

# MARSH CREEK ROAD BRIDGE REPLACEMENT 143 AND 145 PROJECT

## INITIAL STUDY/MITIGATED NEGATIVE DECLARATION



April 2020

## ENVIRONMENTAL CHECKLIST FORM

- 1. Project Title:**  
Marsh Creek Road Bridge Replacement Project, Bridges #28C-0143 and #28C-0145
- 2. Lead Agency Name and Address:**  
Contra Costa County Department of Conservation and Development  
30 Muir Road, Martinez, CA 94553
- 3. Contact Person and Phone Number:**  
Laura Cremin, Environmental Analyst, (925) 313-2015  
Contra Costa County Public Works Department, Environmental Services Division
- 4. Project Location:**  
The Project is located on Marsh Creek Road, southeast of Clayton, in the unincorporated Antioch/Brentwood area (Figure 1). Bridge #28C-0143 (Bridge 143) is located approximately 1.6 miles west of Deer Valley Road. The Bridge 143 Project Site and surrounding land is shown in Figure 2. Bridge #28C-0145 (Bridge 145) is approximately 3.1 miles east of Deer Valley Road and approximately 0.2 mile west of Camino Diablo. The Bridge 145 Project Site and surrounding land is shown in Figure 3.
- 5. Project Sponsor's Name and Address:**  
Contra Costa County Public Works Department  
255 Glacier Drive, Martinez, CA 94553
- 6. General Plan Designation:**  
Bridge 143: Agricultural Lands (AL)  
Bridge 145: Public and Semi-Public (PS), Parks and Recreation (PR), Watershed (WS)
- 7. Zoning:**  
Bridge 143: Agricultural Preserve (A-4), General Agriculture (A-2)  
Bridge 145: Agricultural Preserve (A-4)
- 8. Description of Project:**  
Contra Costa County Public Works Department (CCCPWD), in cooperation with the California Department of Transportation (Caltrans), plans to replace two existing bridges (Bridge 143 and Bridge 145) on Marsh Creek Road to meet current design standards (Project). The horizontal and vertical geometry for the improvements would be governed by the roadway design speed, construction staging, and hydraulic freeboard requirements for Marsh Creek. The selected design speed is 50 mph for Bridge 143 and 60 mph for Bridge 145. The design speeds are based on the posted speed limit, design standards, and speed survey data acquired in September of 2016.  
  
The Project would receive funding through the Federal Highway Administration (FHWA) Highway Bridge Program, which will be managed through Caltrans Local Assistance. Caltrans Local Assistance recommended combining the two bridge replacements under one Project. The Project lies within the East Contra Costa County Habitat Conservation Plan/Habitat Conservation

Plan (HCP/NCCP) Inventory Area. The proposed replacements for each of the bridges are described below.

Bridge 28C-0143 (Bridge 143)

The existing Bridge 143 is a single span steel-girder bridge with a reinforced concrete deck that was constructed in 1934. The curb-to-curb width is approximately 20 feet with 10 foot wide travel lanes and no appreciable shoulders. The total structure is approximately 23.3 feet wide and 40 feet long. A recently constructed water line is attached to the northwest side of the structure.

The proposed replacement for Bridge 143 would be a single span bridge (Figure 4). The bridge deck would be approximately 19.7 feet wider than the existing bridge and provide a curb-to-curb width of 40 feet, with two 12-foot travel lanes, eight-foot shoulders, and one and a half-foot wide concrete barriers, for a total width of approximately 43 feet. The length of the bridge would be approximately 40 feet longer (total length of 80 feet) to decrease the new bridge abutment heights and bridge skew. The west and east roadway approaches to the bridge would be reconstructed and would be approximately 680 feet and 1,040 feet in length, respectively. A retaining wall would be required at each corner of the bridge (four total) to hold back soil and would extend from the abutments and run parallel to the roadway embankment. The wall lengths would be varied from approximately 34 feet to 40 feet, and heights varied from approximately 12 feet to 20 feet. Only a portion of the stated height of the retaining walls would be visible above ground because they would extend approximately 5 feet to 8 feet below grade.

Bridge 143 would be replaced on a shifted alignment (approximately 45 feet to the northwest) to provide a single stage construction approach that would allow traffic to use the existing bridge during most of the construction duration while the new bridge and roadway approaches are built. Toward the end of the construction, Project traffic would be shifted to the new structure and the old bridge would be demolished, and remaining creek and roadway connection work completed.

Bridge 28C-0145 (Bridge 145)

The existing Bridge 145 is a three span steel-girder bridge with a reinforced concrete deck that was constructed in 1937. The curb-to-curb width is approximately 23 feet with 10-foot travel lanes and one and half-foot shoulders. The total structure is 25 feet wide and 60 feet long. Existing abutments from a prior roadway alignment and a gabion retaining wall are located adjacent to the north side of the bridge. There is an inactive gauging station immediately downstream of the bridge.

The proposed replacement for Bridge 145 would be a single span bridge (Figure 5). The bridge deck would be approximately 18 feet wider than the existing bridge and provide a curb-to-curb width of 40 feet, with two 12-foot travel lanes, eight-foot shoulders and one and a half-foot wide concrete barriers for a total width of approximately 43 feet. The length of the new bridge would be approximately 80 feet. The west and east roadway approaches would be reconstructed by approximately 775 feet and 620 feet in length, respectively, each direction from the new bridge. A retaining wall would be required at each corner of the bridge (four total) to hold back soil and would extend from the abutments and run parallel to the roadway embankment. The wall lengths would be varied from approximately 39 feet to 43 feet, and heights varied from approximately 16 feet to 18 feet. Only a portion of the stated height of the retaining walls would be visible above ground because they would extend approximately 5 feet to 8 feet below grade.

Bridge 145 would be replaced on a shifted alignment (approximately 48 feet to the north) to provide a single stage construction approach, similar to the approach described above for Bridge 143.

### Construction

The Project would require removal of both bridges. Work would occur in Marsh Creek. If creek flows are present, dewatering would be required according to regulatory permit conditions. Dewatering is expected to consist of a bypass pipe to ensure downstream flows are maintained and pumping of seepage from the work area if necessary. Ground disturbance would be necessary. Construction depth would vary between Project elements. The maximum depth of excavation for the Project work would be approximately 75 feet for the installation of bridge foundation piles (using drilling), approximately 10 to 15 feet of excavation for bridge abutments, and approximately five feet for general roadway work and utility relocations. Disturbed areas would be stabilized as necessary following construction.

There is not an existing drainage system within the Project, however there are existing earthen ditches along the roadway at both Bridge locations. The existing ditches would be reconstructed and additional ditches may be constructed as necessary to intercept runoff from the roadway. Bioretention facilities may be constructed to receive water from the ditches. Water dissipation pads, culverts, and inlets may be constructed. Drainage patterns in the Project area would be maintained.

Utility relocation would be necessary. At Bridge 143, approximately 7 joint poles and overhead lines and a CCWD 4-inch waterline would be relocated. At Bridge 145, approximately 8 joint poles and overhead lines would be relocated. Tree removal would be necessary, including at Bridge 143 approximately 25 trees and at Bridge 145 approximately 5 trees. Additional permanent right-of-way acquisition near the existing road right-of-way would likely be required at both bridge locations (Table 1). Temporary construction easements would also be required for access to the creek, driveway conforms, proposed staging areas, and for other construction access.

**Table 1: Anticipated Property Acquisition**

| Marsh Creek Bridge 143 |   |  |
|------------------------|---|--|
| Parcel No              | Owner   | Approximate Right-of-Way Acquisition (Acres) |
| 007-191-001            | Private Property  | 2.07   |
| 007-192-008            | Save Mount Diablo   | 0.02   |
| 007-192-007            | Private Property  | 0.62   |
| 007-192-012            | Private Property  | 0.05   |
| 007-192-002            | Private Property  | 0.17   |
| Marsh Creek Bridge 143 |   |  |
| 007-380-011            | State of California Department of Parks and Recreation            | 0.65   |
| 007-380-019            | Contra Costa County Flood Control and Water Conservation District | 1.03   |
| 007-160-014            | Contra Costa Water District                                       | 0.17   |

Staging areas have been proposed and evaluated for environmental resources. The estimated acreages of impact are conservative and may change if CCCPWD is not successful in securing rights to perform staging on private property or if the contractor desires additional areas. There are alternate areas that have been surveyed within the Project vicinity, therefore, if changes to staging areas are necessary, they are not expected to increase or result in new or different impacts. The contract documents would include the requirement to comply with any environmental constraints including applicable HCP/NCCP requirements and fees resulting from changes to staging areas.

CCCPWD will conduct community outreach by meeting individually with each property owner whose parcel is adjacent to the Project Site (as listed in Table 1 above) to discuss the Project and its impacts. There have been multiple meetings about the Project with the State of California Department of Parks and Recreation and with Contra Costa County Flood Control and Water Conservation District.

No full detours are anticipated. The bridges would be constructed off the existing alignments. Temporary traffic controls may be necessary for certain operations but with a minimum of two 10-foot wide traffic lanes, one for each direction, would be maintained during construction with only brief lane closures. Standard traffic control measures would be employed, and emergency vehicles and private property owners will have access at all times.

Standard construction equipment would be used, including but not limited to: excavators, graders, scrapers, loaders, sweepers/scrubbers, plate compactors, vibratory compactors, rollers, backhoes, cranes, drill rigs, casing oscillator, concrete pump trucks, generators, water trucks, storage/sedimentation tanks, and pavers. Portable construction trailers (portable office structure) would also be placed at each site. Construction activities would be generally limited to the hours between 7:00 a.m. and 6:00 p.m.

It is anticipated that both bridges would be constructed at the same time. Construction is expected to begin in May of 2022 and take approximately 18 months to complete.

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

Marsh Creek Road is categorized as a minor arterial road. The road serves as an alternate route from the East Bay to State Route 4 (SR-4) and provides access to local residential properties. At both bridge locations, Marsh Creek Road traverses a rural, low-density residential ranch land use. The Project vicinity is generally hilly and rural with large amounts of surrounding open cattle grazing land and fallow farm fields. Both bridges cross Marsh Creek as the creek meanders naturally without apparent artificial channelization.

Bridge 143 is located approximately 1,400 feet southwest of Clayton Palms Community housing and three single-family residences. Bridge 145 is surrounded by Marsh Creek State Park and land owned by the Contra Costa Water District and Contra Costa County Flood Control District.

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

- California Department of Transportation (Caltrans) under the aegis of the Federal Highways Administration
- California Department of Fish and Wildlife (Lake and Streambed Alteration Program)
- U.S. Army Corps of Engineers (Section 404 Clean Water Act permit requirements)
- Central Valley Regional Water Quality Control Board (Section 401 Clean Water Act permit requirements)
- State Water Resources Control Board (Section 402 Clean Water Act- National Pollution Discharge Elimination System General Permit for Storm Water Discharges Associated with Construction and Land Disturbance Activities)
- Contra Costa County Conservancy (Habitat and Conservation Plan/Natural Community Conservation Plan permit requirements)
- Contra Costa County Flood Control and Water Conservation District (Real estate agreement)

- California State Parks (Real estate agreement)
- Contra Costa Water District (Real estate agreement and utility relocation agreement)
- PG&E (Utility relocation agreement)
- AT&T (Utility relocation agreement)

**11. Have California Native American tribes traditionally and culturally affiliated with the Project area requested consultation pursuant to Public Resources Code section 21080.3.1? If so, is there a plan for consultation that includes, for example, the determination of significance of impacts to tribal cultural resources, procedures regarding confidentiality, etc.?**

Yes, Wilton Rancheria previously requested to be notified of Projects within Contra Costa County under AB 52. CCCPWD conducted outreach to initiate consultation on September 15, 2015 (refer to Section XVIII Tribal Cultural Resources for the record of contacts). No request for consultation nor information about potential resources was received from the tribe. However, consultation with Wilton Rancheria is ongoing through Section 106 National Historic Preservation Act.

### 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"/> Aesthetics                      | <input type="checkbox"/> Agriculture & Forestry Resources | <input type="checkbox"/> Air Quality                                   |
| <input checked="" type="checkbox"/> Biological Resources | <input checked="" type="checkbox"/> Cultural Resources    | <input type="checkbox"/> Energy  |
| <input checked="" type="checkbox"/> Geology/Soils        | <input type="checkbox"/> Greenhouse Gas Emissions         | <input checked="" type="checkbox"/> Hazards & Hazardous Materials      |
| <input type="checkbox"/> Hydrology/Water Quality         | <input type="checkbox"/> Land Use/Planning                | <input type="checkbox"/> Mineral Resources                             |
| <input checked="" type="checkbox"/> Noise                | <input type="checkbox"/> Population/Housing               | <input type="checkbox"/> Public Services                               |
| <input type="checkbox"/> Recreation                      | <input type="checkbox"/> Transportation                   | <input checked="" type="checkbox"/> Tribal Cultural Resources          |
| <input type="checkbox"/> Utilities/Service Systems       | <input checked="" type="checkbox"/> Wildfire              | <input checked="" type="checkbox"/> Mandatory Findings of Significance |

### Determination. (To be completed by the Lead Agency)

On the basis of this initial evaluation:

- ☐ I find that the proposed Project COULD NOT have a significant effect on the environment, and a NEGATIVE DECLARATION will be prepared
- ☒ I find that although the proposed Project could have a significant effect on the environment, there will not be a significant effect in this case because revisions in the Project have been made by or agreed to by the Project proponent. A MITIGATED NEGATIVE DECLARATION will be prepared.
- ☐ I find that the proposed Project MAY have a significant effect on the environment, and an ENVIRONMENTAL IMPACT REPORT is required.
- ☐ I find that the proposed Project MAY have a "potentially significant impact" or "potentially significant unless mitigated" impact on the environment, but at least one effect 1) has been adequately analyzed in an earlier document pursuant to applicable legal standards, and 2) has been addressed by mitigation measures based on the earlier analysis as described on attached sheets. An ENVIRONMENTAL IMPACT REPORT is required, but it must analyze only the effects that remain to be addressed.
- ☐ I find that although the proposed Project could have a significant effect on the environment, because all potentially significant effects (a) have been analyzed adequately in an earlier EIR or NEGATIVE DECLARATION pursuant to applicable standards, and b) have been avoided or mitigated pursuant to that earlier EIR or NEGATIVE DECLARATION, including revisions or mitigations measures that are imposed upon the proposed Project, nothing further is required.

*Telma Moreira*

Telma Moreira  
Principal Planner  
Contra Costa County Department of Conservation

*4/14/2020*

Date

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## EVALUATION OF ENVIRONMENTAL IMPACTS:

| I. AESTHETICS   | Potentially<br>Significant<br>Impact | Less Than<br>Significant<br>with<br>Mitigation<br>Incorporated | Less Than<br>Significant<br>Impact  | No<br>Impact             |
|---|--------------------------------------|--|-------------------------------------|--------------------------|
| <i>Except as provided in the Public Resources Code Section 21099, would the project:</i>  |                                      |  |                                     |                          |
| a) Have a substantial adverse effect on a scenic vista?   | <input type="checkbox"/>             | <input type="checkbox"/>                                       | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| 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 checked="" type="checkbox"/> | <input type="checkbox"/> |
| c) In non-urbanized area, substantially degrade the existing visual character or quality public views of the site and its surroundings? (Public views are those that are experienced from publicly accessible vantage point). If the project is in an urbanized area, would the project conflict with applicable zoning and other regulations governing scenic quality? | <input type="checkbox"/>             | <input type="checkbox"/>                                       | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| 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 checked="" type="checkbox"/> | <input type="checkbox"/> |

a) *Have a substantial adverse effect on a scenic vista? (Less Than Significant Impact)*

According to the Contra Costa County General Plan 2005-2020 (General Plan), the County has two main scenic resources in addition to many localized scenic features: (1) scenic ridges, hillsides, and rock outcroppings; and (2) the San Francisco Bay/Delta estuary system. Throughout much of the County, there are significant topographic variations in the landscape. The largest and most prominent of these are the hills that form the backdrop for much of the developed portions of the area. Views of these major ridgelines help to reinforce the rural feeling of the County's rapidly growing communities. These major ridges provide an important balance to current and planned development (Contra Costa County 2005g).

The Project would not have a substantial adverse effect on a scenic vista. A scenic ridgeline identified on Figure 9-1 of the General Plan is located to the west of both bridges. Views of this ridgeline are obscured at Bridge 143 due to existing topography and vegetation while views of the ridgeline from Bridge 145 are obscured by trees and vegetation. Moreover, the Project is a bridge replacement project that would not block or change views in any direction. Therefore, the Project would have a less than significant impact.

b) *Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a State scenic highway? (Less Than Significant Impact)*

Marsh Creek Road, including both bridges, is identified as a scenic route on Figure 5-4 of the General Plan (Contra Costa County 2005a); however, the project is not located within a state scenic highway (Caltrans

2011) and the bridges do not exhibit scenic characteristics such as distinctive architecture. Views along the roadway are generally rural with little development and consist of rolling hills covered in varying degrees by oaks and other trees. Layers of rocky material are visible in some of the hillsides. Marsh Creek crosses under both bridges and can be seen from the roadway.

The removal of approximately 30 trees throughout the Project would be necessary to expand the footprint of the new bridges. At Bridge 143, a rock outcropping as defined by the HCP/NCCP is expected to be permanently impacted including those trees in or around the rock outcrop. Tree and rock outcrop removal would be limited to only that which is necessary near the footprint of the new bridges.

When the roadway was initially constructed in 1934, it bisected a rock outcropping feature to form a segment to the north and a segment to the south of the existing roadway. The alignment of the new roadway will be shifted to the north and is expected to impact 0.25-acre of the north segment of rock outcropping. The impacted area is located on a downslope from the roadway and consists of boulders interspersed among a cluster of mature oak trees. Boulder and tree removal would be limited to only that which is necessary near the footprint of the new roadway. Because the rock outcropping surrounds the roadway, it cannot be completely avoided. The selected alignment, however, minimizes the area of impacted rock outcropping relative to other potential alignments.

The rock outcropping itself is not readily visible to the traveling public because of its proximity downslope of the road, however, the trees are visible from the road. Viewers most familiar to the area may notice that trees have been removed, and some may notice the removal of the boulders that form the rock outcropping. Although areas near the bridges would have fewer trees and would impact a rock outcrop, there are numerous trees in the area and the removal would not make a substantial difference to the scenic quality of the area. The most visible layers of rock in the hillsides would not be impacted. The area would continue to be a rural landscape of rolling hills and trees. No other historic buildings, or other potentially scenic resources would be impacted by the Project. Therefore, the Project would have a less than significant impact.

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

The Project is located in a non-urbanized area and will cause very little visual change to the existing roadway and surrounding area because of the limited scope and nature of the Project. The Project is limited to the replacement of two existing bridges on Marsh Creek Road. The Project would not remove elements that define the area, or introduce buildings, structures or other features that would not be compatible with the character of the area. Some tree and vegetation removal may be necessary; however, as described above, it would not affect the overall appearance or character of the area. While each of the bridges and the alignments of the roadways leading up to each bridge would be different than the existing conditions, they would not substantially degrade the visual character or quality of the sites or surroundings. The visual character of the area would continue to be that of a road winding through rolling hills and a rural landscape. Therefore, the Project would have a less than significant impact.

- d) *Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area? (**Less Than Significant Impact**)*

The Project would not create a new permanent source of light or glare that would adversely affect day or nighttime views. No reflective surfaces or lights would be installed by the Project. Construction is expected to take place during the daylight hours. If unforeseen circumstances necessitate night work, it would be temporary and require approval by the Resident Engineer who will be available to address any concerns. Therefore, the Project would have a less than significant impact.

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## II. AGRICULTURE AND FORESTRY RESOURCES

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

Would the project:

- |    |   |                          |                          |                                     |                                     |
|----|---|--------------------------|--------------------------|-------------------------------------|-------------------------------------|
| a) | Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on 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 checked="" type="checkbox"/> | <input type="checkbox"/>            |
| b) | Conflict with existing zoning for agricultural use, or a Williamson Act contract?   | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/>            |
| c) | Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g)), timberland (as defined by Public Resources Code section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104(g))? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/>            | <input checked="" type="checkbox"/> |
| d) | Result in the loss of forest land or conversion of forest land to non-forest use?   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/>            | <input checked="" type="checkbox"/> |
| e) | Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use or conversion of forest land to non-forest use?   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/>            | <input checked="" type="checkbox"/> |

- 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 a non-agricultural use? (Less Than Significant Impact)*

The Project may require take of farmland adjacent to the road shoulder to accommodate the new alignments and bridge replacements. At Bridge 143 there would be approximately 2.93 acres of right-of-way acquisition and at Bridge 145 there would be approximately 1.85 acres of right-of-way acquisition. The estimated acreages of impact are conservative and may change, but are not expected to increase or result in new or different impacts. These acquisitions would be slivers along the roadway at the perimeter of farmland. Lands within and surrounding the Project Sites are not classified as Prime Farmland, Unique Farmland, or Farmland of Statewide Importance, as designated by the Farmland Mapping and Monitoring Program (FMMP) of the California Resources Agency (DOC 2016). As such, the Project would not convert these farmland types to a non-agricultural use. However, the land surrounding the Project Sites are designated as Farmland of Local Importance and Grazing Land according to the FMMP. Farmland of Local Importance is land of importance to the local economy, as determined by each county's local advisory committee and Board of Supervisors. Grazing Land has existing vegetation suited to the grazing of livestock.

Given the proximity of the impact (sliver takes along the road right-of-way) and that impact areas are small relative to overall farmland acreages, the viability of the farmland would not be affected nor would the conversion affect the viability of the agricultural use in the area. Further, as described below in Section II.b, the Project is consistent with General Plan policies regarding farmland in Contra Costa County. Therefore, the Project would have a less than significant impact.

*b) Conflict with existing zoning for agricultural use, or a Williamson Act contract? (**Less Than Significant Impact**)*

According to the Contra Costa County zoning code, the Project Site is located within Land Use Districts General Agriculture (A-2) and Agricultural Preserve (A-4). The General Plan Conservation Element contains many goals and policies for agricultural resources. These goals and policies are intended to protect agricultural land and primarily address conversion of agricultural land through urban development. Additionally, some policies stress the economic importance of agriculture, strengthen the availability of agriculture support services and infrastructure, and facilitate cooperation between farmers and their urban neighbors. The Project is limited to the replacement of existing bridges with bridges that meet current design standards. As such, the Project does not introduce land uses that could encourage land use inconsistent with zoning in the area or encourage conversion of agricultural land. Further, the Project supports surrounding land use by maintaining and bringing infrastructure up to current standards. There is no land within the Project Sites listed under the Williamson Act according to the Department of Conservation and the proposed Project would not result in any impacts to lands covered by a Williamson Act contract. Therefore, the Project would have a less than significant impact.

*c) Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g)), timberland (as defined by Public Resources Code section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104(g))? (**No Impact**)*

There is no forestland, or land zoned for timberland production in the Project vicinity. These conditions preclude impacts to forestland or timberland. Therefore, the Project would have no impact.

*d) Result in the loss of forest land or conversion of forest land to non-forest use? (**No Impact**)*

The Project would not result in the loss of forest land or conversion of forest land to non-forest use because forest land is not present within or adjacent to the Project Sites. Therefore, the Project would have no impact.

*e) Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use or conversion of forest land to non-forest use? (**No Impact**)*

The Project involves the replacement of two existing bridges and would not increase the capacity of the roadway, facilitate growth, or encourage development of other land uses that could indirectly result in the conversion of Farmland. Therefore, the Project would have no impact.

### III. AIR QUALITY

|   | Potentially<br>Significant<br>Impact | Less Than<br>Significant<br>with<br>Mitigation<br>Incorporated | Less Than<br>Significant<br>Impact  | No<br>Impact             |
|---|--------------------------------------|--|-------------------------------------|--------------------------|
| Would the project:  |                                      |  |                                     |                          |
| a) Conflict with or obstruct implementation of the applicable air quality plan?   | <input type="checkbox"/>             | <input type="checkbox"/>                                       | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| b) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed the quantitative thresholds for ozone precursors)? | <input type="checkbox"/>             | <input type="checkbox"/>                                       | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| c) Expose sensitive receptors to substantial pollutant concentrations?  | <input type="checkbox"/>             | <input type="checkbox"/>                                       | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| d) Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?   | <input type="checkbox"/>             | <input type="checkbox"/>                                       | <input checked="" type="checkbox"/> | <input type="checkbox"/> |

a) *Conflict with or obstruct implementation of the applicable air quality plan? (Less Than Significant Impact)*

Air quality plans describe air pollution control strategies to be implemented by a city, county, or region. The primary purpose of an air quality plan is to bring an area that does not attain federal and state air quality standards into compliance with the requirements of the Federal Clean Air Act and California Clean Air Act requirements. The Bay Area Air Quality Management District (BAAQMD) is responsible for developing and implementing air quality plans to address the State and federal ambient air quality standards in the San Francisco Bay Area. The air quality plan that is applicable to the proposed Project is the BAAQMD's 2017 Clean Air Plan (Clean Air Plan), which was adopted April 19, 2017 (BAAQMD 2017a). This plan provides a regional strategy to attain state and federal air quality standards by reducing ozone, particulate matter (PM), and toxic air contaminants (TACs).

The BAAQMD considers a project to be consistent with air quality plans prepared for the region if there is substantial evidence that the project: 1) supports the goals of the Clean Air Plan; 2) includes applicable control measures from the Clean Air Plan; and 3) would not disrupt or hinder implementation of any control measures from the Clean Air Plan. An evaluation of the consistency of the Project with the Clean Air Plan is provided below.

**Clean Air Plan Goals.** The primary goals of the Clean Air Plan are to attain air quality standards; reduce population exposure to air pollutants and protect public health in the Bay Area; and reduce greenhouse gas emissions and protect the climate. The Project would not cause significant air quality or greenhouse gas emissions impacts and would not increase exposure of the population to air pollutants (see analysis that follows in Sections III.b and VIII.a). The Project would not hinder the region from attainment of the goals outlined in the Clean Air Plan. Therefore, the Project supports the goals of the Clean Air Plan.

**Clean Air Plan Control Measures.** The control strategies of the Clean Air Plan include measures in the following categories: stationary sources measures, mobile source measures, transportation control measures, land use and local impact measures, and climate measures. The control strategies applicable to the Project are the Mobile Source and Transportation Control Measures.

*Mobile Source and Transportation Control Measures.* The BAAQMD identifies mobile source and transportation control measures as part of the Clean Air Plan to reduce ozone precursor emissions from stationary, area, mobile, and transportation sources. The transportation control measures are applicable to the Project and are designed to reduce emissions from motor vehicles by reducing vehicle trips and vehicle miles traveled (VMT) in addition to vehicle idling and traffic congestion. Any changes to regional VMT and air quality emissions with respect to the Project have been accounted for in current regional emissions and transportation planning. Because the Project would replace two existing bridges with new bridges that would have the same traffic carrying capacity, the intensity of operational emissions has been accounted for in the air quality plan. Therefore, the Project would not conflict with the identified transportation and mobile source control measures of the Clean Air Plan.

The plan includes incentives for construction equipment upgrades and other strategies to reduce emissions of construction vehicles on a plan level. On the Project level, Project specifications require compliance with emissions reduction regulations being mandated by the California Air Resources Board.

**Clean Air Plan Implementation.** As discussed above, implementation of the Project would not disrupt or hinder implementation of applicable measures outlined in the Clean Air Plan, including stationary sources measures, mobile source measures, transportation control measures, land use and local impact measures, and climate measures. Therefore, the Project would not hinder or disrupt implementation of any control measures from the Clean Air Plan.

The Project would not conflict with or obstruct implementation of any control measures from the Clean Air Plan. Therefore, the Project would have a less than significant impact.

- b) *Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed the quantitative thresholds for ozone precursors)? (Less Than Significant Impact)*

The Clean Air Act requires the United States Environmental Protection Agency (EPA) to set National Ambient Air Quality Standards for six common air pollutants known as criteria air pollutants: particle pollution (often referred to as particulate matter or PM), ground-level ozone, carbon monoxide, sulfur oxides, nitrogen oxides, and lead. The Bay Area is under nonattainment status for State 1-hour and 8-hour ozone standards (BAAQMD 2018). In addition, the Bay Area was designated as a nonattainment area for the federal 8-hour ozone standard. The Bay Area is also considered a nonattainment area for PM<sub>2.5</sub> at the state level and an attainment area at the federal level.

The BAAQMD periodically prepares and updates plans to establish rules and regulations for various emissions sources. The purpose of Appendix D of BAAQMD's May 2017 CEQA Air Quality Guidelines is to offer procedures to evaluate potential air quality impacts (BAAQMD 2017b). The significance criteria from the guidelines were applied to evaluate construction-related impacts associated with the Project.

## Construction Emissions

Project construction would result in the temporary generation of reactive organic gases (ROG), nitrogen oxides (NO<sub>x</sub>), PM<sub>10</sub>, and PM<sub>2.5</sub> emissions associated primarily from off-road construction equipment, on-road motor vehicles, soil excavation, and material transport. ROG and NO<sub>x</sub> emissions are primarily associated with mobile equipment exhaust. Fugitive dust emissions are primarily associated with site preparation and vary as a function of parameters such as soil silt content, soil moisture, wind speed, acreage of disturbance area, and miles traveled by construction vehicles on- and off-site.

## Operational Emissions

Post-construction regional operational emissions would be expected to remain the same as existing conditions. The Project proposes to replace existing bridges to meet current design standards, and traffic volumes are not anticipated to increase as the carrying capacity of the bridges would remain the same. Thus, the Project would not generate new daily trips and therefore would not substantially increase emissions from the use of on-road motor vehicles or off-road equipment relative to existing conditions. Therefore, operational emissions would not violate an ambient air quality standard or contribute substantially to an existing violation. This impact would be less than significant.

## Construction Impacts

Construction-related emissions associated with typical construction activities were modeled using the California Emissions Estimator Model (CalEEMod), Version 2016.3.2. CalEEMod allows the user to enter Project-specific construction information, such as types, number, and horsepower of construction equipment, and number and length of off-site motor vehicle trips. Project construction is anticipated to last 18 months and would require removal and replacement of two bridges. Although the schedule of specific Project phases could vary, the analysis assumed construction conditions that would generate emissions at a relatively high level with respect to actual construction practices. For example, the evaluation assumed that both bridges would be replaced at the same time (resulting in an average daily emission level corresponding with the most intense construction activity); in practice, the contractor may stage their crew to perform work at only one site on any given day. The analysis assumed approximately 10 haul truck trips per day would be required during demolition of Bridge 143 and approximately 16 haul truck trips per day during demolition of Bridge 145. For purposes of estimating the most intense construction activity, the maximum number of construction workers on site for each bridge was assumed to be 30 workers, or a maximum of 60 workers per day for both sites combined. The total criteria pollutant construction emissions for the Project are presented in Table 1.

**Table 1: Construction-Related Criteria Pollutant Emissions**

| Emissions Sources  | ROG  | NO <sub>x</sub> | PM <sub>10</sub> Exhaust | PM <sub>2.5</sub> Exhaust |
|--|------|-----------------|--------------------------|---------------------------|
| Total Emissions (tons)   | 0.82 | 8.54            | 0.36                     | 0.33                      |
| Average Maximum Daily Emissions (lbs/day) <sup>a</sup>   | 4.16 | 43.15           | 1.83                     | 1.68                      |
| Thresholds of Significance <sup>b</sup>  | 54   | 54              | 82                       | 54                        |
| Exceeds Thresholds   | No   | No              | No                       | No                        |
| Notes:<br>(a) Average Maximum Daily Emissions were calculated based on 22 working days per month over an 18 month construction period and are based on the combined total construction emissions for both bridges.<br>(b) Thresholds from Table 2-1 of the BAAQMD CEQA Air Quality Guidelines.<br>ROG = reactive organic gases; NO <sub>x</sub> = oxides of nitrogen; PM <sub>10</sub> = particulate matter with aerodynamic diameter less than 10 microns; PM <sub>2.5</sub> = particulate matter with aerodynamic diameter less than 2.5 microns; lbs/day = pounds per day |      |                 |                          |                           |

As shown in Table 1, Project construction would not exceed applicable mass emission thresholds of significance. Although the Project does not exceed the thresholds of significance, the BAAQMD has established standard measures for reducing fugitive dust emissions (PM<sub>10</sub>) that are recommended for all



projects in Table 8-2 of the CEQA Air Quality Guidelines. Implementation of these measures would further reduce fugitive dust emissions from construction activities.

Consistent with the Measures suggested by the BAAQMD, the Project specifications will require the Contractor to implement the following best management practices (BMPs) for air pollution control:

- 1) All exposed surfaces (e.g., parking areas, staging areas, soil piles, graded areas, and unpaved access roads) shall be watered two times per day.
- 2) All haul trucks transporting soil, sand, or other loose material off-site shall be covered.
- 3) All visible mud or dirt tracked-out onto adjacent public roads shall be removed using wet power vacuum street sweepers at least once per day. The use of dry power sweeping is prohibited.
- 4) All vehicle speeds on unpaved roads shall be limited to 15 mph.
- 5) All roadways, driveways, and sidewalks to be paved shall be completed as soon as possible.
- 6) Idling times shall be minimized either by shutting equipment off when not in use or reducing the maximum idling time to 5 minutes (as required by the California airborne toxics control measure Title 13, Section 2485 of California Code of Regulations [CCR]). Clear signage shall be provided for construction workers at all access points.
- 7) All construction equipment shall be maintained and properly tuned in accordance with manufacturer's specifications. All equipment shall be checked by a certified mechanic and determined to be running in proper condition prior to operation.
- 8) A publicly visible sign shall be posted with the telephone number and contact information for the designated on-site construction manager available to receive and respond to dust complaints. This person shall report all complaints to CCCPWD and take immediate corrective action as soon as practical but not more than 48 hours after the complaint is received. The BAAQMD's phone number shall also be visible to ensure compliance with applicable regulations.

As described in Section IX, Hazardous Materials, each existing bridge structure was suspected to contain lead-based paint (LBP) and potential asbestos-containing construction materials (ACM). Therefore, Mitigation Measure HAZ-1 will be implemented.

CEQA defines a cumulative impact as two or more individual effects, which when considered together, are considerable or which compound or increase other environmental impacts. According to the BAAQMD, air pollution is largely a cumulative impact and no single project is sufficient in size itself to result in nonattainment of ambient air quality standards. In developing the thresholds of significance for air pollutants used in the analysis above, the BAAQMD considered the emission levels for which a project's individual emissions would be cumulatively considerable. The BAAQMD CEQA Air Quality Guidelines (2017) indicate that if a project exceeds the identified significance thresholds, its emissions would be cumulatively considerable, resulting in significant adverse air quality impacts to the region's existing air quality conditions. Therefore, if a project's daily average or annual emissions of operational related criteria air pollutants exceed any applicable threshold established by the BAAQMD, the proposed Project would result in a cumulatively significant impact. As stated above, the Project would not result in operational impacts. As such, the Project would not exceed established thresholds for regional emissions or make a cumulatively considerable contribution to regional air quality impacts. Therefore, the Project would have a less than significant impact.

c) *Expose sensitive receptors to substantial pollutant concentrations? (Less Than Significant Impact)*

Some populations are especially sensitive to air pollutant emissions and should be given special consideration when evaluating air quality impacts from projects. Sensitive receptors for air pollution are generally considered children less than 14 years of age, the elderly over 65 years of age, athletes, and individuals with cardiovascular and chronic respiratory diseases. Air quality regulators typically define sensitive receptors as residences, hospitals, and schools. Sensitive receptors in the vicinity of the Project Sites are as follows:

- A residential neighborhood approximately 1,400 feet northeast of Bridge 143 and 690 feet from the closest potential staging area.
- A residence approximately 1,000 feet northeast of Bridge 143 and 500 feet from the closest potential staging area.
- A residence approximately 700 feet east of Bridge 143 and 630 feet from the closest potential staging area.
- A residence approximately 1,100 feet southwest of Bridge 143 and 450 feet from the closest potential staging area.

Residential areas are considered sensitive to air pollution because residents (including children and the elderly) tend to be at home for extended periods of time, resulting in sustained exposure to pollutants present. The greatest potential for toxic air contaminant (TAC) emissions would be related to diesel PM emissions associated with heavy-duty construction equipment activity. The Office of Environmental Health Hazard Assessment (OEHHA) developed a Guidance Manual for the Preparation of Health Risk Assessments. According to OEHHA methodology, health effects from carcinogenic TACs are usually described in terms of individual cancer risk, which is based on a 30-year lifetime exposure to TACs. Construction activities are anticipated to last approximately 18 months and would cease following completion of the Project. Therefore, the total exposure period for construction activities would be five percent of the total exposure period used for typical residential health risk calculations (i.e. 30 years). Due to the buffer distance to the nearest sensitive receptors and the highly dispersive nature of diesel PM emissions, Project construction would not exceed the BAAQMD mass emissions thresholds. Therefore, the Project would not expose sensitive receptors to substantial construction TAC concentrations. Accordingly, air quality impacts on sensitive receptors during construction would be less than significant.

### **Carbon Monoxide Hotspots**

In general, carbon monoxide (CO) has the potential to exceed the California and national standards in concentration at congested roadway intersections. A CO hotspot occurs when the ambient concentrations of CO exceed these standards. However, advances in engine and emission control technology, as well as drivers' use of more efficient vehicles and low or no emission vehicles has significantly decreased the occurrence or potential for CO exceedances. The San Francisco Bay Area is in attainment for the NAAQS and CAAQS for CO concentrations. According to the Caltrans Transportation Project-Level Carbon Monoxide Protocol, a project is likely to worsen air quality and require further analysis if: a) The Project significantly increases the percentage of vehicles operating in cold start mode; b) the project significantly increases traffic volumes; and c) the project worsens traffic flow. The procedures of the CO Protocol are used to determine the level of analysis, if any, required for the Project. According to the CO protocol, if the project is included in 40 Code of Federal Regulations (CFR) 93.126, the proposed Project is exempt from all emissions analyses to determine conformity of federal actions to state or federal implementation plans. Per 40 CFR 93.126, projects that widen narrow pavements or reconstruct bridges, with no additional travel lanes, would be exempt from the requirement to determine conformity. As such, because the Project

proposes to replace existing bridges to meet current design and safety standards, and the carrying capacity of the bridges would remain the same as existing conditions, the Project would be exempt and no further localized hotspot or regional analysis is required.

### Mobile Source Air Toxics

The EPA regulates TACs, also known as hazardous air pollutants. The Clean Air Act identified 188 TACs. EPA has assessed this expansive list of toxics and identified a group of 21 TACs as Mobile Source Air Toxics (MSATs). MSATs are compounds emitted from highway vehicles and non-road equipment. Some toxic compounds are present in fuel and are emitted to the air when the fuel evaporates or passes through the engine unburned. Other toxics are emitted from the incomplete combustion of fuels or as secondary combustion products. EPA has issued a number of regulations that will dramatically decrease MSATs through cleaner fuels and cleaner engines. According to a Federal Highway Administration analysis, even if the VMT number increases by 64%, reductions of 57% to 87% in MSATs are projected from 2000 to 2020.

Technical shortcomings of emissions and dispersion models and uncertain science with respect to health effects prevent meaningful or reliable estimates of MSAT emissions and effects for this Project. However, even though reliable methods do not exist to accurately estimate the health impacts of MSATs at the Project level, it is possible to qualitatively assess the levels of future MSAT emissions under the Project.

The amount of MSATs emitted would be proportional to the VMT for the “build” and “no build” scenarios, assuming that other variables such as fleet mix are the same. FHWA has developed a tiered approach with three categories for analyzing MSATs in NEPA documents, depending on specific project circumstances, including Category 1, no analysis for projects with no potential for meaningful MSAT effects. Criteria for Category 1 projects include projects exempt under the Clean Air Act conformity rule under 40 CFR 93.126; or other projects with no meaningful impacts on traffic volumes or vehicle mix. Since the Project is exempt under 40 CFR 93.126 and operation of the Project would be generally similar to existing conditions, the Project meets the Category 1 criteria for projects with no potential for meaningful MSAT effects.

Due to the short duration of the construction period and the dispersion of Project construction emissions, sensitive receptors are not expected to be exposed to substantial pollutant concentrations. Implementation of the air pollution control BMPs listed in Section III.b, which is consistent with BAAQMD guidelines, would further reduce health risks from construction emissions. Therefore, the Project would have a less than significant impact.

d) *Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people? (**Less Than Significant Impact**)*

The occurrence and severity of odor impacts depend on numerous factors, including the nature, frequency, and intensity of the source; wind speed and direction; and the presence of sensitive receptors. While offensive odors rarely cause direct physical harm, they can still be very unpleasant, leading to considerable distress and often generating citizen complaints to local governments and regulatory agencies. Projects with the potential to frequently expose individuals to objectionable odors are deemed to have a significant impact. Typical facilities that generate odors include wastewater treatment facilities, sanitary landfills, composting facilities, petroleum refineries, chemical manufacturing plants, and food processing facilities.

Operation of the Project would not add any new odor sources beyond existing conditions. Construction activities associated with the Project could result in short-term odor emissions from construction equipment exhaust and asphalt paving activities. However, due to the distance to the nearest sensitive receptors and

the highly diffusive properties of construction exhaust, nearby receptors would not be affected by odors associated with Project construction. The Project would utilize typical construction techniques, and the odors would be typical of most construction sites and temporary in nature. As such, the Project would not result in emissions which lead to odors and would not adversely affect a substantial number of people. Odors would be further reduced with implementation of the BMPs listed in Section III.b. Therefore, the Project would have a less than significant impact.

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#### IV. BIOLOGICAL RESOURCES

|  | Potentially<br>Significant<br>Impact | Less Than<br>Significant<br>with<br>Mitigation<br>Incorporated | Less Than<br>Significant<br>Impact  | No<br>Impact             |
|--|--------------------------------------|--|-------------------------------------|--------------------------|
| <hr/> 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 checked="" type="checkbox"/>                            | <input type="checkbox"/>            | <input type="checkbox"/> |
| b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Game or US Fish and Wildlife Service?   | <input type="checkbox"/>             | <input checked="" type="checkbox"/>                            | <input type="checkbox"/>            | <input type="checkbox"/> |
| c) Have a substantial adverse effect on state or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?   | <input type="checkbox"/>             | <input checked="" type="checkbox"/>                            | <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 checked="" type="checkbox"/> | <input type="checkbox"/> |
| 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 checked="" type="checkbox"/> | <input type="checkbox"/> |
| 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 checked="" type="checkbox"/>                            | <input type="checkbox"/>            | <input type="checkbox"/> |

- 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? (Less Than Significant with Mitigation Incorporated)*

The following analysis is based on the Natural Environment Study (NES) and HCP/NCCP Planning Survey Report prepared for the Project in 2018 by CCCPWD with the assistance of AECOM (AECOM 2018c). As part of the study, AECOM conducted background review of literature and databases, reconnaissance-level field surveys, and a delineation of potential jurisdictional areas. Because the exact extent of the new bridge work was not available at the time of the biological assessment, a conservative area of extent identified as

the Area of Potential Effects was used to analyze potential impacts. The Biological Study Area (BSA) represents the Area of Potential Effects and a 250-foot buffer. At Bridge 143, predominant vegetation types in the area include oak woodland, riparian woodland, and annual grassland. At Bridge 145, predominant vegetation types in the area include oak woodland, non-native woodland (walnut orchard), and annual grassland. These vegetation types are described below and summarized in Table 2.

- **Annual Grassland.** The grassland communities in the BSA primarily are dominated by non-native annual species, but also include some native annuals and perennials. Non-natives, such as wild oat (*Avena fatua*), Italian thistle (*Carduus pycnocephalus*), and bristly ox-tongue (*Helminthotheca echinoides*) generally dominate the grassland in the BSA. Several native plants also are common in the grassland, including several fiddleneck species (*Amsinckia* spp.), common gumplant (*Grindelia camporum*), spikeweed (*Centromadia fitchii*), and vinegarweed (*Trichostema lanceolatum*).
- **Oak Woodland.** Oak woodland habitat occurs in the BSA at both Bridge 143 and Bridge 145. Oak woodland in the BSA primarily is dominated by coast live oak (*Quercus agrifolia*) and valley oak (*Quercus lobata*). At the Bridge 145 site BSA, the oak woodland is a restoration site with planted valley oak and coast live oak trees. The understory in the oak woodland community is similar to the vegetation found in the annual grassland. At the Bridge 143 site in the BSA, a small rock outcropping is in the oak woodland south of Marsh Creek Road and east of Marsh Creek.
- **Riparian Woodland.** Riparian woodland habitat occurs in the BSA at Bridge 143 and Bridge 145. Riparian woodland with similar dominant species is found along the edges of Marsh Creek at both bridge sites. Dominant canopy species include Fremont cottonwood (*Populus fremontii* ssp. *fremontii*), California sycamore (*Platanus racemosa*), arroyo willow (*Salix lasiolepis*), and California buckeye (*Aesculus californica*). Mulefat (*Baccharis salicifolia*), wild roses (*Rosa* sp.) and tree tobacco (*Nicotiana glauca*) dominate the shrub layer in places. Bermuda grass (*Cynodon dactylon*) dominates much of the understory, particularly in heavily grazed areas at the Bridge 143 site. A mix of natives and non-natives, including several rushes (*Juncus* spp.), mugwort (*Artemisia douglasiana*), swamp pricklegum (*Crypsis schoenoides*), and povertyweed (*Iva axillaris*) also are common in the riparian woodland understory.
- **Chaparral/Scrub.** Chaparral/scrub habitat is present in the Bridge 143 BSA, consisting of a narrow band on a vertical rock outcrop face above the roadway at the northeastern end of the BSA and a narrow band adjacent to the roadway on the northwestern end of the BSA. It is dominated by California sagebrush (*Artemisia californica*). This area has some native species not found elsewhere in the BSA, including several clarkias (*Clarkia* spp.), bird's eyes (*Gilia tricolor* ssp. *diffusa*), and California matchweed (*Gutierrezia californica*).
- **Seasonal Wetland.** Two seasonal wetland features are located in the BSA, one feature on the western side of Bridge 143 and one feature on the southwestern side of Bridge 145. The seasonal wetland within the Bridge 143 BSA is approximately 92 feet long by 52 feet wide, covering 0.079 acre. This seasonal wetland was observed to contain water from December 16, 2016 to at least April 21, 2017. The seasonal wetland within the Bridge 145 BSA is approximately 60 feet long by 18 feet wide, covering 0.024 acre. This seasonal wetland was observed to contain water on March 30 and April 21, 2017.

**Table 2: Potential Temporary and Permanent Impacts by Land Cover Type.**

| Land Cover Type     | Total within the Biological Study Area (acres) | Bridge 143                |                           | Bridge 145                |                           |
|---------------------|--|---------------------------|---------------------------|---------------------------|---------------------------|
|                     |  | Permanent Impacts (acres) | Temporary Impacts (acres) | Permanent Impacts (acres) | Temporary Impacts (acres) |
| Annual Grassland    | 22.28  | 0.75                      | 5.16                      | 0.82                      | 4.54                      |
| Oak Woodland        | 10.25  | 0.17                      | 0.88                      | 0.02                      | 1.12                      |
| Riparian Woodland   | 2.15   | 0.09                      | 0.25                      | 0.02                      | 0.17                      |
| Non-native Woodland | 0.53   | 0.006                     | 0.03                      | 0.002                     | 0.25                      |
| Chaparral and Scrub | 0.07   | 0.04                      | 0.04                      | 0.000                     | 0.00                      |
| Seasonal Wetland    | 0.10   | 0.08                      | 0.00                      | 0.02                      | 0.00                      |
| Urban               | 4.18   | 0.83                      | 1.02                      | 0.69                      | 0.81                      |
| <b>Total</b>        | <b>39.58</b>                                   | <b>1.96</b>               | <b>7.38</b>               | <b>1.57</b>               | <b>6.89</b>               |

There is potential for several special-status plant and animal species and their associated habitats to be present in the BSA. As shown in Table 2, using the maximum Area of Potential Effects, the Project would result in permanent impacts to approximately 1.97 acres at Bridge 143 and approximately 1.57 acres at Bridge 145. The Project would result in temporary impacts to approximately 7.38 acres at Bridge 143 and 6.89 acres at Bridge 145. However, actual impacts are expected to be less as the exact alignments and staging areas are refined.

The Project is located within the HCP/NCCP inventory area and is a covered activity under 2.3.2 Rural Infrastructure Projects, Bridge Replacement, Repair or Retrofit. The HCP/NCCP is intended to provide an effective framework to protect natural resources and special-status species recovery in eastern Contra Costa County while improving and streamlining the environmental permitting process for impacts on these species and associated habitats. The East Contra Costa County Habitat Conservancy (Implementing Agency) was created to oversee assembly and operation of the HCP/NCCP Preserve System and ensure compliance with all terms of the HCP/NCCP, permits, and Implementing Agreement. Mitigation Measures BIO-1a and BIO-1b are required by the HCP/NCCP and benefit species covered by the plan as well as additional CEQA covered species. Implementation of Mitigation Measures BIO-1a through BIO-1c, and BIO-2, and payment of HCP/NCCP fees would be implemented to reduce potential impacts to a less than significant level.

**Impact BIO-1:** Potential habitat for special-status wildlife species is present within the Biological Study Area and surrounding area. Therefore, impacts to special-status species and their habitats could occur as a result of Project construction. Mitigation Measure BIO-1a, BIO-1b, and BIO-1c below includes best management practices to avoid and minimize for general impacts, however, specific species measures are discussed further below in Mitigation Measure BIO-2 through BIO-10.

**Mitigation Measure BIO-1a:** The following HCP/NCCP general construction requirements would be used for protection of the biological resources within the BSA and Project vicinity:

- 1) Equipment storage, fueling, and staging areas will be sited on disturbed areas or on ruderal or non-sensitive annual grassland land cover types, when these sites are available, to minimize risk of direct discharge into riparian areas or other sensitive land cover types.
- 2) No erodible materials will be deposited into watercourses. Brush, loose soils, or other debris material will not be stockpiled within stream channels or on adjacent banks.
- 3) All no-take species will be avoided.
- 4) Construction activities will comply with the MBTA and will consider seasonal requirements for birds and migratory non-resident species, including covered species.

- 5) Temporary creek diversions, if required, will employ sand bags or other approved methods that will minimize in-stream impacts and effects on wildlife.
- 6) Silt fencing or other sediment trapping methods will be installed down gradient from construction activities, to minimize the transport of sediment off-site.
- 7) Barriers will be constructed to keep wildlife out of construction sites, as appropriate.
- 8) On-site monitoring will be conducted throughout the construction phase, to ensure that disturbance limits, BMPs, and Plan restrictions are being implemented properly.
- 9) Active construction areas will be watered regularly, to minimize the impact of dust on adjacent vegetation and wildlife habitats, if warranted.
- 10) Vegetation and debris will be managed in and near culverts and under and near bridges, to ensure that entryways remain open and visible to wildlife, and the passage through the culvert or under the bridge remains clear.
- 11) Cut-and-fill slopes will be revegetated with native, non-invasive nonnative, or non-reproductive (i.e., sterile hybrids) plants, suitable for the altered soil conditions.

Mitigation Measure BIO-1b: The following HCP/NCCP measures would be implemented to protect Marsh Creek and other hydrologic features in the vicinity:

- 1) Prior to the start of construction, all portions of Marsh Creek to be avoided by the Project will be temporarily staked in the field by a qualified biologist.
- 2) Before conducting construction activities, all construction personnel will attend environmental awareness training. At a minimum, the training will include a description of special-status species with the potential to occur on site; an explanation of the status of these species and protection under the Federal Endangered Species Act; the measures to be implemented to conserve listed species and their habitats as they relate to construction sites; and boundaries within which construction may occur. On completion of this training, each person will sign a form, confirming attendance and their understanding of all the avoidance and minimization measures.
- 3) To eliminate possibly attracting predators of protected species, all food-related trash items (e.g., wrappers, cans, bottles, and food scraps) will be disposed in solid, closed containers (trash cans) and will be removed from the BSA at the end of each working period.
- 4) No construction or maintenance vehicles will be refueled within 200 feet of the streams unless a bermed and lined refueling area is constructed and hazardous material absorbent pads are available in the event of a spill.
- 5) Appropriate erosion-control measures (e.g., fiber rolls, filter fences) will be used on site to reduce siltation and runoff of contaminants into the stream. Filter fences and mesh will be of material that will not entrap reptiles and amphibians. Erosion control blankets will be used as a last resort because of their tendency to biodegrade slowly and to trap reptiles and amphibians.
- 6) Fiber rolls used for erosion control will be certified as free of noxious weed seed and not contain plastics of any type.
- 7) Seed mixtures applied for erosion control will not contain invasive nonnative species, and will be composed of native species or sterile nonnative species.
- 8) Herbicide will not be applied within 100 feet of wetlands, ponds, streams, or riparian woodland/scrub; however, where appropriate to control serious invasive plants, herbicides that have been approved for use by EPA in or adjacent to aquatic habitats may be used as long as label instructions are followed and applications avoid or minimize impacts on covered species and their habitats. In seasonal or intermittent stream or wetland environments, appropriate herbicides may be applied during the dry season to control nonnative invasive species (e.g., yellow star-thistle). Herbicide drift should be minimized by applying the herbicide as close to the target area as possible.”



**Impact BIO-1c:** The following general construction requirements would be used to protect Marsh Creek from bridge demolition activities.

- 1) Flowing water will be protected from demolition and construction activities by diverting the stream into pipes/culverts through the active construction zone. Downstream flow will be maintained at all times.
- 2) Temporary coffer dams used to redirect flow will consist of sheet piles, gravel bags, water-filled bladder dams, or another agency-approved material. Any water pumped from the work area will be allowed to settle to reduce turbidity prior to being released back into the creek. Temporary coffer dams and diversion pipes will be removed from the creek prior to the winter rainy season. The contractor will be required to prepare and submit a water diversion plan for review and approval by CCCPWD as well as other regulatory agencies as required by the environmental permits.
- 3) During removal of the existing bridge, a tarp or other approved method will be used below the bridge to prevent debris from falling into Walnut Creek. The tarp will be left in place until the bridge is removed. The contractor will be required to prepare and submit a demolition plan for review and approval by CCCPWD as well as other regulatory agencies as required by the environmental permits. As described in Section III.a, best management practices will be implemented to control dust which will minimize impacts to biological resources.

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

A total of 26 special-status plant taxa were considered to have the potential to occur in the BSA. However, many of these plants would have a low potential to occur, because their potential habitats in the BSA would be very marginal. An additional nine special-status plants were evaluated but were considered to have no potential to occur in the BSA, based on their habitat requirements.

Protocol-level floristic surveys conducted on April 20–21, June 5, and September 21, 2017 identified 183 vascular plant taxa in the BSA. Reference population searches were also conducted in conjunction with the floristic surveys to verify that target special-status species were in flower or at least identifiable at the times of the survey.

The only potential special-status plant that was found during the floristic surveys was the Northern California black walnut. Three of these trees, with diameters at breast height of 8 inches or less, were found in the riparian woodland at the Bridge 143 site. The trees at the Bridge 143 site do not appear to be planted but probably established naturally within the past 50 years due to the small diameter at breast height of these trees. These trees may be hybrids with the English walnut. Because the Northern California black walnut trees in the BSA are not part of the original pre-European settlement groves that are afforded special-status, they would not receive protection. As such, these occurrences would not be considered special-status and are not discussed in greater detail. On the southern side of the road at Bridge 145 is a remnant orchard of Northern California walnut. The walnut stand is not considered historical and likely is planted rootstock trees. The trees in this orchard are not considered special-status. Thus, the surveys confirmed that no special-status plant species are known or expected to occur in the BSA and additional protocol-level rare plant surveys are not required.

### **Special-Status Wildlife Species**

Table 3 below identifies HCP/NCCP-covered species, federally and State-listed wildlife species, and other special-status wildlife species that have the potential to occur in the BSA, based on the field-verified presence of suitable habitat.

**Table 3: Potentially Occurring Special-Status Species.**

| Common Name (Species Name)                                     | Listing Status   |
|--|--|
| California tiger salamander ( <i>Ambystoma californiense</i> ) | Federally Threatened (FT), State Threatened (ST), HCP/NCCP covered |
| California red-legged frog ( <i>Rana draytonii</i> )           | FT, California Species of Special Concern (CSC), HCP/NCCP covered  |
| Western pond turtle ( <i>Actinemys marmorata</i> )             | CSC, HCP/NCCP covered  |
| Alameda whipsnake ( <i>Masticophis lateralis euryxanthus</i> ) | FT, ST, HCP/NCCP covered   |
| Burrowing owl ( <i>Athene cunicularia</i> )                    | CSC, HCP/NCCP covered  |
| Golden eagle ( <i>Aquila chrysaetos</i> )                      | Fully Protected (FP), HCP/NCCP covered                             |
| Swainson's hawk ( <i>Buteo swainsoni</i> )                     | ST, HCP/NCCP covered   |
| White-tailed kite ( <i>Elanus leucurus</i> )                   | FP, HCP/NCCP no-take   |
| Townsend's big-eared bat ( <i>Corynorhinus townsendii</i> )    | CSC, HCP/NCCP covered  |
| American badger ( <i>Taxidea taxus</i> )                       | CSC  |
| San Joaquin kit fox ( <i>Vulpes macrotis mutica</i> )          | Federal Endangered (FE), ST, HCP/NCCP covered                      |
| Conservancy fairy shrimp ( <i>Branchinecta conservatio</i> )   | FE   |
| Longhorn fairy shrimp ( <i>Branchinecta longiantenna</i> )     | FE, HCP/NCCP covered   |
| Midvalley fairy shrimp ( <i>Branchinecta mesovallensis</i> )   | HCP/NCCP covered   |
| Vernal pool fairy shrimp ( <i>Branchinecta lynchi</i> )        | FT, HCP/NCCP covered   |
| Vernal pool tadpole shrimp ( <i>Lepidurus packardii</i> )      | FE, HCP/NCCP covered   |

### California Tiger Salamander

California tiger salamander is a federally and State-threatened species that is covered under the HCP/NCCP. California tiger salamander has three distinct population segments (DPS): Central California DPS, Santa Barbara County DPS, and Sonoma County DPS. The Project Sites are within the Central California DPS.

A total of 89 CNDDDB occurrence records are within 5 miles of the Bridge 145 BSA and 66 CNDDDB occurrence records are within 5 miles of the Bridge 143 BSA. The closest occurrences of this species are approximately 0.5 mile from Bridge 145 and 0.5 mile from Bridge 143. Suitable breeding habitat for this species occurs in the Bridge 143 BSA in the form of a seasonal pond. A seasonal pond is also in the Bridge 145 BSA, but it does not appear to be suitable for breeding because of its small size, shallow depth, and likely insufficient period of inundation. In addition, numerous stock ponds are in the Project vicinity that provide potential breeding habitat for this species, and the site is within modeled breeding, aestivation, and movement habitat for California tiger salamander under the HCP/NCCP.

AECOM biologists conducted a habitat assessment and planning survey for California tiger salamander on March 30, 2017. The survey showed that the BSA includes suitable breeding habitat for California tiger salamander west of Bridge 143. Potential upland aestivation, foraging, and movement habitat also occurs in the BSA. Moreover, other potential breeding habitat and known occurrences (documented above) are within the known migration distance of the species (up to 1.4 miles). Overall, the BSA provides approximately 0.08 acre of potential breeding habitat in the form of pond land cover (Bridge 143), and approximately 22.61 acres of suitable upland habitat, including annual grassland, chaparral/scrub, and riparian woodland. Based on the survey results and background information, adult California tiger salamander could potentially occur in the BSA. As such, Project construction may impact California tiger salamander. However, implementation of the HCP/NCCP specific avoidance and minimization measure Mitigation Measure BIO-2 would reduce potentially significant impacts to a less than significant level.

Impact BIO-2: Project construction could directly and indirectly impact California tiger salamander.

**Mitigation Measure BIO-2:** Written notification to USFWS, CDFW, and the Implementing Entity, including photos and breeding habitat assessment, is required prior to disturbance of any suitable breeding habitat. The Project proponent will also notify these parties of the approximate date of removal of the breeding habitat at least 30 days prior to this removal to allow USFWS or CDFW staff to translocate individuals, if requested. USFWS or CDFW must notify the Project proponent of their intent to translocate California tiger salamanders within 14 days of receiving notice from the Project proponent. The applicant must allow USFWS or CDFW access to the site prior to construction if they request it.

There are no restrictions under the HCP/NCCP on the nature of the disturbance or the date of the disturbance unless CDFW or USFWS notify the Project proponent of their intent to translocate individuals within the required time period. In this case, the Project proponent must coordinate the timing of disturbance of the breeding habitat to allow USFWS or CDFW to translocate the individuals. USFWS and CDFW shall be allowed 45 days to translocate individuals from the date the first written notification was submitted by the Project proponent (or a longer period agreed to by the Project proponent, USFWS, and CDFW).

### **California Red-Legged Frog**

California red-legged frog is a federally listed species that is covered under the HCP/NCCP. A total of 81 CNDDDB occurrence records are within 5 miles of the Bridge 145 BSA and 55 CNDDDB occurrence records are within 5 miles of the Bridge 143 BSA. The closest occurrences of this species have been approximately 0.5 mile from Bridge 145 and one California red-legged frog has been recorded in the Bridge 143 BSA. Numerous stock ponds are in the Project vicinity that provide potential breeding habitat for this species, and the site is within modeled breeding, aestivation, and dispersal habitat for California red-legged frog under the HCP/NCCP.

AECOM biologists conducted a habitat assessment and planning survey for California red-legged frog on March 30, 2017. The survey shows that although Marsh Creek in the Project area is modeled as breeding habitat, Marsh Creek in the BSA does not provide suitable breeding habitat for California red-legged frog. For the purposes of this document, Marsh Creek will be considered California red-legged frog breeding habitat based on the requirements of the HCP/NCCP. In addition, the seasonal wetland at Bridge 143 would be very marginal potential breeding habitat because of the absence of aquatic vegetation. The seasonal wetland at Bridge 145 does not appear to have a sufficient period of inundation or depth to support breeding. Potential upland aestivation, foraging, and movement habitat does occur in the BSA. Moreover, the potential breeding habitat and known occurrences (documented above) are within the known migration distance of the species. The BSA provides suitable breeding habitat (seasonal wetland at Bridge 143 and Marsh Creek) and 34.87 acres of suitable movement and refuge habitat, including annual grassland, oak woodland, seasonal wetland, riparian woodland, and chaparral/scrub. Based on the survey results and background information, adult California red-legged frogs have the potential to occur in the BSA.

The nearest critical habitat for California red-legged frog occurs 3.6 miles from the Project Site and would not be affected by the Project. However, aquatic breeding habitat (seasonal wetland at Bridge 143 and the stream within Marsh Creek) and 1.9 acre of upland aestivation, foraging, and/or dispersal habitat in the form of annual grassland, oak woodland, chaparral scrub, and riparian woodland, would be permanently impacted by construction activities. Approximately 12.16 acres of suitable upland habitat would be temporarily impacted, including annual grassland, oak woodland, riparian woodland, and chaparral/scrub. Therefore, the Project could result in a significant impact to California red-legged frogs. Implementation of the HCP/NCCP species-specific avoidance and minimization measure Mitigation Measure BIO-3 would reduce potentially significant impacts to a less than significant level.

**Impact BIO-3:** Project construction could directly and indirectly impact California red-legged frogs.

**Mitigation Measure BIO-3:** Written notification to USFWS, CDFW, and the Implementing Entity, including photos and habitat assessment, is required prior to disturbance of any suitable breeding habitat. The Project proponent will also notify these parties of the approximate date of removal of the breeding habitat at least 30 days prior to this removal to allow USFWS or CDFW staff to translocate individuals, if requested. USFWS or CDFW must notify the Project proponent of their intent to translocate California red-legged frog within 14 days of receiving notice from the Project proponent. The applicant must allow USFWS or CDFW access to the site prior to construction if they request it.

There are no restrictions under the HCP/NCCP on the nature of the disturbance or the date of the disturbance unless CDFW or USFWS notify the Project proponent of their intent to translocate individuals within the required time period. In this case, the Project proponent must coordinate the timing of disturbance of the breeding habitat to allow USFWS or CDFW to translocate the individuals. USFWS and CDFW shall be allowed 45 days to translocate individuals from the date the first written notification was submitted by the Project proponent (or a longer period agreed to by the Project proponent, USFWS, and CDFW).

### **Western Pond Turtle**

Western pond turtle is a State Species of Special Concern and is an HCP/NCCP covered species. A total of 14 CNDDDB occurrence records are within 5 miles of the Bridge 145 BSA and 9 CNDDDB occurrence records are within 5 miles of the Bridge 143 BSA. The closest occurrences of this species have been approximately 0.1 mile from Bridge 145 and have overlapped the Bridge 143 site. Pond turtles were observed in Marsh Creek, north of Bridge 145 and outside the BSA, during the planning surveys. The BSA provides suitable aquatic and upland habitat for western pond turtle. Overall, the BSA provides approximately 34.87 acres of suitable seasonal wetland, annual grassland, oak woodland, and riparian woodland habitat for this species.

Approximately 2.01 acres of permanent impacts and 12.15 acres of temporary impacts would occur on suitable seasonal wetland, annual grassland, oak woodland, and riparian woodland that provide suitable foraging, dispersal, and/or breeding habitat for western pond turtle, that would be permanently impacted by Project construction. There are no species specific avoidance and minimization measures for Western pond turtle, however fees paid to the HCP are used for the purposes of conserving and protecting habitat and land in the County that ultimately benefits all wildlife, including western pond turtle. Further, implementation of Mitigation Measures BIO-1a and BIO-1b and payment of HCP/NCCP fees would ensure that potentially significant impacts are reduced to a less than significant level.

### **Alameda Whipsnake**

Alameda whipsnake is a federally threatened species that is covered by the HCP/NCCP. There are known occurrences are within a number of miles of both bridge replacement locations; however, these records have been suppressed to discourage illegal snake collecting. The BSA at Bridge 143 lies within the area of modeled movement habitat for Alameda whipsnake under the HCP/NCCP, and the BSA at Bridge 145 does not occur within modeled Alameda whipsnake habitat.

AECOM biologists conducted a habitat assessment and planning survey for Alameda whipsnake in the BSA on March 30, 2017. Alameda whipsnake may use the annual grassland, chaparral/scrub, oak woodland, and riparian woodland habitats in the Bridge 143 BSA as movement and foraging habitat. Overall, the Bridge 143 BSA contains approximately 18.38 acres of suitable Alameda whipsnake movement and foraging habitat.

The nearest critical habitat for Alameda whipsnake is 3.8 miles west of Bridge 143 and would not be affected by the Project. However, approximately 1.05 acres of annual grassland, chaparral/scrub, oak woodland, and riparian woodland that provide suitable movement and foraging habitat for Alameda whipsnake would be permanently affected by construction activities. An additional approximately 6.33 acres of habitat would be temporarily affected. Therefore, the Project could result in significant impacts to Alameda whipsnake. Alameda whipsnake does not have species specific HCP/NCCP measures however, implementation of Mitigation Measures BIO-1a and BIO-1b and payment of HCP/NCCP fees would ensure that potentially significant impacts are reduced to a less than significant level.

### **Western Burrowing Owl**

Western burrowing owl is a California Species of Special concern that is covered by the HCP/NCCP. A total of 22 California Natural Diversity Database (CNDDDB) occurrence records are within 5 miles of the Bridge 145 BSA and 9 CNDDDB occurrence records are within 5 miles of the Bridge 143 B. The closest occurrences of this species have been approximately 2.73 miles from Bridge 145 and 2.65 miles from Bridge 143. AECOM biologists observed no burrowing owl or evidence of burrowing owls during the planning surveys in the BSA; however, ground squirrel burrows were observed in the Project area, within suitable habitat for burrowing owl (annual grassland). Overall, the BSA contains approximately 22.28 acres of potentially suitable burrowing owl habitat. Approximately 1.57 acres of annual grassland that provides suitable habitat for burrowing owl permanently would be affected by construction activities. In addition, approximately 9.70 acres of habitat temporarily would be affected. As such, construction of the Project has the potential to impact burrowing owl. However, implementation of the HCP/NCCP species-specific avoidance and minimization measure Mitigation Measure BIO-4 would reduce potentially significant impacts to burrowing owl to a less than significant level.

**Impact BIO-4:** The Project could impact the burrowing owl. Project construction could directly and indirectly impact burrowing owl individuals and will permanently and temporarily impact burrowing owl habitat.

**Mitigation Measure BIO-4:** Prior to any ground disturbance related to covered activities, a USFWS/CDFW- approved biologist will conduct a preconstruction survey in areas identified in the planning surveys as having potential burrowing owl habitat. The surveys will establish the presence or absence of western burrowing owl and/or habitat features and evaluate use by owls in accordance with CDFW survey guidelines (California Department of Fish and Game 1995).

On the parcel where the activity is proposed, the biologist will survey the proposed disturbance footprint and a 500-foot radius from the perimeter of the proposed footprint to identify burrows and owls. Adjacent parcels under different land ownership will not be surveyed. Surveys should take place near sunrise or sunset in accordance with CDFW guidelines. All burrows or burrowing owls will be identified and mapped. Surveys will take place no more than 30 days prior to construction. During the breeding season (February 1– August 31), surveys will document whether burrowing owls are nesting in or directly adjacent to disturbance areas. During the nonbreeding season (September 1–January 31), surveys will document whether burrowing owls are using habitat in or directly adjacent to any disturbance area. Survey results will be valid only for the season (breeding or nonbreeding) during which the survey is conducted.

If burrowing owls are found during the breeding season (February 1 – August 31), the Project proponent will avoid all nest sites that could be disturbed by Project construction during the remainder of the breeding season or while the nest is occupied by adults or young. Avoidance will include establishment of a non-disturbance buffer zone (described below). Construction may occur during the breeding season

if a qualified biologist monitors the nest and determines that the birds have not begun egg-laying and incubation or that the juveniles from the occupied burrows have fledged. During the nonbreeding season (September 1 – January 31), the Project proponent should avoid the owls and the burrows they are using, if possible. Avoidance will include the establishment of a buffer zone (described below).

During the breeding season, buffer zones of at least 250 feet in which no construction activities can occur will be established around each occupied burrow (nest site). Buffer zones of 160 feet will be established around each burrow being used during the nonbreeding season. The buffers will be delineated by highly visible, temporary construction fencing.

If occupied burrows for burrowing owls are not avoided, passive relocation will be implemented. Owls should be excluded from burrows in the immediate impact zone and within a 160-foot buffer zone by installing one-way doors in burrow entrances. These doors should be in place for 48 hours prior to excavation. The Project area should be monitored daily for 1 week to confirm that the owl has abandoned the burrow. Whenever possible, burrows should be excavated using hand tools and refilled to prevent reoccupation. Plastic tubing or a similar structure should be inserted in the tunnels during excavation to maintain an escape route for any owls inside the burrow.

### **Golden Eagle**

Golden eagle is federally protected under the Bald Eagle and Golden Eagle Protection Act and is a State fully protected species and is an HCP/NCCP covered species. A total of 11 CNDDDB occurrence records are within 5 miles of the Bridge 145 BSA and four CNDDDB occurrence records are within 5 miles of the Bridge 143 BSA. The closest occurrences of this species have been approximately 1 mile from Bridge 145 and 4.3 miles from Bridge 143. In addition, observations of golden eagle pairs have been made within 1 to 2 miles of the Project area, to the northwest, northeast, southwest, and southeast. No nests were observed by AECOM biologists during the planning surveys in the BSA. The 22.28 acres of annual grassland in the BSA may provide marginally suitable foraging habitat for this species. The Project would result in approximately 1.57 acres of permanent impacts and 9.70 acres of temporary impacts on golden eagle foraging habitat in annual grassland land cover. Implementation of HCP/NCCP species specific avoidance and minimization measure Mitigation Measure BIO-5, described below, will avoid impacts to golden eagles and violation of the Migratory Bird Treaty Act (MBTA) and California Fish and Game Code (CFGF).

Impact BIO-5: Golden Eagle occurrences have been recorded within the vicinity of the BSA. As such, the Project could directly impact golden eagle.

Mitigation Measure BIO-5: No more than 30 days prior to construction, a qualified biologist will conduct a preconstruction survey to establish whether nests of golden eagles are occupied (see Section 6.3.1, Planning Surveys). If nests are occupied, minimization requirements and construction monitoring will be required.

Covered activities will be prohibited within 0.5 mile of active nests. Nests can be built and active at almost any time of the year, although mating and egg incubation occurs late January through August, with peak activity in March through July. If site-specific conditions or the nature of the covered activity (e.g., steep topography, dense vegetation, limited activities) indicate that a smaller buffer could be appropriate or that a larger buffer should be implemented, the Habitat Conservancy will coordinate with CDFW/USFWS to determine the appropriate buffer size.

Construction monitoring will focus on ensuring that no covered activities occur within the buffer zone established around an active nest. Although no known golden eagle nest sites occur within or near the

ULL, covered activities inside and outside of the Preserve System have the potential to disturb golden eagle nest sites. Construction monitoring will ensure that direct effects to golden eagles are minimized.

### **Swainson's Hawk**

Swainson's hawk is a state threatened species that is covered by the HCP/NCCP. Nine CNDDDB occurrence records are within 5 miles of the Bridge 145 BSA and seven CNDDDB occurrence records are within 5 miles of the Bridge 143 BSA. The closest occurrences of this species were approximately 0.5 mile from Bridge 145 and 1.2 miles from Bridge 143. No Swainson's hawks were observed during the March 30, 2017 planning surveys. Mature stands of trees along Marsh Creek and Marsh Creek Road provide suitable nesting habitat for this species. In addition, annual grassland in the Project area and vicinity provides suitable foraging habitat for this species. Annual grassland in the Project area was observed to contain ground squirrels.

Increased noise and human presence from Project construction could result in impacts on nesting Swainson's hawks if present. In addition, adult trees within the temporary and permanent impact areas may provide breeding habitat for this species. The Project would result in permanent impacts on approximately 1.57 acres and temporary impacts and approximately 9.70 acres of Swainson's hawk foraging habitat in annual grassland. In addition, adult trees within the temporary and permanent impact areas may provide breeding habitat for this species. Temporarily impacted annual grasslands would be restored to near pre-Project conditions through hydro seeding with a native seed mix. In addition, implementation of HCP/NCCP species specific avoidance and minimization measure Mitigation Measure BIO-6 would reduce potentially significant impacts on nesting Swainson's hawks to a less than significant level.

Impact BIO-6: Construction of the Project may result in permanent or temporary impacts on nesting Swainson's hawks.

Mitigation Measure BIO-6: Prior to any ground disturbance related to covered activities that occurs during the nesting season (March 15–September 15), a qualified biologist will conduct a preconstruction survey no more than 1 month prior to construction to establish whether Swainson's hawk nests within 1,000 feet of the Project Site are occupied. If potentially occupied nests within 1,000 feet are off the Project Site, then their occupancy will be determined by observation from public roads or by observations of Swainson's hawk activity (e.g., foraging) near the Project Site. If nests are occupied, minimization measures and construction monitoring are required (see below).

During the nesting season (March 15–September 15), covered activities within 1,000 feet of occupied nests or nests under construction will be prohibited to prevent nest abandonment. If site-specific conditions or the nature of the covered activity (e.g., steep topography, dense vegetation, limited activities) indicate that a smaller buffer could be used, the Habitat Conservancy will coordinate with CDFW/USFWS to determine the appropriate buffer size.

If young fledge prior to September 15, covered activities can proceed normally. If the active nest site is shielded from view and noise from the Project Site by other development, topography, or other features, the Project applicant can apply to the Habitat Conservancy for a waiver of this avoidance measure. Any waiver must also be approved by USFWS and CDFW. While the nest is occupied, activities outside the buffer can take place.

All active nest trees will be preserved on site, if feasible. Nest trees, including non-native trees, lost to covered activities will be mitigated by the Project proponent according to the requirements below. The loss of non-riparian Swainson's hawk nest trees will be mitigated by the Project proponent by:

- If feasible on-site, planting 15 saplings for every tree lost with the objective of having at least 5 mature trees established for every tree lost according to the requirements listed below.

AND either

- 1) Pay the Implementing Entity an additional fee to purchase, plant, maintain, and monitor 15 saplings on the HCP/NCCP Preserve System for every tree lost according to the requirements listed below, OR
- 2) The Project proponent will plant, maintain, and monitor 15 saplings for every tree lost at a site to be approved by the Habitat Conservancy (e.g., within an HCP/NCCP Preserve or existing open space linked to HCP/NCCP preserves), according to the requirements listed below.

The following requirements will be met for all planting options:

- Tree survival shall be monitored at least annually for 5 years, then every other year until year 12. All trees lost during the first 5 years will be replaced. Success will be reached at the end of 12 years if at least 5 trees per tree lost survive without supplemental irrigation or protection from herbivory. Trees must also survive for at least three years without irrigation.
- Irrigation and fencing to protect from deer and other herbivores may be needed for the first several years to ensure maximum tree survival.
- Native trees suitable for this site should be planted. When site conditions permit, a variety of native trees will be planted for each tree lost to provide trees with different growth rates, maturation, and life span, and to provide a variety of tree canopy structures for Swainson's hawk. This variety will help to ensure that nest trees will be available in the short term (5-10 years for cottonwoods and willows) and in the long term (e.g., Valley oak, sycamore). This will also minimize the temporal loss of nest trees.
- Riparian woodland restoration conducted as a result of covered activities (i.e., loss of riparian woodland) can be used to offset the nest tree planting requirement above, if the nest trees are riparian species.
- Whenever feasible and when site conditions permit, trees should be planted in clumps together or with existing trees to provide larger areas of suitable nesting habitat and to create a natural buffer between nest trees and adjacent development (if plantings occur on the development site).
- Whenever feasible, plantings on the site should occur closest to suitable foraging habitat outside the UDA.
- Trees planted in the HCP/NCCP preserves or other approved offsite location will occur within the known range of Swainson's hawk in the inventory area and as close as possible to high-quality foraging habitat.

### **White-Tailed Kite**

White-tailed kite is a fully protected species by the State of California. CNDDDB occurrence records are within 5 miles of the Bridge 143 or Bridge 145 BSAs. White-tailed kite is not known to nest in the Project vicinity, and no white-tailed kite or kite nest was observed during the planning surveys. The large trees near the Project Sites are unlikely to provide suitable nesting habitat because of human activity along Marsh Creek Road. The 22.28 acres of annual grassland in the BSA provide marginally suitable foraging habitat for this species.

Increased noise and human presence from Project construction may result in impacts on foraging white-tailed kite. The Project would result in permanent impacts on approximately 1.57 acres and temporary impacts on approximately 9.70 acres of white-tailed kite foraging habitat, in annual grassland. With



restoration of temporarily disturbed areas, this impact would be negligible. Moreover, implementation of Mitigation Measure BIO-1a and BIO-1b and payment of HCP/NCCP fees would further reduce potentially significant impacts on nesting white-tailed kites to a less than significant level.

### **Townsend's Big-Eared Bat**

Townsend's big-eared bat is a State species of concern and is an HCP/NCCP covered species. No CNDDDB occurrence records are within 5 miles of the Bridge 143 or Bridge 145 BSAs. The potential for Townsend's big-eared bat to occur at the Project Sites is low, and the Project is unlikely to impact this species. The species was not observed during the planning surveys, and the biologists did not observe any evidence of possible roosting sites. Nevertheless, suitable foraging habitat for Townsend's big-eared bat occurs in the site's annual grasslands and at the edges of the oak woodland. In addition, the larger trees on the Project Sites potentially could provide suitable day and/or night roosting habitat, where hollowed trunks and branches have developed. Suitable habitat for maternity roosts does not occur on site because of the absence of structures, mines, and caves. The bridges do not provide suitable roosting habitat.

However, the Project may affect Townsend's big-eared bat if the species establishes day or night roosts in the large trees on site before the start of work. The Project potentially could affect small day or night roosts that may occur in hollowed areas of large trees on the Project Sites. Particularly, the Project would have the potential to impact on Townsend's western big-eared bat because of the removal of several trees that could provide suitable future roosting habitat for this species. However, implementation of HCP/NCCP species specific avoidance and minimization measure Mitigation Measure BIO-7 would reduce potentially significant impacts on Townsend's big-eared bat to a less than significant level.

Impact BIO-7: Project construction and tree removal could directly or indirectly impact Townsend's western big-eared bat through the removal of day or night roosts.

Mitigation Measure BIO-7: If the Project does not avoid impacts to suitable habitat for Townsend's big-eared bat, a preconstruction survey is required to determine whether the sites are occupied immediately prior to construction or whether they show signs of recent previous occupation. Preconstruction surveys are used to determine what avoidance and minimization requirements are triggered before construction and whether construction monitoring is necessary.

If the species is discovered or if evidence of recent prior occupation is established, construction will be scheduled such that it minimizes impacts on Townsend's big-eared bat. Hibernation sites with evidence of prior occupation will be sealed before the hibernation season (November–March), and nursery sites will be sealed before the nursery season (April–August). If the site is occupied, then the action will occur either prior to or after the hibernation season for hibernacula and after August 15 for nursery colonies. Construction will not take place as long as the site is occupied.

The locations of all suitable or occupied microhabitat within the inventory area are not known due to survey and mapping limitations. Hibernacula or nursery sites may be located during planning or preconstruction surveys. Avoiding impacts on occupied sites during sensitive periods will minimize disturbance or direct mortality as a result of covered activities, and sealing sites prior to construction will allow bats to reestablish elsewhere.

### **American Badger**

The American badger is a California Species of Special Concern. Three CNDDDB occurrence records are within 5 miles of the Bridge 145 BSA and four CNDDDB occurrence records are within 5 miles of the Bridge 143 BSA. The closest occurrences of this species have been approximately 2.7 miles from Bridge 145 and

1.9 miles from Bridge 143. Suitable habitat exists in the annual grassland land cover type in the BSA. However, the potential for occurrence is low because of a lack of potential den sites in the area; no dens or other signs of American badger were observed during the planning surveys. The Project is unlikely to impact suitable American badger den sites. Nevertheless, the potential for burrows to occur on the site later cannot be completely ruled out. However, implementation of Mitigation Measure BIO-8 and payment of HCP/NCCP fees would reduce potentially significant impacts to a less than significant level.

Impact BIO-8: The Project could impact American badger. Project construction could directly and indirectly impact American badger. Construction activities could indirectly disrupt foraging and/or denning activities.

Mitigation Measure BIO-8: The Project Sites support suitable breeding and foraging habitat for American badger. The following measures will be implemented to avoid impacts on American badger:

- If grading or construction begins during the breeding season (March–August), a qualified biologist will conduct a survey of the grassland habitat to identify any badger burrows on site. The survey will be conducted no sooner than 2 weeks before the start of construction.
- Impacts on active badger dens will be avoided by establishing exclusion zones around all active dens, within which construction-related activities will be prohibited until denning is complete or the den is abandoned.
- A qualified biologist will monitor each active den once per week, to track its status and inform the PWD of when a den area is cleared for construction.

### **San Joaquin Kit Fox**

San Joaquin kit fox is an HCP/NCCP-covered species, listed as federally endangered and State threatened. The BSA lies within modeled suitable habitat for San Joaquin kit fox under the HCP/NCCP. The biological survey results verified that the BSA contains 22.28 acres of annual grassland, offering potentially suitable foraging, movement, and denning habitat for San Joaquin kit fox. AECOM biologists observed no evidence of San Joaquin kit fox dens in the BSA; however, ground squirrel burrows suitable to provide denning habitat were present in the BSA. Although the occurrence of San Joaquin kit fox in the BSA is unlikely, the Project area supports marginally suitable foraging and movement habitat. Several burrows that were potentially large enough for breeding were identified during planning surveys, and the potential exists for burrows to be created before Project construction. However, implementation of the HCP/NCCP species-specific avoidance and minimization measure Mitigation Measure BIO-9, below, would ensure that potential impacts are reduced to a less than significant level.

Impact BIO-9: The Project could directly and indirectly impact San Joaquin kit fox and its habitat.

Mitigation Measure BIO-9: Prior to any ground disturbance related to covered activities, a USFWS/CDFW– approved biologist will conduct a preconstruction survey in areas identified in the planning surveys as supporting suitable breeding or denning habitat for San Joaquin kit fox. The surveys will establish the presence or absence of San Joaquin kit foxes and/or suitable dens and evaluate use by kit foxes in accordance with USFWS survey guidelines (U.S. Fish and Wildlife Service 1999).

Preconstruction surveys will be conducted within 30 days of ground disturbance. On the parcel where the activity is proposed, the biologist will survey the proposed disturbance footprint and a 250-foot radius from the perimeter of the proposed footprint to identify San Joaquin kit foxes and/or suitable dens. Adjacent parcels under different land ownership will not be surveyed. The status of all dens will be determined and mapped. Written results of preconstruction surveys will be submitted to USFWS within 5 working days after survey completion and before the start of ground disturbance. Concurrence is not required prior to initiation of covered activities.

If San Joaquin kit foxes and/or suitable dens are identified in the survey area, the measures described below will be implemented.

- If a San Joaquin kit fox den is discovered in the proposed development footprint, the den will be monitored for 3 days by a USFWS/CDFW– approved biologist using a tracking medium or an infrared beam camera to determine if the den is currently being used.
- Unoccupied dens should be destroyed immediately to prevent subsequent use.
- If a natal or pupping den is found, USFWS and CDFW will be notified immediately. The den will not be destroyed until the pups and adults have vacated and then only after further consultation with USFWS and CDFW.
- If kit fox activity is observed at the den during the initial monitoring period, the den will be monitored for an additional 5 consecutive days from the time of the first observation to allow any resident animals to move to another den while den use is actively discouraged. For dens other than natal or pupping dens, use of the den can be discouraged by partially plugging the entrance with soil such that any resident animal can easily escape. Once the den is determined to be unoccupied it may be excavated under the direction of the biologist. Alternatively, if the animal is still present after 5 or more consecutive days of plugging and monitoring, the den may have to be excavated when, in the judgment of a biologist, it is temporarily vacant (i.e., during the animal’s normal foraging activities).
- If dens are identified in the survey area outside the proposed disturbance footprint, exclusion zones around each den entrance or cluster of entrances will be demarcated. The configuration of exclusion zones should be circular, with a radius measured outward from the den entrance(s). No covered activities will occur within the exclusion zones. Exclusion zone radii for potential dens will be at least 50 feet and will be demarcated with four to five flagged stakes. Exclusion zone radii for known dens will be at least 100 feet and will be demarcated with staking and flagging that encircles each den or cluster of dens but does not prevent access to the den by kit fox.

### **Branchiopods**

The HCP/NCCP requires that a USFWS-approved biologist conduct a preconstruction survey near potential suitable shrimp habitat. Potential habitat was identified at both bridges and surveys were conducted to determine potential presence of fairy shrimp. Wet and dry season surveys were conducted at Bridge 143 and Bridge 145. At Bridge 143, wet season surveys were conducted in late 2016 but did not detect special –status branchiopods. A dry season survey at Bridge 143 was also conducted in 2017; however, none of the 25 cysts genetically tested during this survey were viable so no species identification could be made. The pond near Bridge 145 was not identified until after the wet and dry season surveys at Bridge 143 were conducted and therefore not included during these original surveys. However, in late 2018, wet season surveys at both bridges were initiated but later abandoned due to low precipitation levels. A dry season survey for both sites was then conducted in 2018 to determine the presence or absence of protected branchiopods at the two pond sites.

The results of the dry season surveys (no viable cysts) is consistent with the negative findings of the wet season surveys. The Project is not expected to cause impacts to special-status branchiopods. Moreover, implementation of Mitigation Measure BIO-1a and BIO-1b and payment of HCP/NCCP fees would further reduce potentially significant impacts on branchiopods to a less than significant level.

### **Nesting Birds**

Numerous bird species have the potential to nest in the Project area. The nests of most birds are protected by the Migratory Bird Species Act and Fish and Game Code Sections 3503 and 3503.5. Mitigation Measures BIO-4 to BIO-6 and BIO-10 describe additional, consistent protections for the nests of special-status birds as specified in the HCP/NCCP. Increased noise and human presence from Project construction

could result in impacts on nesting birds through modifications to behavior resulting in lower breeding success. In addition, adult trees within the temporary and permanent impact areas may provide nesting habitat for this species. Implementation of Mitigation Measure BIO-10 and payment of HCP/NCCP fees would ensure direct impacts on nesting birds are reduced to less than significant levels.

Impact BIO-10: The Project could impact bird species protected by the Migratory Bird Species Act and Fish and Game Code Sections 3503 and 3503.5.

Mitigation Measure BIO-10: Migratory birds and raptors may nest or roost in the BSA. Occupied nests and eggs of native migratory birds are protected by CDFW Code Sections 3503 and 3503.5, and the federal Migratory Bird Treaty Act.

- To the extent feasible, vegetation removal activities will not occur during the breeding season (February 1 through August 31).
- If vegetation removal must occur during the breeding season, all sites will be surveyed by a qualified biologist to verify the presence or absence of nesting birds, as follows:

If construction activities occur during the nesting season (February 1–August 31), a qualified biologist will survey for nesting birds, including raptors, no more than 15 days before the start of construction. An additional survey is recommended immediately prior to construction. The survey areas will include the Project area and an area 250 feet beyond the Project boundaries. If active nests are detected in the survey area, work within 0.5 mile of golden eagle nests, 1,000 feet of Swainson’s hawk nests, 300 feet of other raptor nests, and 50 feet of passerine nests will be avoided until a qualified biologist determines that nesting activity has been completed. If it is not feasible to implement this avoidance buffer, a site-specific plan will be developed by a qualified biologist in coordination with the appropriate agencies to determine if a reduced avoidance buffer is appropriate based upon 1) the type and duration of construction activities being conducted, 2) sensitivity or acclimation to disturbance, 3) the topography surrounding the nest site, and/or 4) the implementation of additional protective measures.

The Project is not anticipated to substantially impact any special-status species with implementation of Mitigation Measures identified above. Therefore, the Project would have a less than significant impact with mitigation incorporated.

- b) *Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Game or US Fish and Wildlife Service? (Less Than Significant with Mitigation Incorporated)*

As described in Section IV.a, the Project would result in permanent and temporary impacts to riparian habitat and other natural communities regulated by USFWS and CDFW through the Lake and Streambed Alteration Agreement and by the Habitat Conservancy. A summary of natural community impacts are included in Table 2. The Project is located within the HCP/NCCP inventory area and is a covered activity and would have permanent impacts to approximately 0.11 acre of riparian woodland, 0.10 acre of seasonal wetland, and 304.24 linear feet of Marsh Creek. Permanent impacts include installation of bridge piles and abutments and additional fill. The Project would result in temporary impacts to 0.42 acre of riparian woodland and 432.19 linear feet of Marsh Creek. Temporary impacts include a creek diversion system, site mobilization, excavation, and grading within the creek channel and banks. The creek diversion system and associated materials will be removed prior to the winter rainy season.

Permits will be obtained from CDFW (Streambed Alteration Agreement) and RWQCB (Water Quality Certification). Permit requirements will be followed to minimize impacts to water quality and riparian habitats. Compensatory mitigation for permanent and temporary impacts to habitats will be achieved through payment by CCCPWD of development fees and wetland mitigation fees to the Conservancy. Moreover, implementation of Mitigation Measures BIO-1a and BIO-1b and payment of HCP/NCCP fees would further reduce potential impacts. Therefore, the Project would have a less than significant impact with mitigation incorporated.

- c) *Have a substantial adverse effect on state or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means? (Less Than Significant with Mitigation Incorporated)*

A delineation of potentially jurisdictional waters was conducted on March 30 and April 21, 2017 (AECOM 2018c). A 0.079-acre seasonal wetland is present within the BSA on the western side of Bridge 143. The seasonal wetland within the Bridge 143 BSA is approximately 92 feet long by 52 feet wide, covering 0.079 acre. This wetland is in an area where the new bridge alignment is situated and the new roadway is necessary to fulfill the objectives of the Project. In particular, the new roadway alignment would be shifted approximately 45 feet to the northwest, where this seasonal wetland is located, in order to provide a single-stage construction approach that allows traffic to use the existing bridge during most of the construction duration while the new bridge and roadway is built. As such, the Project would permanently impact the entire 0.079-acre seasonal wetland as the new roadway would be constructed where the seasonal wetland is located. Specifically, fill material would be placed where the seasonal wetland is located to support the new road.

A 0.024-acre seasonal wetland is present within the BSA on the western side of Bridge 145. This seasonal wetland is approximately 60 feet long by 18 feet wide. At Bridge 145, there would be a slight increase in the elevation of the roadway near the seasonal wetland and private driveway, where a culvert would be installed to accommodate roadside drainage. There is the potential of impacting the hydrology of the wetland in order to provide sufficient roadside draining and avoid potential ponding and flooding of the roadway. CCCPWD has made a conservative assumption that the hydrology of this feature would be affected and therefore has identified this seasonal wetland as permanently impacted.

Project implementation would result in impacts to wetlands. However, implementation of Mitigation Measure BIO-1a through BIO-1c, and payment of HCP/NCCP fees will minimize potential impacts to these features. Moreover, the Project is located within the HCP/NCCP inventory area and is a covered activity. As such, CCCPWD will pay fees for both permanent and temporary impacts at the site to the East Contra Costa County Habitat Conservancy which serves as compensatory mitigation for the Project. The Project would require a 404 Clean Water Act permit from the Army Corps of Engineers (USACE). The USACE has developed Regional General Permit 1 for 404 permits in the HCP/NCCP inventory area (RGP1). The RGP1 allows payment of HCP/NCCP fees as mitigation for wetland impacts. Temporary impacts to wetland and water quality will also be minimized by BIO-1a through BIO-1c. Therefore, the Project would have a less than significant impact with mitigation incorporated.

- 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? (Less Than Significant Impact)*

The Project would not result in permanent disruption to movement of wildlife species in the area, as the Project involves the replacement of two existing bridges and no new permanent features would pose a

barrier to movement that is substantially different from the existing condition. During construction movement through the Project area will be temporarily inhibited though fencing installed to keep species out of the active construction site, this is a protective measure to avoid accidental impacts to species and will be removed after construction. Temporary construction-related activities such as noise at the two Project Sites may temporarily inhibit dispersal, migration and daily movement of wildlife. However, based on existing traffic-related noise at the two sites, this is not expected to be significantly different from the existing condition and will cease on completion of the Project.

Temporary dewatering of Marsh Creek may occur during construction that will temporarily inhibit movement through the Project Site. Again, this is a temporary measure designed to minimize accidental impacts to species and water quality. Further, all dewatering will be conducted in accordance with regulatory permits for installation of cofferdams which typically include conditions that require that aquatic life be either temporarily prohibited from entering the site, or that the system be designed to allow passage through the system. Disruption associated with construction activities would be temporary in nature and would be subject to site specific permit conditions. Therefore, the Project would have a less than significant impact.

- e) *Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance? (Less Than Significant Impact)*

The Project would not conflict with any local policies or ordinances protecting biological resources. The Project would avoid impacts where feasible and mitigate impacts through the implementation of Mitigation Measures identified above. The PSR was completed in adherence with the HCP/NCCP, which is consistent with the biological resources policies included in the Conservation Element section of the County General Plan. The HCP/NCCP assesses fees for project impacts to vegetation communities, including trees, based on the underlying landcover type. Riparian Woodland landcover type and certain other more sensitive land cover types are subject to higher fees. Tree removal would occur as part of the Project but will be mitigated through payment of HCP/NCCP. Therefore, the Project would have a less than significant impact.

- 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? (Less Than Significant Impact with Mitigation Incorporated)*

The Project is located in the HCP/NCCP and is a covered activity. The Project will follow all Mitigation Measures (as identified above) from the PSR and provide mitigation fees to offset impacts in compliance with the HCP/NCCP (AECOM 2018d). Therefore, the Project would have a less than significant impact with mitigation incorporated.

| V. CULTURAL RESOURCES |   | Potentially<br>Significant<br>Impact | Less Than<br>Significant<br>with<br>Mitigation<br>Incorporated | Less Than<br>Significant<br>Impact | No<br>Impact             |
|-----------------------|---|--------------------------------------|--|------------------------------------|--------------------------|
| Would the project:    |   |                                      |  |                                    |                          |
| a)                    | Cause a substantial adverse change in the significance of a historical resource pursuant to § 15064.5?      | <input type="checkbox"/>             | <input checked="" type="checkbox"/>                            | <input type="checkbox"/>           | <input type="checkbox"/> |
| b)                    | Cause a substantial adverse change in the significance of an archaeological resource pursuant to § 15064.5? | <input type="checkbox"/>             | <input checked="" type="checkbox"/>                            | <input type="checkbox"/>           | <input type="checkbox"/> |
| c)                    | Disturb any human remains, including those interred outside of formal cemeteries?                           | <input type="checkbox"/>             | <input checked="" type="checkbox"/>                            | <input type="checkbox"/>           | <input type="checkbox"/> |

The following analysis is based on the Archaeological Survey Report (ASR), Historic Property Survey Report (HPSR), and Extended Phase I Report (XPI) prepared for the Project by AECOM (AECOM 2018a, 2018e, 2018f).

- a) *Cause a substantial adverse change in the significance of a historical resource pursuant to § 15064.5? (Less Than Significant with Mitigation Incorporated)*

CEQA requires lead agencies to determine if a project will have an adverse impact on a significant cultural resource (which includes historical, archaeological, and tribal cultural resources) (Public Resources Code Sections 21084, 21084.1, 21083.2). The agency must first determine if a resource is historically significant, and then determine if the project would cause a "substantial adverse change" in its significance (Public Resource Code 21068, CEQA Guidelines 15382). According to CEQA Guidelines, a resource is considered historically significant if it 1) is listed in or has been determined eligible for listing in the California Register of Historical Resources (CRHR); 2) is included in a local register of historical resources, as defined in Public Resources Code 5020.1(k); 3) has been identified as significant in an historical resources survey, as defined in Public Resources Code 5024.1(g); or 4) is determined to be historically significant by the CEQA lead agency [CCR Title 14, Section 15064.5(a)].

The following CRHR eligibility criteria need to be considered when making a significance determination:

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

To be considered a historical resource for the purpose of CEQA, the resource must also have integrity, which is the authenticity of a resource's physical identity evidenced by the survival of characteristics that existed during the resource's period of significance.

As part of the background cultural resource studies prepared for the Project, AECOM conducted records searches, a pedestrian survey, and a geoarchaeological field investigation. The geoarchaeological field investigation at Bridge 145 involved “Geoprobe” coring of four bores in targeted areas to establish a subsurface context for the Project area and identify subsurface archaeological deposits, if present. At Bridge 143, where access for a Geoprobe drill rig was not possible, presence/absence testing using a hand auger was conducted. The geoarchaeological investigation did not identify any historic or archeological resources at the site.

Listing in the CRHR is not necessary for a resource to be considered a historical resource. A historical resource includes, but is not limited to, any object, building, structure, site, area, place, record, or manuscript that is historically or archaeologically significant (PRC Section 5020.1).

California Public Resources Code Section 21083.2 also addresses the identification and protection of unique archaeological resources. A “unique archaeological resource” is an archaeological artifact, object, or site for which there is a high probability that it meets any of the following criteria:

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

In most situations, resources that meet the definition of a unique archaeological resource also meet the definition of historical resource. As a result, it is current professional practice to evaluate cultural resources for significance based on their eligibility for listing in the CRHR.

Adverse change is defined as physical demolition, destruction, relocation, or alteration of the resource or its immediate surroundings such that the significance of the historical resource would be materially impaired. The significance of a historical resource is materially impaired when a project: demolishes or materially alters in an adverse manner those physical characteristics of an historical resource that convey its historical significance and that justify its inclusion in, or eligibility for inclusion in the California Register, Local Register, or as determined by a lead agency for purposes of CEQA (CEQA Guidelines 15064.5(b)(1-2)(A-C).

One prehistoric archaeological site, one prehistoric isolate, one historic district, and six historic-era resources were identified within a 0.5-mile radius of the Area of Potential Effect (APE) which includes areas of permanent and temporary impacts. However, no resources eligible for National Register of Historic Places (NRHP) or California Register of Historic Resources (CRHR) were identified within the Project APE. The Caltrans Bridge Inventory identifies Marsh Creek as a category 5 for historic significance (not eligible for listing on the NHRP). Resources identified within the Project APE were determined to be exempt under the *First Amended Programmatic Agreement Among the Federal Highway Administration, the Advisory Council on Historic Preservation, the California State Historic Preservation Officer, and the California Department of Transportation Regarding Compliance with Section 106 of the National Historic Preservation Act, as it Pertains to the Administration of the Federal-Aid Highway Program in California* (PA). More specifically, a historic-era corral and remnant bridge abutments near Bridge 145 were determined to be exempt under the PA as Property Type 1, Adjacent Features. A previously unrecorded gauging station at Bridge 145 was also observed in the APE on the east bank of Marsh Creek. However, the station was documented and determined to be exempt under the PA as Property Type 1, Water Conveyance and Control Features—gates, valves, pumps and other flow control devices. Nevertheless, the



potential for subsurface resources cannot be completely ruled out and Project construction may unearth unanticipated historic or pre-historic resources; therefore, the following Mitigation Measures will be followed in the event subsurface resources are discovered during Project construction. In addition, Project contract specifications stipulate that construction shall stop in the area if historical resources (i.e. structure/building remains, bottle glass, ceramics, etc.) are encountered until a qualified archaeologist evaluates the findings. With implementation of Mitigation Measure CULT-1 and CULT-2 (below in section V.c), the Project would have a less than significant impact with mitigation incorporated.

Impact CULT-1: Development of the Project could disturb unanticipated historic resources.

Mitigation Measure CULT-1: The following Best Management Practices will be implemented during Project construction to protect unanticipated historic or pre-historic, archaeological, or paleontological resources.

- 1) Contractor will be notified of the possibility of encountering historic, archaeological, or paleontological materials during ground-disturbing activities and will be educated on the types of historic materials that may be encountered.
  - 2) If an inadvertent discovery is made, the Contractor will cease all ground-disturbing activities in the area of discovery.
  - 3) The Contractor will immediately notify the CCCPWD Resident Engineer who will then request a qualified archaeologist to evaluate the finding(s).
  - 4) If the finding(s) is determined to be potentially significant, the archaeologist in consultation with the appropriate Native American tribal representative or historical society will develop a research design and treatment plan outlining management of the resource, analysis, and reporting of the find.
  - 5) Given the high archaeological sensitivity at Bridge #28C-0145, an archaeological monitoring plan will be prepared prior to any ground disturbance. The report will outline the procedures for discoveries during construction; the chain of command and responsible parties; and special procedures should human remains be encountered.
  - 6) Archaeological monitoring by a qualified archaeologist will be conducted during all ground disturbing activities that yield visible spoils occurring between 5 feet below current ground surface and 20 feet below current ground surface at Bridge #28C-0145. A daily archaeological monitoring log will be completed by the monitor and submitted weekly to CCCPWD for review. Should archaeological resources or human remains be encountered the procedures outlined in the monitoring plan will be implemented.
- b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to § 15064.5? (***Less Than Significant with Mitigation Incorporated***)

The records search and field study did not identify archaeological resources within the APE. While no archaeological resources were identified, there is the potential of encountering unrecorded archaeological resources. Project contract specifications stipulate that construction shall stop in the area if potential archaeological resources (i.e., unusual amounts of shell, stone tools, animal bone, etc.) are encountered until a qualified archaeologist evaluates the findings. Mitigation Measure CULT-1 and CULT-2 will be implemented in the event subsurface resources are discovered during Project construction. The Archaeological Survey Report prepared for the Project identified a sensitive buried soil at Bridge 145 that has nearby archaeological sites associated with it; however, no resources were encountered during testing (AECOM, 2018). Potential impacts on archaeological resources at Bridge 145 would be reduced with the implementation of Mitigation Measure CULT-1 and CULT-2. Therefore, the Project would have a less than significant impact with mitigation incorporated.

- c) Disturb any human remains, including those interred outside of formal cemeteries? (*Less Than Significant with Mitigation Incorporated*)

No formal cemeteries are present within or adjacent to the Project Site. As part of the cultural review conducted for the Project, the NAHC was contacted to determine if there are any recorded Native American burial grounds and/or sacred land sites in the Project vicinity. The NAHC reported that no recorded sites occur in the Project APE. Despite the investigations previously described, Project construction may unearth unanticipated historical or pre-historic archaeological resources; however with implementation of Mitigation Measures CULT-1 provided in V.a, and CULT-2, Project impacts on archaeological resources, including Native American resources, would be less than significant with mitigation incorporated..

Impact CULT-2: The Project could impact previously undiscovered human remains.

Mitigation Measure CULT-2:

If human remains are encountered, work within 25 feet of the discovery shall be redirected and the Contra Costa County Coroner notified immediately. At the same time, an archaeologist shall be contacted to assess the situation. If the human remains are of Native American origin, the Coroner must notify the Native American Heritage Commission within 24 hours of this identification. The Native American Heritage Commission will identify a Most Likely Descendant (MLD) to inspect the site and provide recommendations for the proper treatment of the remains and associated grave goods. Upon completion of the assessment, the archaeologist shall prepare a report documenting the methods and results, and provide recommendations for the treatment of the human remains and any associated cultural materials, as appropriate and in coordination with the recommendations of the MLD. The report shall be submitted to CCCPWD and the Northwest Information Center.

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| VI. ENERGY | Potentially<br>Significant<br>Impact | Less Than<br>Significant<br>with<br>Mitigation<br>Incorporated | Less Than<br>Significant<br>Impact | No<br>Impact |
|------------|--------------------------------------|--|------------------------------------|--------------|
|------------|--------------------------------------|--|------------------------------------|--------------|

Would the project:

- |    |  |                          |                          |                                     |                          |
|----|--|--------------------------|--------------------------|-------------------------------------|--------------------------|
| a) | Result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| b) | Conflict with or obstruct a state or local plan for renewable energy or energy efficiency?   | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |

- a) *Result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation? (Less Than Significant Impact)*

The Project involves the replacement of two existing bridges on Marsh Creek Road and will not require energy use once constructed. Project construction would result in an incremental increase in energy usage associated with construction equipment (i.e. fuel in vehicles and power generators). Construction of the Project would follow typical construction procedures and would not require excessive amounts of wasteful usage of energy. Therefore, the Project would have a less than significant impact.

- b) *Conflict with or obstruct a state or local plan for renewable energy or energy efficiency? (Less Than Significant Impact)*

The Project would not conflict with or obstruct a state or local plan for renewable energy or energy efficiency, including the Contra Costa County Climate Action Plan (CCCD 2015). As noted above, the Project would result in an incremental increase in energy usage during Project construction. However, this would be temporary in nature. Operation of the Project would not require change from existing condition. As such, the Project does not have the potential to conflict with obstruct a state or local plan for renewable energy or energy efficiency. Therefore, the Project would have a less than significant impact.

## VII. GEOLOGY AND SOILS

|  | Potentially<br>Significant<br>Impact | Less Than<br>Significant<br>with<br>Mitigation<br>Incorporated | Less Than<br>Significant<br>Impact  | No<br>Impact                        |
|--|--------------------------------------|--|-------------------------------------|-------------------------------------|
| Would the project:   |                                      |  |                                     |                                     |
| a) Directly or indirectly cause people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:   | <input type="checkbox"/>             | <input type="checkbox"/>                                       | <input checked="" type="checkbox"/> | <input type="checkbox"/>            |
| I. Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault?  | <input type="checkbox"/>             | <input type="checkbox"/>                                       | <input checked="" type="checkbox"/> | <input type="checkbox"/>            |
| II. Strong seismic ground shaking?   | <input type="checkbox"/>             | <input type="checkbox"/>                                       | <input checked="" type="checkbox"/> | <input type="checkbox"/>            |
| III. Seismic-related ground failure, including liquefaction?   | <input type="checkbox"/>             | <input type="checkbox"/>                                       | <input checked="" type="checkbox"/> | <input type="checkbox"/>            |
| IV. Landslides?  | <input type="checkbox"/>             | <input type="checkbox"/>                                       | <input type="checkbox"/>            | <input checked="" type="checkbox"/> |
| b) Result in substantial soil erosion or the loss of topsoil?  | <input type="checkbox"/>             | <input type="checkbox"/>                                       | <input checked="" type="checkbox"/> | <input type="checkbox"/>            |
| 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 checked="" type="checkbox"/> | <input type="checkbox"/>            |
| 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 checked="" type="checkbox"/> | <input type="checkbox"/>            |
| 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"/>            | <input checked="" type="checkbox"/> |
| f) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?  | <input type="checkbox"/>             | <input checked="" type="checkbox"/>                            | <input type="checkbox"/>            | <input type="checkbox"/>            |
| a) <i>Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving: i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault?; ii) Strong seismic groundshaking; iii) Seismic-related ground failure, including liquefaction; iv) Landslides? (Less Than Significant Impact)</i> |                                      |  |                                     |                                     |

**Fault Rupture.** The Project is not expected to expose people or structures to potential substantial adverse effects from a rupture of a known earthquake fault as the Project Sites are not within mapped Alquist-Priolo Fault Zones, and there are no known faults cross the Project Sites. According to the U.S. Geological Survey, the nearest fault lines to the Project Sites are the Clayton-Marsh Creek-Greenville fault, which is approximately 3 miles south of the sites, and the Davis fault, which is approximately 2 miles north of the sites (USGS 2019). The Project does not include elements that would increase risk to people or structures, as it is limited to the replacement of two existing bridges to bring them up to current design standards. Therefore, Project impacts would be less than significant.

**Groundshaking.** Faults occur in the area that could potentially cause seismic ground shaking. The duration and intensity of shaking would depend upon both the magnitude of the earthquake, distance from the epicenter, and ground conditions. The Project design and construction would take the existing seismic conditions into account and the Project would be designed in accordance with local design practice. Further, because the Project is limited to the replacement of two existing bridges to bring them to current design standards, the risk of loss of and the risk of injury or death resulting from implementation of the Project is unlikely. Therefore, Project impacts would be less than significant.

**Seismic-Ground Failure, Including Liquefaction.** Liquefaction is a specialized form of ground failure caused by earthquake ground motion. It is a "quicksand" condition occurring in water-saturated, unconsolidated, relatively clayfree sands and silts caused by hydraulic pressure (from ground motion) forcing apart soil particles and forcing them into quicksand-like liquid suspension. In the process, normally firm, but wet, ground materials take on the characteristics of liquids (Contra Costa County 2005d). According to Figure 10-5 of the General Plan, the general Project area has potential for moderate to low liquefaction. Nevertheless, Project design and construction would take existing soil conditions into account and the Project would be designed in accordance with local design practice and guidelines to ensure that the Project would withstand seismic activity as defined by the Caltrans Highway Design Manual. The Project is not expected to expose people or structures to potential substantial adverse effects as the Project does not include features that would increase risk to people or structures as it is limited to the replacement of two existing bridges. Therefore, the potential for the Project to directly or indirectly expose people or structures to potential substantial adverse effects from liquefaction is less than significant.

**Landslides.** According to Figure 10-6 of the General Plan, the Project is not located within a potential landslide area (Contra Costa County 2005d). Therefore, the Project would have no impact.

*b) Result in substantial soil erosion or the loss of topsoil? (Less Than Significant Impact)*

Grading and excavation associated with the bridge replacements would result in negligible changes in topography. Construction of the Project would temporarily increase the exposure of soils to wind erosion from grading and excavation activities. However, standard erosion control best management practices would be implemented during construction to minimize potential impacts. Therefore, Project impacts associated with soil erosion would be less than significant.

*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? (Less Than Significant Impact)*

According to Figure 10-5 of the General Plan, the general Project area has generally moderate to low potential for liquefaction depending on the precise location (Contra Costa County 2005d). The Project design and construction would take the existing soil conditions into consideration and the Project would be designed in accordance with local design practice. Further, the Project is limited the replacement of existing bridges and would not introduce new land uses that could be impacted by unstable soils. Therefore, Project would have less than significant impact.

- 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? (Less Than Significant Impact)*

The Project Sites are located on clay type soils, which tend to be expansive soils. The Project would be engineered according to local design practice and guidelines as defined in the Caltrans Highway Design Manual, which intended to ensure that structures would withstand seismic activity and liquefaction. Moreover, the Project is limited to replacement of two existing bridges, which would not create substantial risk to life or property from expansive soils. Therefore, Project would have less than significant impact

- 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? (No Impact)*

Septic tanks and alternative wastewater disposal systems are not part of the Project. Therefore, the Project would have no impact.

- f) *Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature? (Less Than Significant Impact with Mitigation)*

The likelihood of discovering paleontological resources depends on the underlying geologic formation. Based on the Geological Map of the Antioch South quadrangle, the Project is located on young Quaternary (latest Pleistocene and Holocene) alluvial fan deposits (CGS 2019). Holocene alluvial deposits and fill are generally considered too recent to contain significant paleontological resources and therefore have low paleontological sensitivity. Latest Pleistocene alluvial deposits can locally contain fresh-water mollusks and late Pleistocene vertebrate fossils. They are overlain by Holocene deposits and incised by channels that are partly filled with Holocene alluvium. The maximum thickness is unknown but at least 150 feet. The maximum depth of excavation of the Project is approximately 75 feet.

At Bridge 143, a rock outcropping would be impacted (as described in Section I.b). Even though the rock outcropping is a geologic feature, it is not exclusively unique due to the fact that it is not part of a larger distinctive grouping of rocks, or part of an overall landscape feature existing throughout the surrounding Project Site. Impacts would be minimized to only what is necessary near the footprint of the new roadway.

While no paleontological resources were identified, there is the potential for encountering unrecorded paleontological resources during Project construction. Project contract specifications would stipulate that construction shall stop in the area if such potential resources are discovered. In addition, Mitigation Measure CULT-1 will be followed in the event subsurface resources are discovered during Project construction. Therefore, the Project would have a less than significant impact with mitigation incorporated.

## VIII. GREENHOUSE GAS EMISSIONS

|  | Potentially<br>Significant<br>Impact | Less Than<br>Significant<br>with<br>Mitigation<br>Incorporated | Less Than<br>Significant<br>Impact  | No<br>Impact             |
|--|--------------------------------------|--|-------------------------------------|--------------------------|
| Would the project:   |                                      |  |                                     |                          |
| a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?      | <input type="checkbox"/>             | <input type="checkbox"/>                                       | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| b) Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases? | <input type="checkbox"/>             | <input type="checkbox"/>                                       | <input checked="" type="checkbox"/> | <input type="checkbox"/> |

The following analysis is based on the Air Quality and Greenhouse Gas Technical Memorandum prepared for the Project by AECOM (AECOM 2018b).

a) *Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment? (Less Than Significant Impact)*

Construction activities, such as site preparation, site grading, on-site heavy-duty construction vehicles, equipment hauling materials to and from the site, and motor vehicles transporting the construction crew would produce combustion emissions from various sources. During construction of the Project, GHGs would be emitted through the operation of construction equipment and from worker and builder supply vendor vehicles, each of which typically uses fossil-based fuels to operate. The combustion of fossil-based fuels creates GHGs such as CO<sub>2</sub>, CH<sub>4</sub>, and N<sub>2</sub>O. Furthermore, CH<sub>4</sub> is emitted during the fueling of heavy equipment. Exhaust emissions from on-site construction activities would vary daily as construction activity levels change. As discussed previously, operation of the Project would be similar to existing conditions because the Project would replace existing bridges with the same traffic carrying capacity.

The BAAQMD does not have an adopted Threshold of Significance for construction-related GHG emissions but states that lead agencies should quantify and disclose GHG emissions that would occur during construction, and make a determination on the significance of these construction-generated impacts. Using the California Emissions Estimator Model (CalEEMod), Version 2016.3.2 it is estimated that the total GHG emissions resulting from construction of the Project would be 1,252 metric tons CO<sub>2</sub>e, with 440 metric tons CO<sub>2</sub>e occurring in the first year of construction and 812 MT CO<sub>2</sub>e in the second year of construction. The Project's emissions will be short term and the Project will implement BMPs stated in Section III.b which include measures to reduce emissions from construction vehicles such as minimizing idling times and requiring properly maintained and tuned equipment which will further reduce GHG emissions. Therefore, the Project would have a less than significant impact.

b) *Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases? (Less Than Significant Impact)*

Assembly Bill 32 (AB 32), the California Global Warming Solutions Act of 2006, recognized that California is a source of substantial amounts of GHG emissions which poses a serious threat to the economic well-being, public health, natural resources, and the environment of California (OPR 2008). This bill directed the California Air Resources Board (CARB) to develop discrete early actions to reduce GHGs to reach the GHG reduction goals by 2020.

In December 2008, CARB adopted its Climate Change Scoping Plan, which contains the main strategies California will implement to achieve reduction of approximately 21.7 percent from the State's projected adopted the First Update to the Climate Change Scoping Plan to identify the next steps in reaching AB 32 goals, evaluate the progress that has been made between 2000 and 2012, and report the trends in GHG emissions from various emission sectors (e.g., transportation, building energy, agriculture) (CARB 2014). In November 2017, CARB adopted the 2017 Climate Change Scoping Plan Update (2017 Scoping Plan Update), which lays out the framework for achieving the 2030 reductions as established in more recent legislation (CARB 2017). The 2017 Scoping Plan Update identifies the GHG reductions needed by each emissions sector to achieve a statewide emissions level that is 40 percent below 1990 levels before 2030.

The Project would not conflict with GHG reduction goals set forth in Assembly Bill 32, including the Recommended Actions identified by the 2017 CARB Climate Change Scoping Plan.

In 2015, Contra Costa County adopted the Contra Costa County Climate Action Plan (CAP) to address the major sources of GHG emissions to meet the emission reduction goal of 15 percent below the County's 2005 conditions by 2020 (CCCD CD 2015). Most of the measures identified in the Climate Action Plan consist of programs and incentives to be implemented by the County and are not applicable to the Project.

Based on Section III.b, the Project will not generate emissions that would exceed the project-level significance criteria established by the BAAQMD and, therefore, the Project will not conflict with plans adopted for the purpose of reducing GHG emissions. Therefore, Project impacts will be less than significant.



| IX.                | HAZARDS AND HAZARDOUS MATERIALS  | Potentially Significant Impact | Less Than Significant with Mitigation Incorporated | Less Than Significant Impact        | No Impact                           |
|--------------------|--|--------------------------------|--|-------------------------------------|-------------------------------------|
| Would the project: |  |                                |  |                                     |                                     |
| a)                 | Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?   | <input type="checkbox"/>       | <input type="checkbox"/>                           | <input checked="" type="checkbox"/> | <input type="checkbox"/>            |
| 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 checked="" type="checkbox"/>                | <input type="checkbox"/>            | <input type="checkbox"/>            |
| 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"/>            | <input checked="" type="checkbox"/> |
| d)                 | Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?  | <input type="checkbox"/>       | <input type="checkbox"/>                           | <input checked="" type="checkbox"/> | <input type="checkbox"/>            |
| e)                 | For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard or excessive noise for people residing or working in the project area? | <input type="checkbox"/>       | <input type="checkbox"/>                           | <input type="checkbox"/>            | <input checked="" type="checkbox"/> |
| f)                 | Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?   | <input type="checkbox"/>       | <input type="checkbox"/>                           | <input checked="" type="checkbox"/> | <input type="checkbox"/>            |
| g)                 | Expose people or structures, either directly or indirectly, to a significant risk of loss, injury or death involving wildland fires?   | <input type="checkbox"/>       | <input checked="" type="checkbox"/>                | <input type="checkbox"/>            | <input type="checkbox"/>            |

The following discussion is based on the findings from the Phase I Environmental Site Assessment Prepared for the Project (WRECO 2018a).

- a) *Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials? (Less Than Significant Impact)*

During construction, trucks would travel to and from the Project Sites. Vehicles would include diesel-powered trucks, backhoes, graders, dump trucks, excavators, water trucks, compactors, skid steers, pick-up

trucks, pavers, and hoppers. This equipment may require the use of fuels and other common liquids that have hazardous properties (e.g., fuels, oils, fluids that are flammable) but they would be handled in small quantities that would not create a substantial hazard for construction workers and/or the public. Compliance with federal, State, and local hazardous materials regulations would minimize the risk to the public presented by these potential hazards during construction of the Project. Completion of the bridge replacements and realignments would not involve routine transport, use, or disposal of hazardous materials or involve potential releases of hazardous materials into the environment. Therefore, construction and operation of the Project would result in less than significant impacts associated with hazardous materials, and no mitigation is required. Therefore, the Project would have a less than significant impact.

*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? (Less Than Significant with Mitigation Incorporated)*

There are three main ways that the public and the environment could be affected by the release of hazardous materials from the Project Site into the environment, including 1) exposing workers or the public to potentially contaminated soil and groundwater during construction or operation of the Project; 2) exposing workers or the public to hazardous building materials (e.g. lead paint, asbestos) during demolition of existing structures, or 3) mobilization of contaminants into the environment through disturbance of potentially contaminated soils or water during construction. An Initial Site Assessment (ISA) was prepared for the Project by WRECO to determine the potential for Recognized Environmental Conditions (RECs) and Activity and Use Limitations (AULs) at the Project Sites (WRECO 2018). As part of the ISA, a site reconnaissance, governmental records search, and environmental database records review were conducted.

The site reconnaissance did not find potentially hazardous conditions within or adjoining the Project footprint. Additionally, the records search found no evidence of historic hazardous material impacts from contiguous properties. Exposed soils along the shoulders of the bridge approaches could contain aerially deposited lead (ADL) from historic use of leaded gasoline because Marsh Creek Road has been in use since as early as 1934. Current traffic counts and projected historic counts during leaded fuel use, however, indicate a low potential for the presence of hazardous soil due to ADL. Therefore, ADL is not expected to pose a hazardous material risk to excavated soils at the sites. There was visible evidence of lead-based paint, asbestos containing material, and treated wood at the Project Sites and several surfaces of each bridge are suspected of containing lead-based paint. These materials would be removed and disposed of in accordance with professionally prepared construction specifications and in accordance with federal, state, and local regulations as part of the planned bridge demolition activities.

Project construction could also cause accidental release of hazardous materials such as a hazardous materials spill or equipment leakage. In addition, the Project would remove existing striping that could contain traces of lead. However, the Project contract specifications will require the Contractor to implement BMPs such as hazardous materials spill management and regular maintenance of vehicles to minimize potential impacts from accidental spills associated with Project construction or construction equipment. The Contractor will also be required to submit a lead compliance plan for approval by CCCPWD for potential lead in striping.

Demolition of the existing bridge will be performed in accordance with the Caltrans specifications supplemented by CCCPWD standards modified to meet environmental permit requirements. All concrete and other debris resulting from the demolition of the existing bridge and roadway will be removed from the Project site and properly disposed of by the contractor. Prior to demolition, the contractor will be required

to prepare and submit a bridge demolition plan including creek diversion and bypass details for review by CCCPWD as well as other agencies as required by the environmental permits.

While the Project will not have long-term operational impacts, temporary impacts could occur during construction. The disturbance will be limited in nature and potential for accidental release will be minimized with implementation of Mitigation Measure HAZ -1.

Impact HAZ-1: Soil movement and bridge demolition activities could mobilize contaminants, including lead-based paint and asbestos containing material, exposing construction workers, the general public, and the environment.

Mitigation Measure HAZ-1:

- 1) The Bay Area Air Quality Management District will be notified through their Asbestos Notification System prior to bridge demolition in compliance with the National Emissions Standards for Hazards Air Pollutants (NESHAP).
- 2) Prior to any construction activities, a pre-demolition survey will be conducted at each bridge prior to construction pursuant to federal National Emissions Standard for Hazardous Air Pollutants regulations and Bay Area Air Quality Management District regulations. CCCPWD will also prepare a lead-based paint survey pursuant to California Department of Public Health and California Occupation and Health Administration regulations for lead in construction. The survey will identify presence or absence of lead based paint or asbestos containing materials and make recommendations for handling and disposal. Recommendations may include but are not limited to handling and storage of lead based paint or asbestos during construction and health and safety plan for workers.

Therefore, the Project would have a less than significant impact with mitigation incorporated.

- c) *Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school? (No Impact)*

There are no schools within one-quarter mile of the two Project Sites. Heritage High School and Adams Middle School are closest schools and are located approximately 3.15 miles from Bridge 143 and 3.75 miles from Bridge 145. Therefore, the Project would have no impact.

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

The EnviroStor and GeoTracker databases were searched for both bridges. No sites of concern were identified within 1 mile of either bridge location. The Department of Toxic Substances Control's (DTSC's) EnviroStor database is an online search and Geographic Information System (GIS) tool for identifying sites that have known contamination or sites for which there may be reasons to investigate further. It also identifies facilities that are authorized to treat, store, dispose or transfer (TSDTF) hazardous waste. The EnviroStor database includes the following site types: Federal Superfund sites (National Priority List); State Response, including Military Facilities and State Superfund; Voluntary Cleanup; and School sites.

The Project is not located on a site that is included on a list of hazardous materials. No sites of concern were identified within 1 mile of the Bridge 143 site. One Underground Storage Tank (UST) site was found within a 1-mile vicinity of the Bridge 145 site. The UST site has the status of "Completed – Case Closed

as of 2/4/2014.” The site is approximately 0.75 miles southeast of the Project Site and downstream of Marsh Creek with groundwater flow to the northeast. The UST site is impacted for crude oil, and other petroleum contaminants. The UST site is unlikely to present hazardous material risk for Bridge 145 due to the location of the site being downstream from Marsh Creek and opposite flow of groundwater from the Project Site. Therefore, the Project would have a less than significant impact.

- e) *For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard or excessive noise for people residing or working in the project area? (No Impact)*

The nearest airport to the Project is Byron Airport. Bridge 145 is located approximately 6.25 miles northwest of the airport and Bridge 143 is located approximately 10.5 miles northwest of the airport. The Project is not located within an Airport Influence area, which is defined as the area where aircraft as they approach and depart the airport or fly within the traffic pattern (CCCALUC 2000). Therefore, the Project would not result in a safety hazard or excessive noise for people residing or working in the Project area due to the proximity of an airport. Therefore, the Project would have no impact.

- f) *Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan? (Less Than Significant Impact)*

The Project would not impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan in the short or long terms, including the Contra Costa County Emergency Operations Plan (CCC 2015). Access for emergency vehicles would be provided at all times during construction. The Project will not change the nature of the Project Site. Therefore, the Project would have a less than significant impact.

- g) *Expose people or structures, either directly or indirectly, to a significant risk of loss, injury or death involving wildland fires? (Less Than Significant Impact with mitigation)*

The Project is located in an area designated as a moderate fire hazard severity zone (ABAG 2016). Operationally, the Project proposes to replace existing bridges structures with new steel and concrete bridges. These materials are not considered flammable and would not contribute to an increased risk due to wildland fire. During construction, however, the Project would use heavy machinery that may lead to sparks, which may trigger wildland fires.

Impact HAZ-2: The use of heavy machinery during construction could cause sparks which could trigger wildland fires.

Mitigation Measure HAZ-2: During Project construction, staging and equipment/vehicle parking areas shall be cleared of dead vegetation that could serve as fuel for combustion. Prior to removal, a biologist shall survey the vegetation to avoid removal of ecologically sensitive vegetation. The clearing shall include vegetation trimming within a few inches of the ground. No grading shall take place as part of the vegetation clearing. Additionally, fire extinguishers will be kept on site. If work is to be performed during the dry season, workers shall be informed of wildland fire risk and measures to prevent it via brochures and worker awareness training.

The use of heavy machinery would be typical of most construction sites and temporary in nature. The risk of wildland fires would be reduced with the implementation of wildland fire prevention Mitigation Measure HAZ-2. Therefore, the Project would have a less than significant impact with mitigation incorporated.

## X. HYDROLOGY AND WATER QUALITY

|  | Potentially<br>Significant<br>Impact | Less Than<br>Significant<br>with<br>Mitigation<br>Incorporated | Less Than<br>Significant<br>Impact  | No<br>Impact                        |
|--|--------------------------------------|--|-------------------------------------|-------------------------------------|
| Would the project:   |                                      |  |                                     |                                     |
| a) Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality?   | <input type="checkbox"/>             | <input type="checkbox"/>                                       | <input checked="" type="checkbox"/> | <input type="checkbox"/>            |
| b) Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin?                                  | <input type="checkbox"/>             | <input type="checkbox"/>                                       | <input type="checkbox"/>            | <input checked="" type="checkbox"/> |
| c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would: |                                      |  |                                     |                                     |
| i) Result in substantial erosion or siltation on- or off-site?   | <input type="checkbox"/>             | <input type="checkbox"/>                                       | <input checked="" type="checkbox"/> | <input type="checkbox"/>            |
| ii) Substantially increase the rate or amount of surface runoff in a manner which would result in flooding on or offsite?  | <input type="checkbox"/>             | <input type="checkbox"/>                                       | <input checked="" type="checkbox"/> | <input type="checkbox"/>            |
| iii) Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?                                | <input type="checkbox"/>             | <input type="checkbox"/>                                       | <input checked="" type="checkbox"/> | <input type="checkbox"/>            |
| iv) Impede or redirect flood flows?  | <input type="checkbox"/>             | <input type="checkbox"/>                                       | <input checked="" type="checkbox"/> | <input type="checkbox"/>            |
| d) In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation?  | <input type="checkbox"/>             | <input type="checkbox"/>                                       | <input checked="" type="checkbox"/> | <input type="checkbox"/>            |
| e) Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?  | <input type="checkbox"/>             | <input type="checkbox"/>                                       | <input checked="" type="checkbox"/> | <input type="checkbox"/>            |
| a) <i>Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality? (Less Than Significant Impact)</i>                                       |                                      |  |                                     |                                     |

The Project is located within the Marsh Creek Watershed (WRECO 2019b). This watershed drains the east side of Mount Diablo and portions of the Black Hills and eventually empties into the San Joaquin-

Sacramento River Delta. Marsh Creek is 34.6 miles long; the upper stretch flows northwards from Mount Diablo through multiple canyons and valleys to Marsh Creek Reservoir (where it is impounded), and the lower stretch is heavily channelized and flows through the City of Brentwood and Oakley and outfalls into the Delta at Big Break Regional Shoreline. Marsh Creek flows under both existing bridges at the Project Sites. Bridge 143 is located upstream from the Canada De Los Poblanos Valley and is surrounded on the east and west by steep hills. Bridge 145 is 4.1 miles southeast of Bridge 143, where the valley widens out around Bridge 145 as Marsh Creek flows into the Marsh Creek Reservoir. Marsh Creek is designated as an impaired waterbody under the Federal Clean Water Act due to the presence of mercury and metals.

Both bridges are within a relatively rural, undeveloped area. There are no existing drainage systems within the Project Sites. Runoff from the bridges and roadway discharges into existing pervious earthen ditches, which convey the runoff to Marsh Creek, and in some areas sheet flows discharge into surrounding pervious areas.

The construction of new impervious area can cause permanent impacts to water quality. New impervious area prevents runoff from naturally dispersing and infiltrating into the ground, resulting in increased concentrated flow. The Project is anticipated to create 1.21 acres of new impervious surface at Bridge 143 and 0.99 acres of new impervious surface at Bridge 145 because of the widening of the bridge deck, travel lanes, and shoulders. Table 4, below, displays the disturbed soil area (DSA), existing, newly created, and replaced impervious area for the Project Sites.

**Table 4: Disturbed Soil Area and Existing/Added/Replaced Impervious Areas for the Project.**

| <b>Water Quality Areas</b>       | <b>Bridge 143</b> | <b>Bridge 145</b> |
|----------------------------------|-------------------|-------------------|
| Disturbed Soil Area (DSA)        | 3.44 acres        | 3.29 acres        |
| Existing Impervious Area         | 0.88 acres        | 0.71 acres        |
| New Impervious Area              | 1.21 acres        | 0.99 acres        |
| Replaced Impervious Area         | 0.51 acres        | 0.34 acres        |
| New and Replaced Impervious Area | 1.72 acres        | 1.33 acres        |

Source: WRECO, 2019c

The Project will not increase vehicular traffic on the roadway because it does not increase capacity. However, as noted above, the Project would result in additional impervious area, which could increase the amount of runoff not infiltrating into the ground. This non-infiltrated and concentrated runoff can result in the direct discharge of sediment-laden flow from the roadway to receiving water bodies if not properly stabilized and can increase pollutant loads by reducing the permeable area available for road runoff to infiltrate into the ground. As shown in Table 4, the Project will result in approximately 2 acres of new impervious surface.

This area of Contra Costa County is covered under the East Contra Costa County Municipal NPDES Permit (Municipal Permit) issued by the Central Valley Regional Water Quality Control Board (CVRWQCB) on September 23, 2010. Provision C.3 of the Municipal Permit addresses source control, site designs, and stormwater treatment measures for new development and redevelopment projects. A Stormwater Control Plan (Jacobs 2019) has been prepared to comply with Provision C.3 of the Municipal Permit. The Stormwater Control Plan follows CCCPWD's Stormwater C.3 Guidebook (CCCWP 2017), including the design of drainage and water treatment facilities. Drainage design features will be based on hydrologic and hydraulic analysis to ensure existing drainage patterns and water quality standards are maintained. The Project would use permeable materials to replace and construct new ditches as necessary to intercept runoff from the roadway. Bioretention facilities will be constructed within these ditches to capture and treat water volumes generated from the Project. Permeable ditches and use of dissipation pads where needed will allow road runoff to infiltrate and reduce potential sediment and roadway pollutants from entering the creek. All

disturbed soil surfaces will be stabilized with a native seed mix once construction is complete which will reduce potential for erosion and related sediment.

Provision C.2.e of the Municipal Permit addresses construction and maintenance of roads and other public works in rural areas. The provision states that best management practices (BMPs) for erosion and sediment control measures should be implemented for construction and maintenance activities on rural roads. The provision also includes the following measures to minimize impacts on streams and wetlands: the design of bridge crossings must use measures to reduce erosion, provide fish passage, and maintain natural stream geomorphology in a stable manner. The design of the bridge crossings include rock stabilization at the abutments which will reduce the erosive forces of water moving under the bridge, and any disturbed areas of stream bank along Marsh Creek will be stabilized using a combination of methods such as erosion control blankets, wattles, or other appropriate methods to stabilize the disturbed banks in the short-term. The disturbed areas will also be seeded with a native seed mix to provide long-term protection against erosion and revegetate the banks. The stream bed will remain an earthen bed and the existing bridge abutments will be removed which will maintain the natural stream morphology to the extent feasible and allow a natural low flow channel, important for fish passage, to develop.

Work within the creek would be subject to regulation by the United States Army Corps of Engineers (USACE), the CVRWQCB, and the California Department of Fish and Wildlife (CDFW). Permits obtained from these agencies will further address water quality impacts and would be adhered to. Permit conditions are expected to include but not be limited to preparation of a Stormwater Pollution Prevention Plan (SWPPP) as described below and additional conditions such as dewatering the creek during construction if flows are present, work windows, and turbidity limits.

During construction, temporary impacts to surface water quality could occur from sediment-laden discharge from disturbed soil areas or pollution laden discharge from storage or work areas. The Project would comply with the provisions of the NPDES Construction General Permit, which will require a SWPPP be developed and implemented for the Project. The SWPPP will identify the potential for construction related erosion and sedimentation, accidental spills, and other potential construction related water quality impacts. The SWPPP will identify BMPs to avoid and minimize this potential and will be approved by CCCPWD prior to construction. (WRECO, 2019a & 2019b). Examples of BMPs include but are not limited to staging equipment away from the creek, dust control, removing tracked out soil from the roadway, secondary containment for liquid materials, rain event action plans, and stabilization of disturbed soils. Temporary impacts are anticipated to be minimal with implementation of the SWPPP measures and BMPs.

The Project would not directly create wastewater discharge or degrade surface or ground water quality. Drainage design features will be based on hydrologic and hydraulic analysis to ensure existing drainage patterns and water quality standards are maintained (Jacobs 2019). Accidental releases could occur during construction. However, as stated above, a SWPPP will be prepared for the Project and standard BMPs will be implemented during construction activities to minimize sediment or pollutants from construction activities from accidentally entering the creek. Therefore, the Project would have a less than significant impact.

b) *Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin? (No Impact)*

The Project would not affect groundwater supply. The Project is not located within a groundwater basin and is not listed for groundwater recharge as a beneficial use. There are no anticipated impacts on local aquifers and groundwater volumes. Therefore, the Project would have no impact.

c) *Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would:*

i) *Result in substantial erosion or siltation on- or off-site? (**Less Than Significant Impact**)*

Section X.a, above, describes the potential impacts associated with increased impervious surface coverage. The Project would widen the roadway to accommodate a wider lanes and shoulders, resulting in an incremental increase in impervious surface coverage at the two sites. An increase in impervious area could modify Marsh Creek's hydrographs by increasing the flow volumes and rates and peak durations from the loss of unpaved overland flow and native infiltration (hydromodification). The increase in impervious surface, however, is limited to a strip along the roadway and the majority of the surrounding land would continue to be pervious. Most roadway run off would be conveyed to pervious roadside ditches and potential biofiltration systems before reaching Marsh Creek, which would allow infiltration and percolation similar to the existing condition. Changes to the existing hydrograph are expected to be minimal (WRECO 2019b). BMPs for erosion and sediment control as identified in Section X.a will be implemented during construction of the Project. Impacts of erosion on receiving waters are also expected to be minimal (WRECO 2019b). Therefore, the Project would have a less than significant impact.

ii) *Substantially increase the rate or amount of surface runoff in a manner which would result in flooding on or offsite? (**Less Than Significant Impact**)*

As described above in (i), the Project would introduce wider lanes and shoulders which would result in an increase in impervious surface as compared to existing conditions. However, following construction, the general drainage patterns would remain unchanged. The area surrounding the bridges and roadway is largely undeveloped and pervious which would not change as a result of the Project. Further the bridge itself would be wider between the abutments than the existing condition thus reducing the constriction point that occurs with bridge crossings resulting in less potential for water to overtop the bridge during heavy storms. As discussed previously new ditches will be pervious allowing water to infiltrate as it does currently. For these reasons the Project would not result in significant changes to drainage patterns or result in an increased flooding impact. Therefore, the Project would have a less than significant impact.

iii) *Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff? (**Less Than Significant Impact**)*

The Project will not create or contribute runoff water that would exceed the capacity of the existing or planned drainage system in the area. The Project is located in an undeveloped area without a drainage system. Stormwater from the Project Site flows primarily over permeable ditches and discharges into Marsh Creek. Roadside ditches and biofiltration systems would be constructed as part of the Project and sized to accommodate anticipated storm flows.

As previously discussed, the Project would widen the roadway and result in an incremental increase in the amount of impervious surface coverage at the two sites. However, no new lanes of traffic would be added and therefore new sources of pollution would not be introduced. Appropriate authorizations related to water quality would be obtained from regulatory agencies prior to construction, as described in Section X.a. The bridge would be constructed



to current design standards and Project construction would implement BMPs during construction to avoid adverse impacts to the drainage area. Therefore, the Project would have a less than significant impact.

iv) *Impede or redirect flood flows? (Less Than Significant Impact)*

The existing bridge structures at the two sites constrict Marsh Creek, resulting in flood water backing up and inundating the undersides of the two bridges during heavy rain events. The new bridge structures would be constructed with wider span between the abutments to allow more water to travel under the bridges during high flow events. The new bridges would provide adequate freeboard – the space required between the bottom of the bridges and flood waters to meet safety standards. In addition, the Project does not substantially increase the amount of impervious surface; thus, the existing drainage patterns would be maintained in its current condition and would not impede or redirect flood flows. Therefore, the Project would have a less than significant impact.

d) *In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation? (Less Than Significant Impact)*

The Project involves the replacement of two existing bridges over Marsh Creek on relatively flat land. No enclosed large surface water bodies, which might be subject to potential impacts from seiches or tsunamis, are located in the vicinity of the Project Sites. According to the Federal Emergency Management Agency's (FEMA) Flood Insurance Rate Map (FIRM), Marsh Creek Road over Marsh Creek is within the Special Flood Hazard Area (SFHA) Zone A, which represents areas subject to flooding by the 100-year flood event. The Project would not result in an increased flooding risk, however, because the new bridge structures would be constructed with wider span between the abutments to allow more water to travel under the bridges during high flow events. The Project would reduce potential floods to escape the channel banks (WRECO 2019a). Therefore, the Project would have a less than significant impact.

e) *Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan? (Less Than Significant Impact)*

This Project is located between the City of Clayton, within the unincorporated area of Antioch, and Brentwood, in Contra Costa County. This area of Contra Costa County is within the limits of the Central Valley RWQCB, which established the Water Quality Control Plan (Basin Plan) for the California Regional Water Quality Control Board Central Valley Region: The Sacramento River Basin and the San Joaquin River Basin (CVRWQCB 2018).

The Basin Plan identifies general water quality objectives for inland surface waters. Generally, roadway runoff can contain the following pollutants: total suspended solids, nitrate nitrogen, total Kjeldahl nitrogen, phosphorus, ortho-phosphate, copper, lead, and zinc. The primary pollutants associated with transportation corridors are heavy metals associated with vehicle tire and brake wear, oil and grease, and exhaust emissions. These sources of pollutants are anticipated to be negligible because the Project would not increase capacity of the road. Further, the Project construction would implement source controls (such as limiting construction access routes, stabilization of areas denuded by construction, and sediment control) to prevent stormwater runoff pollutants from discharging into Marsh Creek.

The Basin Plan lists the following beneficial uses for Marsh Creek and its tributaries: warm freshwater habitat, wildlife habitat, rare, threatened, or endangered species, and commercial and sport fishing. Potential beneficial uses of Marsh Creek include water contact and non-contact recreation. Increased stormwater

runoff from new impervious area could degrade the beneficial use for commercial and sport fishing at Marsh Creek. However, as discussed in Section X.a, this impact would be minimal due to design criteria that will maintain drainage patterns and infiltration. Based on the above, the Project would not conflict or obstruct implementation of a water quality control plan or sustainable groundwater management plan. Therefore, the Project would have a less than significant impact.

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## XI. LAND USE AND PLANNING

|  | Potentially<br>Significant<br>Impact | Less Than<br>Significant<br>with<br>Mitigation<br>Incorporated | Less Than<br>Significant<br>Impact  | No<br>Impact             |
|--|--------------------------------------|--|-------------------------------------|--------------------------|
| Would the project:   |                                      |  |                                     |                          |
| a) Physically divide an established community?   | <input type="checkbox"/>             | <input type="checkbox"/>                                       | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| b) Cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect? | <input type="checkbox"/>             | <input type="checkbox"/>                                       | <input checked="" type="checkbox"/> | <input type="checkbox"/> |

### a) *Physically divide an established community? (Less Than Significant Impact)*

The physical division of an established community typically refers to the construction of a physical feature (such as an interstate highway or railroad tracks) or removal of a means of access (such as a local road or bridge) that would impair mobility within an existing community, or between a community and an outlying area. The Project involves the replacement of two existing bridges on Marsh Creek Road and would not physically divide a community. In addition, access would remain at the two bridges during construction. Therefore, the Project would have a less than significant impact.

### b) *Cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect (Less Than Significant Impact)*

The proposed Project does not conflict with any applicable land use plan, policy or regulation. The Project is consistent with the Transportation and Circulation Element goals and policies of the County General Plan including (Contra Costa County 2005a):

- *Roadway and Transit Goal #5-A:* To provide a safe, efficient and balanced transportation system.
  - Consistency: The Project would replace the existing bridges to bring them up to current safety design standards, improving safety of the roadway.
- *Roadway and Transit Goal #5-K:* To provide basic accessibility to all residents, which includes access to emergency services, public services and utilities, health care, food and clothing, education and employment, mail and package distribution, freight delivery, and a certain amount of social and recreational activities.
  - Consistency: The Project would replace existing structurally deficient bridges to ensure transportation access through Marsh Creek is maintained for all residents.
- *Roadway and Transit Policy #5-9:* Existing circulation facilities shall be improved and maintained by eliminating structural and geometric design deficiencies.
  - Consistency: The purpose of the Project is to eliminate design deficiencies of the existing bridges.
- *Roadway and Transit Policy #5-17:* Emergency response vehicles shall be accommodated in development project design.

- Consistency: Emergency response vehicles will have access through the Project at all times.
- *Roadway and Transit Policy #5-34*: Appropriate buffers, such as soundwalls, bermed embankments, depressed alignments, and open space areas along major transportation facilities, shall be provided adjacent to noise sensitive land uses.
  - Consistency: See Section XIII, Noise. The Project will not result in operational increases of noise, and temporary noise from construction will be mitigated through NOI-1.
- *Scenic Routes Policy #5-47*: Scenic corridors shall be maintained with the intent of protecting attractive natural qualities adjacent to various roads throughout the county.
  - Consistency: See Section I, Aesthetics. The Project will have a less than significant impact on scenic vistas or resources, nor will it damage the existing visual character of the site or its surroundings.
- *Scenic Routes Policy #5-49*: Scenic views observable from scenic routes shall be conserved, enhanced, and protected to the extent possible.
  - Consistency: See Section I.a, Aesthetics. The Project will have a less than significant on scenic vistas.

CCCPWD has an adopted Habitat Conservation Plan/Natural Community Conservation Plan (HCP/NCCP). As described in Section IV, Biological Resources, the Project is a covered activity under the under 2.3.2 Rural Infrastructure Projects, Bridge Replacement, Repair or Retrofit and would comply with all terms of the HCP/NCCP permit requirements.

The Project would not conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect. Therefore, the Project would have a less than significant impact.

## XII. MINERAL RESOURCES

|   | Potentially<br>Significant<br>Impact | Less Than<br>Significant<br>with<br>Mitigation<br>Incorporated | Less Than<br>Significant<br>Impact | No<br>Impact                        |
|---|--------------------------------------|--|------------------------------------|-------------------------------------|
| Would the project:  |                                      |  |                                    |                                     |
| a) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?                                | <input type="checkbox"/>             | <input type="checkbox"/>                                       | <input type="checkbox"/>           | <input checked="" type="checkbox"/> |
| 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"/>           | <input checked="" type="checkbox"/> |

- 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? (No Impact)*

Mineral resources such as crushed rock, sand, and other resources, are important minerals in the region as they provide the necessary components for construction materials including asphalt and concrete for current and future development in the region. The most important mineral resources that are currently mined in the County include diabase near Mt. Zion on the north side of Mt. Diablo, which provides crushed rock primarily for roadbase and streambank stabilizations; domengine sandstone, located in the eastern portion of the County just south of Camino Diablo and east of Vasco Road in the Byron area, which is the sole deposit in the state; and shale in the Port Costa area, which has been designated for protection by the County General Plan (Contra Costa County 2005b). However, there are no mapped mineral resource areas near the Project. Therefore, the Project would have no impact.

- 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?(No Impact)*

There are no mapped mineral resource areas near the Project. Therefore, the Project would have no impact.

### XIII. NOISE

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

- a) *Generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies? (Less Than Significant with Mitigation Incorporated)*

Contra Costa County does not have a noise ordinance and therefore, does not specify operational or construction noise level limits. The Noise Element of the General Plan does specify that construction activities shall be concentrated during the hours of the day that are not noise-sensitive for adjacent land uses and should be commissioned to occur during normal work hours of the day to provide relative quiet during the more sensitive evening and early morning period (Contra Costa County 2005e). Work may occur outside of these times with County approval. Implementation of NOISE-1a, as described below, complies with the Noise Element.

**Project Land Use Compatibility.** Noise-sensitive receptors nearest to the Project Sites include residences near Bridge 143 and an equestrian center near Bridge 145. Locations and distances from these receptors to the Project Sites are provided in Table 5, below. The Project Sites are located in rural, predominantly agricultural (grazing) areas. As such, ambient noise levels are less than in a more urban environment, and primarily stem from vehicular traffic along Marsh Creek Road. Based on the traffic noise contours provided in the Noise Element of the County General Plan, the traffic noise level of Marsh Creek Road between Clayton and Deer Valley Road, where Bridge 143 is located, is estimated to be 65 dBA, which is within the typical hourly noise level range (60 to 65 dBA) for suburban arterial roadways. Traffic noise levels on Marsh Creek Road between Deer Valley Road and Camino Diablo Road, where Bridge 145 is located, is estimated to be 64 dBA, which is also within the typical noise level range (60 to 65 dBA) for suburban arterial roadways.

**Table 5: Nearby Receptors Sensitive to Noise.**

| Sensitive Receiver              | Approximate Distance of Receiver from the Bridge and Potential Staging Area   | Shielding                      | Proposed Changes in Shielding | Ground Surface between Roadway and Receiver        |
|---------------------------------|---|--------------------------------|-------------------------------|--|
| Marsh Creek Road Bridge 143     |   |                                |                               |  |
| Clayton Palms Community Housing | 1,400 feet northeast of Bridge 143 and 690 feet from closest potential staging area. This housing is shielded from noise by existing curves in the road and vegetation. | Landscape trees & Native trees | None                          | Landscape trees & Native trees                     |
| Residence 1                     | 1,000 feet from Bridge 143 and 500 feet from closest potential staging area. Residence is elevated from Marsh Creek Road and shielded by trees and vegetation.          | Landscape trees & Native trees | None                          | Landscape trees & Native trees                     |
| Residence 2                     | 700 feet from Bridge 143 and 630 feet from closest potential staging area. Residence is elevated from Marsh Creek Road and shielded by trees and vegetation.            | Landscape trees & Native trees | None                          | Landscape trees & Native trees & paved parking lot |
| Residence 3                     | 1,100 feet from Bridge 143 and 450 feet from closest potential staging area. Residence is elevated from Marsh Creek Road and shielded by trees and vegetation.          | Landscape trees & Native trees | None                          | Landscape trees & Native trees                     |
| Marsh Creek Road Bridge 145     |   |                                |                               |  |
| Equestrian Center               | 3,000 feet from Bridge 145 and 3,100 feet from potential staging area.  | Landscape trees & Native trees | None                          | Landscape trees & Native trees                     |

**Operational Impacts.** The Project would not increase capacity of the Marsh Creek Road and no significant changes to topography would occur as part of the Project. Roadway and bridge realignments would not result in increased capacity at the two sites. The new roadway alignments and bridge replacements would result in small changes (increases and decreases) in the distance of the roadway from nearby receptors, although changes in operational noise would be negligible due to limited change in the alignments and distance to receptors.

**Construction Impacts.** It is anticipated that the proposed Project would use standard construction equipment, which includes but is not limited to: excavators, graders, scrapers, loaders, sweepers/scrubbers, plate compactors, vibratory compactors, rollers, backhoes, cranes, drill rigs, casing oscillator, concrete pump trucks, generators, water trucks, storage/sedimentation tanks, and pavers. Table 6 summarizes the typical noise levels produced by construction equipment commonly used on road construction projects.

**Table 6 Construction Noise Equipment.**

| <b>Equipment</b>              | <b>Typical Noise Level (dBA at 50 feet from source)</b> |
|-------------------------------|---|
| Large Rotary drilling machine | 79  |
| Excavator                     | 81  |
| Concrete Mixer                | 85  |
| Backhoe                       | 80  |
| Bulldozers                    | 85  |
| Compactor                     | 82  |
| Generator                     | 81  |
| Heavy Trucks                  | 88  |
| Roller                        | 74  |
| Paver                         | 89  |
| Jack Hammer                   | 88  |

Source: Federal Transit Administration 2006.

The Project would result in an increase in ambient noise associated with Project construction. However, these impacts would be short-term and temporary in nature. In general, construction equipment generates noise levels ranging from approximately 74 to 90 dBA at 50 feet from the noise source, with higher levels up to 101 dBA for less typical equipment such as pile drivers and rock drills (USDOT 2006). Construction activities for this Project would fall within a typical range between 74 to 90 dBA at 50 feet. Noise produced by construction equipment would be reduced over distance at a rate of about 6 dBA per doubling of distance (FTA 2006). The nearest sensitive receptor is 450 feet away from the closest staging area. Using 90 dBA this would result in an approximate noise level of less than 72 dBA at the nearest sensitive receptor. The guidelines of the Noise Element of the General Plan state that for the low density residential land use category, the range of community noise exposure is conditionally acceptable between 55 – 70 dBA. While the approximate noise level to the nearest sensitive receiver is slightly above 70 dBA, this is based on the closest extent of a proposed staging area. The equipment would be operated at a further distance towards the roadway and bridge. Noise would be intermittent and cease once Project construction is complete. Additionally, there is a dense grove of mature trees between the receiver and the Project footprint which would further shield the noise. Mitigation Measures will be implemented as described below.

The Project will have construction impacts caused by an increase in ambient noise associated with Project construction. These impacts, however, would be short-term and temporary in nature and are similar to current noise levels at nearby sensitive receivers. The Resident Engineer shall approve the work and will be available to address any noise concerns during all construction activities. Implementation of Mitigation Measures NOISE-1a and NOISE-1b would reduce this short-term construction period noise impact to a less than significant level.

**Impact NOI-1:** Development of the Project will result in a temporary increase in ambient noise levels during Project construction.

**Mitigation Measure NOI-1a:**

Construction activities shall be limited to non-sensitive hours for adjacent land uses (generally between 7:00 a.m. to 6:00 p.m.), consistent with the Contra Costa County General Plan Noise Element. If work is necessary outside of these hours, the CCCPWD shall both approve the extended work hours and the Project construction contractor/Resident Engineer will be available to address any noise concerns during construction.



Mitigation Measure NOI-1b:

The Project contractor shall employ the following noise-reducing practices during Project construction:

1. Require all construction equipment to conform to Section 14-8.02 Noise Control, of the latest Caltrans Standard Specifications. This requires all internal combustion engine driven equipment to be equipped with intake and exhaust mufflers that are in good condition and appropriate for the equipment.
2. Utilize 'quiet' air compressors and other 'quiet' equipment where such technology exists.
3. Locate equipment staging in areas that would create the greatest possible distance between construction-related noise sources and noise-sensitive receptors nearest the active Project site during all Project construction.
4. Provide notification to the adjacent noise-sensitive receptors including the anticipated construction schedule and contact number for a County representative who can address noise complaints.

b) *Generation of excessive groundborne vibration or groundborne noise levels? (**Less Than Significant Impact**)*

Excessive ground borne vibration from construction activities results from equipment such as pile drivers, which would not be used to construct the Project. As an alternative to reduce noise and vibrations compared to driven piles, cast-in-drilled hole shafts would be used. Some ground borne vibration may result from construction but would not be excessive based on the types of construction equipment that would be used and would be short term in nature. Therefore, Project impacts would be less than significant.

c) *For a project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?(**No Impact**)*

The Project is not located within an airport land use plan or within two miles of a public use or private airport. Therefore, the Project would have no impact.

#### XIV. POPULATION AND HOUSING

|  | Potentially<br>Significant<br>Impact | Less Than<br>Significant<br>with<br>Mitigation<br>Incorporated | Less Than<br>Significant<br>Impact | No<br>Impact                        |
|--|--------------------------------------|--|------------------------------------|-------------------------------------|
| <hr/> Would the project:   |                                      |  |                                    |                                     |
| a) Induce substantial unplanned population growth in an area, either directly (e.g., by proposing new homes and businesses) or indirectly (e.g., through extension of roads or other infrastructure)?                    | <input type="checkbox"/>             | <input type="checkbox"/>                                       | <input type="checkbox"/>           | <input checked="" type="checkbox"/> |
| b) Displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere?  | <input type="checkbox"/>             | <input type="checkbox"/>                                       | <input type="checkbox"/>           | <input checked="" type="checkbox"/> |
| <hr/>  |                                      |  |                                    |                                     |
| a) <i>Induce substantial unplanned population growth in an area, either directly (e.g., by proposing new homes and businesses) or indirectly (e.g., through extension of roads or other infrastructure)? (No Impact)</i> |                                      |  |                                    |                                     |
| b) <i>Displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere? (No Impact)</i>   |                                      |  |                                    |                                     |

The Project does not include new homes or businesses that could directly induce population growth. The Project would not displace any existing housing; as such, no replacement housing is necessary. The Project would not increase the capacity of the roadway and involves the replacement of two bridges on Marsh Creek Road to current design standards. Minor storm drainage modifications are required to accommodate the adjusted bridge and roadway alignments. No other infrastructure is proposed that could indirectly induce population growth. Therefore, the Project would have no impact.

| XV. PUBLIC SERVICES  | Potentially<br>Significant<br>Impact | Less Than<br>Significant<br>With<br>Mitigation<br>Incorporated | Less Than<br>Significant<br>Impact | No<br>Impact                        |
|--|--------------------------------------|--|------------------------------------|-------------------------------------|
| Would the project:   |                                      |  |                                    |                                     |
| a) Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:  | <input type="checkbox"/>             | <input type="checkbox"/>                                       | <input type="checkbox"/>           | <input checked="" type="checkbox"/> |
| I. Fire Protection?  | <input type="checkbox"/>             | <input type="checkbox"/>                                       | <input type="checkbox"/>           | <input checked="" type="checkbox"/> |
| II. Police Protection  | <input type="checkbox"/>             | <input type="checkbox"/>                                       | <input type="checkbox"/>           | <input checked="" type="checkbox"/> |
| III. Schools?  | <input type="checkbox"/>             | <input type="checkbox"/>                                       | <input type="checkbox"/>           | <input checked="" type="checkbox"/> |
| IV. Parks?   | <input type="checkbox"/>             | <input type="checkbox"/>                                       | <input type="checkbox"/>           | <input checked="" type="checkbox"/> |
| V. Other public facilities?  | <input type="checkbox"/>             | <input type="checkbox"/>                                       | <input type="checkbox"/>           | <input checked="" type="checkbox"/> |
| a) <i>Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services: fire protection, police protection, schools, parks, and other public facilities?(No Impact)</i> |                                      |  |                                    |                                     |

The East Contra Costa Fire Protection District provides fire protection services and emergency services to the Marsh Creek area and the Contra Costa County Sheriff's Department provides general public safety and law enforcement services in unincorporated areas of Contra Costa County (Contra Costa County 2005d). The Project is located in the Mount Diablo Unified School District (MDUSD 2018).

The Project would not result in population growth, nor does it propose land uses that increase demand on police and fire services, as such the Project would not impact service ratios, response times or other performance objectives for fire protection, police protection, schools, parks, or other public facilities. Emergency vehicles would have access through the Project Site at all times. The Project would not result in new development that could increase demand on public services and therefore would not necessitate the construction of new facilities or the alteration of facilities that could result in environmental impacts. Therefore, the Project would have no impact.

| XVI. RECREATION  | Potentially<br>Significant<br>Impact | Less Than<br>Significant<br>with<br>Mitigation<br>Incorporated | Less Than<br>Significant<br>Impact  | No<br>Impact                        |
|--|--------------------------------------|--|-------------------------------------|-------------------------------------|
| Would the project:   |                                      |  |                                     |                                     |
| 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"/>                                       | <input checked="" type="checkbox"/> | <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"/>                                       | <input type="checkbox"/>            | <input checked="" type="checkbox"/> |

- 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? (Less Than Significant Impact)*

The Project does not include new development that could increase the use of existing parks or recreational facilities that could result in substantial physical deterioration of facilities. However, construction of Bridge 145 would require the permanent right-of-way acquisition of an estimated 0.65 acres of Marsh Creek State Park (2,451 acre parcel) along the north side of Marsh Creek Road. The area required for the proposed right-of-way would not displace any current park facilities (trails, campsites, historic sites), and it amounts to less than 0.02 percent of the parcel and is located over a mile from the main area of the park near a southern gate. Therefore, the Project would have a less than significant impact.

- 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? (No Impact)*

As noted above, the Project does not include new development that could require construction of existing recreational facilities. Therefore, the Project would have no impact.

## XVII. TRANSPORTATION

|  | Potentially<br>Significant<br>Impact | Less Than<br>Significant<br>with<br>Mitigation<br>Incorporated | Less Than<br>Significant<br>Impact  | No<br>Impact             |
|--|--------------------------------------|--|-------------------------------------|--------------------------|
| Would the project:   |                                      |  |                                     |                          |
| a) Conflict with a program plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities?           | <input type="checkbox"/>             | <input type="checkbox"/>                                       | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| b) Would the project conflict or be inconsistent with CEQA Guidelines section 15064.3(b)?  | <input type="checkbox"/>             | <input type="checkbox"/>                                       | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| c) Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)? | <input type="checkbox"/>             | <input type="checkbox"/>                                       | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| d) Result in inadequate emergency access?  | <input type="checkbox"/>             | <input type="checkbox"/>                                       | <input checked="" type="checkbox"/> | <input type="checkbox"/> |

a) *Conflict with a program plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities? (Less Than Significant Impact)*

The Contra Costa Transportation Authority (CCTA) functions as the County's principal transportation planning agency and Congestion Management Agency. The applicable plans adopted by CCTA are the 2017 Update of the Contra Costa Congestion Management Program (CCTA 2017) and the 2018 Countywide Bike and Pedestrian Plan (CCTA 2018). In addition, the Transportation and Circulation Element of the County General Plan includes transportation goals and policies (Contra Costa County 2005a).

Marsh Creek Road is a narrow, two-lane rural arterial road that is widely used by commuters as an alternate to SR-4. The Average Daily Traffic (ADT) on Marsh Creek Road, where Bridge 145 is located, is 4,700. The ADT on the segment of Marsh Creek Road where Bridge 143 is located is 5,600 (CCCPWD 2018). The road winds through a series of tight turns in rolling terrain, serving as a vital transportation link between Central and East Contra Costa County for passenger vehicles, heavy trucks, and vehicles with trailers.

The Project does not include elements that would increase traffic on local roadways (for example, residential or commercial construction). Changes to the roadway are limited to bridge replacement and minor roadway realignment (approximately 45 to 50 feet to the northwest) at two locations on Marsh Creek Road in order to bring the two bridges up to current design standards. This would not substantially change the configuration of the road or increase capacity. As such, the Project will not conflict with plans, ordinances or policies that establish measures of effectiveness for roadway performance.

According to the Countywide Bicycle and Pedestrian Plan, a low stress bikeway has been proposed for Marsh Creek Road. The bikeway represents corridors and general connections intended to create a regional backbone for the bicycle network rather than specific suggested alignments. The plan also acknowledges that local jurisdictions and agencies would have to identify what low stress facilities would be most appropriate (CCCTA 2018). The replacement bridges would not be designated as a bicycle facility,

however, the widened shoulders would be an improvement over the existing condition and not conflict with this plan.

The Contra Costa County Department of Conservation and Development has initiated a feasibility study to evaluate a bicycle facility along Marsh Creek Road to address improvements in the future. The Marsh Creek Corridor Multi-Use trail is proposed to complete a non-motorized corridor along Marsh Creek Road between the City of Clayton and the City of Brentwood. The Bridge 143 site is located in the proposed Marsh Creek Corridor. Any alignments of a multi-use trail in the corridor would not be determined until several years after the completion of the Project. Additionally, the East Bay Regional Park District plans to complete one of the gaps in the multi-use trail by extending the Marsh Creek trail through the City of Brentwood to the Round Valley Regional Preserve. The Bridge 145 site is located in this stretch. The preferred alignment of the multi-use trail near the Project area is to the north of Bridge 145 and parallel to Marsh Creek Road. The alignment of Bridge 145 would be shifted to the north, but not conflict with the proposed trail location which would be completed after the bridge is replaced. The purpose of the Project is to replace the existing bridges to meet safety standards, and this would not preclude future plans for multi-use trails in the area.

There are no public transit or school bus routes along Marsh Creek Road between Clayton and the Brentwood area and therefore no public transit routes would be affected.

The new bridges would be constructed off the existing alignments, therefore a minimum of two 10-foot wide traffic lanes, one for each direction, would be maintained during construction with only brief lane closures. Temporary traffic controls may be necessary for certain operations and standard traffic control measures would be employed.

As such, the Project would not conflict with plans, ordinances or policies that establish measures of effectiveness for roadway performance. For the reasons stated above, the Project does not conflict with applicable plans. Therefore, the Project would have a less than significant impact.

*b) Would the project conflict or be inconsistent with CEQA Guidelines section 15064.3(b)? (Less Than Significant Impact)*

According to CEQA Guidelines Section 15064.3 (b) (2), transportation projects that reduce, or have no impact on, vehicle miles traveled should be presumed to cause a less than significant transportation impact. The Project involves the replacement of two existing bridges and would not increase the capacity of the bridges or roadways and would therefore, not increase vehicle miles traveled. Therefore, the Project would have a less than significant impact.

*c) Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)? (Less Than Significant Impact)*

The Project would not increase hazards due to a design feature as the purpose of the Project is to replace two bridges on Marsh Creek Road by bringing them up to current design standards. More specifically, the Project would realign the roadway approaches to reduce curves and provide wider shoulders for vehicle recovery at both bridges. During construction, the Project contract specifications will require the contractor to implement measures to minimize potential construction impacts. Measures would include advance notification on portable message signs in the Project vicinity and advance notification to local residents and emergency response services prior to construction; posting 25 mph work zones; and standard traffic control.

Emergency vehicles would have access at all times. Therefore, the Project would have a less than significant impact.

*d) Result in inadequate emergency access? (Less Than Significant Impact)*

Construction of the proposed Project may disrupt traffic through the Project areas during construction at the two sites. However, no full detours are anticipated and the bridges would be constructed off the existing alignments. Temporary traffic controls may be necessary for certain operations but with a minimum of two 10-foot wide traffic lanes, one for each direction, maintained during construction with only brief lane closures. Standard traffic control measures will be employed and emergency vehicles and private property owners will have access at all times. Therefore, the Project would have a less than significant impact.

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| XVIII. TRIBAL CULTURAL RESOURCES | Potentially<br>Significant<br>Impact | Less Than<br>Significant<br>with<br>Mitigation<br>Incorporated | Less Than<br>Significant<br>Impact | No<br>Impact |
|----------------------------------|--------------------------------------|--|------------------------------------|--------------|
|----------------------------------|--------------------------------------|--|------------------------------------|--------------|

Would the project cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is:

- |    |   |                          |                                     |                          |                          |
|----|---|--------------------------|-------------------------------------|--------------------------|--------------------------|
| a. | Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code section 5020.1(k), or   | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| b. | A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1. [In applying the criteria set forth in subdivision (c) of Public Resources Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.] | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

- a) *Would the project cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is: (i) Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code section 5020.1(k), or (ii) A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1? (Less Than Significant with Mitigation Incorporated)*

Assembly Bill 52, which became law on January 1, 2015, provides for consultation with California Native American tribes during the CEQA environmental review process, and equates significant impacts to “tribal cultural resources” with significant environmental impacts. Section 21074 of the Public Resources Code defines California Native American tribes as “a Native American tribe located in California that is on the contact list maintained by the NAHC for the purposes of Chapter 905 of the Statutes of 2004.” This includes both federally and non-federally recognized tribes. Section 21074(a) of the Public Resource Code defines Tribal Cultural Resources for the purpose of CEQA as:

1. Sites, features, places, cultural landscapes (geographically defined in terms of the size and scope), sacred places, and objects with cultural value to a California Native American tribe that are any of the following:
  - a. Included or determined to be eligible for inclusion in the California Register of Historical Resources; and/or



- b. Included in a local register of historical resources as defined in subdivision (k) of Section 5020.1; and/or
- c. A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Section 5024.1. In applying the criteria set forth in subdivision (c) of Section 5024.1 for the purposes of this paragraph, the lead agency shall consider the significance of the resource to a California Native American tribe.

A “historical resource” (PRC Section 21084.1), a “unique archaeological resource” (PRC Section 21083.2(g)), or a “nonunique archaeological resource” (PRC Section 21083.2 (h)) may also be a tribal cultural resource if it is included or determined to be eligible for inclusion in the California Register of Historical Resources. Tribal Cultural Resources may or may not exhibit archaeological, cultural, or physical indicators. The consultation provisions of the law require that a public agency consult with local Native American tribes that have requested placement on that agency’s notification list for CEQA projects.

**Tribal Outreach and Consultation.** Recognizing that California tribes are experts in their tribal cultural resources and heritage, AB 52 requires that CEQA lead agencies carry out consultation with tribes at the commencement of the CEQA process to identify Tribal Cultural Resources. Furthermore, because a significant effect on a Tribal Cultural Resource is considered a significant impact on the environment under CEQA, consultation is required to develop appropriate avoidance, impact minimization, and mitigation measures. Consultation is concluded when either the lead agency and tribes agree to appropriate mitigation measures to mitigate or avoid a significant effect, if a significant effect exists, or when a party, acting in good faith and after reasonable effort, concludes that mutual agreement cannot be reached (PRC Section 21080.3.2(b)), whereby the lead agency uses its best judgment in requiring mitigation measures that avoid or minimize impact to the greatest extent feasible.

The Wilton Rancheria previously requested consultation under AB 52. CCCPWD initiated contact for consultation with Wilton Rancheria on September 15, 2015. No comments or responses were received from the tribe. In addition, no information regarding potential resources was received from the tribe. However, consultation with Wilton Rancheria is ongoing through Section 106. Further, as is typical for general cultural resource investigations, throughout all stages of Project planning and archaeological investigations, AECOM conducted consultations with local Native American representatives. On November 28, 2016, AECOM sent a letter briefly describing the Project to the Native American Heritage Commission (NAHC) in Sacramento asking the Commission to review their Sacred Lands File for any Native American cultural resources that might be affected by the proposed Project. The NAHC replied via an email dated December 7, 2016, that a record search of the file was completed and “archaeological sites and tribal cultural resources were identified in the Project area provided.” The NAHC provided contact information for an individual and instructed AECOM to contact him “for more information about potential sites and resources within your APE.” The NAHC also provided a list of six Native American contacts specified as individuals who should be contacted “to locate areas of potential adverse impact within the APE.”

AECOM called the individual on February 7, 2017 and February 9, 2017 but was unable to reach him or leave a voicemail as no inbox was set up. AECOM left the NAHC a voicemail and sent them an email requesting guidance on how to proceed. NAHC staff returned AECOM’s call on February 15, 2017 and provided new contact information for the individual and instructed AECOM to contact an alternative individual who also has information about the Sacred Land in the APE. AECOM contacted both individuals to request feedback regarding the proposed Project and the potential presence of sacred sites in the APE. No responses have been received to date.

On February 22, 2017, AECOM sent emails describing the Project with a map depicting the APE to the Native American individuals specified by the NAHC. AECOM requested any information or concerns these individuals, or the tribes they represent, might have regarding the APE. The tribes contacted included:

- Amah Mutsun Tribal Band;
- Indian Canyon Mutsun Band of Costanoan;
- Muwekma Ohlone Indian Tribe of the San Francisco Bay Area;
- Chairperson, North Valley Yokuts Tribe;
- The Ohlone Indian Tribe; and
- Wilton Rancheria.

The chairperson of Wilton Rancheria responded via email on February 24, 2017 requesting background documents to compare with their database and payment for reviewing documentation and participating in field investigations. The Caltrans District 4 Native American Coordinator responded to this email. The chairperson of the North Valley Yokuts Tribe responded via phone on February 24, 2017 and again via email on February 27, 2017. The chairperson expressed concern that the Project would potentially impact archaeological sites and burials. The chairperson noted that the area is generally sensitive for buried archaeology, particularly because it is adjacent to a creek. The chairperson requested that the Project area be tested and that an archaeologist and a tribal monitor be present during all ground disturbing activities. AECOM followed up with the chairperson to see if she knew the location of any burials in the APE, but she did not know the specific locations.

The chairperson of the Amah Mutsun Tribal Band responded via email on March 2, 2017, and recommended that anyone involved in the Project receive Cultural Sensitivity Training. The chairperson also recommended that a California-trained archaeological monitor be present on site during any ground-breaking activities, and that a qualified and trained Native American monitor be on site when needed. Mitigation Measure CULT-1 and CULT-2 will be implemented to minimize unanticipated impacts to previously undiscovered resources. Therefore, the Project would have a less than significant impact with mitigation incorporated.

## XIX. UTILITIES AND SERVICE SYSTEMS

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

- a) *Require or result in the relocation or construction of new or expanded water, wastewater treatment or storm water drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects? (Less Than Significant Impact)*

The Project involves the replacement of two existing bridges and would not require or result in the relocation or construction of new or expanded water, wastewater treatment, electric power, or natural gas facilities. The Project would require the relocation of joint utility poles and overhead cables, power lines, and related facilities at both bridges sites. At Bridge 143, a 4-inch diameter Contra Costa Water District waterline and related facilities are attached to the northwest side of the existing bridge structure and would be relocated to the new structure. Relocation of utilities would be done in compliance with all applicable regulations and would not cause a significant environmental impact. Therefore, the Project would have a less than significant impact.

- b) *Have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry and multiple dry years? (Less than Significant Impact)*

Development of the Project would not result in the need for new or expanded water supplies because of the limited scope of the Project. Any water needed during construction would be provided by water trucks from off-site water sources, and water use would be limited to the minimum amount necessary. Therefore, the Project would have a less than significant impact.

- c) *Result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments? (No Impact)*

The Project involves the replacement of two existing bridges and would not increase the population within the Project vicinity. As such, development of the Project would not result in the need for new or expanded wastewater facilities and would not have an adverse effect on wastewater treatment requirements. Therefore, the Project would have no impact.

- d) *Generate solid waste in excess of State or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals? (Less Than Significant Impact)*

The Project would not generate operational waste and would not result in the need for a new solid waste facility. However, the Project would generate limited amounts of solid waste including vegetative matter, asphalt, and concrete during construction of the Project. The County has active solid waste facilities with capacity to accommodate any construction waste that may be generated (CalRecycle 2018). In addition, Project contract specifications will require that the contractor dispose of solid waste in accordance with all federal, state and local regulations. Therefore, the Project have a less than significant impact.

- e) *Comply with federal, state, and local management and reduction statutes and regulations related to solid waste? (Less Than Significant Impact)*

As stated above, Project contract specifications will require that the contractor dispose of solid waste in accordance with all federal, state and local regulations. Therefore, the Project would have a less than significant impact.

**XX. WILDFIRE**

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

a) *Substantially impair an adopted emergency response plan or emergency evacuation plan? (Less Than Significant Impact)*

The Project would improve vehicular movement on Marsh Creek Road by replacing bridges with those that meet current design standards. Therefore the project will not impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan including the Contra Costa County Emergency Operations Plan (CCC 2015). Access for emergency vehicles would be provided at all times during construction. Therefore, the Project would have a less than significant impact.

b) *Due to slope, prevailing winds, and other factors, exacerbate wildfire risks, and thereby expose project occupants to, pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire? (Less Than Significant with Mitigation Incorporated)*

The California Department of Forestry and Fire Protection (Cal Fire) has produced maps of Fire Hazard Severity Zones in Local Responsibility Areas, which are classified as “moderate,” high,” or “very high.” CalFire produces recommendations to local agencies for areas within “very high” hazard severity zones. Bridge 145 is within a “moderate” Fire Hazard Severity Zone and Bridge 143 is within a “high” Fire Hazard Severity Zone (Cal Fire 2007). The Project involves the replacement of two bridges and bringing them to current design standards and would therefore not change the operational nature of the Project Sites. During construction of the Project, however, heavy equipment would have the potential to lead to sparks that could

trigger wildland fires. Wildfire prevention Mitigation Measure HAZ-2 would be implemented to reduce the risk of wildland fires. As such, the Project would not exacerbate wildfire risk and thereby expose Project occupants to pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire. Therefore, the Project would have a less than significant impact with mitigation.

- c) *Require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment? (**Less Than Significant Impact**)*

As noted above, the Project is not located in a very high Fire Hazard Severity Zone. In addition, the Project does not include installation or maintenance of fuel breaks, emergency water sources, power lines, other utilities, or associated infrastructure that may exacerbate fire risk. Moreover, the Project components will comply with state and local building, engineering, and environmental standards and regulations. Therefore, the Project would have a less than significant impact.

- d) *Expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes? (**Less Than Significant Impact**)*

The Project is limited to the replacement of two existing bridges on Marsh Creek Road and would require minor amounts of grading. However, the Project would not significantly change the surrounding slopes at the two sites. The Project would not expose people or structures to significant risks, including downslope or downstream flooding or landslides resulting from runoff, post-fire slope instability, or drainage changes. Therefore, the Project would have a less than significant impact.

**XXI. MANDATORY FINDINGS OF SIGNIFICANCE**

|  | Potentially Significant Impact | Less Than Significant with Mitigation Incorporated | Less Than Significant Impact        | No Impact                |
|--|--------------------------------|--|-------------------------------------|--------------------------|
| a) Does the project have the potential to substantially degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, substantially reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory? | <input type="checkbox"/>       | <input checked="" type="checkbox"/>                | <input type="checkbox"/>            | <input type="checkbox"/> |
| 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 checked="" type="checkbox"/> | <input type="checkbox"/> |
| c) Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?  | <input type="checkbox"/>       | <input checked="" type="checkbox"/>                | <input type="checkbox"/>            | <input type="checkbox"/> |

- 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 a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory? (Less Than Significant with Mitigation Incorporated)*

As discussed in Section IV, implementation of Mitigation Measures BIO-1 through BIO-10 would ensure that development of the Project would not: 1) substantially reduce the habitat of a fish or wildlife species; 2) cause a fish or wildlife species population to drop below self-sustaining levels; 3) threaten to eliminate a plant or animal community; or 4) reduce the number or restrict the range of a rare or endangered plant or animal. Specifically, implementation of Mitigation Measures BIO-1 through BIO-10 would ensure that potentially significant impacts would be reduced to less than significant levels. As discussed in Section V, the Project would not impact on- and/or off-site historic resources with implementation of Mitigation Measure CULT-1 and CULT-2. As such, the proposed Project would result in less than significant with mitigation incorporated.

- 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)? (Less Than Significant Impact)*

All Project impacts were found to be less than significant or less than significant with Mitigation Measures incorporated. The bridge replacement sites are approximately four miles apart and would be constructed simultaneously. Potential Project impacts are primarily related to short-term construction impacts. The air quality analysis took into account both sites and would not exceed construction-related criteria pollutant emissions. Potential impacts associated with noise, accidental spills of hazardous materials, and potential water quality and erosion impacts would not have a cumulative impact with implementation of Mitigation Measures NOI-1, HAZ-1 and BIO-1. Impacts to traffic would not be cumulative between the two Project sites because no road detours are anticipated and a minimum of two 10-foot wide traffic lanes would be maintained during construction with only brief lane closures. No other known projects that could result in cumulative construction impacts are currently planned. Therefore, Project impacts would be less than significant.

- c) *Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly? (Less Than Significant with Mitigation Incorporated)*

The Project would not cause substantial adverse direct or indirect effects on human beings as impacts will be avoided and minimized where possible and mitigated when necessary. Specifically, implementation of Mitigation Measures HAZ-1 and NOI-1 would ensure that potentially significant impacts would be reduced to less than significant levels. Therefore, Project impacts would be less than significant with mitigation incorporated.



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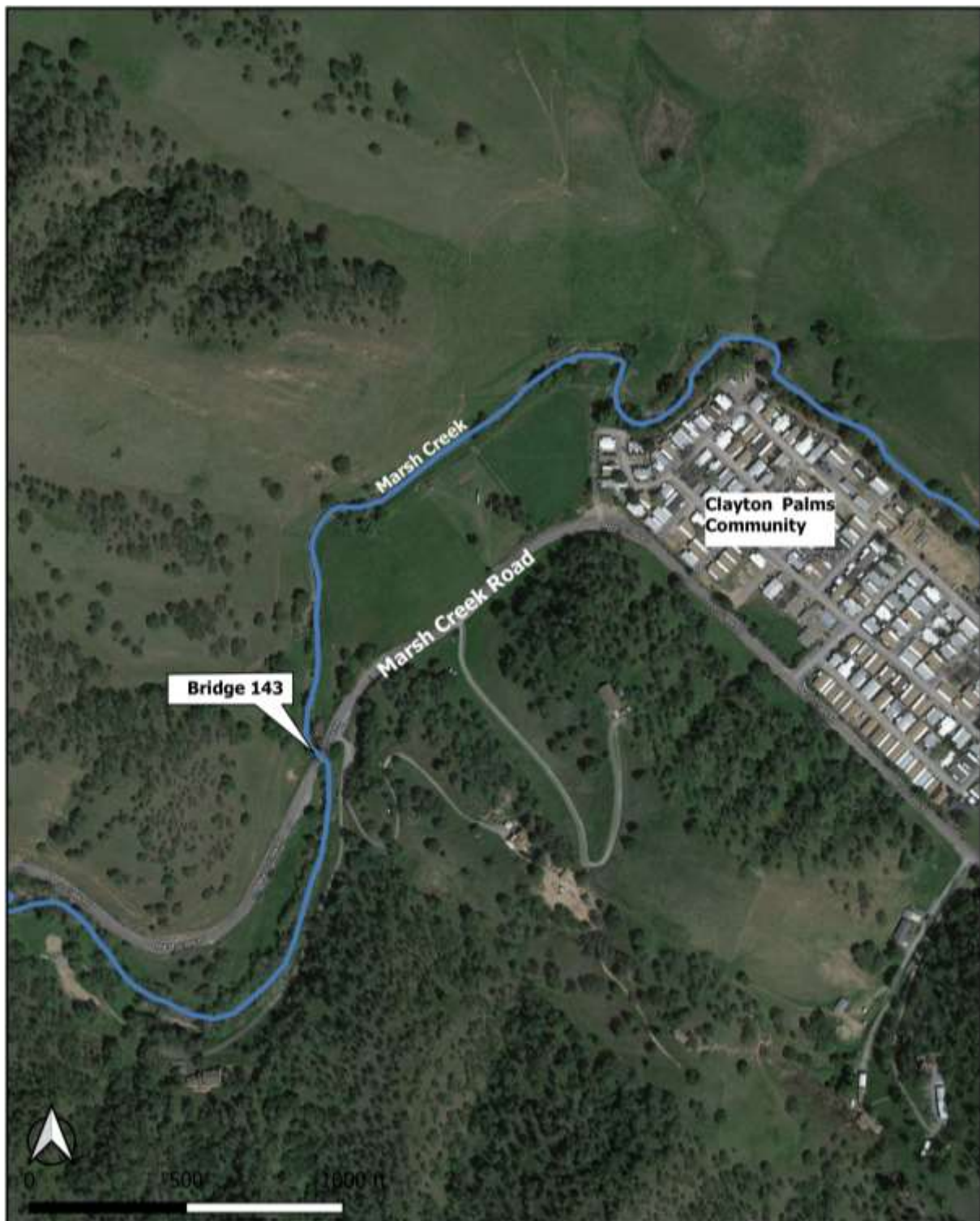
## FIGURES



Contra Costa County  
Public Works  
Department

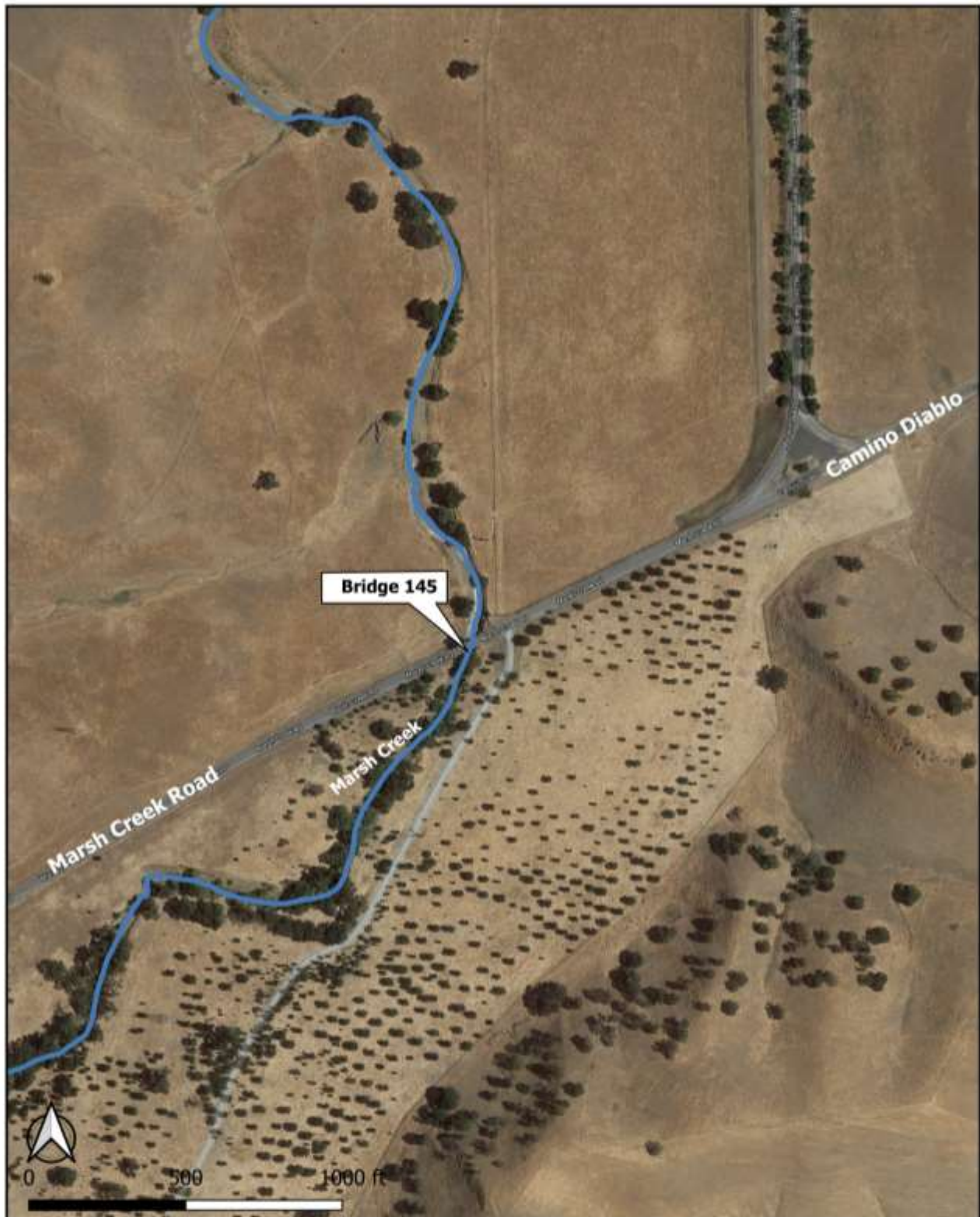
**Figure 1**  
**Project Location and Regional Vicinity Map**  
*Marsh Creek Road Bridges 143 and 145  
Replacement Project*





Contra Costa County  
Public Works  
Department

**Figure 2**  
**Marsh Creek Road Bridge #143 Vicinity Map**  
*Marsh Creek Road Bridges 143 and 145  
Replacement Project*



**Figure 3**  
**Marsh Creek Road Bridge #145 Vicinity Map**  
*Marsh Creek Road Bridges 143 and 145  
Replacement Project*

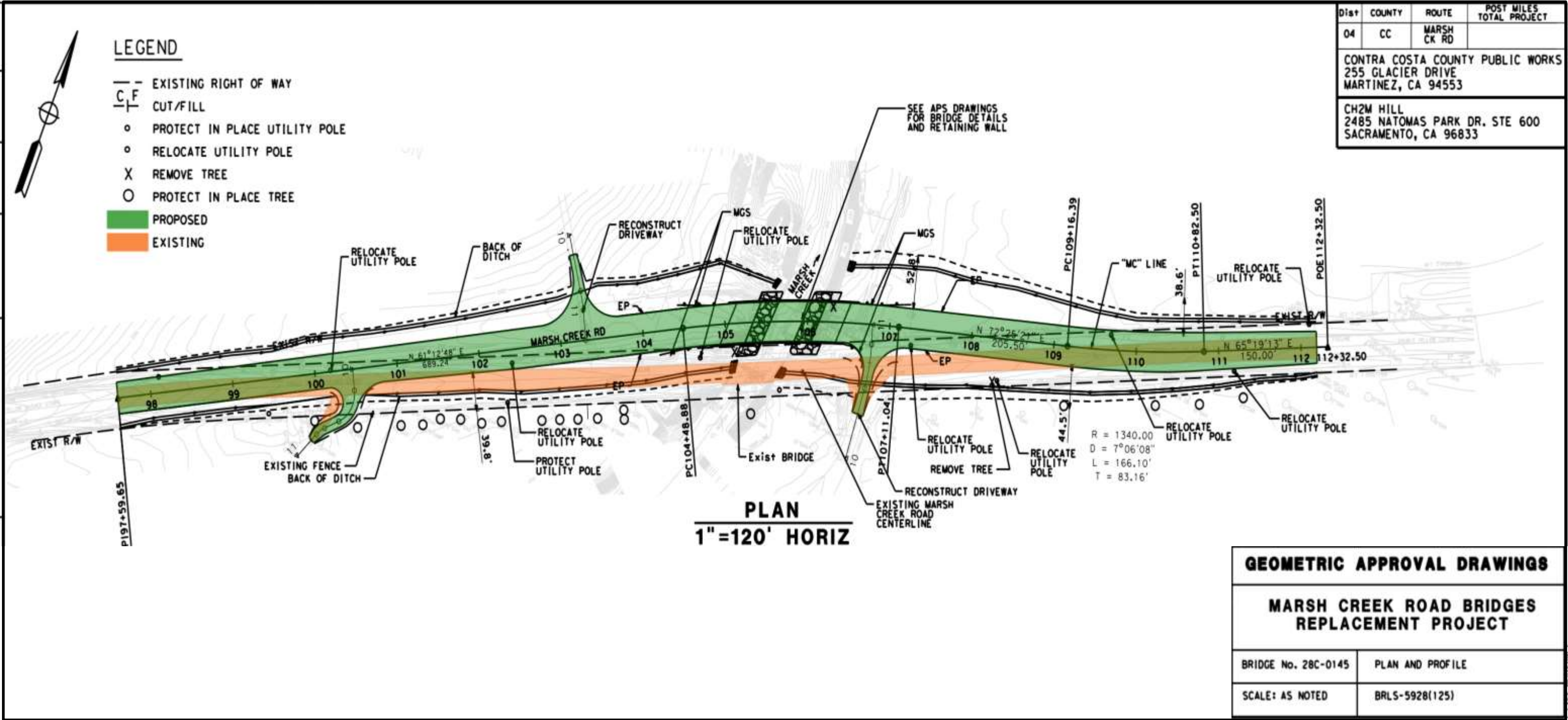




### Figure 4

#### Bridge 143 Site Plan





**Figure 5**

**Bridge 145 Site Plan**