 0.11 | 4.00  | 0.64  | 2.72  | 19.37 |
| 2010 | 6.43  | 2.40  | 2.01  | 3.19  | 1.08  | 0.00  | 0.00 | 0.00 | 0.00 | 1.01  | 2.21  | 5.50  | 23.83 |
| 2011 | M1.52 | M4.63 | M6.99 | M0.21 | M0.43 | M2.52 | 0.00 | 0.00 | 0.00 | M0.78 | M1.08 | 0.06  | 18.22 |



|      |       |      |      |      |      |      |      |      |      |      |      |       |       |       |
|------|-------|------|------|------|------|------|------|------|------|------|------|-------|-------|-------|
| 2012 | M2.87 | 1.07 | 5.16 | 2.94 | 0.00 | 0.03 | 0.00 | 0.00 | 0.00 | 0.00 | 1.25 | M0.24 | 6.51  | 20.07 |
| 2013 | 0.53  | 0.30 | 0.46 | 0.93 | 0.01 | 0.80 | 0.00 | 0.00 | 0.80 | 0.00 | 0.00 | 1.40  | 0.54  | 5.77  |
| 2014 | 0.08  | 4.99 | 1.87 | 2.12 | 0.00 | 0.00 | 0.00 | 0.11 | 0.28 | 0.20 | 0.00 | 1.42  | 10.74 | 21.81 |
| 2015 | 0.02  | 2.08 | 0.13 | 1.01 | 0.05 | 0.19 | 0.01 | 0.00 | 0.00 | 0.08 | 0.00 | 1.60  | 2.70  | 7.87  |
| 2016 | 5.39  | 1.26 | 4.89 | 1.05 | 0.21 | 0.00 | 0.00 | 0.00 | 0.00 | 0.61 | 2.00 | 1.24  | 3.15  | 19.80 |
| 2017 | 11.53 | 7.49 | 2.88 | 2.82 | 0.00 | T    | 0.00 | T    | 0.00 | 0.30 | 0.00 | 4.42  | 0.06  | 29.50 |
| 2018 | 3.03  | 0.64 | 5.23 | 2.32 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.06 | 0.00 | M2.88 | 14.16 |       |
| 2019 | 5.59  | 8.47 | 3.61 | 0.29 | 1.90 | 0.00 | 0.00 | 0.00 |      |      |      |       |       | 19.86 |

Notes: Data missing in any month have an "M" flag. A "T" indicates a trace of precipitation.

Data missing for all days in a month or year is blank.

Creation date: 2016-07-22

Appendix D

**Draft Rare Plant Survey Report, August 2021**

**Rare Plant Survey Report**  
for the  
**Martinez Bay Trail Project Phase II**  
Contra Costa County, California



*Prepared for:*

Kimley-Horn and Associates

*Prepared by:*

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**August 2021**

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## Appendices

- Appendix A. Special Status Plant Species and Plant Communities Potentially Occurring in the Survey Area
- Appendix B. List of Plants Observed within the Survey Area

## 1. Introduction

This report summarizes the results of floristic, protocol-level rare plant surveys conducted by Swaim Biological, Inc. (SBI) at the Martinez Bay Trail Phase II Project (Project) in the City of Martinez, California. Surveys were conducted on March 26, June 2, and August 11, 2021, which correspond to the peak blooming periods of the rare plant species that were determined to have the potential to occur in the survey area.

Construction of the Project has been proposed as an expansion and improvement to the larger San Francisco Bay Trail (SFBT) and is being developed by the Association of Bay Area Governments in conjunction with local agencies. The Project is to begin at the East Bay Regional Park District (EBRPD) Nejedly Staging Area and provide a link to the SFBT at the EBRPD Radke Martinez Regional Shoreline parking lot, approximately 0.5-mile northeast of Nejedly Staging Area. The proposed Project includes improvements to construct approximately 3,100 feet of trail and the paving of an approximately 700-foot portion of existing trail from the Nejedly Staging Area to the UPRR right-of-way that is currently constructed with aggregate base.

## 2. Site Description and Location

The proposed Project is located within the City of Martinez in Contra Costa County, California. (**Figure 1**). It is within the Benicia 7.5-minute USGS topographic quadrangle.

Segment 1 of the trail/survey area (**Figure 2.1**) begins at the Nejedly Staging Area at Carquinez Scenic Drive and extends northwest for approximately 800 feet to approximately 100 feet south of the UPRR right-of-way. Proposed work in this segment includes removal of upland and ruderal vegetation on the existing gravel trail and resurfacing the trail with asphalt. Vegetation removal to clear the existing rock-lined ditches adjacent to the trail and minor bridge maintenance to repair a gap between the existing trail and bridge abutment will also be required. Segment 2 of the trail/survey area (**Figure 2.2**) is approximately 1,900 feet in length and extends roughly parallel to the UPRR right-of-way. Proposed work in this segment will include trail construction, grading, vegetation removal, and fill of less than 0.5-acre of jurisdictional wetlands (Swaim 2020a). The proposed paved trail will be approximately 10 feet wide with 2-foot-wide aggregate base shoulders.

## 2.1 Environmental Setting

The Project is located in the East Bay of the San Francisco Bay Area, adjacent to the south shoreline of the Carquinez Strait/Suisun Bay, west of California Highway I-680 and the Benicia-Martinez Bridge. Segment 1 of the survey area largely occurs within the oak (dominated by coast live oak – *Quercus agrifolia*) and eucalyptus (*Eucalyptus spp.*) woodlands within the Carquinez Strait Regional Shoreline. The north end of Segment 1 is bordered on the north by the UPRR tracks, and on the northwest by coastal scrub habitat. Segment 2 of the survey area is bordered on the north by the UPRR tracks and on the west by coastal scrub habitat. Industrial, commercial, and residential development occur immediately north of the UPRR right-of-way, interspersed with coastal tidal marsh and brackish marsh habitat. Segment 2 of the survey area is bordered on the south by the Carquinez Regional Shoreline along its western half, and by industrial development along its eastern half. Habitats within the Carquinez Regional Shoreline in Segment 2 of the survey area include willow riparian, coastal scrub, oak woodland, and freshwater and brackish marshes, comprised by suballiance wetland communities. The northeast end of Segment 2 occurs at the railroad crossing at Berrellesa Street, and is surrounded by industrial, commercial, and residential development.

### 2.1.1 Hydrology

The Project begins in the Carquinez Drainages Watershed at the Nejedly Staging Area and ends approximately 0.5-mile downhill (northeast) at the junction of the UPRR tracks/right-of-way and Berrellesa Street in the Alhambra Creek Watershed. Site elevation ranges from 50 feet above sea level (ASL) at the Nejedly Staging Area to less than 10 feet ASL along the UPRR tracks/right-of-way. Prior to construction of the UPRR tracks (pre-1939), the bayside slopes and canyons of the hills surrounding the Project drained directly into the marshes lining the south shoreline of the Carquinez Strait. Under current conditions, areas of freshwater and brackish marsh occur throughout Segment 2 of the survey area, predominantly within an ephemeral, low flow channel that formed as a result of the railroad construction (**Figure 2.1 and Figure 2.2**). The Arroyo del Hambre, a stream connecting inland Alhambra Creek to the Carquinez Strait/Suisun Bay, occurs approximately 96 feet east of the northeast end of Segment 2 of the survey area.

### 2.1.2 Soils

Three soil types occur in the survey area. General descriptions of these soils are summarized from the descriptions provided in the Natural Resources Conservation Service Web Soil Survey Soil Survey (USDA 2021):

- *Los Gatos loam (LeF)*, 30 to 50 percent slopes—mapped in 25% of the survey area; on upland slopes and results from weathered sedimentary rock with high runoff potential/well-drained soils.

- *Los Gatos loam (LeG)*, 50 to 75 percent slopes—mapped in 38% of the survey area; on upland slopes and results from weathered sedimentary rock with high runoff potential/well-drained soils.
- *Omni silty clay (Ob)*—mapped in 37% of the survey area; on flood plains and results from alluvium derived from sedimentary rock with medium runoff potential and moderately to strongly saline.

## 2.2 Vegetation Communities

The following vegetation communities occur in the survey area:

### 2.2.1 Ruderal

Ruderal vegetation is characterized by the presence of sparse to dense nonnative annual grasses and weedy annual forbs that have colonized an area following human disturbance (Holland, 1986). Ruderal vegetation occurs in Segment 2 of the survey area adjacent to the UPRR right-of-way and is widespread along its eastern portion. Ruderal vegetation in the survey area is dominated by nonnative grasses, including ripgut brome (*Bromus diandrus*) and red brome (*Bromus madritensis* ssp. *rubens*), with some native coastal gumweed (*Grindelia stricta*).

### 2.2.2 Eucalyptus Grove

Eucalyptus grove habitat occurs in Segment 1 of the survey area between the Nejedly Staging Area and the pedestrian bridge. Eucalyptus groves or *Eucalyptus (globulus, camaldulensis)* Semi-Natural Woodland Stands in the survey area are dominated by blue gum (*E. globulus*) (Sawyer et al. 2009). Eucalyptus grove habitat in the survey area is contiguous with the wild oats and annual brome grassland habitat, and understory vegetation is dominated by nonnative grasses and forbs, including oats (*Avena* spp.), ripgut brome, bull thistle (*Cirsium vulgare*), and black mustard (*Brassica nigra*).

### 2.2.3 Wild Oats and Annual Brome Grassland

Wild oats and annual brome grassland habitat, or *Bromus diandrus-Avena* spp. Semi-Natural Herbaceous Stands (Sawyer et al. 2009), occurs within openings in eucalyptus grove habitats in the survey area. This habitat is present in portions of both the understory of the eucalyptus grove and coast live oak woodlands. Nonnative grasses, including wild oats, ripgut brome, smilo grass, (*Stipa miliaceae*) soft brome (*Bromus hordeaceus*), and red brome dominate this habitat. Other nonnatives are also common in the herbaceous layer, such as black mustard, California burclover (*Medicago polymorpha*), cutleaf geranium (*Geranium dissectum*), English plantain (*Plantago lanceolata*) and summer mustard (*Hirschfeldia incana*). Isolated stands of poison oak

(*Toxicodendron diversilobum*) and Himalayan blackberry (*Rubus armeniacus*) also occur within wild oats and brome grassland.

#### 2.2.4 Creeping Ryegrass Turf

A patch of creeping ryegrass turf, or *Elymus triticoides* Herbaceous Alliance (Sawyer et al. 2009), is present in the survey area immediately north of the pedestrian bridge. This vegetation community spans a grassy slope at the base of a northeast-facing hillside and is directly adjacent to the riparian corridor (**Figure 2.1**). Creeping ryegrass turf in the survey area is dominated by the native wild rye species *Elymus* (= *Leymus*) *triticoides*. Other native grasses and forbs also occur, such as nodding needle grass (*Stipa cernua*), native rushes (*Juncus* sp.), and mugwort (*Artemisia douglasiana*). Nonnatives also occur in the herbaceous layer, including wild oats (*Avena fatua*), Italian rye grass (*Festuca perennis*), poison hemlock (*Conium maculatum*) and teasel (*Dipsacus sativus*). Low shrub cover comprised of coyote brush (*Baccharis pilularis*) was also present in this vegetation community within the survey area.

#### 2.2.5 Coast Live Oak Woodland

The overstory of the coast live oak woodland, or *Quercus agrifolia* Woodland Alliance (Sawyer et al. 2009), in the survey area is dominated by coast live oak (*Quercus agrifolia*). Other tree species including California bay (*Umbellularia californica*), California walnut (*Juglans californica*), and arroyo willow (*Salix lasiolepis*) are also present. The understory is sparsely vegetated to bare and becomes denser near the pedestrian bridge and in the western half of Segment 2 towards Berrellesa Street. The understory supports woody shrubs and vines, including poison oak, California blackberry (*Rubus ursinus*), elderberry (*Sambucus nigra* ssp. *caerulea*), and nonnative cultivated plum (*Prunus* sp.). The herbaceous layer includes open areas of nonnative grasses and densely vegetated areas supporting a variety of forbs, including fennel (*Foeniculum vulgare*), thimbleberry (*Rubus parviflorus*), soap plant (*Chlorogalum pomeridianum*), and snowberry (*Symphoricarpos* sp.).

#### 2.2.6 California Sagebrush Scrub

California sagebrush scrub habitat, or *Artemisia californica* shrubland alliance (Sawyer et al. 2009), occurs in the survey area on the north-facing hillside on the south side of Segment 2 (**Figure 2.1**). Coyote brush and sagebrush (*Artemisia californica*) dominate the shrub layer in this location. Native species occur within this vegetation community, including golden yarrow (*Eriophyllum confertiflorum*), common yarrow (*Achillea millefolium*), toyon (*Heteromeles arbutifolia*), two lobed clarkia (*Clarkia biloba* ssp. *biloba*), and San Antonio Hills monardella (*Monardella antonina* ssp. *antonina*). Nonnative grasses and forbs also occur in the herbaceous layer, including teasel, Smilo grass, and summer mustard.



### 2.2.7 Arroyo Willow Thicket

One patch of arroyo willow thicket, or *Salix lasiolepis* Woodland Alliance (Sawyer et al. 2009), occurs on the west half of Segment 2 of the survey area (**Figure 2.1**). This habitat is narrow and bordered by mature oak woodlands to the south and the UPRR right-of-way to the north. Mature arroyo willows (*Salix lasiolepis*) are dominant in this habitat and occur with dense stands of California blackberry. Coyote brush, poison oak, fennel, and plants associated with adjacent freshwater marsh habitat (described below) occur in the understory.

### 2.2.8 Freshwater and Brackish Marsh

Perennial freshwater and brackish marsh habitats are present in portions of the survey area along the south side of the UPRR right-of-way. These areas are predominantly adjacent to arroyo willow thicket, oak woodland, and ruderal habitats. Wetland plant communities within the survey area are dominated by strongly hydrophytic species, such as cattails (*Typha* sp.), bulrush (*Bolboschoenus* spp.), and sedges (*Cyperus* and *Carex* spp.). Freshwater and brackish marshes in the survey area are comprised of five suballiance occurrences which are described in more detail below: Yerba Mansa Alkaline Wet Meadow, Smartweed Cocklebur Patches, Cattail Marsh, Hardstem and California Bulrush Marsh, and Saltgrass Flats. Two of these are considered Sensitive Natural Communities: Yerba Mansa Alkaline Wet Meadow and Hardstem and California Bulrush Marshes.

#### *Yerba Mansa Alkaline Wet Meadow*

The California Native Plant Society (CNPS) describes the Yerba Mansa Alkali Wet Meadow community as *Anemopsis californica*, *Helianthus nuttallii*, *Solidago confinis* and/or *Solidago spectabilis* being dominant or co-dominant in the herbaceous layer with *Ambrosia psilostachya*, *Bromus hordeaceus*, *Carex praegracilis*, *Carpobrotus edulis*, *Cirsium occidentale*, *Distichlis spicata*, *Euthamia occidentalis*, *Holocarpha virgata*, *Hordeum murinum* ssp. *leporinum*, *Juncus arcticus*, *Juncus cooperi*, *Juncus rugulosus*, *Lactuca serriola*, *Leymus triticoides*, *Lolium perenne*, *Medicago polymorpha*, *Rumex crispus*, *Schoenoplectus americanus*, *Sisyrinchium bellum* and *Sporobolus airoides* (CNPS 2021b). This alliance has a rarity listing of S2 which indicates it is fairly rare and threatened. This habitat type occurred in only one location in a ponded segment of the low flow channel in Segment 2 of the survey area (**Figure 2.1**). Early growth of *Anemopsis californica* at approximately 30% cover with the remaining cover composed of cocklebur, algal matting, mud, or water was observed in this location in 2020 (Swaim 2020b) and during the March 2021 rare plant survey. During the August 2021 survey gravel fill had been placed in the area that formerly contained this vegetation community and the plants associated with it were no longer visible.

### ***Smartweed Cocklebur Patches***

CNPS describes the Smartweed Cocklebur Patches community as *Polygonum lapathifolium* and/or *Xanthium strumarium* or other knotweed species being dominant or co-dominant in the herbaceous layer with *Bidens frondosa*, *Cuscuta pentagona*, *Echinochloa spp.*, *Eleocharis macrostachya*, *Euthamia occidentalis*, *Helianthus annuus*, *Phyla nodiflora* and *Polygonum spp.* (CNPS 2021b). Common cocklebur (*Xanthium strumarium*) occurs particularly in disturbed areas such as seasonally flooded streamsides and alluvial flats. Smartweed Cocklebur Patches occur in the open herbaceous areas in Segment 2 of the survey area as a stand-alone species or in conjunction with *Juncus*, *Carex*, *Cyperus*, *Elymus*, *Rumex*, *Distichlis*, and *Grindelia*, among others.

### ***Cattail Marsh***

CNPS describes the Cattail Marshes community as *Typha angustifolia*, *Typha domingensis* or *Typha latifolia* being dominant or co-dominant in the herbaceous layer with *Agrostis stolonifera*, *Argentina egedii*, *Cyperus spp.*, *Distichlis spicata*, *Echinochloa crus-galli*, *Eleocharis macrostachya*, *Equisetum telmateia*, *Juncus spp.*, *Lemna minuta*, *Lepidium latifolium*, *Oenanthe sarmentosa*, *Persicaria lapathifolia*, *Persicaria punctata*, *Phragmites australis*, *Schoenoplectus americanus*, *Schoenoplectus californicus*, *Typha × glauca* and *Xanthium strumarium* (CNPS 2021b). Within the survey area, this community is comprised of the non-native narrowleaf cattail (*Typha angustifolia*) and tends to occur in the open herbaceous areas downstream as exclusive patches.

### ***Hardstem and California Bulrush Marshes***

CNPS describes the Hardstem and California Bulrush Marshes community as *Schoenoplectus acutus* and/or *Schoenoplectus californicus* being dominant or co-dominant in the herbaceous layer with *Apocynum cannabinum*, *Azolla filiculoides*, *Bolboschoenus maritimus*, *Calystegia sepium*, *Eichhornia crassipes*, *Euthamia occidentalis*, *Hibiscus lasiocarpus*, *Hoita macrostachya*, *Hydrocotyle ranunculoides*, *Leersia oryzoides*, *Ludwigia peploides*, *Lycopus americanus*, *Persicaria punctata*, *Phragmites australis*, *Sparganium eurycarpum*, *Triglochin spp.*, *Typha angustifolia*, *Typha domingensis*, *Typha latifolia* and *Urtica dioica* (CNPS 2021b). This alliance is considered a Sensitive Natural Community and has a rarity listing of S3, which indicates it is moderately rare and threatened. It occurs primarily as an understory community beneath the arroyo willow thicket, becoming most prominent at the downstream end of the ephemeral, low flow channel (**Figure 2.1**).

### ***Salt Grass Flats***

CNPS describes the Salt Grass Flats community as *Distichlis spicata*, *Juncus acutus* and/or *Juncus cooperi* being dominant or co-dominant in the herbaceous layer with *Agrostis viridis*, *Ambrosia chamissonis*, *Anemopsis californica*, *Atriplex prostrata*, *Batis maritima*, *Bromus diandrus*, *Cotula coronopifolia*, *Eleocharis palustris*, *Frankenia salina*, *Hordeum brachyantherum*, *Hordeum*

*murinum*, *Jaumea carnosa*, *Juncus acutus*, *Juncus arcticus*, *Juncus cooperi*, *Lepidium latifolium*, *Leymus triticoides*, *Limonium californicum*, *Muhlenbergia asperifolia*, *Parapholis strigosa*, *Pascopyrum smithii*, *Poa secunda*, *Puccinellia nuttalliana*, *Sarcocornia pacifica*, *Sporobolus airoides* or *Triglochin maritima* (CNPS 2021b). Within the survey area, this community occurs in the seasonal wetland at the downstream terminus of the low-flow channel in the eastern half of Segment 2.

### **2.2.9 Developed**

Developed land cover occurs in Segment 2 of the survey area and includes paved portions of Berrellesa Street, UPRR tracks, compacted gravel within the UPRR right-of-way, and industrial development on the southeast half of the trail segment. Developed land cover in the outer edges of the survey area include paved Berrellesa Street and Carquinez Scenic Drive. Areas within the UPRR right-of-way are largely devoid of vegetation.

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## **3. Methods**

Floristic surveys followed protocols described in the following guidelines:

- *Protocols for Surveying and Evaluating Impacts to Special Status Native Plant Populations and Natural Communities* (California Department of Fish and Game [CDFG], 2018);
- *CNPS Botanical Survey Guidelines* (California Native Plant Society [CNPS], 2001); and
- *Guidelines for Conducting and Reporting Botanical Inventories for Federally Listed, Proposed, and Candidate Plants* (U.S. Fish and Wildlife Service [USFWS], (1996).

### **3.1 Background Research**

SBI conducted a review of available background information, including local soil surveys available on the U.S. Department of Agriculture's (USDA) Web Soil Survey, historical aerial photographs obtained using Google Earth, and a search and review of the California Natural Diversity Data Base (CNDDDB) within an approximately five-mile radius of the site (CNDDDB 2021). The CNDDDB data was used to evaluate the documented occurrences of special-status plant and natural communities (or plant communities) of special concern in proximity to the survey area. In addition, the CNPS Inventory of Rare Plants of California (database) was used to search the Benicia USGS quadrangle maps and the USGS quadrangles maps directly adjacent (CNPS 2021a).

### **3.2 Reference Site Visits**

On August 4, 5 and 11, 2021, SBI biologists Natasha Dvorak and Matt Beyers visited known reference site populations of special status plants in Contra Costa County, including crownscale

(*Atriplex coronata* var. *coronata*), big tarplant (*Blepharizonia plumosa*), western leatherwood (*Dirca occidentalis*), San Joaquin spearscale (*Extriplex joaquinana*) and oval-leaved viburnum (*Virburnum ellipticum*). Crownscale, western leatherwood, San Joaquin spearscale, and oval-leaved viburnum were all observed at known reference sites visited. Although the annual blooming periods for western leatherwood and oval-leaved viburnum had passed, these species of shrub were positively identified by over-ripe, dry fruits and other dry floral parts, as well as with vegetation and bark, which is unique and distinctive in both species. A known population of San Joaquin spearscale was observed at the same reference site location where crownscale was observed and previously recorded within the Los Vaqueros Watershed, east of Mount Diablo. A population of *Blepharizonia* was observed along a trail at a reference site in EBRPD Black Diamond Mines Regional Preserve. The population observed was immature with no mature reproductive structures (i.e., flowers/fruits) to observe to make a positive identification of big tarplant at the time of this survey. A common species, glandular big tarweed (*Blepharizonia laxa*), occurs within the same range as big tarplant in much of Contra Costa County and mature flowers (and preferably fruits) are necessary to correctly identify to species and differentiate between the rare and common tarplant. None of the species surveyed for or observed at known populations/reference sites were observed in the survey area.

### 3.3 Surveys

Three rounds of floristic surveys were conducted to encompass the annual blooming periods of target special-status species with potential to occur onsite. The surveys were conducted on March 26, 2021, by SBI biologists Natasha Dvorak and Bridget Sousa, and on June 2 and August 11, 2021, by Natasha Dvorak and botanist Matt Beyers. The survey area included Segment 1 and Segment 2 of the trail alignment including a surrounding 50-foot buffer zone, starting just south of Carquinez Scenic Drive at Nejedly Staging Area to approximately 0.5-mile northeast at the junction of the UPRR right-of-way and Berrellesa Street (**Figure 2.1** and **Figure 2.2**). Surveying biologists walked parallel transects spaced approximately 15 feet apart to ensure 100 percent visual coverage within the survey area. All plants encountered, whether living or dead, were identified to the most specific taxonomic level possible.

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## 4. Results

### 4.1 Rare Plant Occurrences

During June and August surveys, special status plants two lobed clarkia (*Clarkia biloba* ssp. *biloba*), and San Antonio Hills monardella (*Monardella antonina* ssp. *antonina*) were observed in the survey area. Two lobed clarkia is considered locally rare by the California Native Plant Society's East Bay Chapter (ranked A2) and is therefore reviewed under the California

Environmental Quality Act (CEQA). A population of two lobed clarkia was observed on a steep, north-facing hillside on the south side of the western half of Segment 2 of the survey area, as an understory species within California sagebrush scrub and coinciding with a population of San Antonio Hills monardella. A population of San Antonio Hills monardella, California Rare Plant Rank (CRPR) 3, was observed in the survey area at the same location as the two-lobed clarkia population within California sagebrush scrub.

Another population of San Antonio Hills monardella was observed just outside the survey area, immediately along the northwest side of Segment 1 on a north-northeast-facing hillside within wild oats and annual brome grassland and coastal scrub habitat (**Figure 2.1**)

## 4.2 Sensitive Natural Communities

Three sensitive natural communities were observed in the survey area, consisting of Creeping Ryegrass Turf, Yerba Mansa Alkaline Wet Meadow, and Hardstem and California Bulrush Marsh. See Section 2.2 for descriptions of the plant species associated with these communities.

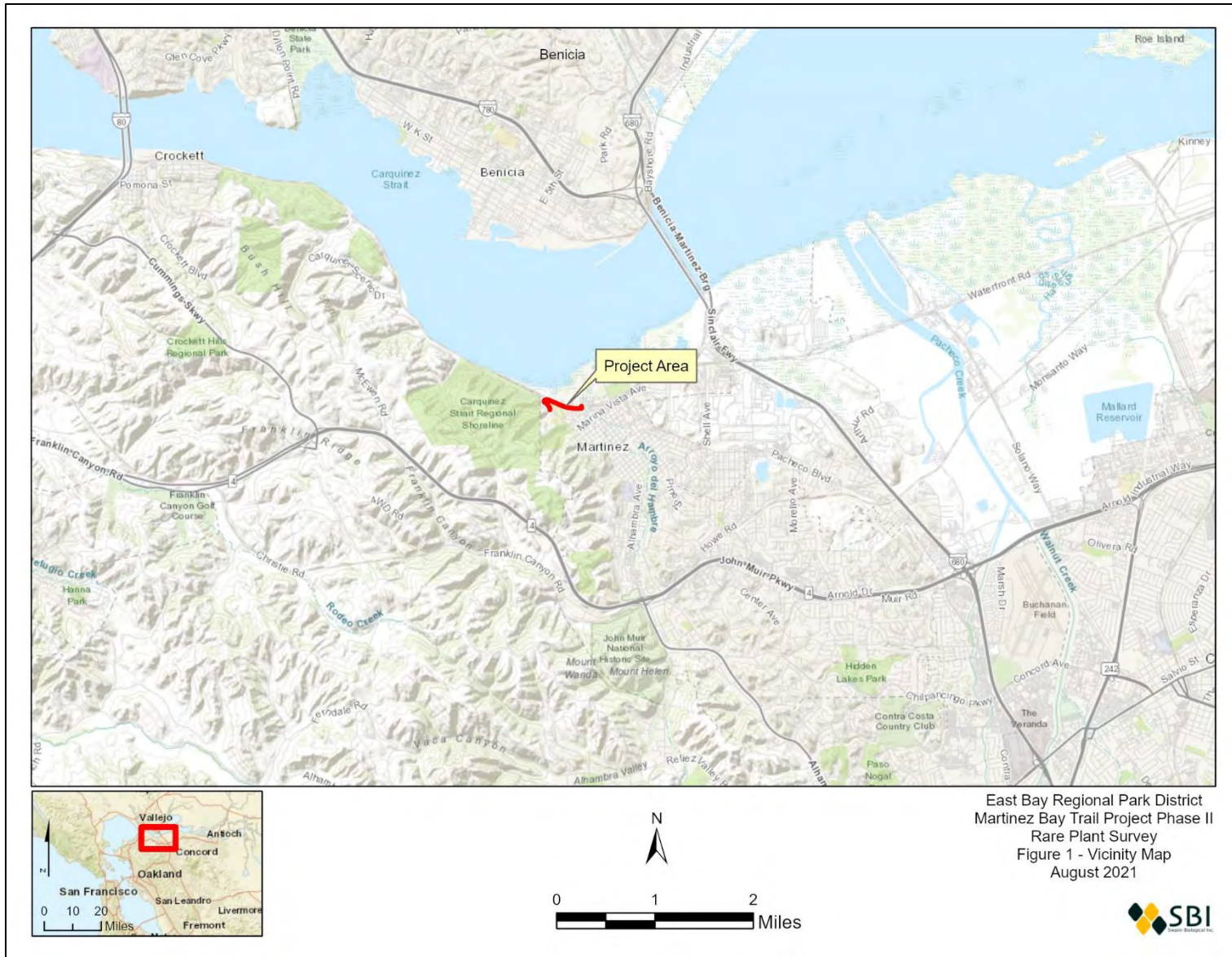
The Creeping Ryegrass Turf community has membership rules that vary from 30% to 50% relative cover in the herbaceous layer and a rarity listing of S3 which indicates it is moderately rare and threatened (CNPS 2021b). In the survey area, there is a small (0.05 acre) stand where *Elymus triticoides* is dominant in the herbaceous layer at greater than 50% relative cover. The Creeping Ryegrass Turf community continues under the edge of the riparian canopy and extends uphill toward the California sagebrush community just beyond the northwest side of Segment 1 of the survey area (**Figure 2.1**).

The Hardstem and California Bulrush Marshes community has membership rules requiring that *Schoenoplectus acutus* or *Schoenoplectus californicus* > 50% cover in the herbaceous layer or > 30% relative cover if codominant with *Typha* spp. It has a rarity listing of S3 which indicates it is moderately rare and threatened (CNPS 2021b). The Hardstem and California Bulrush Marsh alliance occurs as an understory community beneath the arroyo willow thicket extending downstream to the open herbaceous area on the west half of Segment 2 of the survey area (**Figure 2.1**).

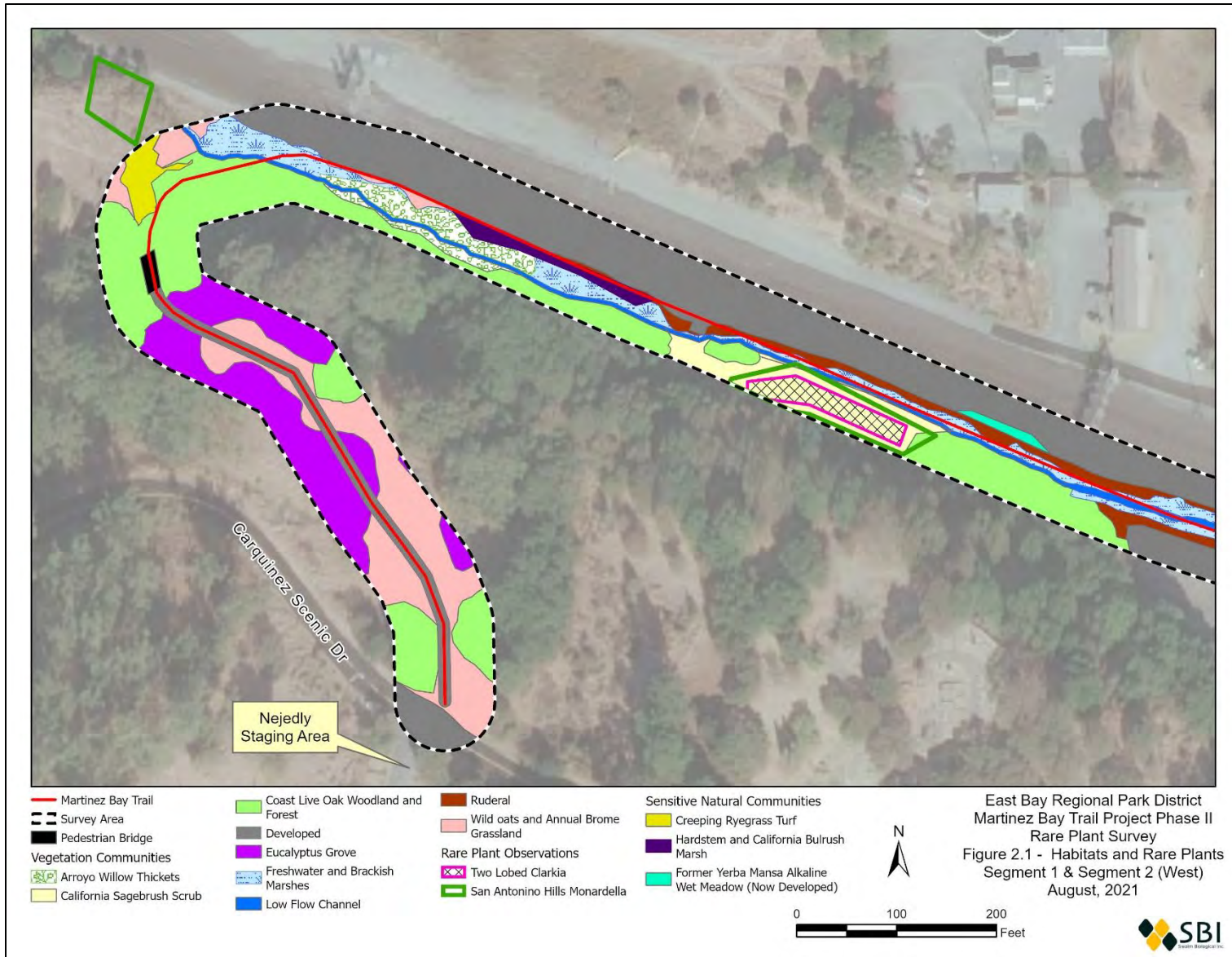
The Yerba Mansa Alkali Wet Meadow community has a rarity listing of S2 which indicates it is fairly rare and threatened (CNPS 2021b). In the lower reaches of the low flow channel in Segment 2 of the survey area, there was a ponded segment measuring approximately 100 square feet that, at the time of the May 2021 survey, exclusively supported the early growth of *Anemopsis californica* at approximately 30% cover (**Figure 2.1**). During the June and August 2021 rare plant surveys, the location where this sensitive natural wetland community was previously observed had been covered with rock fill within the UPRR right-of-way. The community was not observed where it had been previously mapped and recorded in Segment 2 of the survey area.

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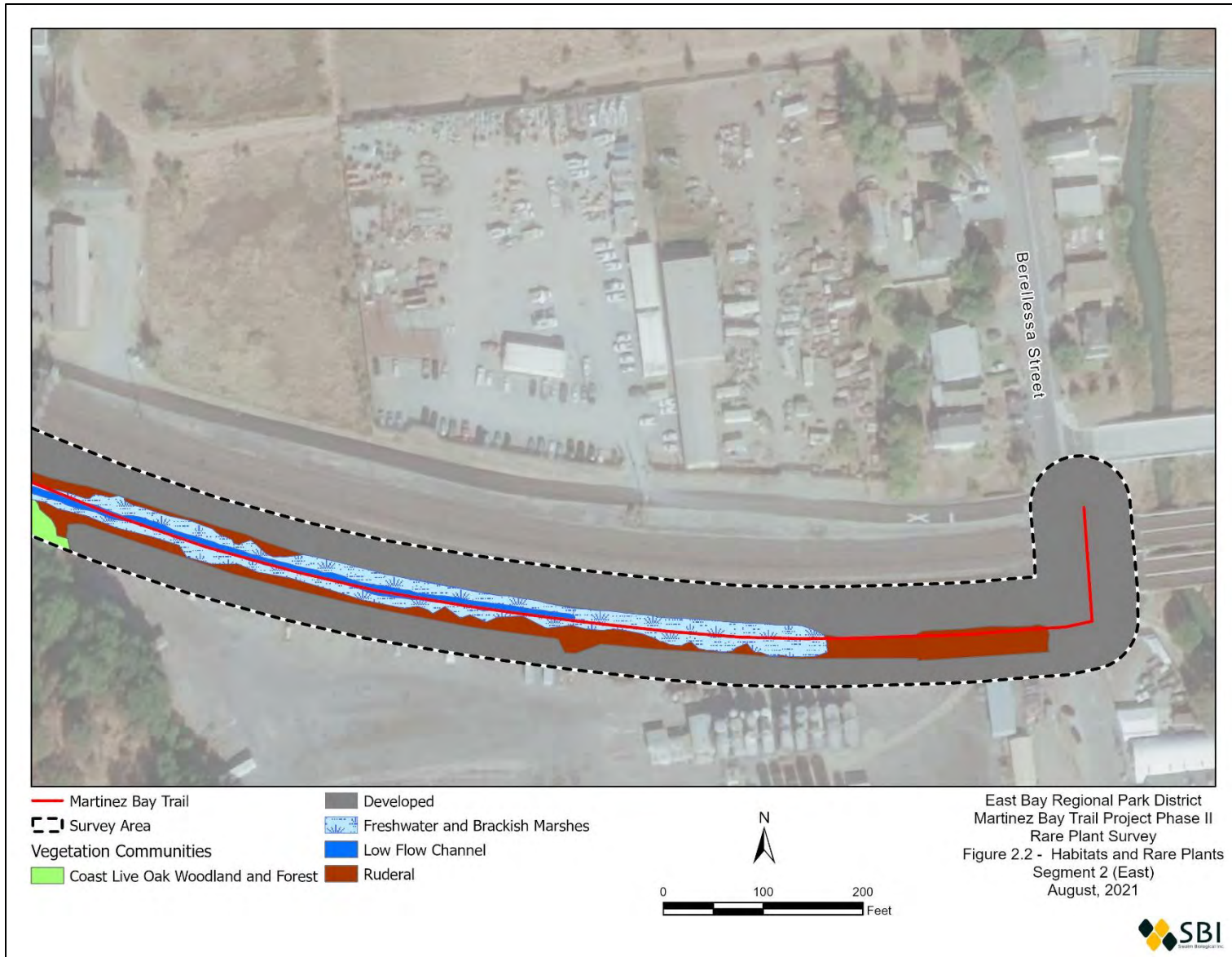


**Figure 1.** Martinez Bay Trail Phase II Project location and vicinity.



**Figure 2.1.** Martinez Bay Trail Phase II Project, Segment 1 and Segment 2 (West) survey area showing plant communities and rare plant populations.





**Figure 2.2.** Martinez Bay Trail Phase II Project, Segment 2 (East) survey area showing plant communities and rare plant populations.

## APPENDIX A. Special Status Plant Species and Plant Communities Potentially Occurring in the Survey Area

| Scientific Name                               | Common Name              | Status <sup>1</sup> | General Habitat Requirements  | Typical Blooming Period | 2021 Survey Results |
|---|--------------------------|---------------------|---|-------------------------|---------------------|
| <i>Amsinckia lunaris</i>                      | bent-flowered fiddleneck | 1B.2                | Cismontane woodland, valley and foothill grassland, and coastal bluff scrub; damp rock and soil on outcrops and cliffs within broadleaved upland forest, lower montane coniferous forest and north coast coniferous forest; often on acidic substrates. Known elevations are between 325-3280 ft elevation. | Mar-Jun                 | Not observed.       |
| <i>Androsace elongata</i> ssp. <i>acuta</i>   | California androsace     | 4.2                 | Chaparral, Cismontane woodland, Coastal scrub, Meadows and seeps, Pinyon and juniper woodland, Valley and foothill grassland  | Mar-Jun                 | Not observed.       |
| <i>Arctostaphylos pallida</i>                 | pallid manzanita         | FT/SE<br>1B.1       | Siliceous shale, sandy or gravelly soils in broadleaved upland forest, closed-cone coniferous forest, chaparral, cismontane woodland, and coastal scrub within the Diablo Range at known elevations between 605-1525 ft. elevation. Perennial evergreen shrub.  | Dec-Mar                 | Not observed        |
| <i>Atriplex coronata</i> var. <i>coronata</i> | crownscale               | 4.2                 | Alkaline, often clay soils in chenopod scrub, valley and foothill grassland, and vernal pools.  | Mar-Oct                 | Not observed.       |
| <i>Blepharizonia plumosa</i>                  | big tarplant             | 1B.1                | Valley and foothill grassland, usually clay soils   | Jul-Oct                 | Not observed.       |
| <i>Calochortus pulchellus</i>                 | Mt. Diablo fairy-lantern | 1B.2                | Occurs on north-facing wooded slopes in riparian woodland, and valley and foothill grassland, rarely within chaparral, at elevations between 100-2755 ft.   | Apr-Jun                 | Not observed.       |
| <i>Calochortus umbellatus</i>                 | Oakland star-tulip       | 4.2                 | Often serpentine soils in broadleaved upland forest, chaparral, cismontane woodland, lower montane coniferous forest, and valley and foothill grassland at elevations of 328-2,297 ft.  | Mar-May                 | Not observed.       |
| <i>Castilleja ambigua</i> var. <i>ambigua</i> | johnny-nip               | 4.2                 | Coastal bluff scrub, Coastal prairie, Coastal scrub, Marshes and swamps, Valley and foothill grassland, Vernal pools margins  | Mar-Aug                 | Not observed.       |

## APPENDIX A. Special Status Plant Species and Plant Communities Potentially Occurring in the Survey Area

| Scientific Name                                 | Common Name              | Status <sup>1</sup> | General Habitat Requirements   | Typical Blooming Period | 2021 Survey Results   |
|---|--------------------------|---------------------|--|-------------------------|---|
| <i>Clarkia biloba</i> ssp. <i>biloba</i>        | two lobed clarkia        | EB<br>CNPS<br>A2    | Occurs on serpentine or not; coniferous forest, foothill woodland, and chaparral   | May-Aug                 | <b>Present.</b> Observed as an understory species within California sagebrush scrub on a steep, north-facing hillside on the south side of the western half of Segment 2 of the study area. |
| <i>Centromadia parryi</i> ssp. <i>congdonii</i> | Congdon's tarplant       | 1B.1                | Often alkaline soils in chaparral, coastal prairie, meadows and seeps, coastal salt marshes and swamps, and vernal mesic valley and foothill grassland, at elevations of 3-750 ft. | May-Oct<br>(Nov)        | Not observed.   |
| <i>Chloropyron molle</i> ssp. <i>molle</i>      | soft bird's-beak         | FE/SR<br>1B.2       | Marshes and swamps (coastal)   | Jun-Nov                 | Not observed.   |
| <i>Cicuta maculata</i> var. <i>bolanderi</i>    | Bolander's water-hemlock | 2B.1                | Marshes and swamps: coastal, fresh or brackish water   | Jul-Sep                 | Not observed.   |
| <i>Cirsium andrewsii</i>                        | Franciscan thistle       | 1B.2                | Broadleafed upland forest, Coastal bluff scrub, Coastal prairie, Coastal scrub; mesic, sometimes serpentine soils  | Mar-Jul                 | Not observed.   |
| <i>Dirca occidentalis</i>                       | western leatherwood      | 1B.2                | Broadleafed upland forest, Closed-cone coniferous forest, Chaparral, Cismontane woodland, North Coast coniferous forest, Riparian forest, Riparian woodland; mesic soils           | Jan-Mar<br>(Apr)        | Not observed.   |
| <i>Eleocharis parvula</i>                       | small spikerush          | 4.3                 | Marshes and swamps   | (Apr) Jun-Aug<br>(Sep)  | Not observed.   |
| <i>Eryngium jepsonii</i>                        | Jepson's coyote thistle  | 1B.2                | Occurs in wetlands below 1,640 ft elevation on moist clay soil.  | Apr-Aug                 | Not observed.   |
| <i>Extriplex joaquinana</i>                     | San Joaquin spearscale   | 1B.2                | Chenopod scrub, Meadows and seeps, Playas, Valley and foothill grassland; alkaline soils   | Apr-Oct                 | Not observed.   |
| <i>Fissidens pauperculus</i>                    | minute pocket moss       | 1B.2                | North Coast coniferous forest (damp coastal soil)  | N/A                     | Not observed.   |
| <i>Fritillaria liliacea</i>                     | fragrant fritillary      | 1B.2                | Often serpentinite soils in cismontane woodland, coastal prairie, coastal scrub, and valley and foothill grassland, at elevations of 10- 1,345 ft.                                 | Feb-Apr                 | Not observed.   |

## APPENDIX A. Special Status Plant Species and Plant Communities Potentially Occurring in the Survey Area

| Scientific Name                                 | Common Name                  | Status <sup>1</sup> | General Habitat Requirements  | Typical Blooming Period | 2021 Survey Results  |
|---|------------------------------|---------------------|---|-------------------------|--|
| <i>Helianthella castanea</i>                    | Diablo helianthella          | 1B.2                | Broadleafed upland forest, Chaparral, Cismontane woodland, Coastal scrub, Riparian woodland, Valley and foothill grassland; usually rocky, axonal soils. Often in partial shade | Mar-Jun                 | Not observed.  |
| <i>Holocarpha macradenia</i>                    | Santa Cruz tarplant          | FT/SE<br>1B.1       | Occurs in coastal prairie, coastal scrub and valley and foothill grasslands, in areas with light sandy soil, or sandy clay between 30-720 ft. elevation.                        | Jun-Oct                 | Not observed.  |
| <i>Iris longipetala</i>                         | coast iris                   | 4.2                 | Coastal prairie, Lower montane coniferous forest, Meadows and seeps; mesic soils  | Mar-May                 | Not observed   |
| <i>Isocoma arguta</i>                           | Carquinez goldenbush         | 1B.1                | Generally found in wetlands within valley and foothill grassland, usually within alkali flats or other mineral-rich soils of the Suisun Slough at elevations of 3-65 ft.        | Aug-Dec                 | Not observed.  |
| <i>Lasthenia conjugens</i>                      | Contra Costa goldfields      | FE/—<br>1B.1        | Mesic habitats including cismontane woodland, alkaline playas, valley and foothill grasslands, and vernal pools, at elevations of 0- 1,542 ft.                                  | Mar-Jun                 | Not observed.  |
| <i>Lathyrus jepsonii</i> var. <i>jepsonii</i>   | Delta tule pea               | 1B.2                | Low elevation marshes and swamps (freshwater and brackish)  | May-Jul<br>(Aug-Sep)    | Not observed.  |
| <i>Lilaeopsis masonii</i>                       | Mason's lilaeopsis           | —/SR<br>1B.1        | Marshes and swamps (brackish or freshwater), Riparian scrub   | Apr-Nov                 | Not observed.  |
| <i>Meconella oregana</i>                        | Oregon meconella             | 1B.1                | Coastal prairie and scrub between 820-2035 ft. elevation.   | Mar-Apr                 | Not observed.  |
| <i>Micropus amphibolus</i>                      | Mt. Diablo cottonweed        | 3.2                 | Broadleafed upland forest, Chaparral, Cismontane woodland, Valley and foothill grassland; rocky soils   | Mar-May                 | Not observed.  |
| <i>Monardella antonina</i> ssp. <i>antonina</i> | San Antonio Hills monardella | 3                   | Chaparral and cismontane woodland at elevations of 1050-3281 ft.  | Jun-Aug                 | <b>Present.</b> Observed within California sagebrush scrub on a steep, north-facing hillside on the south side of the western half of Segment 2 of the survey area and just outside the survey area along the buffer zone west of Segment 1. |
| <i>Navarretia gowenii</i>                       | Lime Ridge navarretia        | 1B.1                | Chaparral at elevations of 591-1001 ft.   | May-Jun                 | Not observed.  |
| <i>Polygonum marinense</i>                      | Marin knotweed               | 3.1                 | Marshes and swamps (coastal salt or brackish)   | (Apr) May-Aug (Oct)     | Not observed.  |

## APPENDIX A. Special Status Plant Species and Plant Communities Potentially Occurring in the Survey Area

| Scientific Name  | Common Name                      | Status <sup>1</sup> | General Habitat Requirements  | Typical Blooming Period | 2021 Survey Results   |
|--|----------------------------------|---------------------|---|-------------------------|---|
| <i>Ranunculus lobbii</i>   | Lobb's aquatic buttercup         | 4.2                 | Cismontane woodland, North Coast coniferous forest, Valley and foothill grassland, Vernal pools; mesic soils  | Feb-May                 | Not observed.   |
| <i>Spergularia macrotheca</i> var. <i>longistyla</i>   | long-styled sand-spurrey         | 1B.2                | Alkaline marshes, mud flats, meadows, and hot springs between 0-670 ft. elevation.  | Feb-May (Jun)           | Not observed.   |
| <i>Streptanthus albidus</i> ssp. <i>peramoenus</i>   | most beautiful jewelflower       | 1B.2                | Chaparral, Cismontane woodland, Valley and foothill grassland; serpentine soils   | (Mar) Apr-Sep (Oct)     | Not observed.   |
| <i>Symphotrichum lentum</i>  | Suisun Marsh aster               | 1B.2                | Marshes and swamps (brackish and freshwater)  | (Apr) May-Nov           | Not observed.   |
| <i>Trifolium hydrophilum</i>   | saline clover                    | 1B.2                | Salt marsh and swamp, vernal pool or other wetlands within valley and foothill grassland on alkaline soils at elevations of 0-985 ft.   | Apr-Jun                 | Not observed.   |
| <i>Viburnum ellipticum</i>   | oval-leaved viburnum             | 2B.3                | Chaparral, cismontane woodland, and lower montane coniferous forest at elevations of 705-4,595 ft.  | May-Jun                 | Not observed.   |
| <b>Sensitive Plant Communities</b>   |                                  |                     |   |                         |   |
| <i>Leymus cinereus</i> - <i>Leymus triticoides</i><br>Herbaceous Alliance  | Creeping Ryegrass Turfs          | S3                  | <i>Leymus cinereus</i> and/or <i>Leymus triticoides</i> (= <i>Elymus triticoides</i> ) is dominant or co-dominant in the herbaceous layer. Emergent trees and shrubs may be present at low cover. Membership rules vary from 30% to 50% relative cover in the herbaceous layer. | N/A                     | <b>Present.</b> This community is present at the north pedestrian bridge footing, continuing north across a grassy slope on the northwest side of Segment 1 and east under the riparian canopy along the stream channel.  |
| <i>Anemopsis californica</i> - <i>Helianthus nuttallii</i> - <i>Solidago spectabilis</i><br>Alkaline Wet Meadows | Yerba Mansa Alkaline Wet Meadows | S2                  | <i>Anemopsis californica</i> , <i>Helianthus nuttallii</i> , <i>Solidago confinis</i> and/or <i>Solidago spectabilis</i> is dominant or co-dominant in the herbaceous layer. Membership rules require 30% cover in the herbaceous layer.  | N/A                     | <b>Present.</b> This community is restricted to a small area (100 sq. ft.) near the middle of the low flow channel on the west half of Segment 2 of the survey area. During June and August 2021 rare plant surveys, the location where this sensitive natural wetland community was previously observed had been covered with rock fill and was not observed where it had been previously mapped and recorded in the survey area during March 2021 rare plant surveys. |

## APPENDIX A. Special Status Plant Species and Plant Communities Potentially Occurring in the Survey Area

| Scientific Name                                      | Common Name                             | Status <sup>1</sup> | General Habitat Requirements   | Typical Blooming Period | 2021 Survey Results  |
|--|---|---------------------|--|-------------------------|--|
| <i>Schoenoplectus (acutus, californicus)</i> Marshes | Hardstem and California Bulrush Marshes | S3                  | <i>Schoenoplectus acutus</i> and/or <i>Schoenoplectus californicus</i> is dominant or co-dominant in the herbaceous layer. Membership rules require that <i>Schoenoplectus acutus</i> or <i>Schoenoplectus californicus</i> > 50% cover in the herbaceous layer or > 30% relative cover if codominant with <i>Typha</i> spp. | N/A                     | <b>Present.</b> This community is present primarily as an understory community beneath the arroyo willow thicket, becoming most prominent at the downstream end as the overstory canopy declines. It is restricted to a small area (300 sq. ft.) within the low flow channel within the survey area. |

<sup>1</sup>Federal Endangered Species Act (FESA) Designations: (FE) Federally Endangered

California Endangered Species Act (CESA) Designations: (SE) State Endangered

California Native Plant Society (CNPS) Rare Plant Rank: (1A) Presumed extinct in California; (1B) Rare, threatened, or endangered in California and elsewhere; (2) Rare, threatened, or endangered in California, but more common elsewhere; (3) More information is needed; (4) Limited distribution, watch list; Threat Rank: 0.1 Seriously threatened in California (more than 80% of occurrences threatened / high degree and immediacy of threat); 0.2 Fairly threatened in California (20 to 80% occurrences threatened/moderate degree and immediacy of threat); 0.3 Not very threatened in California (less than 20% of occurrences threatened / low degree and immediacy of threat or no current threats known).

**APPENDIX B. List of Plants Observed within the Survey Area**

| <b>PLANTS</b>                                     |                        |
|---|------------------------|
| <b>Scientific Name</b>                            | <b>Common Name</b>     |
| <i>Achillea millefolium</i>                       | yarrow                 |
| <i>Adiantum jordanii</i>                          | maiden hair fern       |
| <i>Aesculus californica</i>                       | California buckeye     |
| <i>Amsinckia intermedia</i>                       | common fiddleneck      |
| <i>Anemopsis californica</i>                      | yerba mansa            |
| <i>Artemisa californica</i>                       | California sage brush  |
| <i>Artemisia douglasiana</i>                      | mugwort                |
| <i>Asclepias fascicularis</i>                     | narrow leaf milkweed   |
| <i>Avena barbata</i>                              | slender oat            |
| <i>Avena fatua</i>                                | wild oat               |
| <i>Baccharis glutinosa</i>                        | Douglas' baccharis     |
| <i>Baccharis pilularis</i>                        | coyote brush           |
| <i>Bolboschoenus maritimus</i>                    | alkali bulrush         |
| <i>Bolboschoenus robustus</i>                     | sturdy bullrush        |
| <i>Brassica nigra</i>                             | black mustard          |
| <i>Bromus diandrus</i>                            | rip gut brome          |
| <i>Bromus madritensis</i> ssp. <i>rubens</i>      | red brome              |
| <i>Capsella bursa-pastoris</i>                    | shepherd's purse       |
| <i>Cardamine hirsuta</i>                          | hairy bitter cress     |
| <i>Carduus pycnocephalus</i>                      | Italian thistle        |
| <i>Centaurea melitensis</i>                       | toocalote              |
| <i>Centaurea solstitialis</i>                     | yellow star thistle    |
| <i>Cerastium glomeratum</i>                       | sticky chickweed       |
| <i>Chenopodium album</i>                          | lamb's quarters        |
| <i>Chlorogalum pomeridianum</i>                   | amole                  |
| <i>Cirsium vulgare</i>                            | bull thistle           |
| <i>Clarkia biloba</i> ssp. <i>biloba</i>          | two lobed clarkia      |
| <i>Clarkia purpurea</i> ssp. <i>quadrivulnera</i> | four spot              |
| <i>Clarkia unguiculata</i>                        | elegant clarkia        |
| <i>Claytonia perfoliata</i>                       | miner's lettuce        |
| <i>Claytonia</i> sp.                              | miner's lettuce        |
| <i>Conium maculatum</i>                           | poison hemlock         |
| <i>Crypsis schoenoides</i>                        | Swamp grass            |
| <i>Cynodon dactylon</i>                           | Bermuda grass          |
| <i>Cynosurus echinatus</i>                        | hedgehog dogtail grass |
| <i>Cyperus eragrostis</i>                         | tall cyperus           |
| <i>Dactylis glomerata</i>                         | orchard grass          |
| <i>Dichelostemma capitatum</i>                    | blue dicks             |
| <i>Digitaria sanguinalis</i>                      | crab grass             |
| <i>Diplacus aurantiacus</i>                       | sticky monkeyflower    |
| <i>Dipsacus sativus</i>                           | Fuller's teasel        |
| <i>Distichlis spicata</i>                         | saltgrass              |
| <i>Dittrichia graveolens</i>                      | stinkwort              |
| <i>Drymocallis glandulosa</i>                     | sticky cinquefoil      |
| <i>Dryopteris arguta</i>                          | California wood fern   |

**APPENDIX B. List of Plants Observed within the Survey Area**

| <b>PLANTS</b>  |                                  |
|--|----------------------------------|
| <b>Scientific Name</b>                                       | <b>Common Name</b>               |
| <i>Elymus condensatus</i>                                    | giant wild rye                   |
| <i>Elymus glaucus</i>  | blue wildrye                     |
| <i>Elymus triticoides</i>                                    | creeping wild rye                |
| <i>Epilobium brachycarpum</i>                                | annual fireweed                  |
| <i>Eriogonum nudum</i> var. <i>auriculatum</i>               | naked buckwheat                  |
| <i>Eriophyllum confertiflorum</i> var. <i>confertiflorum</i> | golden yarrow                    |
| <i>Erodium botrys</i>  | long beaked filaree              |
| <i>Erodium cicutarium</i>                                    | red stemmed filaree              |
| <i>Erodium moschatum</i>                                     | white stemmed filaree            |
| <i>Eschscholzia californica</i>                              | California poppy                 |
| <i>Eucalyptus camaldulensis</i>                              | red gum                          |
| <i>Eucalyptus globulus</i>                                   | blue gum                         |
| <i>Euphorbia oblongata</i>                                   | eggleaf spurge                   |
| <i>Euphorbia peplus</i>                                      | petty spurge                     |
| <i>Festuca microstachys</i>                                  | small fescue                     |
| <i>Festuca myuros</i>  | rattail sixweeks grass           |
| <i>Festuca perennis</i>                                      | Italian rye grass                |
| <i>Ficus carica</i>  | common fig                       |
| <i>Foeniculum vulgare</i>                                    | sweet fennel                     |
| <i>Galium aparine</i>  | sticky willy                     |
| <i>Galium porrigens</i> ssp. <i>porrigens</i>                | climbing bedstraw                |
| <i>Galium</i> sp.  | bed straw                        |
| <i>Genista monspessulana</i>                                 | French broom                     |
| <i>Geranium dissectum</i>                                    | cut leaved geranium              |
| <i>Geranium molle</i>  | crane's bill geranium            |
| <i>Geranium robertianum</i>                                  | Robert's geranium                |
| <i>Grindelia camporum</i>                                    | common gumplant                  |
| <i>Grindelia stricta</i>                                     | coastal gumplant                 |
| <i>Helminthotheca picroides</i>                              | bristly ox-tongue                |
| <i>Heteromeles arbutifolia</i>                               | toyon                            |
| <i>Hirschfeldia incana</i>                                   | summer mustard                   |
| <i>Hordeum marinum</i> ssp. <i>gussoneanum</i>               | Mediterranean barley             |
| <i>Hordeum murinum</i>                                       | foxtail barley                   |
| <i>Juglans hindsii</i>                                       | Northern California black walnut |
| <i>Juncus balticus</i> ssp. <i>ater</i>                      | Baltic rush                      |
| <i>Juncus mexicanus</i>                                      | Mexican rush                     |
| <i>Lactuca serriola</i>                                      | wild lettuce                     |
| <i>Lathyrus latifolius</i>                                   | sweet pea                        |
| <i>Lathyrus tingitanus</i>                                   | Tangier pea                      |
| <i>Lathyrus vestitus</i> var. <i>vestiitus</i>               | common pacific pea               |
| <i>Lepidium latifolium</i>                                   | broad leaved pepper grass        |
| <i>Lotus corniculatus</i>                                    | bird's foot trefoil              |
| <i>Lupinus bicolor</i>                                       | annual lupine                    |
| <i>Lupinus nanus</i>   | sky lupine                       |
| <i>Lupinus succulentus</i>                                   | succulent lupine                 |
| <i>Lysimachia arvensis</i>                                   | scarlet pimpernel                |



**APPENDIX B. List of Plants Observed within the Survey Area**

| <b>PLANTS</b>                                   |                              |
|---|------------------------------|
| <b>Scientific Name</b>                          | <b>Common Name</b>           |
| <i>Lythrum hyssopifolia</i>                     | hyssop loosestrife           |
| <i>Madia gracilis</i>                           | grassy tarweed               |
| <i>Marah fabacea</i>                            | California man-root          |
| <i>Medicago lupulina</i>                        | black medic                  |
| <i>Medicago polymorpha</i>                      | bur clover                   |
| <i>Melica californica</i>                       | California melic grass       |
| <i>Melica torreyana</i>                         | Torrey's melica              |
| <i>Melilotus indicus</i>                        | annual yellow sweetclover    |
| <i>Melilotus officinalis</i>                    | yellow sweetclover           |
| <i>Monardella antonina</i> ssp. <i>antonina</i> | San Antonio Hills monardella |
| <i>Morella californica</i>                      | California wax myrtle        |
| <i>Nerium oleander</i>                          | oleander                     |
| <i>Oemleria cerasiformis</i>                    | oso berry                    |
| <i>Oxalis</i> sp.                               | oxalis                       |
| <i>Pentagramma triangularis</i>                 | gold back fern               |
| <i>Phoenix canariensis</i>                      | Canary Island date palm      |
| <i>Phragmites australis</i>                     | common reed                  |
| <i>Phyla nodiflora</i>                          | common lippia                |
| <i>Plantago coronopus</i>                       | cut leaf plantain            |
| <i>Plantago erecta</i>                          | California plantain          |
| <i>Plantago lanceolata</i>                      | English plantain             |
| <i>Plantago major</i>                           | common plantain              |
| <i>Poa annua</i>                                | annual blue grass            |
| <i>Polygonum aviculare</i>                      | prostrate knotweed           |
| <i>Polypogon monspeliensis</i>                  | rabbitsfoot grass            |
| <i>Prunus dulcis</i>                            | almond                       |
| <i>Prunus</i> sp.                               | prunus                       |
| <i>Quercus agrifolia</i>                        | coast live oak               |
| <i>Quercus douglasii</i>                        | blue oak                     |
| <i>Quercus lobata</i>                           | valley oak                   |
| <i>Ranunculus californicus</i>                  | California buttercup         |
| <i>Raphanus sativus</i>                         | cultivated radish            |
| <i>Rosa</i> sp.                                 | cultivated rose              |
| <i>Rubus aremeniacus</i>                        | Himalayan blackberry         |
| <i>Rubus ursinus</i>                            | California blackberry        |
| <i>Rumex acetosella</i>                         | common sheep sorrel          |
| <i>Rumex crispus</i>                            | curly dock                   |
| <i>Rumex obtusifolius</i>                       | bitter dock                  |
| <i>Rumex pulcher</i>                            | fiddle dock                  |
| <i>Salix lasiolepis</i>                         | arroyo willow                |
| <i>Sambucus nigra</i> ssp. <i>caerulea</i>      | blue elderberry              |
| <i>Sanicula crassicaulis</i>                    | Pacific sanicle              |
| <i>Schinus molle</i>                            | Peruvian pepper tree         |
| <i>Schoenoplectus acutus</i>                    | hardstem bulrush             |
| <i>Schoenoplectus californicus</i>              | California bulrush           |
| <i>Scrophularia californica</i>                 | California figwort           |
| <i>Senecio vulgaris</i>                         | common groundsel             |

**APPENDIX B. List of Plants Observed within the Survey Area**

| <b>PLANTS</b>                     |                         |
|-----------------------------------|-------------------------|
| <b>Scientific Name</b>            | <b>Common Name</b>      |
| <i>Sidalcea malviflora</i>        | checker bloom           |
| <i>Silybum marianum</i>           | milk thistle            |
| <i>Sisymbrium officinale</i>      | hedge mustard           |
| <i>Sisyrinchium bellum</i>        | blue-eyed grass         |
| <i>Stachys bullata</i>            | California hedge nettle |
| <i>Stellaria media</i>            | chickweed               |
| <i>Stipa cernua</i>               | nodding needle grass    |
| <i>Stipa miliacea</i>             | smilo grass             |
| <i>Taraxacum officinale</i>       | common dandy lion       |
| <i>Thalictrum fendleri</i>        | Fendler's meadow rue    |
| <i>Torilis arvensis</i>           | field hedge parsley     |
| <i>Toxicodendron diversilobum</i> | poison oak              |
| <i>Tragopogon porriflorus</i>     | purple salsify          |
| <i>Trifolium hirtum</i>           | rose clover             |
| <i>Trifolium repens</i>           | white clover            |
| <i>Trifolium tomentosum</i>       | wooly clover            |
| <i>Triteleia laxa</i>             | Ithuriel's spear        |
| <i>Typha angustifolia</i>         | narrow leaf cattail     |
| <i>Umbellularia californica</i>   | California bay          |
| <i>Vicia benghalensis</i>         | purple vetch            |
| <i>Vicia sativa</i>               | spring vetch            |
| <i>Vicia villosa</i>              | hairy vetch             |
| <i>Vitis</i> sp.                  | cultivated grape        |
| <i>Washingtonia robusta</i>       | Mexican fan palm        |
| <i>Xanthium strumarium</i>        | rough cocklebur         |

Appendix E

**Natural Environment Study (Minimal Impacts), January 2024**

**Natural Environment Study (Minimal Impacts)**

**Martinez Bay Trail Project Phase II  
Contra Costa County, California  
January 2024**

**STATE OF CALIFORNIA  
Department of Transportation**

Prepared By: \_\_\_\_\_ Date: \_\_\_\_\_

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## **1. Introduction**

Sequoia Ecological Consulting, Inc. (Sequoia) has prepared this Natural Environment Study (Minimal Impact) (NES (MI)) for the proposed Martinez Bay Trail Project Phase II Project, a proposed segment of the San Francisco Bay Trail, located in the City of Martinez, in Contra Costa County (Appendix A: Figure 1). The purpose of this report is to describe the biological resources present within project area, to identify sensitive biological resources known to occur in the project region, and to evaluate the potential for sensitive resources to occur within the project area. This NES (MI) has been developed in support of preparation of an Environmental Document in compliance with the California Environmental Quality Act (CEQA) and National Environmental Policy Act (NEPA).

### **1.1 Project History**

In May 2003, an Initial Study/Mitigated Negative Declaration (City of Martinez 2003) was prepared and adopted by the City of Martinez (City) for approval of the Martinez Bay Trail Phase II Project (hereafter referred to as the Original Project). The Original Project was proposed as part of the larger San Francisco Bay Trail (SFBT) which is being developed by the Association of Bay Area Governments in conjunction with local agencies. The Original Project was intended to begin at the East Bay Regional Park District (EBRPD) Nejedly Staging Area and to provide a link to the SFBT at the EBRPD Martinez Regional Shoreline parking lot. The Original Project was approved in 2003, a Joint Aquatic Resources Permit Application was completed, and permits were obtained for the project in 2003-2004. Approximately 700 feet of the first phase of the trail from the Nejedly Staging Area to the Union Pacific Railroad (UPRR) right-of-way was subsequently built. The remainder of the project was put on hold until an easement was granted by UPRR for the EBRPD to construct the remainder of the Phase II project. The original Memorandum of Understanding (MOU) between UPRR and EBRPD was signed in 1993, and the Amended and Restated MOU was agreed to on May 3, 2016. This MOU provides recreational trail easements over railroad property, and grants the EBRPD a longitudinal, non-exclusive easement for trail along the UPRR right-of-way easterly to and then across Berrellesa Street.

The Original Project was approved in 2003 with the City of Martinez as the Lead Agency. EBRPD has since assumed primary responsibility for the current Martinez Bay Trail Phase II Project (hereafter referred to as the proposed project). EBRPD, in coordination with the City, is now finalizing project design and updating previously obtained permits in order to construct the proposed project. The proposed project includes minor modifications and as the responsible agency, EBRPD is finalizing the design and providing funding for construction. As a result, EBRPD is filing an Addendum to the previously approved Mitigated Negative Declaration (MND) for review and approval by the EBRPD Board of Directors. The Addendum evaluates whether modifications/refinements to the proposed project would result in any new or substantially more significant effects or require any new mitigation measures not identified in the 2003 MND.

As in the Original Project, the proposed project includes improvements to construct approximately 3,100 feet of trail including the addition of a crossing of the UPRR alignment at Berrellesa Street. Due to the similarities in alignment, project plans, needed work efforts, location, and environmental conditions, the elements of the currently proposed project have been previously analyzed in the 2003 MND as they were needed to implement the Original Project. The proposed project does include upgrades to the existing railroad crossing at Berrellesa street to meet current California Public Utilities Commission (CPUC) standards and UPRR requirements. This would include removal and replacement of existing gate arms, and enhanced signage, striping and safety improvements for the UPRR crossing. These enhancements have been designed to preserve the functionality of the railroad. In addition, the proposed project would result in paving of an approximately 700-foot portion of trail from the Nejedly Staging Area to the UPRR right-of-way. This section of trail was originally approved to be paved but was instead constructed with aggregate base and is now partly overgrown with upland ruderal vegetation. The Addendum also found that the mitigation that has already been implemented to offset impacts on wetlands was completed and is considered to be appropriate to offset the lost wetland habitat.

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

The goal of this project is to expand on the existing SFBT layout and to provide pedestrian traffic a safe means of transportation along the UPRR right-of-way, connecting the Nejedly Staging Area to the Martinez Regional Shoreline.

## **1.2 Project Description**

The proposed project is located in the same area and follows the Original Project alignment. The proposed project includes approximately 3,100 feet of paved trail that will provide connectivity between the Nejedly Staging Area at Carquinez Scenic Drive and the SFBT at EBRPD Martinez Regional Shoreline parking lot and will complete a link planned for by the SFBT Plan. The SPBT Plan consists of a 400-mile regional network of bicycle and hiking trails along the shoreline areas of San Francisco and San Pablo bays. Local cities, counties, and park districts along the trail network have worked closely with the Association of Bay Area Governments in developing the Bay Trail Plan. The proposed project is being developed and will be maintained by the EBRPD. A portion of the trail is located in an easement on the UPRR, and within jurisdictional areas of the San Francisco Bay Water Quality Control Board (SFBWQCB), Bay Conservation and Development Commission (BCDC), California Department of Fish and Wildlife (CDFW), and U.S. Army Corps of Engineers (USACE). The proposed project will include an update to agreements and approvals from regulatory agencies previously obtained in 2003-2004.

## **2. Study Methods**

This chapter summarizes the findings of the biological study area (BSA). The purpose of this chapter is to document biological resources in and within five miles of the BSA, to evaluate the potential of habitats to support special-status plant and animal species and to identify any adverse effects from the project on biological resources.

### **2.1 Regulatory Requirements**

#### **2.1.1 Federal Endangered Species Act**

The Federal Endangered Species Act (FESA) provides protection for federally listed endangered and threatened species and their habitats. A project may obtain permission to take federally listed species in one of two ways: a Section 10 Habitat Conservation Plan (HCP) issued to a non-federal entity, or a Section 7 Biological Opinion from the U.S. Fish and Wildlife Service (USFWS) and/or the National Oceanic and Atmospheric Administration (NOAA) issued to another federal agency that funds or permits an action (e.g., USACE). Under either Section of the FESA, adverse impacts to protected species are avoided, minimized, and mitigated. Both cases require consultation with the USFWS and/or National Marine Fisheries Service (NMFS), which ultimately issues a Biological Opinion determining whether the federally listed species may be incidentally taken pursuant to the proposed action and authorizing incidental take.

Section 7 of FESA requires that federal agencies develop a conservation program for listed species (FESA 7(a)(a)) and that they avoid actions that will jeopardize the continued existence of the species or result in the destruction or adverse modification of the species' designated critical habitat (FESA 7(a)(2)). FESA Section 9 prohibits all persons and agencies from take of threatened and endangered species (though the prohibition on taking listed plants only applies to plants taken from "areas under Federal jurisdiction" or plants taken "in knowing violation of any law or regulation of any State or in the course of any violation of a State criminal trespass law"). Those who violate this mandate face civil and criminal penalties, including civil fines of up to \$25,000 per violation, as well as criminal penalties of up to \$50,000 and imprisonment for one year. Section 10 of FESA regulates a wide range of activities affecting fish and wildlife designated as endangered or threatened and the habitats on which they rely. Section 10 prohibits activities affecting these protected fish and wildlife species and their habitats unless authorized by a permit from USFWS or NMFS. These permits may include incidental take permits, enhancement of survival permits, or recovery and interstate commerce permits. HCPs under Section 10(a)(1)(B) provide for partnerships with non-federal parties to conserve the ecosystems upon which listed species depend.

HCPs are required as part of an application for an incidental take permit under Section 10. They describe the anticipated effects of the proposed take, how those impacts will be minimized or mitigated, and how the HCP will be funded.

### **2.1.2 Migratory Bird Treaty Act of 1918**

The Migratory Bird Treaty Act (MBTA) (16 USC §703–711), as administered by the USFWS, makes it unlawful to “pursue, hunt, take, capture, kill, attempt to take, capture or kill, offer for sale, sell, offer to purchase, purchase, deliver for shipment, ship, cause to be shipped, deliver for transportation, transport, cause to be transported, carry, or cause to be carried by any means whatever, receive for shipment, transportation or carriage, or export at any time, or in any manner, any migratory bird, or any part, nest, or egg of any such bird.” This includes direct and indirect acts, except for harassment and habitat modification, which are not included unless they result in direct loss of birds, nests, or eggs.

### **2.1.3 Bald and Golden Eagle Protection Act of 1940**

The Bald and Golden Eagle Protection Act (BGEPA; 16 USC. 668-668c) prohibits anyone from taking, possessing, or transporting a bald eagle (*Haliaeetus leucocephalus*) or golden eagle (*Aquila chrysaetos*), or the parts, nests, or eggs of such birds without prior authorization. This includes inactive nests as well as active nests. Take means to pursue, shoot, shoot at, poison, wound, kill, capture, trap, collect, destroy, molest, or disturb. Activities that directly or indirectly lead to take are prohibited without a permit.

### **2.1.4 Magnuson-Stevens Fishery Conservation and Management Act**

The Magnuson-Stevens Fishery Conservation and Management Act establishes guidelines to assist the Regional Fishery Management Councils and the Secretary of Commerce in the description and identification of Essential Fish Habitat (EFH) in fishery management plans, the identification of adverse effects to EFH, and the identification of actions required to conserve and enhance EFH. This Act requires NMFS to protect EFH for those fish species regulated under the federal Fisheries Management Plan. NMFS requires any federal agencies to consult with NMFS on all actions that could adversely impact EFH.

### **2.1.5 Clean Water Act**

The Clean Water Act (CWA) provides guidance for the restoration and maintenance of the chemical, physical, and biological integrity of the nation's waters.

Section 404: Gives the USACE jurisdiction over fill materials in essentially all water bodies, including wetlands. All federal agencies are to avoid impacts to wetlands whenever there is a practicable alternative. Section 404 established a permit program administered by USACE regulating the discharge of dredged or fill material into waters of the U.S. (including wetlands).

Section 401: Requires that an applicant for a federal license or permit that allows activities resulting in a discharge to waters of the U.S. must obtain a state certification that the discharge complies with other provisions of the CWA. The State Water Resources Control Board (SWRCB) and Regional Water Quality Control Boards



(RWQCBs) administer the certification program in California. The guidelines allow the discharge of dredged or fill material into the aquatic system only if there is no practicable alternative that would have less adverse impacts.

### **2.1.6 Porter-Cologne Water Quality Control Act**

The Porter-Cologne Water Quality Control Act expands the enforcement authority of the SWRCB and is becoming more prominent on projects involving impacts to isolated waters of the state (non-404/401 waters). The RWQCB regulates waters of the state impacts with a Construction General Permit, State General Waste Discharge Order, or Waste Discharge Requirements, depending on the characteristics of the waterway and the level of impact.

### **2.1.7 Executive Order 11990 – Protection of Wetlands**

Executive Order 11990 established a national policy to avoid adverse impacts on wetlands whenever there is a practicable alternative. The U.S. Department of Transportation (DOT) promulgated DOT Order 5660.1A in 1978 to comply with this direction. On federally funded projects, impacts on wetlands must be identified. Alternatives that avoid wetlands must be considered. If wetland impacts cannot be avoided, then all practicable measures to minimize harm must be included. This must be documented in a specific Wetlands Only Practicable Alternative Finding. Additional requirement is to provide early public involvement in projects affecting wetlands. The Federal Highway Administration (FHWA) provides technical assistance and reviews environmental documents for compliance.

### **2.1.8 Executive Order 13112 – Invasive Species**

On February 3, 1999, Executive Order 13112 was signed requiring federal agencies to combat the introduction or spread of invasive species in the U.S. The order defines invasive species as “any species, including its seeds, eggs, spores, or other biological material capable of propagating that species, that is not native to that ecosystem whose introduction does or is likely to cause economic or environmental harm or harm to human health.” FHWA guidance issued August 10, 1999 directs the use of the state’s invasive species list, maintained by the Invasive Species Council of California, to define the invasive plants that must be considered as part of the NEPA analysis for a proposed project.

Under the Executive Order, federal agencies cannot authorize, fund, or carry out actions that it believes are likely to cause or promote the introduction or spread of invasive species in the U.S. or elsewhere unless all reasonable measures to minimize risk of harm have been analyzed and considered.

### **2.1.9 California Environmental Quality Act**

CEQA requires public agencies in California to analyze and disclose potential environmental impacts associated with a proposed discretionary project that the agency

will carry out, fund, or approve. Any significant impact must be mitigated to the extent feasible, below the threshold of significance.

## **2.1.10 California Fish and Game Code**

### **2.1.10.1 Sections 1600-1616: Lake or Streambed Alteration Agreement**

The CDFW regulates activities within watercourses, lakes, and in-stream reservoirs pursuant to Sections 1600-1616. Under Section 1602 of the California Fish and Game Code (CFGC)—often referred to as the Lake or Streambed Alteration Agreement (LSAA)—the CDFW regulates activities that would alter the flow or change or use any material from the bed, channel, or bank of any perennial, intermittent, or ephemeral river, stream, or lake. Each of these activities requires a Section 1602 permit. Section 1602 requires the CDFW to be notified of any activity that might affect lakes and streams. It also identifies the process through which an applicant can come to an agreement with the state regarding the protection of these resources, both during and following construction.

### **2.1.10.2 Sections 1900-1913: Native Plant Protection Act**

The Native Plant Protection Act (NPPA) includes measures to preserve, protect, and enhance rare and endangered native plants. The list of native plants afforded protection pursuant to the NPPA includes those listed as rare, threatened, and endangered under the California Endangered Species Act (CESA). The NPPA provides limitations that no person would import into the state—or take, possess, or sell within the state—any rare, threatened, or endangered native plant, except in compliance with provisions of the NPPA. Where individual landowners have been notified by the CDFW that rare, threatened, or endangered plants are growing on their land, the landowners are required to notify the CDFW at least 10 days in advance of changing land uses to allow the CDFW to salvage any rare, threatened, or endangered native plant material.

### **2.1.10.3 Sections 2080-2081: California Endangered Species Act**

The CDFW is responsible for administering the CESA. Section 2080 of CFGC prohibits take of any species that the Fish and Wildlife Commission determines to be an endangered species or a threatened species. However, CESA does allow for take that is incidental to otherwise lawful development projects. Sections 2081(b) and (c) of CESA allow the CDFW to issue an incidental take permit for a state listed threatened and/or endangered species only if specific criteria are met (i.e., the effects of the authorized take are minimized and fully mitigated). The measures required to meet this obligation shall be roughly proportional in extent to the impact of the authorized taking on the species. Where various measures are available to meet this obligation, the measures required shall maintain the applicant's objectives to the greatest extent possible. All required measures shall be capable of successful implementation.

#### **2.1.10.4 Sections 2800-2835: Natural Community Conservation Plant Act**

The Natural Community Conservation Planning Act of 1991, as amended in 2003 (CFGC Sections 2800–2835) established the Natural Community Conservation Planning (NCCP) program for the protection and perpetuation of the state’s biological diversity. The CDFW established the program in order to conserve natural communities at the ecosystem level while accommodating compatible land use. An NCCP identifies and provides for the regional or area-wide protection of plants, animals, and their habitats, while allowing compatible and appropriate economic activity. The CDFW provides support, direction, and guidance to participants in order to ensure that NCCPs are consistent with the CESA.

#### **2.1.10.5 Section 3500: Nesting Birds**

CFGC Section 3503 states that it is unlawful to take, possess, or needlessly destroy the nests or eggs of any bird, except as otherwise provided by the CFGC or any regulation made pursuant thereto. CFGC Section 3503.5 protects all birds of prey (raptors) and their eggs and nests. Section 3513 states that it is unlawful to take or possess any migratory non-game bird as designated in the MBTA. These regulations could require that elements of a project (specifically vegetation removal or construction near nest trees) be reduced or eliminated during critical phases of the nesting cycle unless surveys by a qualified biologist demonstrate that nests, eggs, or nesting birds will not be disturbed, which may be subject to approval by the CDFW and/or the USFWS.

#### **2.1.10.6 Sections 3500, 4700, 5050, and 5500: Fully Protected Species, Species of Special Concern, and Non-Game Mammals**

The classification of “fully protected” was the CDFW’s initial effort to identify and provide additional protection to those animals that were rare or faced possible extinction. CFGC sections (birds at 3503 and 3511, mammals at 4150 and 4700, amphibians and reptiles at 5050, and fish at 5515) dealing with “fully protected” species state that these species “may not be taken or possessed at any time and no provision of this code or any other law shall be construed to authorize the issuance of permits or licenses to take any fully protected species;” however, take may be authorized for necessary scientific research.

California Species of Special Concern are species in which their California breeding populations are seriously declining and extirpation from all or a portion of their range is possible. This designation is intended to result in special consideration for these animals by CDFW, project proponents, consultants, among others, and is also intended to encourage collection of additional information on these species and risks to their persistence. Although these species are not listed under the CESA or FESA and are afforded no special legal status, they are provided special consideration under the CEQA during project review.

Sections 4150-4155 of the CFGC protects non-game mammals, including bats. Section 4150 states “A mammal occurring naturally in California that is not a game mammal, fully protected mammal, or furbearing mammal is a non-game mammal. Non-game mammals that may be taken or possessed are primarily those that cause crop or property damage. Bats are classified as a non-game mammal and are protected under the CFGC.

## **2.2 Studies Required**

### **2.2.1 Literature Search**

Prior to performing the field survey, Sequoia performed a desktop review of available literature to identify special-status plants, animals, and habitats reported to occur in the vicinity of the BSA. This included a 5-mile search of the CDFW California Natural Diversity Database (CNDDDB; CDFW 2023); a review of the Benicia U.S. Geological Survey (USGS) 7.5-minute quadrangle (quad); search of the California Native Plant Society (CNPS) Online Inventory of Rare and Endangered Plants of California (CNPS 2023); USFWS’ Information for Planning and Consultation (IPaC; USFWS 2023a) system; NOAA’s NMFS species list (NMFS 2023); and USFWS’ National Wetlands Inventory (NWI; USFWS 2023b). Available aerial photography and relevant literature on listed species with potential to occur was also included in this review.

### **2.2.2 Survey Methods**

Sequoia senior biologist, Dan Muratore, conducted a biological survey of the BSA on December 14, 2023. The area was surveyed outside of blooming periods for target list plant species, which should be considered a constraint. A reconnaissance habitat assessment of the BSA was performed to assess general and dominant vegetation types, aquatic resources, suitable habitat for special-status species, and species present. The purpose of the desktop review and field survey was to re-validate and/or update findings of the Biological Resources Assessment (BRA) authored by Swaim Biological, Inc. (May 2020).

## **3. Results: Environmental Setting**

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

#### **3.1.1 Study Area**

The BSA for the project is defined as the project footprint, or direct construction area, and a 100-foot buffer surrounding the project’s footprint. This includes potential temporary, permanent, direct, indirect, and cumulative effects from the project. Direct impacts are impacts caused directly by the action (i.e., project-related activities). Indirect impacts are impacts that occur later in time or farther removed in distance by project-related activities. Cumulative impacts are impacts that are incremental and a combination or interaction of past, present, and/or future impacts.

The BSA includes the direct construction area and the land adjacent to the project, including access and staging areas. The BSA primarily consists of paved and gravel surfaces, ruderal (weedy) vegetation, fresh or brackish marsh vegetation, oak woodland, eucalyptus groves, and disturbed barren ground.

### **3.1.2 Physical Conditions**

The BSA is located in the City of Martinez, California. The elevation ranges from 10 to 62 feet above sea level. The topography is moderately flat with a slight decrease in slope from the Nejedly Staging Area to the Martinez Regional Shoreline. The climate in the vicinity of the BSA is consistent with the Mediterranean climate of the San Francisco Bay Area, which typically features hot, dry summers and relatively cool, wet winters. The BSA occurs within a predominately disturbed habitat and includes an unnamed ephemeral waterway which runs along the Nejedly Staging Area towards the shoreline.

### **3.1.3 Biological Conditions**

The BSA is dominated by ruderal vegetation, fresh or brackish marsh, oak woodland, eucalyptus groves, and disturbed barren ground. The project is located along a UPRR right-of-way and includes a vegetated stretch of EBPRD property connecting the right-of-way to the Nejedly Staging Area.

### **3.1.4 Habitat Connectivity**

The BSA provides habitat connectivity to surrounding EBPRD property; however, it is segmented by urban development and paved roadways.

## **3.2 Regional Species and Habitats and Natural Communities of Concern**

Special-status plant and animal species have been given recognition by state and/or federal agencies due to a perceived or documented decline in the species' population size or geographic range. Certain vegetation types or habitats are considered to have special-status because they have limited distribution or the potential to support special-status plant and animal species. For the purposes of this document, Federal Endangered (FE); Federal Threatened (FT); Federal Proposed (FP, FPE, FPT); Federal Candidate (FC), Federal Species of Concern (FSC); Bird of Conservation Concern (BCC); State Endangered (SE); State Threatened (ST); Fully Protected (SFP); State Rare (SR); State Species of Special Concern (SSC); and CNPS Rare Plant Ranks 1-3 were reviewed due to their eligibility under CESA/FESA. For each species, a site analysis was performed to determine species presence, potential and habitat suitability (Tables 1 and 2).

Results of Swaim Biological, Inc's BRA, and CNPS, CNDDDB, IPaC, and NMFS database queries, indicate 36 special-status plant species and 45 special-status animal species have potential to occur within five miles of the BSA.

**Table 1: Listed Plant Species Potential to Occur in the Project Area**

| Scientific Name                               | Common Name              | Listing Status | Blooming Period | Habitat Requirements   | Habitat Present /Absent | Potential to Occur   |
|---|--------------------------|----------------|-----------------|--|-------------------------|--|
| <i>Amsinckia lunaris</i>                      | bent-flowered fiddleneck | 1B.2           | Mar-Jun         | Cismontane woodland, valley and foothill grassland, and coastal bluff scrub; damp rock and soil on outcrops and cliffs within broadleaved upland forest, lower montane coniferous forest and north coast coniferous forest; often on acidic substrates. Known elevations are between 325-3,280 feet. | A                       | <b>Not Expected.</b> Suitable habitat does not occur within the BSA. Only one record within 5 miles of the BSA, at Briones Regional Park.        |
| <i>Androsace elongata</i> ssp. <i>acuta</i>   | California androsace     | 4.2            | Mar-Jun         | Prefers dry grassy slopes within chaparral, cismontane woodland, coastal scrub, meadows and seeps, pinyon and juniper woodland, valley and foothill grassland. Known elevations are between 490-4,280 feet.  | A                       | <b>Not Expected.</b> Suitable habitat does not occur within the BSA. No occurrences are reported north of the City of Concord.                   |
| <i>Arctostaphylos pallida</i>                 | pallid manzanita         | FT/SE 1B.1     | Dec-Mar         | Siliceous shale, sandy or gravelly soils in broadleaved upland forest, closed-cone coniferous forest, chaparral, cismontane woodland, and coastal scrub within the Diablo Range at known elevations between 605-1,525 feet.  | A                       | <b>Not Expected.</b> Suitable habitat does not occur within the BSA. No manzanita shrubs were observed in the BSA during reconnaissance surveys. |
| <i>Atriplex coronata</i> var. <i>coronata</i> | crownscale               | 4.2            | Mar-Oct         | Alkaline, often clay soils in chenopod scrub, valley and foothill grassland, and vernal pools. Known elevations are between 5-1,935 feet.  | A                       | <b>Not Expected.</b> Suitable habitat does not occur within the BSA. No occurrences are reported west of Mt. Diablo.                             |

Natural Environment Study (Minimal Impacts)

| Scientific Name                                 | Common Name              | Listing Status | Blooming Period | Habitat Requirements   | Habitat Present /Absent | Potential to Occur  |
|---|--------------------------|----------------|-----------------|--|-------------------------|---|
| <i>Blepharizonia plumosa</i>                    | big tarplant             | 1B.1           | Jul-Oct         | Valley and foothill grassland, usually clay soils. Known elevations are between 100-1,655 feet.  | A                       | <b>Not Expected.</b><br>Suitable habitat does not occur within the BSA. The only observation within 5 miles of the BSA dates from a 1917 museum record and is vaguely located as "Benicia". |
| <i>Calochortus pulchellus</i>                   | Mt. Diablo fairy-lantern | 1B.2           | Apr-Jun         | Occurs on north-facing wooded slopes in riparian woodland, and valley and foothill grassland, rarely within chaparral, at elevations between 100-2,755 feet.                             | A                       | <b>Not Expected.</b><br>Suitable habitat does not occur within the BSA. North facing woodlands are predominantly eucalyptus groves within the area.   |
| <i>Calochortus umbellatus</i>                   | Oakland star-tulip       | 4.2            | Mar-May         | Often serpentine soils in broadleaved upland forest, chaparral, cismontane woodland, lower montane coniferous forest, and valley and foothill grassland at elevations of 328-2,297 feet. | A                       | <b>Not Expected.</b><br>Suitable habitat does not occur within the BSA. No records of the species occur within 5 miles of the BSA.  |
| <i>Castilleja ambigua</i> var. <i>ambigua</i>   | johnny-nip               | 4.2            | Mar-Aug         | Coastal bluff scrub, coastal prairie, coastal scrub, marshes and swamps, valley and foothill grassland, and vernal pools margins. Known elevations are between 0-1,425 feet.             | A                       | <b>Not Expected.</b><br>Suitable habitat does not occur within the BSA. No records of the species occur within 5 miles of the BSA.  |
| <i>Centromadia parryi</i> ssp. <i>congdonii</i> | Congdon's tarplant       | 1B.1           | May-Oct(Nov)    | Often alkaline soils in chaparral, coastal prairie, meadows and seeps, coastal salt marshes and swamps, and vernal mesic valley and foothill grassland, at elevations of 3-750 feet.     | A                       | <b>Not Expected.</b><br>Suitable habitat does not occur within the BSA. Four records occurs within 5 miles of the BSA, the nearest of which is located 2.4 miles east at the Waterbird      |

Natural Environment Study (Minimal Impacts)

| Scientific Name                              | Common Name              | Listing Status | Blooming Period   | Habitat Requirements  | Habitat Present /Absent | Potential to Occur  |
|--|--------------------------|----------------|-------------------|---|-------------------------|---|
|  |                          |                |                   |   |                         | Regional Preserve.  |
| <i>Chloropyron molle</i> ssp. <i>molle</i>   | soft bird's-beak         | FE/SR<br>1B.2  | Jun-Nov           | Marshes and swamps (coastal salt). Known elevations are between 0-10 feet.  | A                       | <b>Not Expected.</b><br>Suitable habitat does not occur within the BSA.   |
| <i>Cicuta maculata</i> var. <i>bolanderi</i> | Bolander's water-hemlock | 2B.1           | Jul-Sep           | Marshes and swamps coastal, fresh or brackish water. Known elevations are between 0-655 feet.   | HP                      | <b>Low Potential.</b><br>Potentially suitable habitat is present in the BSA. The only records of the species within 5 miles of the BSA date from 1900 and 1938, and are located in Benicia and "Near Martinez".       |
| <i>Cirsium andrewsii</i>                     | Franciscan thistle       | 1B.2           | Mar-Jul           | Broadleafed upland forest, coastal bluff scrub, coastal prairie, coastal scrub; mesic, sometimes serpentine soils. Known elevations are between 0-490 feet.   | A                       | <b>Not Expected.</b><br>Suitable habitat does not occur within the BSA.   |
| <i>Dirca occidentalis</i>                    | western leatherwood      | 1B.2           | Jan-Mar(Apr)      | Broadleafed upland forest, closed-cone coniferous forest, chaparral, cismontane woodland, north coast coniferous forest, riparian forest, and riparian woodland with mesic soils. Known elevations are between 80-1,395 feet. | HP                      | <b>Low Potential.</b><br>Potentially suitable habitat is present. All known occurrences of the species in the vicinity are associated with the areas around Cummings Skyway near Crockett, 2.9 miles west of the BSA. |
| <i>Eleocharis parvula</i>                    | small spikerush          | 4.3            | (Apr)Jun-Aug(Sep) | Marshes and swamps. Known elevations are between 5-9,910 feet.  | HP                      | <b>Low Potential.</b><br>Potentially suitable habitat is present. No records of the species occur within 5 miles of the BSA.  |



Natural Environment Study (Minimal Impacts)

| Scientific Name              | Common Name             | Listing Status | Blooming Period | Habitat Requirements  | Habitat Present /Absent | Potential to Occur   |
|------------------------------|-------------------------|----------------|-----------------|---|-------------------------|--|
| <i>Eryngium jepsonii</i>     | Jepson's coyote thistle | 1B.2           | Apr-Aug         | Occurs in wetlands below 1,640 feet elevation on moist clay soil.   | HP                      | <b>Low Potential.</b> Potentially suitable habitat is present. The nearest occurrence is located in annual grasslands at the Carquinez Regional Shoreline southeast of the project site.                 |
| <i>Extriplex joaquinana</i>  | San Joaquin spearscale  | 1B.2           | Apr-Oct         | Chenopod scrub, meadows and seeps, playas, valley and foothill grassland; alkaline soils. Known elevations are between 2-2,740 feet.  | A                       | <b>Not Expected.</b> Suitable habitat does not occur within the BSA. No records of the species occur within 5 miles of the BSA.  |
| <i>Fissidens pauperculus</i> | minute pocket moss      | 1B.2           | -               | North coast coniferous forest (damp coastal soil). Known elevations are between 35-3,360 feet.  | A                       | <b>Not Expected.</b> Suitable habitat does not occur within the BSA. No records of the species occur within 5 miles of the BSA.  |
| <i>Fritillaria liliacea</i>  | fragrant fritillary     | 1B.2           | Feb-Apr         | Often serpentinite soils in cismontane woodland, coastal prairie, coastal scrub, and valley and foothill grassland, at elevations of 10-1,345 feet.   | A                       | <b>Not Expected.</b> Suitable habitat does not occur within the BSA. No records of the species occur within 5 miles of the BSA.  |
| <i>Helianthella castanea</i> | Diablo helianthella     | 1B.2           | Mar-Jun         | Broadleafed upland forest, chaparral, cismontane woodland, coastal scrub, Riparian woodland, valley and foothill grassland; usually rocky, axonal soils. Often in partial shade. Known elevations are between 195-4,265 feet. | HP                      | <b>Low Potential.</b> Suitable habitat is present in the BSA. Several records occur on the coastal hillsides of the Carquinez Strait Regional Shoreline Park, with the nearest located approximately 100 |

Natural Environment Study (Minimal Impacts)

| Scientific Name                               | Common Name             | Listing Status | Blooming Period   | Habitat Requirements   | Habitat Present /Absent | Potential to Occur  |
|---|-------------------------|----------------|-------------------|--|-------------------------|---|
|   |                         |                |                   |  |                         | feet west of the BSA.   |
| <i>Holocarpha macradenia</i>                  | Santa Cruz tarplant     | FT/SE 1B.1     | Jun-Oct           | Occurs in coastal prairie, coastal scrub and valley and foothill grasslands, in areas with light sandy soil, or sandy clay between 30-720 feet.                            | HP                      | <b>Low Potential.</b> Grassland habitat is minimally present in the BSA. No records of the species occur within 5 miles of the BSA.   |
| <i>Iris longipetala</i>                       | coast iris              | 4.2            | Mar-May           | Coastal prairie, lower montane coniferous forest, meadows and seeps; mesic soils. Known elevations are between 0-1,970 feet.   | A                       | <b>Not Expected.</b> Suitable habitat does not occur within the BSA. No records of the species occur within 5 miles of the BSA.   |
| <i>Isocoma arguta</i>                         | Carquinez goldenbush    | 1B.1           | Aug-Dec           | Generally found in wetlands within valley and foothill grassland, usually within alkali flats or other mineral-rich soils of the Suisun Slough at elevations of 3-65 feet. | HP                      | <b>Low Potential.</b> Potentially suitable habitat is present within the BSA. The only CNDDDB record within 5 miles of the BSA dates from 1968, and is based on a site named in, "A California Flora and Supplement." |
| <i>Lasthenia conjugens</i>                    | Contra Costa goldfields | FE/— 1B.1      | Mar-Jun           | Mesic habitats including cismontane woodland, alkaline playas, valley and foothill grasslands, and vernal pools, at elevations of 0-1,542 feet.                            | A                       | <b>Not Expected.</b> Suitable habitat does not occur within the BSA. No records of the species occur within 5 miles of the BSA.   |
| <i>Lathyrus jepsonii</i> var. <i>jepsonii</i> | Delta tule pea          | 1B.2           | May-Jul (Aug-Sep) | Low elevation marshes and swamps (freshwater and brackish). Known elevations are between 0-15 feet.  | A                       | <b>Not Expected.</b> Potentially suitable habitat is present within the BSA. Nine records of the species occur within 5 miles of the BSA, suitable habitat does not occur within the BSA.                             |

Natural Environment Study (Minimal Impacts)

| Scientific Name                                 | Common Name                  | Listing Status | Blooming Period | Habitat Requirements  | Habitat Present /Absent | Potential to Occur   |
|---|------------------------------|----------------|-----------------|---|-------------------------|--|
| <i>Lilaeopsis masonii</i>                       | Mason's lilaeopsis           | —/SR<br>1B.1   | Apr-Nov         | Marshes and swamps (brackish or freshwater), riparian scrub. Known elevations are between 0-35 feet.  | A                       | <b>Not Expected.</b><br>Suitable habitat does not occur within the BSA. The nearest known occurrence is located 1.9 miles east of the BSA, at Payton Slough.                                     |
| <i>Meconella oregana</i>                        | Oregon meconella             | 1B.1           | Mar-Apr         | Coastal prairie and scrub at elevations between 820-2,035 feet.   | A                       | <b>Not Expected.</b><br>Suitable habitat does not occur within the BSA. No records of the species occur within 5- miles of the BSA, and the BSA is outside the elevational range of the species. |
| <i>Micropus amphibolus</i>                      | Mt. Diablo cottonweed        | 3.2            | Mar-May         | Broadleaved upland forest, chaparral, cismontane woodland, valley and foothill grassland; rocky soils. Known elevations are between 150-2,705 feet. | HP                      | <b>Low Potential.</b><br>Potentially suitable habitat is minimally present within the BSA.   |
| <i>Monardella antonina</i> ssp. <i>antonina</i> | San Antonio Hills monardella | 3              | Jun-Aug         | Chaparral and cismontane woodland at elevations of 1,050-3,281 feet.  | A                       | <b>Not Expected.</b><br>Suitable habitat does not occur within the BSA. No records of the species occur within 5 miles of the BSA. Elevations in the BSA are lower than at reported occurrences. |
| <i>Navarretia gowenii</i>                       | Lime Ridge navarretia        | 1B.1           | May-Jun         | Chaparral at elevations of 591-1,001 feet.  | A                       | <b>Not Expected.</b><br>Suitable habitat does not occur within the BSA. No records of the species occur within 5 miles of the BSA. Elevations in the   |

Natural Environment Study (Minimal Impacts)

| Scientific Name                                      | Common Name                | Listing Status | Blooming Period   | Habitat Requirements  | Habitat Present /Absent | Potential to Occur  |
|--|----------------------------|----------------|-------------------|---|-------------------------|---|
|  |                            |                |                   |   |                         | BSA are lower than at reported occurrences.   |
| <i>Polygonum marinense</i>                           | Marin knotweed             | 3.1            | (Apr)May-Aug(Oct) | Marshes and swamps (coastal salt or brackish). Known elevations are between 0-35 feet.  | A                       | <b>Not Expected.</b> Suitable habitat does not occur within the BSA.  |
| <i>Ranunculus lobbii</i>                             | Lobb's aquatic buttercup   | 4.2            | Feb-May           | Cismontane woodland, north coast coniferous forest, valley and foothill grassland, vernal pools; mesic soils. Known elevations are between 50-1,540 feet. | A                       | <b>Not expected.</b> Suitable habitat does not occur within the BSA. No records of the species occur within 5 miles of the BSA                                |
| <i>Spergularia macrotheca</i> var. <i>longistyla</i> | long-styled sand-spurrey   | 1B.2           | Feb-May(Jun)      | Alkaline marshes, mud flats, meadows, and hot springs at elevations between 0-670 feet.   | A                       | <b>Not Expected.</b> Suitable habitat does not occur within the BSA. The only record occurring within 5 miles of the BSA dates from a 1900 museum collection. |
| <i>Streptanthus albidus</i> ssp. <i>peramoenus</i>   | most beautiful jewelflower | 1B.2           | (Mar)Apr-Sep(Oct) | Chaparral, cismontane woodland, valley and foothill grassland; serpentine soils. Known elevations are between 310-3,280 feet.                             | A                       | <b>Not Expected.</b> Suitable habitat does not occur within the BSA.  |
| <i>Symphyotrichum lentum</i>                         | Suisun Marsh aster         | 1B.2           | (Apr)May-Nov      | Marshes and swamps (brackish and freshwater). Known elevations are between 0-10 feet.   | HP                      | <b>Low Potential.</b> Suitable habitat is present within the BSA. The nearest records are located 3.1 miles east of the BSA at Pacheco Creek.                 |
| <i>Trifolium hydrophilum</i>                         | saline clover              | 1B.2           | Apr-Jun           | Salt marsh and swamp, vernal pool or other wetlands within valley and foothill grassland on alkaline soils at elevations of 0-985 feet.                   | A                       | <b>Not Expected.</b> Suitable habitat does not occur within the BSA. The only record occurring within 5 miles of the BSA dates from a 1938                    |

Natural Environment Study (Minimal Impacts)

| Scientific Name            | Common Name          | Listing Status | Blooming Period | Habitat Requirements   | Habitat Present /Absent | Potential to Occur  |
|----------------------------|----------------------|----------------|-----------------|--|-------------------------|---|
|                            |                      |                |                 |  |                         | museum collection and is located across the Bay near Benicia.   |
| <i>Viburnum ellipticum</i> | oval-leaved viburnum | 2B.3           | May-Jun         | Chaparral, cismontane woodland, and lower montane coniferous forest at elevations of 705-4,595 feet. | A                       | <b>Not Expected.</b> Suitable habitat does not occur within the BSA. The only record within 5 miles of the BSA occurs at Briones Regional Park. Elevations in the BSA are lower than at reported occurrences. |

California Rare Plant Rank (CRPR) Designation: (1A) Presumed extinct in California; (1B) Rare, threatened, or endangered in California and elsewhere; (2) Rare, threatened, or endangered in California, but more common elsewhere; (3) More information is needed; (4) Limited distribution, watch list. **Threat Ranks:** 0.1 Seriously threatened in California (more than 80% of occurrences threatened / high degree and immediacy of threat); 0.2 Fairly threatened in California (20 to 80% occurrences threatened / moderate degree and immediacy of threat); 0.3 Not very threatened in California (less than 20% of occurrences threatened / low degree and immediacy of threat or no current threats known).

**Table 2: Listed Animal Species Potential to Occur in the Project Area**

| Scientific Name                  | Common Name              | Listing Status | Habitat Requirements   | Habitat Present /Absent | Potential to Occur   |
|----------------------------------|--------------------------|----------------|--|-------------------------|--|
| <b>Invertebrates</b>             |                          |                |  |                         |  |
| <i>Bombus occidentalis</i>       | western bumble bee       | —/SC           | Wet/moist meadows with abundant floral resources, roadside areas, and other areas containing forage species preferred by bumble bees . | A                       | <b>Not Expected.</b> Suitable habitat does not occur within the BSA. Current California populations are mostly restricted to high elevation sites in the Sierra Nevada, with only a few observations of the species on the northern California coast (Xerces Society 2008). May occur in grassland and scrub areas and forest openings. Not expected in low-diversity eucalyptus groves and annual grasslands. |
| <i>Branchinecta conservation</i> | conservancy fairy shrimp | FE/—           | Ephemeral freshwater and playa pools in the Central Valley and the San Francisco Bay Area.   | A                       | <b>Not Expected.</b> Suitable habitat does not occur within the BSA. The BSA is outside the species' known range.  |

Natural Environment Study (Minimal Impacts)

| Scientific Name                   | Common Name                                   | Listing Status | Habitat Requirements   | Habitat Present /Absent | Potential to Occur   |
|-----------------------------------|---|----------------|--|-------------------------|--|
| <i>Branchinecta lynchi</i>        | vernal pool fairy shrimp                      | FT/—           | Vernal pools and ditches in the Central Valley.  | A                       | <b>Not Expected.</b> Suitable habitat does not occur within the BSA. The BSA is outside the species' range.  |
| <i>Callophrys mossii bayensis</i> | San Bruno elfin butterfly                     | FE/—           | Rocky outcrops and cliffs in coastal scrub on the San Francisco Peninsula. Host plant is <i>Sedum spathulifolium</i> .   | A                       | <b>Not Expected.</b> Suitable habitat does not occur within the BSA. The BSA is outside of species' known range.   |
| <i>Danaus plexippus pop. 1</i>    | monarch – California overwintering population | FC/—           | Requires milkweed for larval host plant, and late-blooming plants for adult nectar during migration.   | A                       | <b>Not Expected.</b> While potentially suitable habitat is present in eucalyptus groves, overwintering monarchs are not known to occur in the BSA. The nearest known active overwintering site occurs 8.8 miles northwest of the BSA, on Mare Island. Within Contra Costa County, only two overwintering locations are known, of which only one is known to be active (Xerces Society 2016).         |
| <i>Speyeria callippe callippe</i> | Callippe silverspot butterfly                 | FE/—           | Grasslands supporting its host plant, <i>Viola pedunculata</i> . Uses a variety of nectar plant species found in grassland and coastal scrub communities, with ridgelines and hilltops forming an important habitat component. | A                       | <b>Not Expected.</b> Suitable habitat does not occur within the BSA. While the species historically occurred in the grasslands of Contra Costa County, it is no longer extant in the County. Since the late 1980s, the species has only been recorded in San Mateo, Alameda, and Sonoma Counties. Further, the species' larval host plant was not observed in the BSA during reconnaissance surveys. |
| <i>Syncaris pacifica</i>          | California freshwater shrimp                  | FE/SE          | Low gradient streams with moderate to heavy riparian cover. Occasionally in isolated pools of minimal cover when water levels are low. Endemic to Marin, Napa and Sonoma counties.   | A                       | <b>Not Expected.</b> Suitable habitat does not occur within the BSA. The BSA is outside the species' range.  |

Natural Environment Study (Minimal Impacts)

| Scientific Name                           | Common Name                                      | Listing Status | Habitat Requirements  | Habitat Present /Absent | Potential to Occur  |
|---|--|----------------|---|-------------------------|---|
| <b>Fish</b>                               |  |                |   |                         |   |
| <i>Archoplites interruptus</i>            | Sacramento perch                                 | –/SSC          | Found mostly in alkaline lakes, reservoirs, and farm ponds. Often associated with submerged vegetation or other objects in the nearshore area of warm water lakes and ponds.  | A                       | <b>Not Expected.</b> Suitable habitat does not occur within the BSA.  |
| <i>Hypomesus transpacificus</i>           | Delta smelt                                      | FT/SE          | Shallow tidal waters of the Sacramento and San Joaquin River Delta.   | A                       | <b>Not Expected.</b> Suitable habitat does not occur within the BSA. The BSA is outside the species' range. |
| <i>Oncorhynchus mykiss irideus</i> pop. 8 | steelhead salmon – central California coast DPS  | FT/–           | Spawn in coastal watersheds ranging from the Russian River in Sonoma County to Aptos Creek in Santa Cruz County.  | A                       | <b>Not Expected.</b> Suitable habitat does not occur within the BSA. The BSA is outside the species' range. |
| <i>Oncorhynchus tshawytscha</i> pop. 7    | chinook salmon – Sacramento River winter-run ESU | FE/–           | Spawn in coastal watersheds ranging from Redwood Creek in Humboldt County to the Russian River in Sonoma County.  | A                       | <b>Not Expected.</b> Suitable habitat does not occur within the BSA. The BSA is outside the species' range. |
| <i>Pogonichthys macrolepidotus</i>        | Sacramento splittail                             | –/SSC          | Confined to the Delta, Suisun Bay and associated marshes, slow moving rivers sections, and dead-end sloughs. Requires flooded vegetation for spawning and foraging for young. | A                       | <b>Not Expected.</b> Suitable habitat does not occur within the BSA.  |

Natural Environment Study (Minimal Impacts)

| Scientific Name   | Common Name  | Listing Status | Habitat Requirements   | Habitat Present /Absent | Potential to Occur   |
|---|--|----------------|--|-------------------------|--|
| <i>Spirinchus thaleichthys</i>                          | longfin smelt  | FC/ST          | Spawns in fresh water in the upper end of the San Francisco Bay; occurs year-round in the Suisun Bay.  | A                       | <b>Not Expected.</b> Suitable habitat does not occur within the BSA.   |
| <b>Amphibians</b>                                       |  |                |  |                         |  |
| <i>Ambystoma californiense</i> – Central California DPS | California tiger salamander                            | FT/ST          | Breeds in vernal pools and seasonal wetlands; uses small mammal burrows in suitable uplands during the dry season.   | A                       | <b>Not Expected.</b> Suitable habitat does not occur within the BSA. The BSA is outside of the known range of the species (California Herps 2023).   |
| <i>Rana boylei</i>                                      | foothill yellow-legged frog – West/Central Coast Clade | –/SE           | Rocky streams in open areas with riffles and cobble-sized stones in Coast Range.   | A                       | <b>Not Expected.</b> Suitable habitat does not occur within the BSA. Streams in this area lack the riffles and cobble-sized stones preferred by the species.   |
| <i>Rana draytonii</i>                                   | California red-legged frog                             | FT/SSC         | Lowlands and foothills in or near permanent sources of deep water with dense, shrubby or emergent riparian vegetation. Requires 11 to 20 weeks of permanent water for larval development and must have access to upland habitat. | HP                      | <b>Low Potential.</b> Aquatic habitat in the BSA provides marginal or low-quality breeding habitat as they are shallow, narrow, sparsely vegetated, and typically dry by July. The closest occurrence (Occurrence No. 508) is located 2.2 miles northwest of the BSA which is near the maximum distance that frogs can disperse from breeding sites during a single season (USFWS 2010). |
| <b>Reptiles</b>   |  |                |  |                         |  |
| <i>Anniella pulchra</i>                                 | Northern California legless lizard                     | –/SSC          | Sparsely vegetated areas of beach dunes, chaparral, pine-oak woodlands, desert scrub, sandy washes, and stream terraces with sycamores, cottonwoods, or oaks. Requires loose soils that are warm and moist.                      | A                       | <b>Not Expected.</b> Suitable habitat does not occur within the BSA.   |
| <i>Emys marmorata</i>                                   | western pond turtle                                    | –/SSC          | Permanent and intermittent freshwater aquatic habitats including rivers, streams,  | A                       | <b>Not Expected.</b> Suitable habitat does not occur within the BSA. Wetlands in the BSA are not connected to suitable stream or pool habitat.   |



Natural Environment Study (Minimal Impacts)

| Scientific Name                          | Common Name                         | Listing Status | Habitat Requirements  | Habitat Present /Absent | Potential to Occur  |
|--|-------------------------------------|----------------|---|-------------------------|---|
|  |                                     |                | lakes, ponds, marshes, and vernal pools. Prefers habitats with abundant basking sites, underwater refugia, and standing or slow moving water. Nesting sites are on sandy banks and bars or in fields or sunny spots up to a few hundred meters from water.                                  |                         |   |
| <i>Masticophis lateralis euryxanthus</i> | Alameda whipsnake (= striped racer) | FT/ST          | Chaparral, northern coastal sage scrub, coastal sage, and grassland communities.  | A                       | <b>Not Expected.</b> Suitable habitat does not occur within the BSA. Scrub habitat in and adjacent to the BSA is limited in extent, highly fragmented, and surrounded by oak and eucalyptus woodland. All observations of the species in the vicinity of the BSA occur south of State Route 4, with the nearest located approximately 2.4 miles south of the BSA (Occurrence No. 74). |
| <i>Thamnophis gigas</i>                  | giant garter snake                  | FT/ST          | Associated with aquatic habitats. Often occurs in or near agricultural wetlands and other waterways such as irrigation and drainage canals; sloughs; ponds; small lakes; low gradient streams; rice fields; freshwater marshes; and adjacent uplands in the Sacramento and Central Valleys. | A                       | <b>Not Expected.</b> Suitable habitat does not occur within the BSA.  |
| <b>Birds</b>                             |                                     |                |   |                         |   |
| <i>Agelaius tricolor</i>                 | tricolored blackbird                | -/ST           | Nests colonially in extensive emergent vegetation and agricultural fields.  | A                       | <b>Not Expected.</b> Suitable habitat does not occur within the BSA. Dense emergent habitat sufficient to support a nesting colony of tricolored blackbirds is  |

Natural Environment Study (Minimal Impacts)

| Scientific Name                   | Common Name          | Listing Status | Habitat Requirements   | Habitat Present /Absent | Potential to Occur  |
|-----------------------------------|----------------------|----------------|--|-------------------------|---|
|                                   |                      |                |  |                         | absent from the BSA. Limited foraging habitat for this species occurs in the wetlands bordering the railroad tracks.  |
| <i>Aquila chrysaetos</i>          | golden eagle         | –/FP           | Avoiding developed areas, they are found in open areas of native vegetation, mountains up to 12,000 feet, canyonlands, rimrock terrain, and riverside cliffs and bluffs. Nest in large trees in oak savannah, and on cliffs and steep escarpments in chaparral, forest, and other vegetated areas. | A                       | <b>Not Expected.</b> Suitable habitat does not occur within the BSA.  |
| <i>Asio flammeus</i>              | short-eared owl      | –/SSC          | Occupies a variety of open habitats with sufficient rodent prey concentrations. Nests on dry ground in open areas with dense herbaceous cover. May occur in salt and freshwater marshes, grasslands, agricultural fields, and pastures.  | A                       | <b>Not Expected.</b> Suitable habitat does not occur within the BSA. Marshes north of the BSA may provide breeding and foraging habitat, but the species is not expected to occur in the BSA except as a transient. |
| <i>Athene cunicularia</i>         | burrowing owl        | –/SSC          | Open arid and semiarid grassland, agricultural, and ruderal habitats where ground squirrel or other burrows are present.   | A                       | <b>Not Expected.</b> Suitable habitat does not occur within the BSA. No ground squirrel colonies or other burrows were observed during surveys.   |
| <i>Charadrius nivosus nivosus</i> | western snowy plover | FT/SSC         | Breeds above the high tide line on coastal beaches, sand spits, dune-backed beaches, sparsely vegetated dunes, beaches at creek and river mouths, and salt pans at lagoons and   | A                       | <b>Not Expected.</b> Suitable habitat does not occur within the BSA.  |

Natural Environment Study (Minimal Impacts)

| Scientific Name                   | Common Name       | Listing Status | Habitat Requirements  | Habitat Present /Absent | Potential to Occur   |
|-----------------------------------|-------------------|----------------|---|-------------------------|--|
|                                   |                   |                | estuaries. Less common nesting habitat includes bluff-backed beaches, dredged material disposal sites, salt pond levees, dry salt ponds, and river bars.  |                         |  |
| <i>Circus hudsonius</i>           | northern harrier  | –/SSC          | Occurs in sloughs; wet meadows; marshlands; swamps; prairies; plains; grasslands; shrublands; large forest openings; or low woody or herbaceous vegetation. Nests on the ground in dense clumps of vegetation, such as grasses or rushes. | A                       | <b>Not Expected.</b> Suitable habitat does not occur within the BSA. Individuals may occasionally forage in grasslands and marsh habitat near the BSA.   |
| <i>Coturnicops noveboracensis</i> | yellow rail       | –/SSC          | Sedge marshes and meadows with moist soil or shallow standing water and densely vegetated montane sedges.   | A                       | <b>Not Expected.</b> Suitable habitat does not occur within the BSA. The BSA is outside of the known breeding range of the species. Considered an extremely rare winter visitor in the San Francisco Bay region, with single birds occasionally observed in the Suisun Marsh (Heath 2008).   |
| <i>Elanus leucurus</i>            | white-tailed kite | –/FP           | Nests in tall shrubs and trees, forages in grasslands, marshes, and ruderal habitats.   | HP                      | <b>Low Potential.</b> White-tailed kites have frequently been observed in marsh habitats north of the BSA (eBird 2023); however, large, isolated trees or shrubs suitable for kite nesting are absent from the BSA, and the species has not been recorded breeding in the vicinity (Mt. Diablo Audubon Society 2009). A lack of isolated trees surrounded by open foraging habitat, combined with high levels of human disturbance associated with park trails and railroads limit nesting opportunities for the species in this area. |

Natural Environment Study (Minimal Impacts)

| Scientific Name                   | Common Name                    | Listing Status | Habitat Requirements  | Habitat Present /Absent | Potential to Occur   |
|-----------------------------------|--------------------------------|----------------|---|-------------------------|--|
| <i>Falco peregrinus anatum</i>    | American peregrine falcon      | –/FP           | Nests near water on ledges of rocky cliffs or buildings. Also found along rivers and coastlines or in cities/urban areas.   | A                       | <b>Not Expected.</b> Suitable habitat does not occur within the BSA. The nearest known nesting records are located on the Carquinez Bridge and the Mare Island Bridge (Napa-Solano Audubon Society 2014). While individuals may occasionally forage in the vicinity, they are not expected to breed in or near the BSA.  |
| <i>Geothlypis trichas sinuosa</i> | salt marsh common yellowthroat | –/SSC          | Nests in herbaceous vegetation in densely vegetated brackish and freshwater marshes, moist floodplains, and woody swamps.   | A                       | <b>Not Expected.</b> Suitable habitat does not occur within the BSA. The nearest known breeding records of the species are located in extensive tidal marshes 2.1 miles east of the BSA (Occurrence No. 86). High quality nesting habitat in the form of dense marsh vegetation occurs north of the BSA in the Martinez Regional Shoreline Park, and the species is frequently observed there in the breeding season (eBird 2023). |
| <i>Haliaeetus leucocephalus</i>   | bald eagle                     | D/SE/FP        | Breeding habitats are mainly in mountain and foothill forests and woodlands near reservoirs, lakes, and rivers. Most breeding territories are in northern California. | A                       | <b>Not Expected.</b> Suitable habitat does not occur within the BSA. The only known nesting account in Contra Costa County is located at San Pablo Reservoir. This was the first known bald eagle nest for the County, and the species was not known to breed in the County prior to this account (Grinnell and Miller 1927, Mt. Diablo Audubon Society 2009).   |
| <i>Icteria virens</i>             | yellow-breasted chat           | –/SSC          | Nests in dense stands of willow and other riparian habitat.   | A                       | <b>Not Expected.</b> Suitable habitat does not occur within the BSA. No breeding records of the yellow-breasted chat are known from the vicinity and the species is a very rare breeder in the County, with records occurring only in the County's far northeastern corner (Mount Diablo Audubon Society 2009). Historically, the species is only known to occur as far west as the center of the County.                          |

Natural Environment Study (Minimal Impacts)

| Scientific Name                            | Common Name               | Listing Status | Habitat Requirements   | Habitat Present /Absent | Potential to Occur  |
|--|---------------------------|----------------|--|-------------------------|---|
| <i>Laterallus jamaicensis coturniculus</i> | California black rail     | ST/FP          | Salt marshes of San Francisco Bay and Suisun Marsh, and some freshwater inland marshes of the Sacramento Bay-Delta.  | A                       | <b>Not Expected.</b> The limited extent and sparse vegetation of the wetlands in the BSA are not suitable habitat for the species. The nearest records of black rails occur in marshes 0.6 miles northeast of the BSA (Occurrence No. 184) and rails have also been heard calling in the restored portions of the tidal marshes about 500 feet north of the BSA (Jaramillo 2015). Traveled railroad tracks and developed areas separate the BSA from suitable habitat to the north. |
| <i>Melospiza melodia maxillaris</i>        | Suisun song sparrow       | -/SSC          | Permanent resident of tidal salt marshes of Suisun Bay. Forages and nests in emergent vegetation. The Suisun subspecies occurs along the shores of Suisun Bay from Martinez eastward.  | A                       | <b>Not Expected.</b> Suitable habitat does not occur within the BSA. Breeding individuals have been recorded in tidal marshes north of and outside the BSA (eBird 2023).  |
| <i>Melospiza melodia samuelis</i>          | San Pablo song sparrow    | -/SSC          | Permanent resident of tidal salt marshes of the San Pablo Bay. Forages and nests in emergent vegetation. The San Pablo subspecies occurs in salt marshes along the shores of San Pablo Bay, including Richmond and Pinole, southeast to Point San Pablo. | A                       | <b>Not Expected.</b> Suitable habitat does not occur within the BSA. Song sparrows occurring in the BSA are assumed to be the Suisun subspecies.  |
| <i>Rallus obsoletus obsoletus</i>          | California Ridgway's rail | FE/SE/FP       | Salt and brackish marshes of San Francisco Bay.  | A                       | <b>Not Expected.</b> No suitable salt or brackish marsh habitat occurs in the BSA. The nearest records of Ridgway's rails occur in marshes 0.6 miles northeast of the BSA (Occurrence No. 114) and the species has been   |

Natural Environment Study (Minimal Impacts)

| Scientific Name                 | Common Name           | Listing Status | Habitat Requirements   | Habitat Present /Absent | Potential to Occur  |
|---------------------------------|-----------------------|----------------|--|-------------------------|---|
|                                 |                       |                |  |                         | observed in the restored tidal marshes at Martinez Regional Shoreline, about 500 feet north of the BSA (Jaramillo 2015).  |
| <i>Setophaga petechia</i>       | yellow warbler        | –/SSC          | Nests in riparian habitat with a mature overstory of cottonwood and sycamore, a midstory of box elder and willow and a dense understory of vines, blackberries and forbs.  | A                       | <b>Not Expected.</b> Suitable habitat does not occur within the BSA. The species typically nests in riparian corridors with a mature overstory and dense understory. Yellow warblers are generally absent from riparian zones that are limited, discontinuous, or lacking sufficient understory cover (Santa Clara Valley Audubon Society 2007).  |
| <i>Sterna antillarum browni</i> | California least tern | FE/SE          | Nests on barren and sparsely vegetated sandy or gravelly substrate within marine and estuarine shores and abandoned salt ponds. Nesting colonies placed in areas of low human and predatory disturbance.   | A                       | <b>Not Expected.</b> Suitable habitat does not occur within the BSA. No nesting colonies have been recorded in the vicinity (CDFW 2023).  |
| <b>Mammals</b>                  |                       |                |  |                         |   |
| <i>Antrozous pallidus</i>       | pallid bat            | –/SSC          | Regionally found in low elevation arid or semi-arid areas near water. Their day roost is often in a warm horizontal opening (e.g., rock cracks, attics); the night roost is often in the open, near foliage; and the hibernation roost is often in buildings, caves, or cracks in rocks. | HP                      | <b>Low Potential.</b> The pedestrian bridge in the BSA lacks crevices or other structures that retain heat and provides only low-quality night roost habitat for the species. Eucalyptus with exfoliating bark, cracks, and crevices provide suitable roost habitat for pallid bats. Small numbers of bats may utilize tree roost habitat in the BSA. No documented occurrences are present within 5 miles (CDFW 2023). |
| <i>Lasiurus blossevillii</i>    | western red bat       | –/SSC          | Typically solitary, roosting primarily in the foliage of trees or shrubs. Day roosts are commonly in edge habitats adjacent to streams or open fields, in  | HP                      | <b>Low Potential.</b> Suitable roosting habitat occurs in the BSA where dense foliage clusters are present in woodland habitat. No documented occurrences are present within 5 miles (CDFW 2023).   |

Natural Environment Study (Minimal Impacts)

| Scientific Name                    | Common Name                        | Listing Status | Habitat Requirements   | Habitat Present /Absent | Potential to Occur  |
|------------------------------------|------------------------------------|----------------|--|-------------------------|---|
|                                    |                                    |                | orchards, and sometimes in urban areas. There may be an association with intact riparian habitat (particularly willows, cottonwoods, and sycamores).                                       |                         |   |
| <i>Neotoma fuscipes annectens</i>  | San Francisco dusky-footed woodrat | –/SSC          | Builds large stick nests in a variety of habitats, including riparian areas, oak woodlands, and scrub.   | HP                      | <b>Low Potential.</b> Suitable habitat occurs throughout the BSA in riparian oak woodland, willow riparian, and scrub habitats. Reconnaissance-level surveys did not detect any woodrat nests in the BSA; however, the presence of dense stands of poison oak and blackberry may have concealed nests. Due to the availability of moderate quality habitat throughout the BSA, and the limitations of the survey, there is a low probability that the species may occur in the BSA. |
| <i>Nyctinomops macrotis</i>        | big free-tailed bat                | –/SSC          | Roosts in desert and arid grassland areas where rocky outcrops, canyons, or cliffs provide ideal roosts.   | A                       | <b>Not Expected.</b> Suitable habitat does not occur within the BSA. The species' range does not include northern California. Observations in the project vicinity are considered vagrants or extralimital records. The only documented occurrence within 5 miles dates from a 1979 museum specimen whose locality was vaguely recorded as "Martinez".  |
| <i>Reithrodontomys raviventris</i> | salt-marsh harvest mouse           | FE/SE          | Salt and brackish marshes of San Francisco Bay. Primary habitat dominated by pickleweed ( <i>Salicornia pacifica</i> ), with adjacent upland grasslands providing refugia during flooding. | A                       | <b>Not Expected.</b> Suitable habitat does not occur within the BSA. The species has been recorded throughout marshes east of I-680, and potentially suitable marsh habitat is available north of the BSA at the Martinez Regional Shoreline. The BSA lacks suitable marsh habitat and is separated from nearby marshes by heavily traveled railroad tracks. The species' dependence on cover to escape predation, combined with the heavy use of the railroad tracks               |

| Scientific Name               | Common Name     | Listing Status | Habitat Requirements   | Habitat Present /Absent | Potential to Occur   |
|-------------------------------|-----------------|----------------|--|-------------------------|--|
|                               |                 |                |  |                         | prevent it from occurring in the BSA.  |
| <i>Sorex ornatus sinuosus</i> | Suisun shrew    | –/SSC          | Salt and brackish marshes along the north shore of San Pablo and Suisun Bays. Prefers areas of low, dense vegetation contiguous with vegetated uplands that provide refugia during high tides.         | A                       | <b>Not Expected.</b> Suitable habitat does not occur within the BSA. The BSA is outside the known distribution of the species. |
| <i>Taxidea taxus</i>          | American badger | –/SSC          | Permanent resident found throughout most of the state, except in the northern North Coast area. Most abundant in drier open stages of most shrub, forest, and herbaceous habitats, with friable soils. | A                       | <b>Not Expected.</b> Suitable habitat does not occur within the BSA. No burrows or dens observed during surveys.               |

Status: Federally Endangered (FE); Federally Threatened (FT); Federal Candidate (FC); Federally Delisted (D); State Endangered (SE); State Threatened (ST); State Candidate (SC); State Fully Protected (SP); California Species of Special Concern (CSSC).

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

### 4.1 Habitats and Natural Communities of Special Concern

The BSA does not occur within any federally designated (USFWS/NMFS) or other special-status habitats (USFWS 2023c; NMFS 2023; CDFW 2023). Three sensitive natural communities (SNC) Hardstem and California Bulrush Marsh, Yerba Mansa Alkaline Wet Meadow, and Creeping Wildrye Turf are present within the BSA.

#### 4.1.1 Discussion of Natural Community “Hardstem and California Bulrush Marsh”

CNPS describes the Hardstem and California Bulrush Marsh community as *Schoenoplectus acutus* and/or *Schoenoplectus californicus* being dominant or co-dominant in the herbaceous layer with *Apocynum cannabinum*, *Azolla filiculoides*, *Bolboschoenus maritimus*, *Calystegia sepium*, *Eichhornia crassipes*, *Euthamia occidentalis*, *Hibiscus lasiocarpus*, *Hoita macrostachya*, *Hydrocotyle ranunculoides*, *Leersia oryzoides*, *Ludwigia peploides*, *Lycopus americanus*, *Persicaria punctata*, *Phragmites australis*, *Sparganium eurycarpum*, *Triglochin* spp., *Typha angustifolia*, *Typha domingensis*, *Typha latifolia*, and *Urtica dioica*. Membership rules require that



*Schoenoplectus acutus* or *Schoenoplectus californicus* > 50% cover in the herbaceous layer or > 30% relative cover if codominant with *Typha* spp. It has a rarity listing of S3 which indicates it is moderately rare and threatened. The Hardstem and California Bulrush Marsh alliance occurs as an understory community beneath the arroyo willow thicket extending downstream to the open herbaceous area.

#### **4.1.2 Discussion of Natural Community “Yerba Mansa Alkali Wet Meadow”**

CNPS describes the Yerba Mansa Alkali Wet Meadow community as *Anemopsis californica*, *Helianthus nuttallii*, *Solidago confinis* and/or *Solidago spectabilis* being dominant or co-dominant in the herbaceous layer with *Ambrosia psilostachya*, *Bromus hordeaceus*, *Carex praegracilis*, *Carpobrotus edulis*, *Cirsium occidentale*, *Distichlis spicata*, *Euthamia occidentalis*, *Holocarpha virgata*, *Hordeum murinum* ssp. *leporinum*, *Juncus arcticus*, *Juncus cooperi*, *Juncus rugulosus*, *Lactuca serriola*, *Leymus triticoides*, *Lolium perenne*, *Medicago polymorpha*, *Rumex crispus*, *Schoenoplectus americanus*, *Sisyrinchium bellum*, and *Sporobolus airoides*. Membership rules require 30% cover in the herbaceous layer. It has a rarity listing of S2 which indicates it is fairly rare and threatened. In the lower reaches of the low flow channel there is a ponded segment measuring approximately 100 square feet that, at the time of the aquatic resource delineation, exclusively supported the early growth of *Anemopsis californica* at approximately 30% cover. The remaining cover was algal matting, mud, or water.

#### **4.1.3 Discussion of Natural Community “Creeping Wildrye Turf”**

Only one patch of Creeping Wildrye Turf occurs in the BSA. It is located immediately along the southern end of the pedestrian bridge directly south of Nejedly Staging Area. This area is a mesic transitional zone situated between scrub habitat on the western hillside and coast live oak woodland and forest along the ephemeral creek to the south and east. Creeping Wildrye Turf in the BSA is dominated by the native wild rye species (*Leymus cinereus* and/or *Leymus triticoides*). Other native grasses and forbs also occur in the herbaceous layer, such as native brome (*Bromus* sp.), Italian ryegrass (*Festuca perennis*), rushes (*Juncus* sp.), and Douglas' sagewort (*Artemisia douglasiana*). Non-natives also occur in the herbaceous layer, including wild oat (*Avena fatua*), poison hemlock (*Conium maculatum*), and teasel (*Dipsacus* sp.). Poison hemlock and teasel are both ranked as moderately invasive (Cal-IPC 2023). Relatively low cover of coyote brush (*Baccharis pilularis*) was also present in this habitat in the BSA.

##### **4.1.3.1 Survey Results**

Three SNCs were found to be present within the BSA and would be permanently impacted by project activities. These communities consist of Hardstem and California Bulrush Marsh, Yerba Mansa Alkaline Wet Meadow, and Creeping Wildrye Turf.

#### 4.1.3.2 Project Impacts

Three SNCs are present in the BSA and will be directly and permanently impacted during staging and construction by blading, grading, and trail establishment activities. While certain types of special-status plant individuals and vegetation communities are difficult to successfully relocate and reestablish, these three SNCs are likely to survive transplantation and successfully colonize their new areas. These areas are relatively small, especially the Yerba Mansa Alkali Wet Meadow which is approximately 100 square feet (0.002 acres). The Hardstem and California Bulrush Marsh community is approximately 300 square feet (0.007 acres). The Creeping Wildrye Turf community is approximately 2,000 square feet (0.05 acres).

#### 4.1.3.3 Avoidance and Minimization Efforts/Compensatory Mitigation

By requiring relocation of these communities, the following avoidance and minimization measures (AMMs) will reduce potentially significant impacts:

AMM BIO-1. Sensitive Natural Communities Avoidance. In advance of construction mobilization, the project proponent will flag portions of the project that are containing SNCs for avoidance.

AMM BIO-2. Sensitive Natural Communities Relocation/Replanting. If avoidance of SNCs is not possible, plants that are characteristic of the SNCs that would be affected by project activities will be relocated before or in timely conjunction with construction activities. It may be feasible to relocate plants from each of the SNCs to areas along the trail margins where they already occur. The scalped/excavated SNCs will be replanted promptly to ensure they survive and do not die from exposure and desiccation, with the location and timing of transplantation to be determined in consultation with CDFW.

## 4.2 Special-Status Plant Species

Plants are considered to be of special concern based on (1) federal, state, or local laws regulating their development; (2) limited distributions; and/or (3) the presence of habitat required by special-status plants occurring on site. While no special-status plants were detected during site surveys, potentially suitable habitat for the following species known from the region was determined to be present within the BSA: Bolander's water-hemlock (*Cicuta maculata* var. *bolanderi*), western leatherwood (*Dirca occidentalis*), small spikerush (*Eleocharis parvula*), Jepson's coyote thistle (*Eryngium jepsonii*), Mt. Diablo helianthella (*Helianthella castanea*), Santa Cruz tarplant (*Holocarpha macradenia*), Carquinez goldenbush (*Isocoma arguta*), Mt. Diablo cottonweed (*Micropus amphibolus*), and Suisun marsh aster (*Symphyotrichum lentum*).

### 4.2.1 Discussion of Plant Species "Bolander's water-hemlock"

Bolander's water-hemlock is a perennial forb that has a CRPR rating of 2B.1. It has a blooming period between June and November. It occurs in marsh or swamp habitats

with fresh or brackish water, which occur surrounding the BSA. Occurrences are known from collections within Benicia from 1938 (CNDDDB Occurrence No. 3).

The species was not observed during reconnaissance surveys. However, special-status plant surveys will be performed during the known blooming period of this species and its presence documented if found within the BSA.

#### **4.2.2 Discussion of Plant Species “western leatherwood”**

Western leatherwood is a deciduous shrub that has a CRPR rating of 1B.2. It has a blooming period between January and March. It occurs in chaparral and riparian forest habitats which occur sparsely within the BSA. Occurrences are known around Cummings Skyway near Crocket, approximately 2.9 miles west of the BSA (CNDDDB Occurrence No. 77).

The species was not observed during reconnaissance surveys. However, special-status plant surveys will be performed during the known blooming period of this species and its presence documented if found within the BSA.

#### **4.2.3 Discussion of Plant Species “small spikerush”**

Small spikerush is a perennial herb that has a CRPR rating of 4.3. It has a blooming period between June and August. It occurs in marsh habitats similar to those which occur within and surrounding the BSA. No known occurrences are found within five miles of the BSA.

The species was not observed during reconnaissance surveys. However, special-status plant surveys will be performed during the known blooming period of this species and its presence documented if found within the BSA.

#### **4.2.4 Discussion of Plant Species “Jepson's coyote thistle”**

Jepson's coyote thistle is a perennial herb that has a CRPR rating of 1B.2. It has a blooming period between April and August. It occurs in wetland habitats similar to those which occur within the BSA. Occurrences are known from grasslands within the Carquinez Strait Regional Shoreline southeast of the BSA (CNDDDB Occurrence No. 10).

The species was not observed during reconnaissance surveys. However, special-status plant surveys will be performed during the known blooming period of this species and its presence documented if found within the BSA.

#### **4.2.5 Discussion of Plant Species “Mt. Diablo helianthella”**

Mt. Diablo helianthella is a perennial herb that has a CRPR rating of 1B.2. It has a blooming period between March and June. It occurs in a variety of vegetation communities, including riparian woodland and valley and foothill grassland communities similar to those which occur within the BSA, and prefers a microhabitat of rocky axonal

soils (young soils formed in recent floodplains, without well-developed subsoils) often in partial shade. Occurrences in Marin and San Francisco counties are believed to be extirpated, leaving extant populations only in Alameda, Contra Costa, and San Mateo counties. An extant occurrence (CNDDDB Occurrence No. 56) is located just west from the Nejedly Staging Area in a coastal scrub and oak woodland habitat system, approximately 100 feet from the BSA.

The species was not observed during reconnaissance surveys. However, special-status plant surveys will be performed during the known blooming period of this species and its presence documented if found within the BSA.

#### **4.2.6 Discussion of Plant Species “Santa Cruz tarplant”**

Santa Cruz tarplant is an annual wildflower that has a CRPR rating of 1B.1 and a listing status of federally threatened and state endangered. It has a blooming period between June and October. It occurs within coastal scrub and foothill grassland habitats which both occur sparsely within the BSA. No historic occurrences have been recorded within five miles of the BSA.

The species was not observed during reconnaissance surveys. However, special-status plant surveys will be performed during the known blooming period of this species and its presence documented if found within the BSA.

#### **4.2.7 Discussion of Plant Species “Carquinez goldenbush”**

Carquinez goldenbush is a perennial shrub that has a CRPR rating of 1B.1. It has a blooming period between August and December. It occurs in wetlands found within foothill grassland habitats similar to those which occur within the BSA. One known occurrence from 1968 was observed at the Carquinez Strait Regional Shoreline southeast of the BSA (CNDDDB Occurrence No. 10).

The species was not observed during reconnaissance surveys. However, special-status plant surveys will be performed during the known blooming period of this species and its presence documented if found within the BSA.

#### **4.2.8 Discussion of Plant Species “Mt. Diablo cottonweed”**

Mt. Diablo cottonweed is an annual herb that has a CRPR rating of 3.2. It has a blooming period between March and May. It occurs in chaparral and foothill grassland habitats which occur sparsely within the BSA. No historic occurrences have been documented within five miles of the BSA.

The species was not observed during reconnaissance surveys. However, special-status plant surveys will be performed during the known blooming period of this species and its presence documented if found within the BSA.

#### **4.2.9 Discussion of Plant Species “Suisun Marsh aster”**

Suisun marsh aster is a perennial herb that has a CRPR rating of 1B.2. It has a blooming period between April and November. It occurs in marsh habitats similar to those which occur within the BSA. Occurrences are known from Pacheco Creek approximately 3.1 miles east of the BSA (CNDDDB Occurrence No. 17).

The species was not observed during reconnaissance surveys. However, special-status plant surveys will be performed during the known blooming period of this species and its presence documented if found within the BSA.

##### **4.2.9.1 Survey Results**

According to CNDDDB and CNPS database queries, 36 special-status plant species are known from the vicinity of the BSA, and as described above, suitable habitat occurs within the BSA for nine (9) of these species. No special-status plants were observed during reconnaissance-level surveys.

##### **4.2.9.2 Project Impacts**

While no special-status plants were observed during reconnaissance surveys, these surveys were conducted outside blooming periods for special-status species that have potential for occurrence within the BSA due to the presence of suitable habitat on site. Therefore, appropriately-timed special-status plant surveys will be performed prior to project commencement to determine presence/absence of listed plants within the BSA.

##### **4.2.9.3 Avoidance and Minimization Efforts/Compensatory Mitigation**

Special-status plant surveys will be conducted following CDFW's 2018 *Protocols for Surveying and Evaluating Impacts to Special-Status Native Plant Populations and Sensitive Natural Communities* and will document presence if detected in the BSA. No special-status plants were observed during reconnaissance surveys in 2020 and 2023. If special-status plants are present in the BSA they could be directly and permanently impacted during staging and construction by blading, grading, and trail establishment activities. If present and not impacted directly by the construction phase, they could also be impacted during pre-construction mobilization of equipment and staging. Accordingly, special-status plant surveys are critical to prevent these types of impacts by identifying their presence/absence within the BSA. If special-status plants are identified within the BSA, the following AMMs would reduce potentially significant impacts to less than significant:

AMM BIO-3. Special-Status Plant Avoidance. Special-status plant individuals and/or populations would be flagged and avoided during project-related activities. To prevent accidental impacts, special-status plant areas would be clearly marked with high visibility flagging or fencing prior to the start of construction activities, and the flagging

or fencing would be maintained around the special-status plant areas for the duration of construction.

AMM BIO-4. Coordination with Agencies. If avoidance is not feasible, appropriate agencies will be contacted to identify appropriate relocation and compensation strategies. These agencies are typically CDFW and CNPS, but may also include USFWS, RWQCB, and BCDC based on special-status plant legal status and whether the growing location overlaps with aquatic resource jurisdiction. Projects requiring more than minimal compensatory mitigation would require a full Natural Environment Study and shall not use this format.

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

Animals are considered to be of special concern based on (1) federal, state, or local laws regulating their development; (2) limited distributions; and/or (3) the habitat requirements of special-status animals occurring on site. While no special-status animal species were observed within the BSA, suitable habitat is present for the following species: California red-legged frog (*Rana draytonii*), white-tailed kite (*Elanus leucurus*), pallid bat (*Antrozous pallidus*), western red bat (*Lasiurus blossevillii*), and San Francisco dusky-footed woodrat (*Neotoma fuscipes annectens*).

#### **4.3.1 Discussion of Animal Species “California red-legged frog”**

The California red-legged frog is federally listed as threatened and is also considered a Species of Special Concern by the CDFW (USFWS 1996; CNDDB 2023). Critical habitat was designated for the species in 2010 (USFWS 2010).

The California red-legged frog is the largest native frog in the western United States (Wright and Wright 1949) and can range from 1.75 to 5.25 inches in length (Stebbins 2003). Its back is typically brown, gray, olive, or reddish brown with prominent dorsolateral folds and many small black flecks around whitish centers (Stebbins 2003). Larvae are dark brown and yellow with darker spotting and range from 0.6 to 3.1 inches in length (Storer 1925). Historically, the range of the California red-legged frog extended from along the California coast near Elk Creek in Mendocino County and inland from around Redding in Shasta County, south to Baja California (Jennings and Hayes 1985; Hayes and Krempels 1986). Although California red-legged frogs are still locally abundant in portions of the Central Coast and San Francisco Bay Area, their current range has been reduced by an estimated 70 percent from its former extent within California (USFWS 2002).

The California red-legged frog uses a variety of habitat types, including aquatic, riparian and upland areas. It predominantly inhabits permanent and semi-permanent water bodies including ponds, streams, and wetlands, but also occurs in seasonal creeks and drainages. Breeding habitat consists of wetlands, ponds, and other still or slow-moving aquatic habitat including as backwaters of streams and creeks. Other aquatic habitats including pools in intermittent creeks, seeps, and springs may provide shelter, predator avoidance, foraging opportunities, and aquatic dispersal habitat. During summer

months California red-legged frogs may take refuge in cool, moist areas including pools in stream channels, exposed roots, dense vegetation, rodent burrows, and soil crevices near breeding sites during times when water is not available. Upland and dispersal habitat can include grassland, forest, riparian areas, and agricultural fields (USFWS 2010).

The BSA is located outside of designated critical habitat for the California red-legged frog (USFWS 2010). Seven records of red-legged frogs occur within five miles of the BSA. The nearest recorded observation of the California red-legged frog was an unknown number of individuals observed in 2000 at a pond adjacent to the former Port Costa Brick Company, 2.2 miles northwest of the BSA (CNDDDB Occurrence No. 508). The second observation was of six frogs observed in 1998 in Telephone Creek, immediately north of State Route 4, 4.4 miles southwest of the BSA (CNDDDB Occurrence No 310). This location is connected, via an underpass of State Route 4, to Rodeo Creek, where breeding red-legged frogs were documented in the early 2000s (CDFW 2020).

The wetlands located in the BSA near the railroad tracks provide marginal or extremely low-quality breeding habitat for California red-legged frog. California red-legged frog breeding sites are normally associated with relatively deep (greater than 2 feet) fresh water with shrubby or emergent riparian vegetation (Hayes and Jennings 1988), and hold water for a minimum of 20 weeks in all but the driest of years (USFWS 2010). Larvae typically metamorphose between July and September (USFWS 2002). The wetlands in the BSA typically dry by July (Bobzien 2003); during the May 2020 field survey they contained water less than two feet deep and during the December 2023 field survey they contained water less than six inches deep. Emergent vegetation within the wetlands and edge cover were sparse during the field survey. The relatively narrow width of the wetlands (less than six feet across in most areas) and their proximity to developments which promote the presence of urban adapted predators, such as striped skunk (*Mephitis mephitis*), possum (*Didelphis virginiana*), and raccoon (*Procyon lotor*) would make any California red-legged frogs or their eggs highly susceptible to predation. Areas containing deep water or dense aquatic vegetation that would allow frogs to escape from predators were absent. The ephemeral creek within the BSA is dry most of the year, and characteristics associated with red-legged frog presence, including dense vegetation, undercut banks, and exposed roots, were absent from the creek.

A small number of ponds that may be suitable to support breeding occur within about one mile of the BSA, which is reflective of the average dispersal distance for the species, although frogs are capable of moving distances of up to two miles (Bulger, et al 2003, USFWS 2010). Historic aerial imagery indicates that some of these ponds maintain sufficient hydroperiods to support breeding red-legged frogs, although most do so only in particularly wet years (Google Earth 2023). All ponds within potential dispersal distance are located to the south and west of the BSA, within open space areas which are contiguous with the BSA. No suitable habitat for California red-legged frogs occurs north or east of the BSA, due to the presence of tidal salt marsh and dense urban development.

Due to the marginal nature of the habitat on site and the distance to known occurrences, the California red-legged frog has a low potential to occur in the BSA. They are most likely to occur in the BSA during rain events and periods of wet weather when frogs tend to make overland movements away from breeding ponds and aquatic non-breeding habitats. If present, frogs would be most likely to use the wetlands, drainage ditches, and nearby leaf litter and dense vegetation. During the summer months, California red-legged frogs are less likely to occur in the BSA.

#### **4.3.2 Discussion of Animal Species “white-tailed kite”**

The white-tailed kite is a California Fully Protected species (CNDDDB 2023). The species is also protected under CFGC, the MBTA, and as a "bird of prey" under the Raptor Recovery Act.

The white-tailed kite occurs in nearly all lowlands in California, except the southeast deserts. The core of the white-tailed kite's breeding range in the U.S. is California, with nearly all areas up to the western Sierra Nevada foothills and southeast deserts occupied (Dunk 1995). They require relatively open habitat for foraging, and trees (isolated or within stands) for nesting and roosting. White-tailed kite nests are built in trees or shrubs and are composed of small twigs lined with grass, hay or leaves (Dunk 1995). White-tailed kites breed in lowland grasslands, agriculture, wetlands, oak-woodland and savannah habitats, and riparian areas associated with open areas. The presence of prey species, particularly voles, may be the most important determinant of habitat quality for white-tailed kites (Dunk and Cooper 1994, Skonieczny and Dunk 1997).

White-tailed kites have frequently been observed in marsh habitats north of the BSA (eBird 2023). The species has not been recorded breeding in the vicinity, although the reasons why are not clear (Mt. Diablo Audubon Society 2009). A lack of isolated trees surrounded by open foraging habitat, combined with high levels of human disturbance associated with park trails and UPRR tracks, may limit nesting opportunities for the species in this area. Therefore, white-tailed kites are not expected to nest in the BSA and have a low likelihood to occur as a transient or forager.

#### **4.3.3 Discussion of Animal Species “pallid bat”**

The pallid bat is considered a Species of Special Concern by CDFW (CNDDDB 2023). It has no federal status. Pallid bats are listed as a species of medium to high level of concern and in need of conservation action by the Western Bat Working Group.

Pallid bats occur in a variety of habitats in California, including low desert, oak woodland, and coastal redwood forests. In northern California, the species is typically associated with oak savannah habitat (Pierson and Rainey 1998). Pallid bat day-roosting habitat typically includes rocky outcrops, cliffs, large-diameter live and snag trees, and spacious crevices with access to open habitats for foraging. Pallid bats may also roost in caves, mines, bridges, barns, porches, bat boxes, stone piles, rags, baseboards, rocks, and on the ground. Day roosts are generally warm and out of reach



from ground predators. Day roosts may consist of single- or mixed-sex colonies in crevices or man-made structures. Numbers of individuals in a day roost range from a few individuals to over a hundred (Barbour and Davis 1969). Breeding colonies are formed in the spring. Young are dependent on their mothers for at least six weeks and do not gain full independence until the fall, when colonies disperse (Pierson and Rainey 1998). Pallid bats are sensitive to disturbance at roost sites and may abandon a roost if repeatedly disturbed (Pierson and Rainey 1998).

Pallid bats have been documented using bridge structures for roosting and the pedestrian bridge structure in the BSA may provide low quality night roost habitat for a small number of bats. In addition, pallid bats may roost in the loose bark, leaves, and crevices of mature eucalyptus and oaks in the BSA. No cavities capable of supporting a large colony were observed in the BSA during reconnaissance surveys and no records of the species occur within five miles of the BSA (CDFW 2023). In general, pallid bats have a low likelihood to occur in relatively small numbers within suitable tree roost habitat observed within the BSA.

#### **4.3.4 Discussion of Animal Species “western red bat”**

The western red bat is considered a Species of Special Concern by CDFW (CNDDDB 2023). It has no state or federal status. Western red bats can be found throughout California’s lower elevations, with many records concentrated in the Central Valley. Like some bats found in California, western red bats make regional movements between their winter and maternity roosts seasonally. As a foliage roosting bat, the western red bat is closely associated with well-developed riparian habitats but will also utilize other habitats (e.g., orchard trees, eucalyptus, tamarisk, etc.) that provide suitable dense clusters of leaves creating suitable roosting sites. Of note, this species has been observed roosting on the ground within leaf clutter. The western red bat is a solitary roosting bat that will often have two pups per year.

Dense foliage clusters observed in eucalyptus groves in the BSA provide potentially suitable western red bat roost habitat, though there are no western red bat records within five miles of the BSA. Western red bat roosts are small and consist of just one to a few individuals. Given the limited extent of the BSA, it is therefore unlikely to support many individuals of this solitary roosting bat. Based on the presence of potentially suitable roost habitat within and adjacent to the BSA, western red bats have a low likelihood to occur.

#### **4.3.5 Discussion of Animal Species “San-Francisco dusky-footed woodrat”**

The San Francisco dusky-footed woodrat is one of 11 woodrat subspecies and is state protected as a California Species of Special Concern (CNDDDB 2023). It has no state or federal status. It can be found throughout the San Francisco Bay Area within mixed coniferous forests and oak and riparian woodlands. It can be abundant in areas with dense shrub cover and is strongly associated with structurally complex habitats, such as riparian corridors. Woodrats are usually conspicuous where they occur due to their

large stick-pile houses which they construct on the ground, in rocky outcrops, and in trees from sticks and other debris. Houses may be reused by successive generations and some can grow to be six feet or more in height, while others are well-hidden and easily overlooked. Houses are used for rearing young, protection from predators, resting, food storage, thermal protection, and social interaction (Vestal 1938). Each house is typically inhabited by one male or one female with young (Carraway and Verts 1991) but individuals may use multiple satellite houses within a home range. Dusky-footed woodrat houses are also used by a wide variety of native amphibians, small mammals, reptiles, and insects. Dusky-footed woodrats are mostly nocturnal. They forage in trees and on the ground for a wide variety of nuts, fruits, fungi, foliage, and some forbs (Linsdale and Tevis 1951). Reproduction typically occurs between September and December and between February and July, peaking in April and May.

No woodrat middens were observed during focused surveys conducted on December 14, 2023. However, due to the availability of moderate quality habitat throughout the BSA and presence of dense stands of poison oak (*Toxicodendron diversilobum*) and blackberry (*Rubus armeniacus*), there is a low probability that the species may occur in the BSA.

#### **4.3.5.1 Survey Results**

No special-status animals were detected during the reconnaissance surveys. Low potential for species to occur was expected due to habitat suitability and historical occurrences. However, a majority of the known occurrences were found in specialized marsh habitat occurring across the railroad tracks at Martinez Regional Shoreline.

#### **4.3.5.2 Project Impacts**

According to the CNDDDB, 45 special-status animal species occurred within five miles of the BSA. A majority of these species' habitat requirements include marsh habitat and aquatic features predominately found surround the BSA. These habitat types are found in small, fragmented areas within the BSA and are subject to frequent disturbance through the active railways alongside the BSA. The following AMMs are proposed to mitigate any potential impacts to special-status animals.

#### **4.3.5.3 Avoidance and Minimization Efforts/Compensatory Mitigation**

The following AMMs are recommended to reduce the potential impacts on special-status animals:

AMM BIO-5. Worker Environmental Awareness Program. Before any ground-disturbing activities begin, a Qualified Biologist, defined as a person who possesses, at a minimum, a bachelor's degree in biological sciences, zoology, botany, ecology, or another closely-related field, and who is familiar with the special-status species that could occur in the project area, will conduct a training session for all on-site project personnel. At a minimum, the training will include a description of the California red-

legged frog, white-tailed kite, pallid bat, western red bat, and San Francisco dusky-footed woodrat, the importance of these species, the measures that are being implemented to avoid and minimize impacts as they relate to the Project, and the boundaries within which work may occur.

AMM BIO-6. Delineation of Work Area. The boundaries of the work area where natural vegetation occurs shall be clearly staked or otherwise delineated on the plans to prevent workers or equipment from inadvertently straying from the work area. All construction personnel, equipment, and vehicle movement shall be confined to designated construction and staging areas.

AMM BIO-7. Prevention of Entrapment. All excavated, steep-walled holes or trenches will be covered at the end of each workday with plywood or similar materials. If this is not possible, one or more escape ramps constructed of earth fill or wooden planks will be established in the hole. Before such holes or trenches are filled, they will be thoroughly inspected for any animals.

AMM BIO-8. No Monofilament Plastic. Plastic monofilament netting (erosion control matting) or similar material will not be used because wildlife may become entangled or trapped in it. Acceptable substitutes include coconut coir matting or tackifier hydroseeding compounds.

AMM BIO-9. Biological Monitoring. A Qualified Biologist will remain on site during clearing and grubbing, tree removal, initial grading, and any vegetation removal in wetland or riparian habitat. Prior to commencement of the above construction activities, the Qualified Biologist will survey the project footprint to ensure no special-status species are within the work area. If any special-status species are found in areas where they could be impacted by work activities, work activities will be halted until the animal leaves the work area on its own.

AMM BIO-10. Seasonal Avoidance. To the extent feasible, initial grading, tree removal, and vegetation removal within riparian or wetland habitats should be restricted to the dry season (i.e., April 15 through October 15). No vegetation removal or ground disturbing activities should occur in riparian or wetland habitats during or within 24 hours following a rainfall event of 0.1 inches or more.

AMM BIO-11. Pre-Activity Survey. The Qualified Biologist will survey the work area immediately prior to vegetation removal in wetland or riparian habitats, and prior to all initial ground disturbance and tree removal activities. If California red-legged frogs are found, work will not proceed until the animal has moved out of the work area on its own.

AMM BIO-12. Seasonal Bat Avoidance. The removal of any trees containing suitable bat roosting habitat should be scheduled to avoid the maternity roost season. To the extent feasible, activities should be restricted to the period between August 31 and April 15.

AMM BIO-13. Bat Roost Deterrent/Exclusion Plan. If seasonal avoidance is not possible and roosting bats or signs of roosting bats are observed, a Qualified Biologist should develop a roost deterrent and/or roost exclusion plan. The deterrent/exclusion plan should include measures to avoid bats potentially using bat tree roost habitat within the BSA, if necessary.

AMM BIO-14. Bat Roost Habitat Survey. Prior to the start of work, the pedestrian bridge and all vegetation scheduled for removal should be surveyed to determine if potential bat roost habitat is present and if 2- phase tree removal or other avoidance measures are necessary to avoid impacts on bats.

AMM BIO-15. Pre-Construction Surveys. Prior to the start of work, the pedestrian bridge, trees, leaf clusters, or similar structures in the BSA should be thoroughly inspected by a Qualified Biologist for the presence of wildlife, including roosting bats, prior to being removed. Any bat observed in the BSA should be allowed to leave on its own.

AMM BIO-16. Biological Monitoring During Vegetation removal. A Biological Monitor should be present during tree removal and any clearing of riparian vegetation. The on-site biologist should inspect all bat roost habitat (e.g., crevice and foliage habitat types) for roosting bats prior to trimming or removal activities.

AMM BIO-17. Woodrat House Survey. Prior to the start of project activities, a survey of the BSA will be conducted for woodrat houses.

AMM BIO-18. Woodrat and House Relocation Plan. If woodrat houses are found and cannot be avoided, a San Francisco dusky-footed woodrat relocation plan will be prepared and submitted to CDFW before any woodrat houses are disturbed. The Plan would establish buffers and avoidance measures and establish a relocation protocol for woodrat houses.

AMM BIO-19. Seasonal Avoidance. Project activities should be scheduled to avoid the nesting bird season. For project planning purposes, the nesting bird season in the San Francisco Bay Area for birds protected under the MBTA is often identified by regulatory agencies as February 1 through August 31. Plan to conduct activities between September 1 – January 31 and do not initiate activities at any time if nesting birds are present (hummingbirds and raptors, for example, may nest earlier if weather conditions are mild, and could be present outside of the guidance period).

If seasonal avoidance is not possible, the following measures would minimize potential impacts on nesting birds.

AMM BIO-20. Pre-Construction Nesting Bird Surveys. Within 10-days prior to the start of work at each Segment, a Qualified Biologist should conduct a visual survey of the area for nesting birds within the work areas to be disturbed and including a perimeter buffer of 100 feet for non-raptor migratory birds and 300 feet for raptors. All nest avoidance requirements of the Migratory Bird Treaty Act should be observed (e.g.,

establishing appropriate protection buffers around active nests until young have fledged). A Qualified Biologist should resurvey the BSA if a halt in project activities of 10 days or more occurs. All nests identified during pre-construction surveys should be determined “inactive” by a Qualified Biologist prior to removal. No eagle nests should be removed without approval from USFWS.

AMM BIO-21. No Project Activities within Nest Buffers. If seasonal avoidance is not possible and nesting birds are present, a Qualified Biologist will establish temporary buffers around the nest. Project activities will not occur within the buffer areas until the nest has fledged or has otherwise become inactive.

AMM BIO-22. Biological Monitoring for Compliance and Nest Buffer Avoidance. A Qualified Biologist should monitor all identified nesting birds within the survey area for long enough to determine whether project activities will result in observable signs of disturbance to the nest. Nest buffers may need to be adjusted to a greater distance if disturbance is. Conversely, buffer size may be decreased in consultation with CDFW if project activities do not result in disturbance.

## **5. Conclusions and Regulatory Determinations**

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

A total of 22 federally listed species were analyzed for effects determinations for the Project following a desktop review of the USFWS, NMFS, and IPaC species lists. Appropriately-timed surveys and/ or mitigation measures will be enacted to avoid impacts to species protected under FESA.

### **5.2 California Endangered Species Act Summary**

A total of 16 state listed species were analyzed for effects determinations for the Project following a desktop review of the CNDDDB and CNPS species lists. Appropriately-timed surveys and/ or mitigation measures will be enacted to avoid impacts to species protected under CESA.

### **5.3 Essential Fish Habitat Consultation Summary**

Since there are no perennial surface water features within the BSA the Project will not affect EFH.

### **5.4 Wetlands and Other Waters Coordination Summary**

Acquisition of regulatory agency authorizations pursuant to CWA Sections 401/404 and/ or CFGC Section 1600 will be required for impacts within jurisdictional wetland features occurring within the BSA.

## **5.5 Invasive Species**

The Project has limited potential to spread invasive plant species as the area in path footprint occurs along a predominately disturbed area and is surrounded by several invasives species currently, such as French broom (*Genista monspessulana*) and Himalayan blackberry (*Rubus armeniacus*). Therefore, the Project is not expected to result in an increase of invasive plant species within and/or adjacent to project boundaries.

## **5.6 Other**

### **5.6.1 Nesting Birds**

Habitat that supports nesting for birds protected under the MBTA and CFGC occurs throughout the BSA. Avoidance and minimization efforts described above will be implemented to avoid impacts to nesting birds.

### **5.6.2 Trees**

The Project will avoid damage to and/or removal of trees; therefore, it is determined that no effect to trees will occur as a result of project-related activities.

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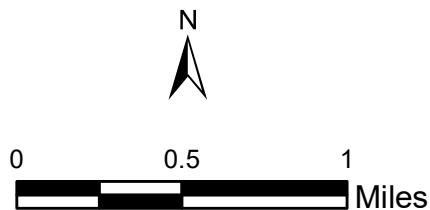
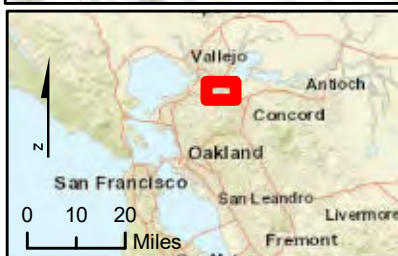
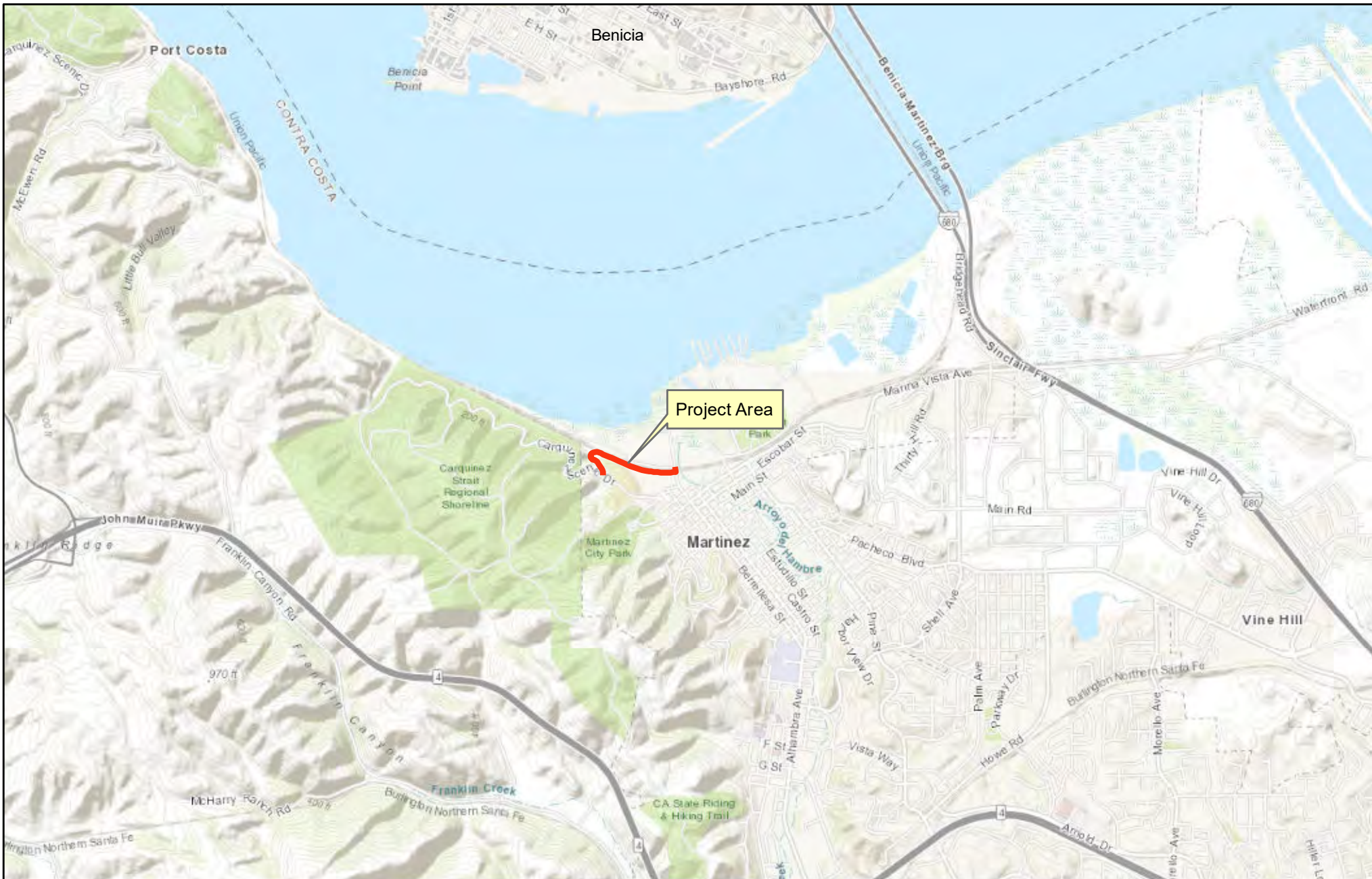
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## **7. Appendices**

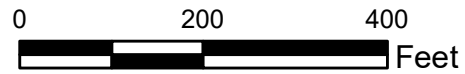
## **Appendix A. Figures**



East Bay Regional Park District  
 Martinez Bay Trail Project Phase II  
 Biological Resources Assessment  
 Figure 1 - Vicinity Map  
 May 2020



- |                        |                                    |                                      |
|------------------------|------------------------------------|--------------------------------------|
| Biological Survey Area | <b>Habitats</b>                    | Eucalyptus Grove                     |
| Pedestrian Bridge      | Arroyo Willow Thickets             | Freshwater and Brackish Marshes      |
| Segment 1              | California Sagebrush Scrub         | Low Flow Channel                     |
| Segment 2              | Coast Live Oak Woodland and Forest | Ruderal                              |
| Segment 3              | Creeping Ryegrass Turf             | Wild oats and Annual Brome Grassland |
| Creeks/Drainages (CDD) | Developed                          |                                      |



East Bay Regional Park District  
 Martinez Bay Trail Project Phase II  
 Biological Resources Assessment  
 Figure 2 - Biotic Habitats Map  
 May 2020



East Bay Regional Park District  
 Martinez Bay Trail Project Phase II  
 Martinez, CA  
 May 2020

Figure 3 - Impacts to Wetlands and Other Waters of the U.S. for the Martinez Bay Trail Project



**Legend**

- Map Reference Point
- ▭ Survey Area Boundary (6.68 acres)
- ▭ Permanent Impact Area
- Creeks/Drainages (Contra Costa County)
- Unmapped Drainages
- ▬ Stand alone swale
- ▭ Low Flow Channel
- Wetlands (0.74 acres)**
- ▭ Wetlands (0.14 acres)
- ▭ Adjacent Wetland (0.60 acres)



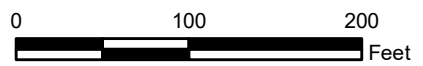
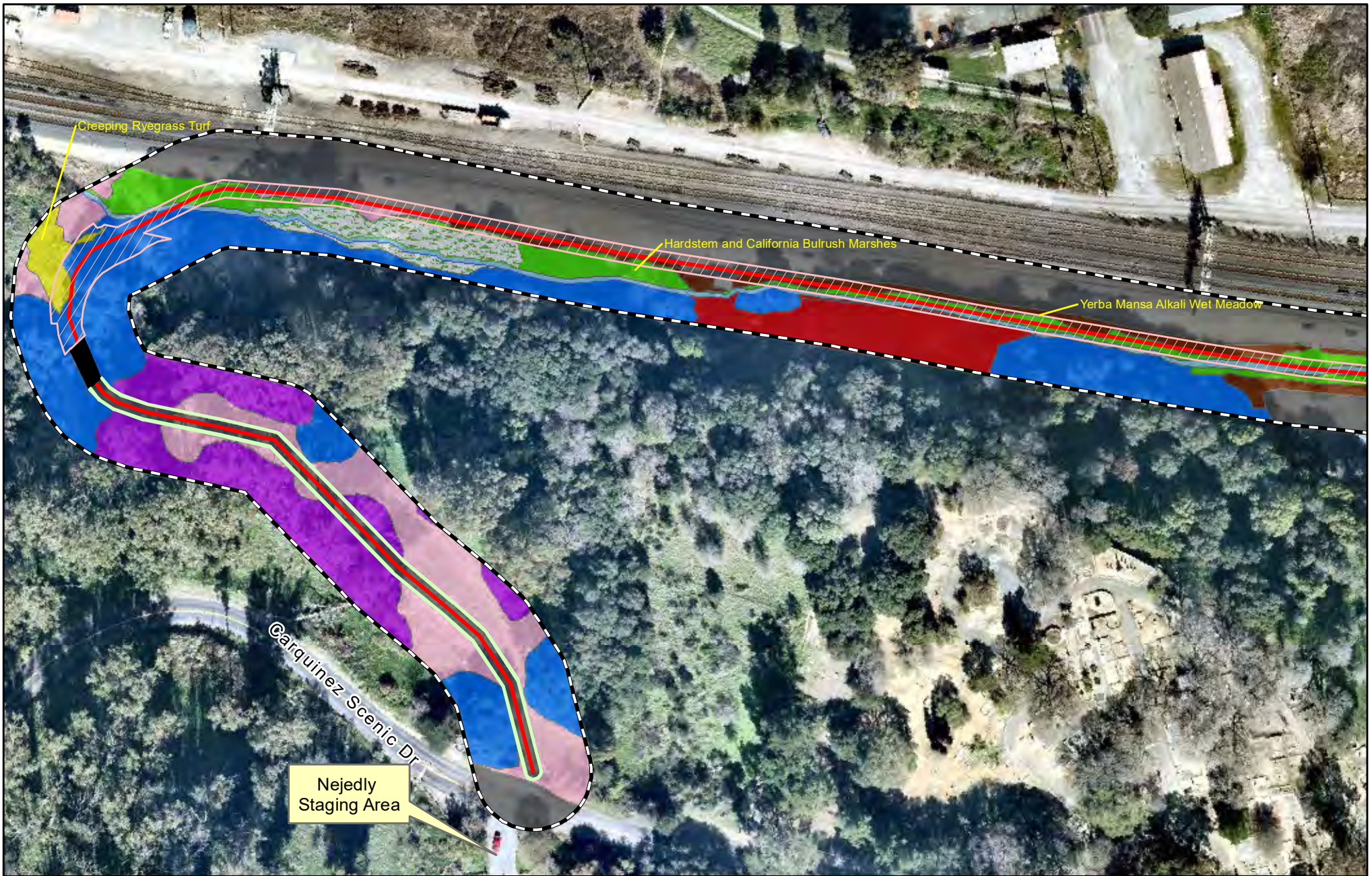
Coordinate System: NAD 1983 UTM Zone 10N  
 Projection: Transverse Mercator  
 Datum: North American 1983  
 Vertical Datum: NAVD88, U.S. Feet  
 1 in = 183 ft

**Created on May 26, 2020**

Delineators: Natasha Dvorak and Bridget Sousa  
 Delineation dates: May 12, 2020

Imagery Data:  
 Feb 14, 2020



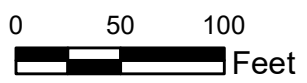


East Bay Regional Park District  
 Martinez Bay Trail Project Phase II  
 Biological Resources Assessment  
 Figure 4.1 - Impacts Map  
 Segment 1 & Segment 2 (West)  
 May 2020



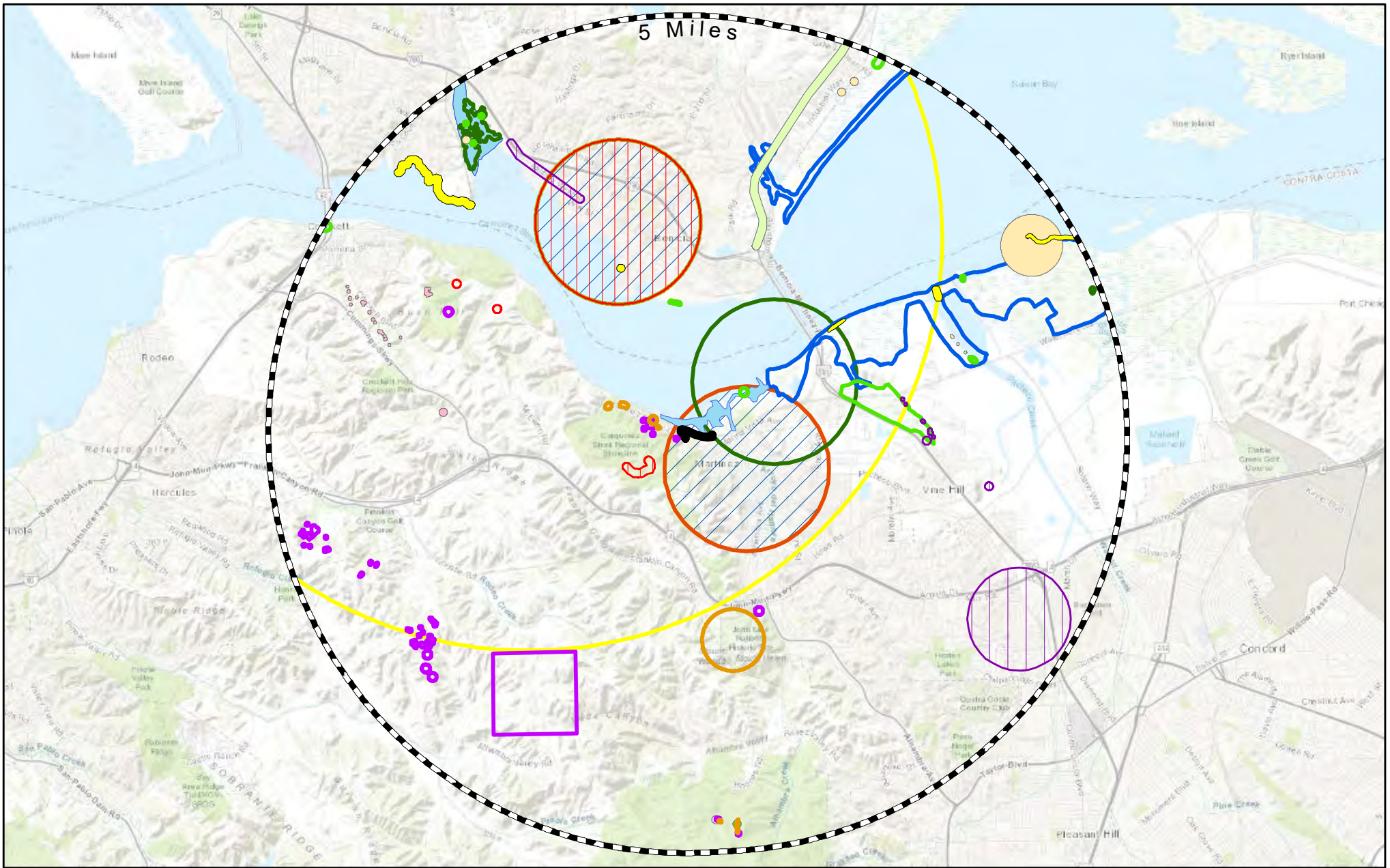


- Martinez Bay Trail
- Biological Survey Area
- Habitats**
- Arroyo Willow Thickets
- California Sagebrush Scrub
- Coast Live Oak Woodland and Forest
- Creeping Ryegrass Turf
- Developed
- Eucalyptus Grove
- Freshwater and Brackish Marshes
- Low Flow Channel
- Ruderal
- Wild oats and Annual Brome Grassland
- Permanent Impacts

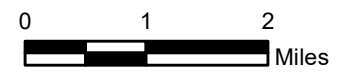


East Bay Regional Park District  
 Martinez Bay Trail Project Phase II  
 Biological Resources Assessment  
 Figure 4.2 - Impacts Map  
 Segment 2 (East)  
 May 2020

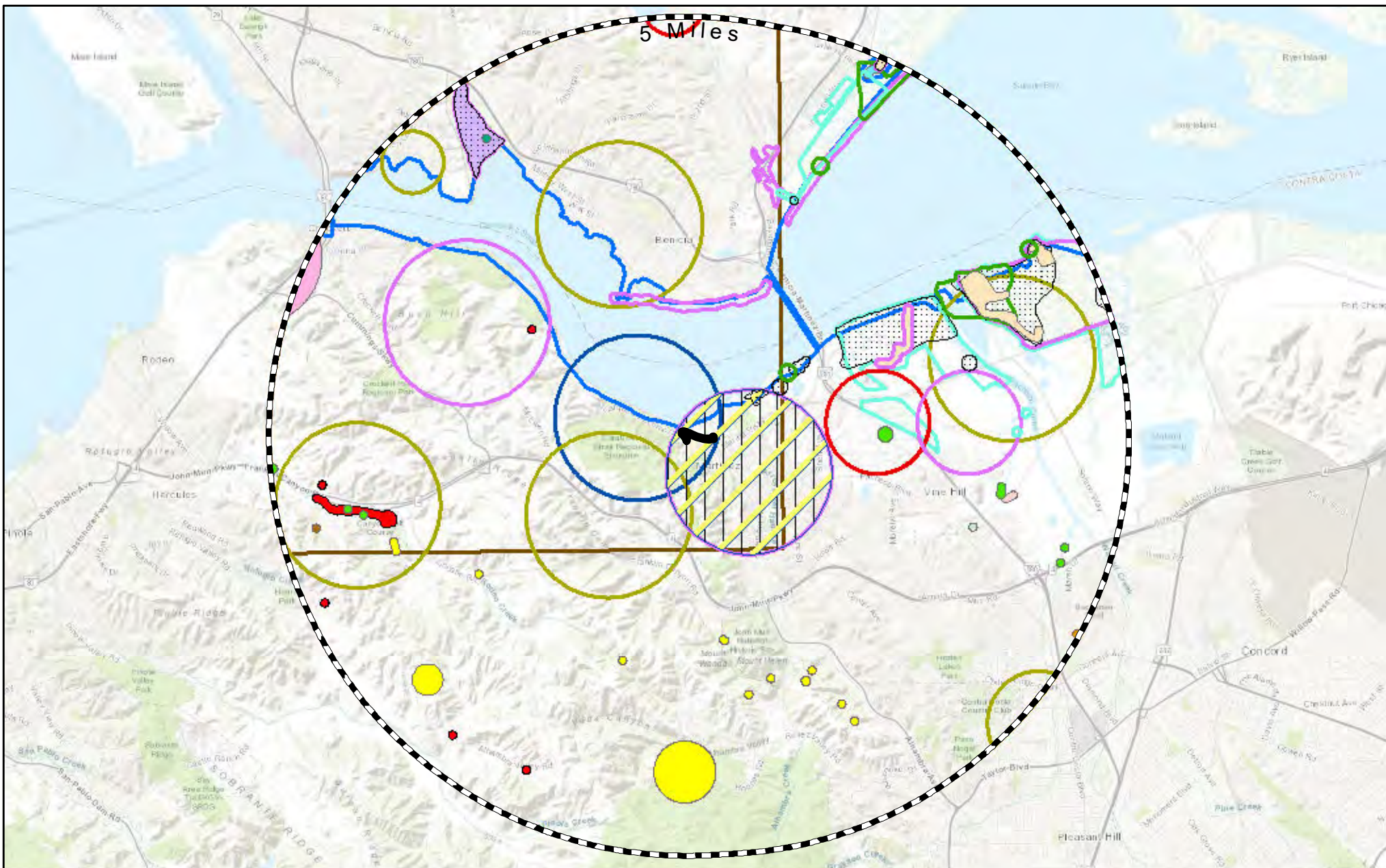




- |                            |                             |                          |
|----------------------------|-----------------------------|--------------------------|
| Biological Survey Area     | Delta tule pea              | bent-flowered fiddleneck |
| CNDDDB - Plant Occurrences | Diablo helianthella         | big tarplant             |
| CDFW - May 2020            | Jepson's coyote-thistle     | long-styled sand-spurrey |
| Bolander's water-hemlock   | Marin knotweed              | oval-leaved viburnum     |
| Carquinez goldenbush       | Mason's lilaeopsis          | saline clover            |
| Coastal Brackish Marsh     | Mt. Diablo fairy-lantern    | soft salty bird's-beak   |
| Congdon's tarplant         | Northern Coastal Salt Marsh | western leatherwood      |
|                            | Suisun Marsh aster          |                          |



East Bay Regional Park District  
 Martinez Bay Trail Project Phase II  
 Biological Resources Assessment  
 Figure 5 - CNDDDB Plant Records  
 May 2020



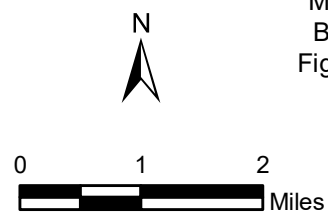
**Biological Survey Area**  
**CNDDB - Wildlife Occurrences**  
**CDFW - May 2020**

- Alameda whipsnake
- American peregrine falcon
- Bridges' coast range shoulderband
- California Ridgway's rail

- California black rail
- California linderella
- California red-legged frog
- Cooper's hawk
- Sacramento splittail
- San Pablo song sparrow
- Suisun shrew

- Suisun song sparrow
- big free-tailed bat
- burrowing owl
- longfin smelt
- northern harrier
- obscure bumble bee
- salt-marsh harvest mouse

- saltmarsh common yellowthroat
- tricolored blackbird
- western bumble bee
- western pond turtle
- yellow rail



East Bay Regional Park District  
 Martinez Bay Trail Project Phase II  
 Biological Resources Assessment  
 Figure 6 - CNDDB Wildlife Records  
 May 2020

**Appendix B. USFWS IPaC and NMFS Species Lists**



# United States Department of the Interior



FISH AND WILDLIFE SERVICE  
Sacramento Fish And Wildlife Office  
Federal Building  
2800 Cottage Way, Room W-2605  
Sacramento, CA 95825-1846  
Phone: (916) 414-6600 Fax: (916) 414-6713

In Reply Refer To:  
Project Code: 2024-0026203  
Project Name: Martinez Trail Phase II

December 13, 2023

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

## To Whom It May Concern:

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

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

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

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

(c)). For projects other than major construction activities, the Service suggests that a biological evaluation similar to a Biological Assessment be prepared to determine whether the project may affect listed or proposed species and/or designated or proposed critical habitat. Recommended contents of a Biological Assessment are described at 50 CFR 402.12.

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

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

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

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

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

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Attachment(s):

- Official Species List

## **OFFICIAL SPECIES LIST**

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

This species list is provided by:

### **Sacramento Fish And Wildlife Office**

Federal Building  
2800 Cottage Way, Room W-2605  
Sacramento, CA 95825-1846  
(916) 414-6600

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## PROJECT SUMMARY

Project Code: 2024-0026203  
Project Name: Martinez Trail Phase II  
Project Type: Road/Hwy - New Construction  
Project Description: Construction of approximately 3,100 feet of trail running from Nejedly Staging Area to Berrellesa Street.

### Project Location:

The approximate location of the project can be viewed in Google Maps: <https://www.google.com/maps/@38.01952875,-122.14537999487219,14z>



Counties: Contra Costa County, California

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## ENDANGERED SPECIES ACT SPECIES

There is a total of 13 threatened, endangered, or candidate species on this species list.

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

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries<sup>1</sup>, as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

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

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

### MAMMALS

| NAME   | STATUS     |
|--|------------|
| Salt Marsh Harvest Mouse <i>Reithrodontomys raviventris</i><br>No critical habitat has been designated for this species.<br>Species profile: <a href="https://ecos.fws.gov/ecp/species/613">https://ecos.fws.gov/ecp/species/613</a> | Endangered |

### BIRDS

| NAME   | STATUS     |
|--|------------|
| California Clapper Rail <i>Rallus longirostris obsoletus</i><br>No critical habitat has been designated for this species.<br>Species profile: <a href="https://ecos.fws.gov/ecp/species/4240">https://ecos.fws.gov/ecp/species/4240</a>  | Endangered |
| California Least Tern <i>Sterna antillarum browni</i><br>No critical habitat has been designated for this species.<br>Species profile: <a href="https://ecos.fws.gov/ecp/species/8104">https://ecos.fws.gov/ecp/species/8104</a>   | Endangered |
| Western Snowy Plover <i>Charadrius nivosus nivosus</i><br>Population: Pacific Coast population DPS-U.S.A. (CA, OR, WA), Mexico (within 50 miles of Pacific coast)<br>There is <b>final</b> critical habitat for this species. Your location does not overlap the critical habitat.<br>Species profile: <a href="https://ecos.fws.gov/ecp/species/8035">https://ecos.fws.gov/ecp/species/8035</a> | Threatened |

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## REPTILES

| NAME   | STATUS                 |
|--|------------------------|
| Alameda Whipsnake (=striped Racer) <i>Masticophis lateralis euryxanthus</i><br>There is <b>final</b> critical habitat for this species. Your location does not overlap the critical habitat.<br>Species profile: <a href="https://ecos.fws.gov/ecp/species/5524">https://ecos.fws.gov/ecp/species/5524</a> | Threatened             |
| Northwestern Pond Turtle <i>Actinemys marmorata</i><br>No critical habitat has been designated for this species.<br>Species profile: <a href="https://ecos.fws.gov/ecp/species/1111">https://ecos.fws.gov/ecp/species/1111</a>   | Proposed<br>Threatened |

## AMPHIBIANS

| NAME   | STATUS     |
|--|------------|
| California Red-legged Frog <i>Rana draytonii</i><br>There is <b>final</b> critical habitat for this species. Your location does not overlap the critical habitat.<br>Species profile: <a href="https://ecos.fws.gov/ecp/species/2891">https://ecos.fws.gov/ecp/species/2891</a>                        | Threatened |
| Foothill Yellow-legged Frog <i>Rana boylei</i><br>Population: Central Coast Distinct Population Segment (Central Coast DPS)<br>No critical habitat has been designated for this species.<br>Species profile: <a href="https://ecos.fws.gov/ecp/species/5133">https://ecos.fws.gov/ecp/species/5133</a> | Threatened |

## INSECTS

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

## CRUSTACEANS

| NAME  | STATUS     |
|---|------------|
| Conservancy Fairy Shrimp <i>Branchinecta conservatio</i><br>There is <b>final</b> critical habitat for this species. Your location does not overlap the critical habitat.<br>Species profile: <a href="https://ecos.fws.gov/ecp/species/8246">https://ecos.fws.gov/ecp/species/8246</a> | Endangered |
| Vernal Pool Fairy Shrimp <i>Branchinecta lynchi</i><br>There is <b>final</b> critical habitat for this species. Your location does not overlap the critical habitat.<br>Species profile: <a href="https://ecos.fws.gov/ecp/species/498">https://ecos.fws.gov/ecp/species/498</a>        | Threatened |

## FLOWERING PLANTS

| NAME   | STATUS     |
|--|------------|
| Contra Costa Goldfields <i>Lasthenia conjugens</i><br>There is <b>final</b> critical habitat for this species. Your location does not overlap the critical habitat.<br>Species profile: <a href="https://ecos.fws.gov/ecp/species/7058">https://ecos.fws.gov/ecp/species/7058</a>      | Endangered |
| Soft Bird's-beak <i>Cordylanthus mollis ssp. mollis</i><br>There is <b>final</b> critical habitat for this species. Your location does not overlap the critical habitat.<br>Species profile: <a href="https://ecos.fws.gov/ecp/species/8541">https://ecos.fws.gov/ecp/species/8541</a> | Endangered |

## CRITICAL HABITATS

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

YOU ARE STILL REQUIRED TO DETERMINE IF YOUR PROJECT(S) MAY HAVE EFFECTS ON ALL ABOVE LISTED SPECIES.

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## **IPAC USER CONTACT INFORMATION**

Agency: Sequoia Ecological Consulting, Inc.

Name: Daniel Muratore

Address: 1342 Creekside Drive

City: Walnut Creek

State: CA

Zip: 94596

Email: [dmuratore@sequoiaeco.com](mailto:dmuratore@sequoiaeco.com)

Phone: 9258555500

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Martinez Bay Trail Project Phase II – NMFS Species Lists. Project occurs on the following USGS 7.5-minute quadrangle:

- Benicia – 38122-A2

Quad Name **Benicia**

Quad Number **38122-A2**

### **ESA Anadromous Fish**

SONCC Coho ESU (T) -

CCC Coho ESU (E) -

CC Chinook Salmon ESU (T) -

CVSR Chinook Salmon ESU (T) - **X**

SRWR Chinook Salmon ESU (E) - **X**

NC Steelhead DPS (T) -

CCC Steelhead DPS (T) - **X**

SCCC Steelhead DPS (T) -

SC Steelhead DPS (E) -

CCV Steelhead DPS (T) - **X**

Eulachon (T) -

sDPS Green Sturgeon (T) - **X**

### **ESA Anadromous Fish Critical Habitat**

SONCC Coho Critical Habitat -

CCC Coho Critical Habitat -

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) -

Range White Abalone (E) -

### **ESA Marine Invertebrates Critical Habitat**

Black Abalone Critical Habitat -

### **ESA Sea Turtles**

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

### **ESA Whales**

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

### **ESA Pinnipeds**

Guadalupe Fur Seal (T) -  
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 -  
MMPA Pinnipeds - **X**

## **Appendix C. Representative Photographs**



Appendix C. Representative Photographs



Natural Environment Study (Minimal Impacts)



**Photo 5.** *Elymus* sp. grassland with mixed annual grasses and teasels.



**Photo 6.** Pedestrian bridge crossing the unnamed channel occurring along the alignment.



**Photo 7.** Eucalyptus and oak – bay woodland habitats occurring near Nejedly Staging area.



**Photo 8.** Mixed ornamental palms, bay, and willow species occurring south of the pedestrian bridge.