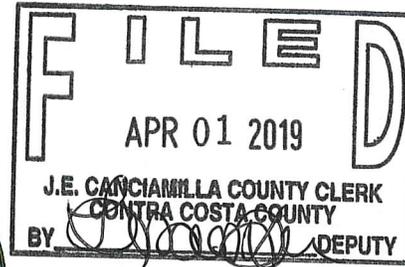


**Department of  
Conservation and  
Development**

30 Muir Road  
Martinez, CA 94553

Phone: 1-855-323-2626

**Contra  
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County**



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**Kelli Zenn**  
Business Operations Manager

**April 2, 2019**

**NOTICE OF PUBLIC REVIEW AND INTENT TO  
ADOPT A PROPOSED MITIGATED NEGATIVE DECLARATION**

**County File No. CP 19-13**

Pursuant to the State of California Public Resources Code and the "Guidelines for Implementation of the California Environmental Quality Act of 1970" as amended to date, this is to advise you that Contra Costa County has prepared an Initial Study for the following project:

**PROJECT NAME:** Lower Marsh Creek Stream Corridor Restoration Program

**LEAD AGENCY:** Contra Costa County Department of Conservation and Development

**APPLICANT:** Contra Costa County Flood Control District

**LOCATION:** Marsh Creek from Balfour Road in Brentwood to the Contra Costa Canal in Oakley just north of Cypress Road; Sand Creek from Highway 4 in Brentwood to its confluence with Marsh Creek in Brentwood; Deer Creek from the Deer Creek Detention Basin in Brentwood to its confluence with Marsh Creek in Brentwood

**DESCRIPTION:** The Lower Marsh Creek Stream Corridor Restoration Program (Program) is a creek restoration and flood risk reduction Program proposed by the Contra Costa County Flood Control and Water Conservation District ("District") and American Rivers, a national nonprofit organization that protects wild rivers, restores damaged rivers, and conserves clean water for people and nature. The goal of the Program is to incentivize willing landowners and developers to work with the District and other local partners to improve Marsh, Deer, and Sand creeks. Implementation of the proposed Program will result in: 1) improved habitat conditions for fish, birds, reptiles, and amphibians by providing a mosaic of riparian, floodplain, wetland, and aquatic habitat types for these species to utilize, 2) expanded channel capacity to meet or exceed flood channel conveyance capacity, 3) improved local water quality by shading

the creek and reducing mobilization of fine sediments, and 4) improved public recreational opportunities.

The CEQA document has been developed to put in place the environmental compliance mechanism necessary to alleviate uncertainty and complexity associated with implementing creek restoration projects, which would further incentivize landowners and developers to participate.

Construction would occur during the summer and fall months and occur over an approximately a 45-working day period. Excavation and grading activities would occur during the dry season (July to October) with plant restoration occurring afterwards (November to December). Construction activities will be generally limited to the hours between 7:00 a.m. to 5:00 p.m.

Real property transactions, including right-of-way acquisition and temporary construction easements for access and staging areas and permanent easements for access and maintenance may be necessary in support of Program projects.

The project will not have any significant environmental impacts with incorporation of proposed mitigation and avoidance measures. A copy of the Initial Study/Mitigated Negative Declaration (IS/MND) may be reviewed at the Contra Costa County Public Works Department, 255 Glacier Drive, Martinez, during normal business hours. You may also view the IS/MND on the County's webpage: <http://ca-contracostacounty2.civicplus.com/4841/Public-Input>. All documents referenced in the IS/MND are available on request.

**PUBLIC COMMENT PERIOD:** The period for accepting comments on the adequacy of the environmental document is from **April 2, 2019 to May 1, 2019**. Any comments should be in writing and submitted to the following address and/or email address:

Claudia Gemberling  
Environmental Services Division  
Contra Costa County Public Works Department  
255 Glacier Drive  
Martinez, CA 94553  
925-313-2192  
[claudia.gemberling@pw.cccounty.us](mailto:claudia.gemberling@pw.cccounty.us)



Lead Agency Representative  
Contra Costa County Department of Conservation and Development



Date

**INITIAL STUDY AND  
MITIGATED NEGATIVE  
DECLARATION  
LOWER MARSH CREEK STREAM CORRIDOR  
RESTORATION PROGRAM**

*Pursuant to the California Environmental Quality Act,  
as amended*

**Prepared for**

Contra Costa County Flood Control  
and Water Conservation District  
255 Glacier Drive  
Martinez, CA 94553  
Contact: Claudia Gemberling  
(925) 313-2192

**Prepared by**

American Rivers  
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**March 2019**



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**INITIAL STUDY / MITIGATED NEGATIVE DECLARATION**  
*Pursuant to the California Environmental Quality Act, as amended*

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**A. PROGRAM INFORMATION**

**1. Project title:** Lower Marsh Creek Stream Corridor Restoration Program

**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:** Claudia Gemberling, Contra Costa County Public Works Department and Flood Control and Water Conservation District; 925-313-2192

**4. Program location:** Multiple project sites on Marsh Creek, Sand Creek and Deer Creek located in eastern Contra Costa County within the cities of Brentwood and Oakley, and in unincorporated Contra Costa County.

**5. Project sponsor's name and address:**

Contra Costa County Flood Control and Water Conservation District  
255 Glacier Drive  
Martinez, CA 94553

**6. Applicable Land Use plan designation:** Zoning designations along Marsh Creek, Deer Creek, and Sand Creek corridors within the cities of Oakley and Brentwood, and in unincorporated Contra Costa County, include low, medium and high density residential as well as commercial, agricultural and open space.

**A1. PROGRAM DESCRIPTION**

**A1.1. Program Goals and Objectives**

The Lower Marsh Creek Stream Corridor Restoration Program (Program) is a creek restoration and flood risk reduction Program proposed by the Contra Costa County Flood Control and Water Conservation District (“CCCFCFCD” or “District”) and American Rivers, a national nonprofit organization that protects wild rivers, restores damaged rivers, and conserves clean water for people and nature. Implementation of the proposed Program will result in: 1) improved habitat conditions for fish, birds, reptiles, and amphibians by providing a mosaic of riparian, floodplain, wetland, and aquatic habitat types for these species to utilize, 2) expanded channel capacity to meet or exceed flood channel conveyance capacity, 3) improved local water quality by shading the creek and reducing mobilization of fine sediments, and 4) improved public recreational opportunities. This Program will also complement three existing conservation planning efforts: the East Contra Costa County Habitat Conservation Plan and Natural Community Conservation Plan (Jones & Stokes Associates 2006) (HCP/NCCP), the CCCFCFCD’s *50 Year Plan: Channel to Creeks* (2009), and American Rivers’ *Lower Marsh Creek Stream Corridor Master Plan* (2015) (Master Plan).

## **Lower Marsh Creek Stream Corridor Restoration Program Initial Study/Mitigated Negative Declaration**

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The goal of the Program is to incentivize willing landowners and developers to work with the CCCFCD and other local partners to transition the existing 75-foot stream setbacks on Marsh Creek and 50-foot stream setbacks on Deer and Sand creeks (referred to collectively hereafter as stream corridors), as required by the HCP/NCCP for parcels and development activities subject to compliance with the HCP/NCCP, into ecologically functioning riparian habitat corridors. As such, this CEQA document has been developed to put in place the environmental compliance mechanism necessary to alleviate uncertainty and complexity associated with implementing creek restoration projects, which would further incentivize landowners and developers to participate.

Primary Program objectives include:

- Enable restoration of riparian vegetation, both woody and herbaceous, within the expanded stream corridors;
- Improve aquatic and wetland habitats within the stream corridors;
- Improve water quality and lower water temperatures within the stream corridors;
- Provide enhanced flow capacity within the stream reaches that are either meeting or exceeding critical flood conveyance targets;
- Reduce the need for and impact of routine channel maintenance by reducing local stream velocities/sheer stress and resulting bank erosion, and allowing riparian trees to grow and shade out nuisance nonnative plants in restoration areas; and
- Enhance local recreational experiences along existing and future creek trails by creating shaded woodland areas throughout the trail system.

While the 2015 Lower Marsh Creek Stream Corridor Restoration Master Plan identified a number of discrete parcels that would be appropriate for implementing multi-benefit restoration projects, this Program expands the limits of the Master Plan to include all streamside parcels in the Program area.

### **A1.2. Purpose of Initial Study/Mitigated Negative Declaration**

Pursuant to Section 15063 of the State of California Environmental Quality Act (CEQA) Guidelines (Title 14, California Code of Regulations, Sections 15000 et seq), an Initial Study (IS) is a preliminary environmental analysis that is used by the Lead Agency as a basis for determining whether an Environmental Impact Report (EIR), a Mitigated Negative Declaration (MND), or a Negative Declaration is required for a project. The State CEQA Guidelines require that the Initial Study contain a project description; a location map; a description of environmental setting; an identification of environmental effects by checklist or other similar form; an explanation of environmental effects; and a discussion of mitigation for potentially significant environmental effects.

State CEQA Guidelines, Section 15070 provides that if all the impacts can be mitigated to a less-than-significant level, the Lead Agency may instead prepare a MND whereby mitigations measures will be implemented.

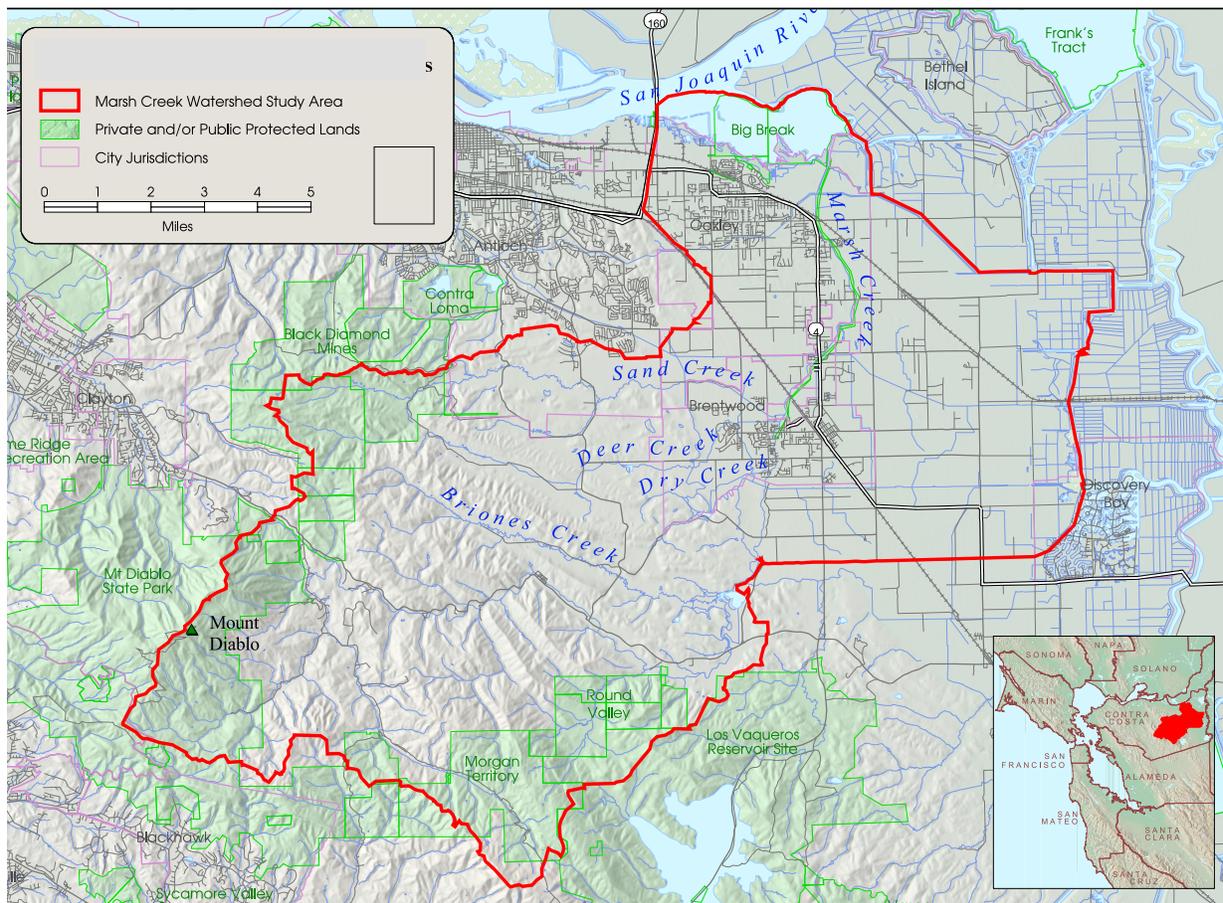
As such, the purpose of this IS is to inform decision-makers, representatives of affected and responsible agencies, the public, and other interested parties of the potential environmental impacts associated with implementation of the proposed Program. The Program goals and objectives would be achieved, in part, through use of this CEQA document to provide future project applicants with: (a) clear design guidelines; (b) accepted avoidance, minimization and mitigation measures; and (c) a simplified and transparent compliance process for implementing the types of projects envisioned under the Program. The CEQA document analyzes a range of construction and operational activities associated with increasing the width and configuration of the stream corridors to allow for inset floodplain benches and development of mature riparian vegetation while meeting or exceeding CCCFCD's

## Lower Marsh Creek Stream Corridor Restoration Program Initial Study/Mitigated Negative Declaration

flood control targets. This IS has been prepared in compliance with the 1970 CEQA (as amended), codified in California Public Resources Code Sections 21000 et seq., and the CEQA Guidelines in the California Code of Regulations, Title 14, Division 6, Chapter 3, Section 15000 et seq. As such, the CCCFCD has opted to prepare a Program IS/MND to achieve these goals and objectives.

### A1.3. Regional and Program Setting

The proposed Program is located within the Marsh Creek Watershed in eastern Contra Costa County approximately 40 miles northeast of San Francisco, and includes the cities of Brentwood and Oakley, and unincorporated areas (**Figure 1**). It is the second largest watershed in the County. The watershed drains 128 square miles of the eastern side of Mt. Diablo from Marsh Creek at its headwaters in Morgan Territory for approximately 30 miles through rangeland, farmland, and urban lands to its mouth at Big Break in the Delta just north of Oakley. Marsh Creek Watershed is an important link between the Delta and the Diablo Range.



**Figure 1. Marsh Creek Watershed**

## Lower Marsh Creek Stream Corridor Restoration Program Initial Study/Mitigated Negative Declaration

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Marsh Creek's major tributaries – Briones, Dry, Deer, and Sand creeks – all flow southeasterly draining the eastern highlands of Mount Diablo State Park and/or Black Diamond Mines Regional Preserve. Briones Creek, which drains the undeveloped Briones Valley, flows into Marsh Creek at the Marsh Creek Reservoir within Cowell Ranch south of the city of Brentwood, while Dry, Deer, and Sand creeks all flow into Marsh Creek within the city limits of Brentwood. Much of the land in the northern lowland section of the watershed is privately owned and lies within the cities of Antioch, Brentwood, and Oakley as well as unincorporated County land. All of the privately-owned land in the watershed's southern uplands is unincorporated and falls within the planning jurisdiction of the County. Although most of the land within the watershed is under private ownership, the watershed is bounded by large areas of publicly owned open space including Morgan Territory Regional Preserve, Los Vaqueros watershed lands, Round Valley Regional Preserve, Mount Diablo State Park, Black Diamond Mines Regional Preserve, Contra Loma Regional Park, and the Big Break Regional Shoreline.

The Program Area is focused on Lower Marsh Creek watershed as it flows through the cities of Brentwood and Oakley, and a small portion of unincorporated Contra Costa County, upstream of Marsh Creek's confluence with the western Delta at Big Break. While Marsh Creek has 4 tributaries, due to the heavily degraded ecological conditions and the flood risk concerns, the Program is focused on potential future actions in the urbanized reaches of Deer and Sand Creek as well as the lower mainstem of Marsh Creek (below the Marsh Creek Reservoir). In this area, Marsh Creek flows due north at a relatively gentle slope of approximately 0.3% or 15 vertical feet per mile of stream. The sub-watersheds of Deer Creek and Sand Creek function as important conduits of surface flow, sediment, agricultural return flow, and urban runoff into lower Marsh Creek. CCCFCD has constructed large detention basins on each of these three creeks, which are designed to attenuate peak flows and capture sediment. Deer Creek is a seasonal creek that drains 6.6 square miles of foothill and flows for approximately one stream mile through flat floodplain lands into a large detention basin  $\frac{3}{4}$  of a mile upstream of its confluence with Marsh Creek. Between the detention basin and Marsh Creek is a constructed, trapezoidal channel. Sand Creek, the largest of the lower zone tributaries, drains 14.4 square miles from its headwaters in Black Diamond Mines Regional Preserve to its confluence with Marsh Creek approximately 700 feet downstream of the Deer Creek confluence. Sand Creek appears to have seasonal flow in its more natural upland reaches, and perennial flow supported by agricultural return flows and urban runoff in the lowland reaches. The reaches of Sand Creek upstream of the Program Area, between its urban boundaries with Antioch and Brentwood and Black Diamond Mines Regional Preserve, still contains reaches of intact aquatic and riparian habitat. CCCFCD completed the final phase of construction on the Upper Sand Creek Basin in 2014, which now has the capacity to store 900 acre-feet of water and provide 100-year storm protection to the downstream community.

### **A1.4. Program Area Location and Ownership**

Individual projects that would be covered under this Program are anticipated to occur primarily on undeveloped lands adjacent to Marsh, Deer, and Sand creek corridors. The Program Area in its entirety includes the Marsh Creek corridor from Balfour Road in Brentwood in the south, to the Contra Costa Canal in Oakley in the north. It also includes Sand Creek from Highway 4 in Brentwood to its confluence with Marsh Creek, and Deer Creek from the Deer Creek Detention Basin to its confluence with Marsh Creek. See **Figure 2** for a map of the Program Area.

# Lower Marsh Creek Stream Corridor Restoration Program Initial Study/Mitigated Negative Declaration

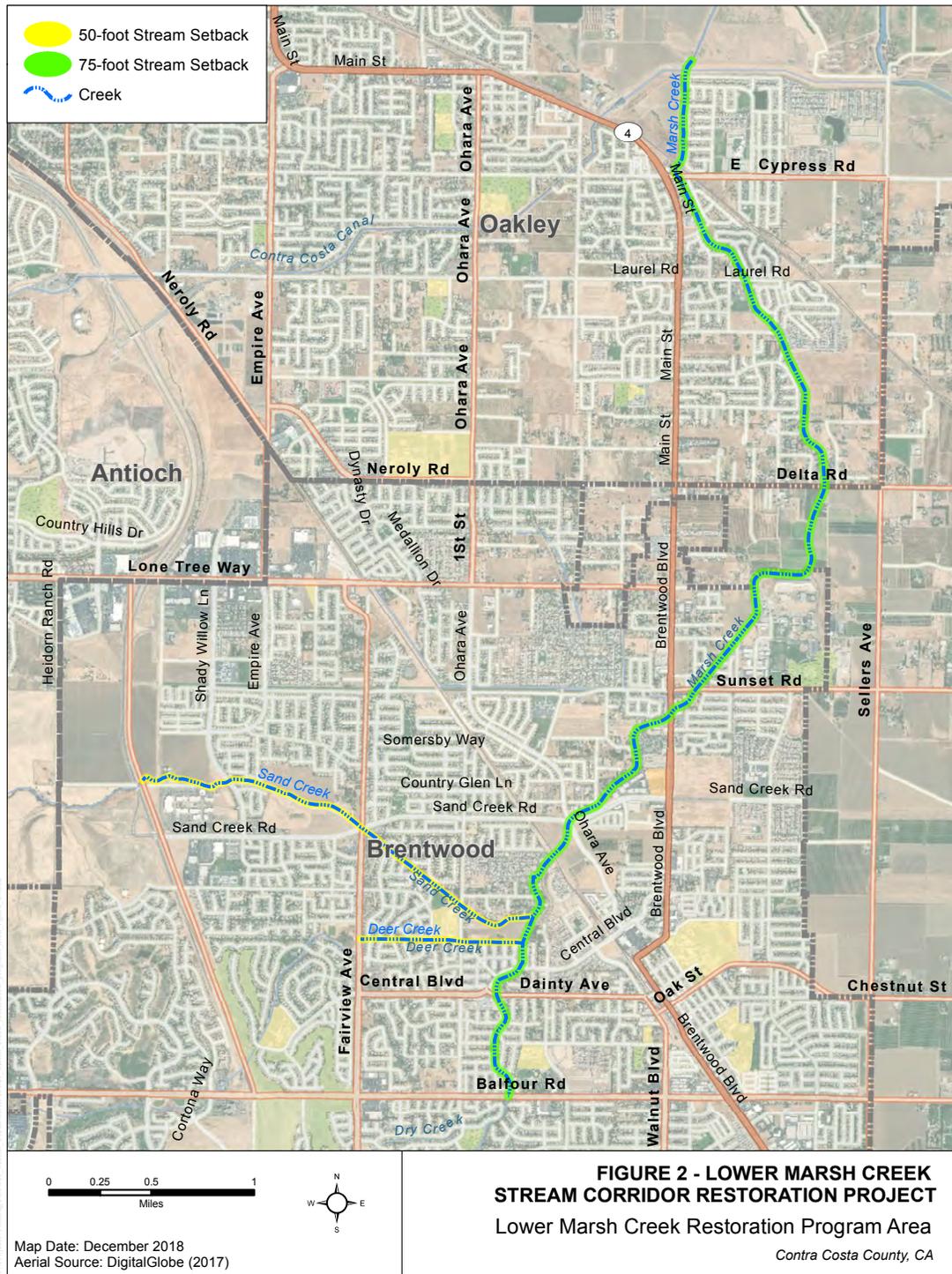
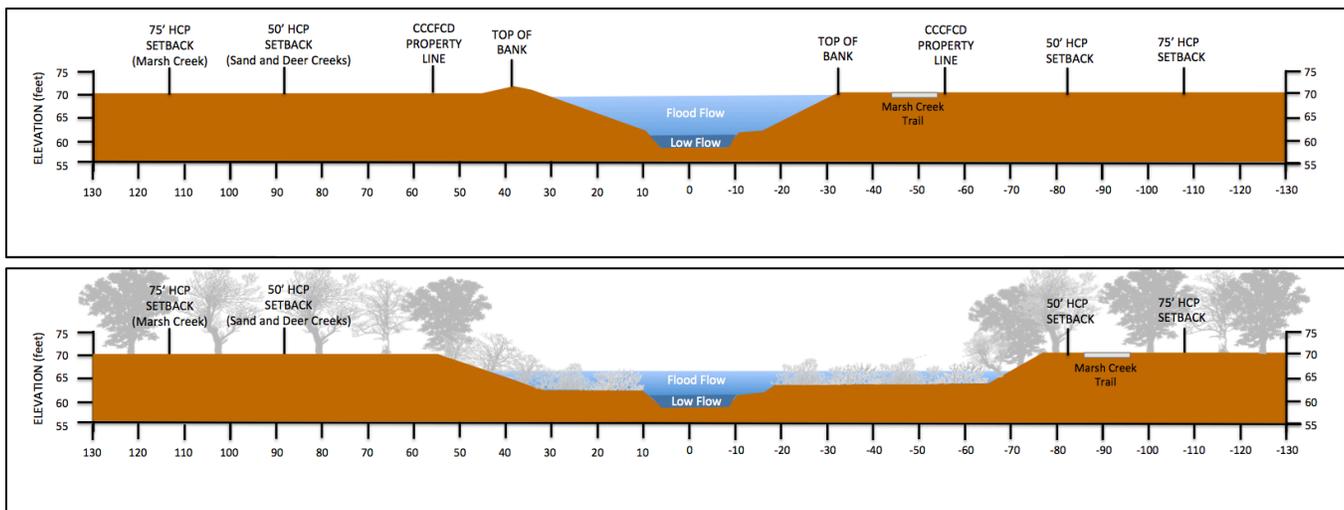


Figure 2. Lower Marsh Creek Stream Corridor Restoration Program Area

## Lower Marsh Creek Stream Corridor Restoration Program Initial Study/Mitigated Negative Declaration

The Program will focus on working with willing partners to facilitate creek corridor restoration actions along Marsh Creek, Sand Creek, and Deer Creek. All work will be conducted within stream setbacks of 75 feet on Marsh Creek and 50 feet on Deer and Sand Creeks, as required by the HCP/NCCP for parcels and development activities subject to compliance with the HCP/NCCP (Chapter 6, Conservation Measures 1.7 and 2.12 and Table 6-2). These setbacks are calculated from the existing top of bank for each watercourse (**Figure 3**). The HCP/NCCP encourages trails to be sited outside stream setbacks and constructed with permeable or semi-permeable surfaces. When trails cannot be sited outside the required setback, they should be sited as far from the stream channel as possible and should adhere to limitations on exceptions to stream setback requirements (HCP/NCCP Conservation Measure 1.7 and Table 6-2). While the CCCFCD owns between 50-100 feet from the centerline of the three creeks within the Program Area (except for a small stretch on Sand Creek between Highway 4 and the Lower Sand Creek Basin, just downstream of Shady Willow Lane, which is owned by the City of Brentwood), ownership of the additional area within the setback will vary across a range of public and private landowners. Right-of-way acquisition or offers of dedication to public agencies such as the CCCFCD or East Bay Regional Park District (EBRPD) may be necessary to implement projects proposed under this Program.



**Figure 3. Typical Creek Cross-Sections Showing 50' and 75' HCP/NCCP Stream Setbacks from Top of Bank, Existing Conditions (Top) and Example of Widened Channel with Riparian Vegetation (Bottom)**

### A1.5. Planning Context

There are a number of pertinent planning documents that collectively form the technical foundation for the Lower Marsh Creek Corridor Restoration Program. Based on Marsh Creek's unique location, providing a natural link between the ecologically rich Diablo Range and Sacramento-San Joaquin Delta, planning efforts such as the Delta Plan, the East Contra Costa County HCP/NCCP, and various planning documents related to the park units in the upper watershed (Mount Diablo State Park and Black Diamond Mines Regional Preserve) all point to the value of this natural asset. Each of these plans, which focus on the larger region, discuss the importance of maintaining and improving connectivity in this corridor for both terrestrial and aquatic species as well as the need to improve the quality of water flowing through these creeks and into the Delta.

At a more granular level, the following planning documents that span the past 15 years, provide finer detail on the vision for realizing ecological uplift of the critical creek and riparian resources that link the Diablo Range to the Delta. In 2007, the Natural Heritage Institute (NHI) and the Delta Science Center (DSC) published the 4<sup>th</sup> edition of *The Past and Present Condition of the Marsh Creek Watershed* (Marsh Creek Watershed Report). This

## Lower Marsh Creek Stream Corridor Restoration Program Initial Study/Mitigated Negative Declaration

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document provided the first detailed analysis of land-use change and the resulting impacts to the watershed's ecological resources. The document was specifically focused on the wholesale manipulation of Marsh Creek and its tributaries throughout the previous 100 years and the massive impact agricultural production, suburbanization, and flood control activities had on these resources. NHI followed up on earlier editions of this report with the first edition of the *Corridor Width Report, Parcel Inventory and Conceptual Stream Corridor Master Plan for Marsh, Sand and Deer Creeks in Brentwood CA* (Walking et al. 2002). This report provided a parcel by parcel analysis of opportunities to develop multiple benefit creek restoration projects that would also provide the community with additional benefits such as increased flood conveyance, improved water quality, and enhanced recreational experiences. This report was adopted as Appendix IX of the City of Brentwood Parks and Recreation *Parks, Trails and Recreation Master Plan* (City of Brentwood 2002). In 2006, the HCP/NCCP was finalized and in 2007 ordinances were adopted by the participating cities and the County to establish procedures to implement the HCP/NCCP. The HCP/NCCP highlighted some opportunities along Marsh Creek as a "key restoration priority" and parcels within the Program Area are considered potential preserve sites for the HCP/NCCP (Chapter 5, page 5-42). In 2015, American Rivers developed the *Lower Marsh Creek Stream Corridor Restoration Master Plan* (Master Plan), which updated NHI's 2002 report to include the entire lower Marsh Creek Watershed.

In the intervening years between publication of the original Corridor Width Report in 2002 and the updated Master Plan, the CCCFCD was working a number of parallel efforts. In 2009, the Contra Costa County Board of Supervisors adopted CCCFCD visionary document, *The 50 Year Plan: from Channels to Creeks*. This new approach was born out of a decade of collaboration between the CCCFCD, NHI, the Delta Science Center, and a number of community watershed groups, dating back to Contra Costa County's first Watershed Symposium in 1999. An excerpt from the document summarizes the sea change:

*"As with most Flood Control Districts, the Contra Costa County Flood Control and Water Conservation District was formed to provide flood protection infrastructure and improvements for a rapidly developing County. Our mandate at that time was defined as simply providing flood protection in the most economical manner... Today, however, communities desire a broader range of services. The citizens of our county still want flood protection, but they also want a healthy and natural looking eco-system in their drainage channels and creeks (while minimizing the amount on their tax bill for maintenance and new infrastructure costs). They want good water quality and a sustainable and rich plant and animal habitat in their creeks and watersheds."*

This Program is in direct response to needs and direction outlined in the regional and local planning documents described above. This vision, coupled with a growing population and the continued shifting of land-use from agriculture to suburban development posed serious challenges for the CCCFCD and its partners to develop forward-looking flood control plans that improved the quality and quantity of creek habitat.

The Program is also situated within the general plan areas and planning documents of both Brentwood and Oakley and both municipalities have moved forward partnership projects as pilots for this Program. The first is the City of Oakley's Creekside Park. In 2008, Oakley received a grant from the California Natural Resources Agency's California River Parkways Program to widen the floodplain, restore habitat along Marsh Creek, and improve trails and public access. The project was completed in 2012 and resulted in restoration of approximately 3 acres of riparian habitat and conversion of approximately 850 linear feet of trapezoidal flood control channel to a diverse floodplain habitat. The project also included an 8-foot wide pedestrian trail and a pedestrian bridge across Marsh Creek that connects Creekside Park with East Bay Regional Park District's (EBRPD) Marsh Creek Regional Trail. The City of Brentwood, in partnership with the CCCFCD and American Rivers will be completing the Three Creeks Parkway Restoration Project (estimated completion date is fall 2020). Like the Oakley Creekside Park project, the Three Creeks Project includes widening of Marsh Creek to accommodate a floodplain bench, riparian planting, improved flood conveyance capacity, and enhanced recreational opportunities. These two

## Lower Marsh Creek Stream Corridor Restoration Program Initial Study/Mitigated Negative Declaration

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projects demonstrate that the CCCFCD, working in partnership with Brentwood and Oakley, as well as an array of nongovernmental partners, can effectively design and implement projects like those proposed in this Program.

### **A1.6. Purpose and Need**

The overarching purpose of the Program is to help implement a 21<sup>st</sup> century vision of flood management that focuses on working collaboratively with landowners on creekside parcels to widen the existing corridors to provide the community with both high levels of flood protection, restored aquatic and riparian habitats, and improved recreational experiences.

A few key studies have documented the historical ecology of Marsh Creek (Marsh Creek Watershed Report; Standord et al. 2012) and provide historical context that informs present day management challenges. The following excerpts from the Marsh Creek Watershed Report provide a compelling narrative that clarifies the purpose and need for this Program:

*“The tendency of Marsh Creek to meander across the gently sloping topography of the lower watershed and regularly inundate its broad floodplain was not compatible with agricultural and urban development. Beginning at the turn of the century, humans began to confine the channel to its present location and build levees to protect the rich farmland on the eastern side of the channel...By the late 1930s, expansion of agriculture had reduced the riparian corridor along Marsh Creek to a fringe of trees no more than 50 feet wide on either side....As Brentwood grew and more floodplain lands were converted to both agriculture and suburban/commercial use, the effects of frequent flood events began to have significant financial impacts in the lower zone of the Marsh Creek watershed. Contra Costa County’s 1959 Watershed Work Plan cites flooding as the major problem facing the watershed.*

‘Damaging floods have occurred, on the average, once in three years, with three of the worst since January 1952. It is not uncommon to have several floods in the same year, as happened in the winter of 1955–1956 and again in 1958. When such events occur, some damage is suffered to roads, bridges and stream banks in the middle reaches of the creek. The great bulk of the damage however, takes place on the flood plains of Marsh and Kellogg creeks. In the case of Marsh Creek, floodwater leaves the inadequate channel at various points but is prevented by topographic conditions from returning... Such flows have inundated as much as 4,900 acres to depths of four feet.’ (Eastern Contra Costa Soil Conservation Service et al. 1959)’

*This series of flood events in the 1950s compelled the County flood control district and the Soil Conservation Service to implement a major flood control program that channelized lower Marsh Creek and constructed two flood control dams on Marsh Creek and Dry Creek. These flood control improvements straightened and confined the existing channel, removed all of the existing near channel riparian vegetation, and increased the channel cross section to efficiently convey floodwaters through the lower zone into the Delta...Channel excavation, clearing, and straightening over the past century has resulted in the loss of more than 50% of the total stream channel length in the lower zone. Similarly, these flood control improvements have eliminated nearly all the riparian and floodplain habitat that once flourished along the margins of Marsh Creek. Habitat in the stream channel itself has been further impacted by the loss of natural complexity associated with a meandering stream channel. Prior to the flood control improvements, the channel form was highly variable with pools, gravel riffles, gentle bars, and steep cut-banks...”*

The report then summarizes the current condition of Marsh Creek in these stark terms, “Today, flood protection activities such as levee maintenance, channel dredging, and vegetation removal have transformed the creeks of the lower Marsh Creek watershed from dynamic living systems to static, confined, and ecologically impoverished

## Lower Marsh Creek Stream Corridor Restoration Program Initial Study/Mitigated Negative Declaration

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water conveyance structures.” Over the last 20 years, the pace and scale of development in the watershed has seen an ebb and flow, but overall development has increased substantially, to a point where the flood control channels designed in the 1950s, 1960s and 1970s are significantly under capacity in many locations along lower Marsh Creek. This dynamic of increased flood management needs, combined with the community’s desire for these channels to provide habitat for a wealth of fish and wildlife species and recreational opportunities is the backdrop to the Program.

### **A1.7. Baseline Conditions**

Determining whether a project or Program may have a significant effect on the environment plays a critical role in the CEQA process. In order to evaluate effects of project or Program implementation, it is critical to understand baseline conditions. This section briefly summarizes the current, baseline conditions in terms of ecological resources, hydraulic conditions, routine maintenance, and recreation.

#### ***A1.7.1. Ecological Conditions***

There is almost no woody riparian vegetation along the creek corridor and wetland vegetation is very limited to a narrow 1–3-foot wide string along the low flow channel. While these systems are degraded, they continue to provide habitat for a surprising diversity of native fish and wildlife include western pond turtles (*Actinemys marmorata*), occasional adult Chinook salmon (*Oncorhynchus tshawytscha*), warm water fish such as hitch (*Lavinia exilicauda*) and roach (*Hesperoleucus symmetricus*) and periodic foraging for California river otters (*Lontra canadensis*). Another example of the wildlife still thriving along the degraded creek corridor is the snowy egret (*Egretta thula*) and night heron (*Nycticorax nycticorax*) rookeries established in neighborhood street trees close to Marsh Creek (B. Margesson, 2018). That said, the current conditions from an ecological perspective are in a severely degraded condition. The areas 75 feet from the top of bank are generally covered by ruderal, nonnative vegetation and provide significantly limited ecological services (e.g providing habitat, filtering out pollutants, providing shade, enabling carbon sequestration, etc.), which could be restored through a suite of well-designed restoration projects. Moreover, the HCP/NCCP has required 50-foot and 75-foot setbacks from these creeks for parcels and development activities subject to compliance with HCP/NCCP to allow for future riparian and creek restoration actions. In accordance with the HCP/NCCP (Chapter 6, Section 1.7 and 2.12 and Table 6-2), the stream setback measure is intended to achieve the following purposes:

- Maintain or improve water quality by filtering sediments and pollutants from urban runoff before they reach the stream.
- Allow for protection of preserved and restored riparian woodland and scrub within and adjacent to the stream channel.
- Maintain a buffer zone between urban development and existing and restored nesting habitat for Swainson’s hawk and other bird species.
- Maintain and enhance the water quality of the stream to protect native fish populations, including populations of special-status species that occur in downstream reaches (e.g., fall-run Chinook salmon in Marsh Creek).
- Maintain a more viable wildlife corridor for some species (e.g., California red-legged frog [*Rana draytonii*], foothill yellow-legged frog [*Rana boylei*]) than would be present with a narrower buffer zone.
- Maximize the natural flood protection value of the floodplain.
- Provide for recreational trails along the corridor that are compatible with wildlife use.

In order to achieve these purposes, the setback could be more than just an area that is outside of development, but rather an area that is actively enhanced for multiple benefits. This Program focuses explicitly on developing multiple-benefit projects within the setbacks that will transition these ruderal undeveloped areas to effective natural resource areas that can provide the services articulated in the HCP/NCCP and other plans.

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For summary purposes, the six photos below (taken in August 2017) demonstrate the degraded and homogeneous nature of the creek channel and its banks.

	
<p>Photo 1. Marsh Creek in Brentwood between the Union Pacific Railroad and O'Hara Ave. Taken 08/07/17.</p>	<p>Photo 2. Marsh Creek in Oakley downstream of Barnard Road. Taken 8/07/17.</p>
	
<p>Photo 3. Marsh Creek at the Oakley Creekside Park restoration site. Taken 08/07/17.</p>	<p>Photo 4. Sand Creek near Old Sand Creek Road, upstream of Shady Willow Ln. Taken 08/07/17</p>
	
<p>Photo 5. Deer Cr looking West from San Jose Avenue (date unknown).</p>	<p>Photo 6. Deer Cr looking toward confluence with Marsh Creek (date unknown).</p>

**Figure 4. Photos of Downgraded, Homogenous Creek Channels and Beds**

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### ***A1.7.2. Hydraulic Conditions***

CCCFCD prepared two reports in 2010 that document the status of Marsh Creek and its tributaries in meeting the District's flood control targets of containing the 100-year water surface and the 50-year water surface plus freeboard (Boucher 2010 and Louis 2010). The modeling outputs and recommendations from these reports conclude that multiple locations along the Marsh Creek channel are currently under capacity and that new development along the creek corridor will require CCCFCD to coordinate with both the cities of Brentwood and Oakley to ensure that future development be designed to address these inadequacies. Moreover, both reports state that in their current condition, these creek channels do not have the capacity to accommodate the co-benefits of flood control, riparian habitat restoration, creation of wildlife corridors and improved recreational opportunities. The CCCFCD recently completed one of the major flood risk reduction projects that came out of these studies, the Upper Sand Creek Basin. This project is a multi-benefit flood protection project that significantly reduces peak flow contribution from the upper Sand Creek watershed into Marsh Creek from 2,870 to 134 cubic feet per second (cfs) for a 100-year storm event. Moreover, the design of this basin incorporates the Sand Creek channel, creating an "in-line" basin behind the dam. Approximately 3,612 feet was reconstructed with a fluvial geomorphic design to restore and enhance Sand Creek within the basin. An additional 264 feet was constructed as wetland acreage. In the project work plan, the CCCFCD explicitly notes in the purpose and need section that, "...If the Project is not implemented, the ecosystem along Sand Creek will continue to be unresponsive of native species and lack critical habitats." This project is emblematic of the 21<sup>st</sup> century approach to flood control being practiced by the CCCFCD and creates a context for developing and implementing multiple benefit projects that reduce flood risk, improve ecological conditions, and enhance recreational opportunities. Because the Marsh Creek channel, within the Program Area, is currently under capacity in multiple locations this Program represents a unique opportunity for the CCCFCD to partner with developers, the cities and nongovernmental organizations to design and implement multi-benefit projects like the Upper Sand Creek Basin project and those envisioned under this Program.

### ***A1.7.3. Routine Maintenance***

Nearly all of Marsh, Sand and Deer creeks within the Program Area, with the exception of a small reach between on Sand Creek between Highway 4 and the Lower Sand Creek Detention Basin, are either owned in fee-title or easement by CCCFCD. Routine maintenance in the areas owned by CCCFCD is governed by the terms and conditions of Streambed Alteration Agreement for Routine Maintenance Activities (Agreement) 1600-2010-0367-R3 (April 18, 2011) between California Department of Fish and Wildlife (CDFW) and CCCFCD. The Agreement identifies routine maintenance activities for all flood control facilities in Contra Costa County, including Marsh Creek. For the purposes of the Agreement, routine maintenance activities are generally defined as periodic activities necessary to maintain the water transport capacity of streams and channels and the structural and functioning integrity of existing flood control and sediment detention structures on or affecting streams. Routine maintenance activities authorized under the Agreement include both seasonal activities and year-round activities. Seasonal maintenance takes place between April 15 and October 31 and includes:

- Sediment removal
- Vegetation management (via mechanical and/or chemical treatment)
- Maintenance, repair, rehabilitation, and replacement of existing structures
- Bank stabilization activities
- Temporary water diversions
- Temporary access roads or structures

Annual maintenance activities can take place either within the seasonal window or outside of that window. Annual activities are limited to debris removal from creeks, channels and/or basins and a subset of vegetation

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management activities including: removal of cattails, beginning in September and continued through the end of November and chemical mowing (application of herbicide to retard growth), from December through February.

### ***A1.7.4. Recreational Conditions***

The Marsh Creek corridor is an integral part of both local and regional trail systems. The EBRPD owns and maintains the Marsh Creek Regional Trail, which follows the mainstem of Marsh Creek approximately 6.5 miles from Big Break in Oakley to Concord Avenue in Brentwood (**Figure 5**). EBRPD has proposed an expansion of the trail that would link it to the future Marsh Creek State Park, providing a link by Briones Creek to the proposed Deer Creek State Park, and to Round Valley Regional Preserve upstream of the Marsh Creek Reservoir. Connecting the Marsh Creek Regional Trail to Round Valley provides further connections to Los Vaqueros Watershed, Morgan Territory, and Mount Diablo State Park. The current Marsh Creek Trail also links to the Mokelumne Coast to Crest Trail at Sunset Road in Brentwood, the Big Break Regional Trail along the Delta to the north, and the Delta De Anza Regional Trail near Cypress Road in Oakley. In addition to these regional trail linkages, the Marsh Creek Regional Trail links a number of small community parks or pocket parks in Brentwood and Oakley. In its current condition, the trail is heavily used and runs along the creek segment for much of its length. Unfortunately, the trail lacks shade, greatly impeding its utility and safety for users during the warmer months. The existing recreational experience could be greatly improved with riparian woodlands providing both shade for recreational users and habitat for a wealth of bird species. Sand Creek currently supports a small recreational trail that extends from Fairview Avenue to Minnesota Avenue and Deer Creek has a trail from Fairview Avenue to San Jose Avenue. Neither of these trails currently have a formal connection to the larger Marsh Creek Trail.

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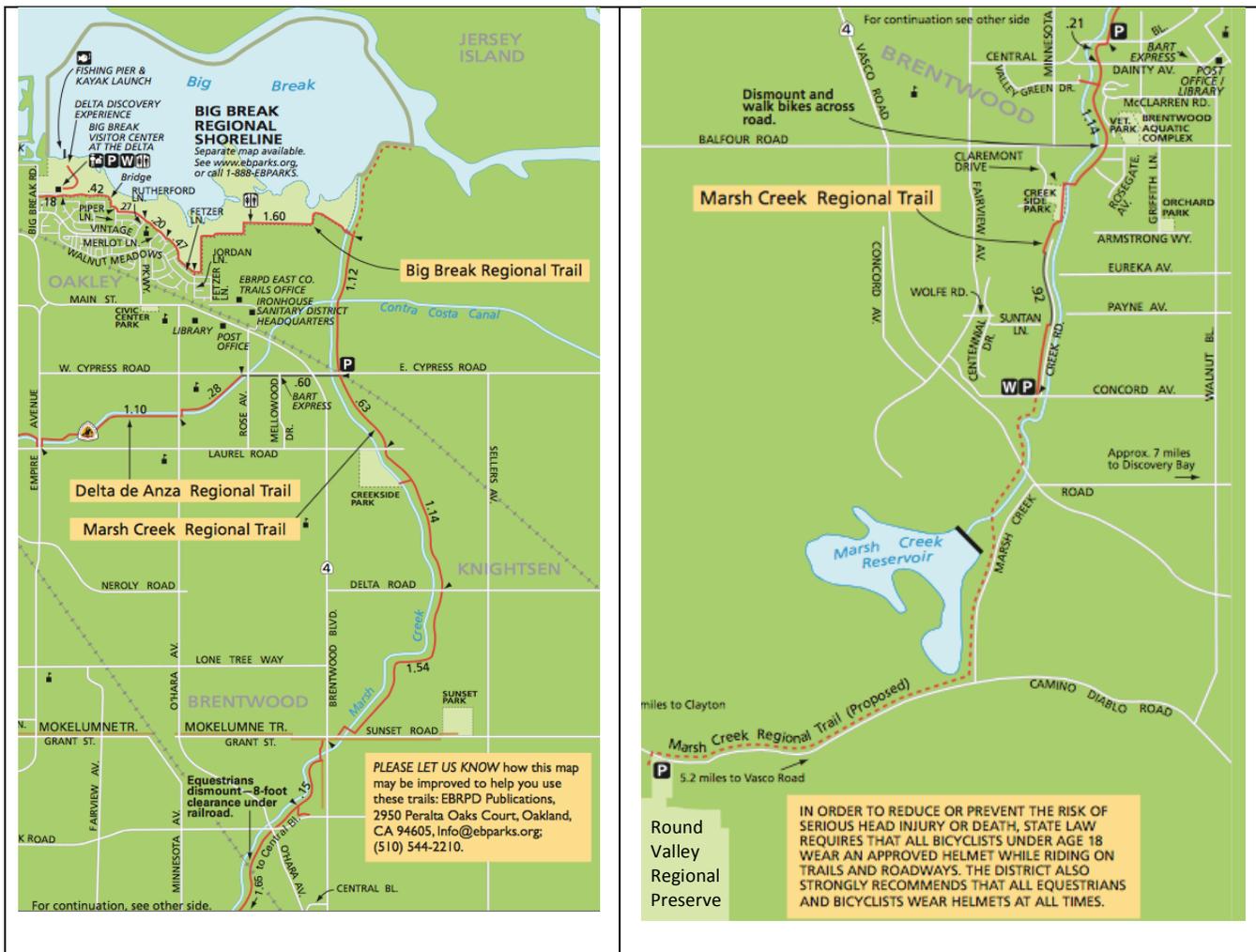


Figure 5. EBRPD Marsh Creek Regional Trail

The figure shows the northern reach from Big Break to Central Boulevard (left) and southern reach from Central Boulevard to Concord Avenue, and proposed trail from Concord Avenue to Round Valley Regional Preserve (right).

## A1.8. Program Implementation Elements

The Program will focus on working with willing partners to facilitate multi-benefit, creek corridor restoration actions in the Program Area. Except in rare circumstances, all work will be conducted within the existing HCP/NCCP established stream setbacks of 75 feet from Marsh Creek and 50 feet from Deer and Sand Creeks required for parcels and development activities subject to compliance with HCP/NCCP. While the Program is anticipated to occur primarily on undeveloped lands with willing landowners, it is possible that certain existing structures or infrastructure may need to be removed or relocated to accomplish the goals of the Program. Removal or modification of any existing infrastructure will be carried out in accordance with local land-use ordinances.

Projects developed and implemented within this Program could include any or all of the following elements:

- Channel Widening
- Riparian and Wetland Revegetation

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- Installation of Instream Habitat Features
- Vegetation Maintenance
- Temporary Channel Crossing
- Channel Dewatering
- Removal of Existing Structures or Debris
- Utility Line Protection and Relocation
- Recreational Improvements
- Purchase or Donation of Land in Fee-title or Easement

**Table 1** provides a brief description of each element or activity that once implemented would result in creek restoration and highlights key technical analyses that will be mandatory during planning and articulates some impacts and specific mitigation measures that will be required during implementation. Additional planning measures and construction-related mitigation measures are described later in this section.

**Table 1: Program Implementation Elements**

<b>Program Element</b>	<b>Description</b>
<i>Channel Widening</i> (see <b>Figure 3</b> for typical cross-section)	<p>The main goal of expanding the channel cross-section is to create enough conveyance capacity to allow for the planting of woody riparian vegetation (shrubs and trees), while also safely conveying large flood flows (100 year storm and 50 year storm plus freeboard) to protect adjacent infrastructure and neighborhoods. Floodplain benches would be constructed within the widened channel on one or both sides of the creek. Benches would be constructed at an elevation that would get inundated by annual high flow events. Bench width would range from approximately 10’ to 40’ and slopes from the benches to the top of bank set at between 2:1 to 4:1, depending on the local conditions. Current estimates suggest approximately 6cy/linear ft. of channel widened.</p> <p>Potential Impacts: The main environmental impacts associated with channel widening will be clearing and grubbing of existing vegetation prior to excavation and both excavation and off-haul of existing soil, rock, and debris required to widen the channel. If not mitigated, these activities could result in temporary impacts to air quality, biological resources, cultural resources, hydrology, recreation, traffic and noise. Design details will be developed for each site, once the site is identified and technical analyses such as hydraulics, geology, etc. will be completed as per the measures identified in the Initial Study.</p>
<i>Technical Requirements</i>	<ul style="list-style-type: none"> <li>• Engineering designs and erosion control plan stamped by a registered civil engineer.</li> <li>• Hydraulic analysis by registered professional demonstrating neutral or positive effect on local flood conveyance and no net increase in water surface elevations directly upstream or downstream.</li> <li>• Approval by CCCFCD engineering.</li> <li>• Site-specific biological and cultural resource studies will be conducted prior to any earth moving which may require monitoring.</li> </ul>

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Program Element	Description
	<ul style="list-style-type: none"> <li>Any soils excavated as part of the channel widening will be removed from the site and placed at an approved location outside of the mapped 100-year floodplain and any jurisdictional (state or federal) wetlands or waters.</li> </ul>
<p><b><i>Riparian and Wetland Revegetation and Short-term Vegetation Maintenance</i></b> <i>(approximately 5 yr. minimum establishment period)</i></p>	<p>The goals of this activity are to (a) restore native riparian and wetland communities to the stream corridors, (b) create a shaded woodland to enhance the existing recreational opportunities along the Marsh Creek Regional Trail, and (c), provide shade to the stream corridor that will encourage aquatic wildlife and discourage growth of nonnative weedy species that require routine maintenance to maintain channel capacity. Seed and live plant material used in this activity will be sourced from local sources. This activity not only includes planting of native vegetation, but also includes monitoring and maintenance for at least 5 years after installation. Specific maintenance activities will be governed by a maintenance and monitoring plan (see <b>Table 3</b> below) that will be developed by the project partners for each project under this Program. Operations and maintenance activities can include mechanical or herbicide use to control nonnative invasive plants as well as pruning, limbing, otherwise maintaining and potentially replanting the vegetation to meet the project goals.</p> <p>Potential Impacts: Vegetation management during the initial establishment period could result in impacts to biological resources and hydrologic resources. While maintenance during the establishment period is expected to be minimal, conditions related to this activity will be consistent with the measures articulated under Vegetation Maintenance, below.</p>
<p><i>Technical Requirements</i></p>	<ul style="list-style-type: none"> <li>Project plans will include a detailed revegetation/restoration plan as well as a 5-year maintenance and monitoring plan. Plans will include species lists, planting or seed densities, success criteria, triggers for remedial/follow-up actions and roles and responsibilities for implementing the plan.</li> <li>Plant pallets for restoration sites could include the following: The upper banks and floodplain could be planted with native riparian trees such as valley oak, sycamore, live oak, blue oak, box elder, buckeye, cottonwood, and willow. Slopes and banks could also be planted with native grassland and scrub species, which would include creeping wild rye, California brome, purple needlegrass, dense-flowered lupine, mugwort, common fiddleneck, elegant clarkia, and California poppy. Areas of the floodplain and banks below the new benches could be planted with native seasonal wetland species that will include, but not be limited to, creek clover, Baltic rush, and deer sedge.</li> </ul>
<p><b><i>Installation of Instream Habitat Features</i></b></p>	<p>The goal of this activity is to improve instream habitat for a range of aquatic species including, but not limited to, rearing Chinook salmon, rearing and spawning for steelhead (<i>Oncorhynchus mykiss irideus</i>), basking and foraging for western pond turtles and foraging and refugia for California red-legged frogs and other riparian wildlife species. This activity could include installation of either large woody debris (LWD) and/or rock features (e.g.,</p>

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Program Element	Description
	<p>rock barbs) below the ordinary high water mark (OHWM) to improve degraded aquatic conditions by providing high flow and predation refugia, sorting sediment, and restoring pool and riffle characteristics. Augmentation of gravel could occur concurrently or in isolation and would enhance spawning opportunities for Chinook salmon and steelhead. Limited grading below the OHWM may be required to properly install and anchor instream features. Installation of these features will occur during the summer or early fall months when streams are either dry or experiencing low flows. It is possible that dewatering may be required for certain actions that require construction equipment to enter the channel or work in an area that would be wetted. If working in a wetted channel, where the live channel cannot be isolated from the work area via localized cofferdams, piles, etc., dewatering will be necessary. If so, see dewatering section below for details.</p> <p>Potential Impacts: Installation of instream habitat features may result in temporary construction related impacts to biological resources, hydrological resources, and cultural resources during dewatering and excavation, if necessary.</p>
<i>Technical Requirements</i>	<ul style="list-style-type: none"> <li>• Structures will be designed to withstand a 100-year (Q100) storm event.</li> <li>• Features should be designed and implemented in accordance with the CDFW’s <i>California Salmonid Stream Habitat and Restoration Manual</i> (<a href="http://www.dfg.ca.gov/fish/Resources/HabitatManual.asp">http://www.dfg.ca.gov/fish/Resources/HabitatManual.asp</a>) or in coordination with staff from the National Marine Fisheries Service (NMFS) and/or CDFW. Some examples of the features that could be utilized in Marsh Creek include Digger Logs (p. VII-26 of the manual), Spider Logs (p. VII-27), and Log, Root Wad, and Boulder Combinations (p. VII-28).</li> <li>• Structures designs will be stamped by a registered civil engineer or licensed landscape architect.</li> <li>• Hydraulic analysis will need to demonstrate that structures result in either a neutral or beneficial effect on local channel capacity and do not result in elevated water surface elevations during a Q50 or above recurrence interval storm directly upstream or downstream from the project site.</li> <li>• Site specific biological and cultural resource surveys and monitoring may need to be conducted if installation requires dewatering, isolation of wetted areas, and/or excavation.</li> </ul>
<i>Vegetation Maintenance (after 5-year establishment period)</i>	<p>Vegetation within the new widened channel may require limited maintenance in order to (a) remove nonnative invasive species, (b) maintain as-designed roughness standards to ensure post-project channel capacity, and (c) enable the maintenance of public safety via visual access through the restored sites. Vegetation maintenance will be implemented on an as-needed basis and will be conducted in accordance with the conditions of the CCCFCD’s existing (or renewed) Routine Maintenance Agreement with CDFW and in any maintenance plan developed in association with a restoration project. The current CCCFCD Routine Maintenance Agreement only applies to maintenance of facilities on CCCFCD fee title properties and within</p>

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	<p>CCCFCFCD easements. As such, any activities that occur outside of CCCFCFCD ownership will be required to obtain an individual agreement with CDFW. We expect the terms and conditions of any individual maintenance agreement to be similar to the existing CCCFCFCD agreement.</p> <p>Routine maintenance activities currently authorized under the Routine Maintenance Agreement with CDFW include clearing of debris from existing culverts, minor vegetation removal, debris removal in streams sufficient to restore water flow, bank stabilization and erosion control using bio-engineered techniques, and removal of hazardous man-made structures from water bodies for public safety and habitat improvement.</p> <p>Potential Impacts: Vegetation management could result in impacts to biological resources and hydrologic resources.</p>
<i>Technical Requirements</i>	<ul style="list-style-type: none"> <li>• Develop a long-term maintenance plan for any revegetation site implemented under the Program. The Plan should articulate goals and triggers for vegetation management, methods for vegetation management, responsibilities for vegetation management, and clear avoidance and minimization measures.</li> <li>• Follow specific terms and conditions for avoidance and minimization as articulated in the CCCFCFCD Routine Maintenance Agreement and/or individual agreements developed for vegetation management at the project site(s).</li> </ul>
<i>Temporary Channel Crossing</i>	<p>During project implementation, it may be necessary for heavy equipment to cross the wetted channel. If this is the case and dewatering will not be necessary to install instream structures, a temporary instream crossing may be necessary. Temporary channel crossings could consist of either (a) 1-3 temporary culverts placed in the stream with clean sand or gravel bags used to keep them in place, or (b) a series of industrial “super-sacks” filled with clean sand or gravel. Other options may be appropriate given the site conditions. In addition, temporary channel crossing structures would include some type of stable material for equipment to drive on top of the instream materials. Appropriate materials include, but are not limited to, crane mats, plywood, or compacted gravel. All of this material would be removed, after the temporary crossing is no longer in use or if a storm is expected that would result in flows beyond the capacity of the crossing. If the contractor uses clean river-run gravel as part of the temporary crossing, this material may be approved by resources agencies to be left in the stream to help improve instream conditions.</p> <p>Potential Impacts: Construction and removal of temporary channel crossing could result in impacts to biological or hydrologic resources in the form of sediment release or fluids from construction equipment, flow obstruction, and impacts to aquatic species.</p>
<i>Technical Requirements</i>	<ul style="list-style-type: none"> <li>• If the crossing requires pipes or culverts, project engineer or hydrologist would provide discharge requirements for temporary crossings.</li> <li>• Any sand or gravel bags will need to be filled with washed materials, so</li> </ul>

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Program Element	Description
<i>Channel Dewatering</i>	<p>as to not result in water quality impacts.</p> <p>Dewatering a portion of a stream during construction is completed to allow equipment access to the active channel while protecting water quality and aquatic species. Dewatering involves isolating the work area using temporary structures such as cofferdams and the pumping of water around the worksite in order to maintain flows downstream. Cofferdams are generally installed at the top and bottom of the dewatered site and are constructed of clean sand or gravel bags wrapped in visqueen or plastic with pipes for gravity feeding water past the work area. Prior to installing the cofferdam, approved/qualified biologists should clear the site of aquatic species and install block nets above and below where the cofferdams are to be located. If salmonids or other fish are expected to be in the dewatered area, fish biologists will capture and relocate all native aquatic species the area prior to dewatering. In addition to gravity feed, subsurface pumps may be necessary to collect groundwater and allow for excavation. Clean stream water that is flowing through a gravity feed system would be discharged downstream of the bottom cofferdam. Groundwater or excess water removed from the site via pumps or sumps may require treating before it is returned to the creek (depending of turbidity levels). Baker boxes, temporary stilling basins or discharge into uplands is acceptable for turbid water.</p> <p>It should be noted that dewatering is implemented to protect resources such as aquatic biota and water quality. If localized isolation of a small (25'x 25') area or a portion of the channel is possible to accomplish the construction tasks, it is ideal to avoid dewatering and focus on local isolation techniques. Local isolation has a smaller impact footprint and generally can be installed rapidly, removed immediately after construction is complete, and provide an appropriate level of resource protection. These techniques might include silt fences, clean sand or gravel bags and small 1-2" "trash" pumps to enable a limited earth moving or structure installation within the active channel.</p> <p>Potential Impacts: To be effective, cofferdams need to be trenched into the channel bottom and this work occurs prior to dewatering and can result in localized, temporary sediment mobilization and impact to hydrologic, biological, and cultural resources. Groundwater pumping to reduce flow can also result in turbid water on-site and downstream. Aquatic species need to be removed and relocated prior to dewatering, which can result in impacts to these species related to handling.</p>
<i>Technical Requirements</i>	<ul style="list-style-type: none"> <li>• Dewatering system should be designed by a registered engineer and be included as part of the stamped project plans. Plan should include pipe sizing, approximate locations of cofferdams, cofferdam design concepts, and specifications on addressing potential turbidity of removing groundwater or shallow seepage.</li> <li>• CDFW, RWQCB, and/or other agencies may require approval of dewatering plans prior to onset of construction.</li> <li>• Capture and relocation of aquatic species would be conducted in accordance with accepted protocols from NMFS and CDFW. The</li> </ul>

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Program Element	Description
<p><b><i>Removal of Existing Structures or Debris</i></b></p>	<p>HCP/NCCP does not provide coverage for listed fish.</p> <p>Removal and disposal of unwanted structures and debris from waterways and/or areas to be restored, will occur as-needed. Unwanted structures could include old out-buildings, barns, or other structures within the footprint of the specific project to be implemented. Debris could include large appliances, concrete, car parts, and garbage found during grubbing or excavation (items that are anthropogenic and not natural to the system). Anthropogenic material will be removed, hauled away and disposed of at approved recycling facilities or landfills.</p> <p>Potential Impacts: Removal of debris could result in impacts to historic structures, biological resources, or impact to water quality through disturbance of associated soils and materials that are part of the debris.</p>
<p><b><i>Technical Requirements</i></b></p>	<ul style="list-style-type: none"> <li>• Any structures to be relocated or demolished should be clearly shown on the project design plans. Removal of any structures must comply with the applicable local Building Ordinances and cultural resource regulations.</li> <li>• If debris could contain hazardous materials (e.g., coolant in a refrigerator or oil in a motor), removal will be completed in a way that avoids any further release of hazardous materials.</li> </ul>
<p><b><i>Utility Line Protection and Relocation</i></b></p>	<p>Utility lines such as sewer lines, drainage outfalls, power lines, and/or other utilities will need to be protected and/or be relocated/modified in order to accommodate grading and excavation work associated with implementing projects within this Program. Protection of utility lines is preferred over relocation and modification. For example, a 33” municipal sewer line runs 15 feet under either the east or west bank of Marsh Creek in the City of Brentwood and this line needs to be avoided. If a line cannot be avoided and requires either relocation or modification, engineering will be designed and implemented in coordination with the utility company, the applicable City, and the CCCFCD.</p> <p>Potential Impacts: Impacts to utility lines could affect ability of utilities to deliver essential services to the communities that rely on them. Moreover, inadvertent impacts to sewerlines could result in water quality impacts. Depending on location, removal and relocation could result in removal of vegetation and ground-disturbance, which could result in impacts to biological and/or cultural resources.</p>
<p><b><i>Technical Requirements</i></b></p>	<ul style="list-style-type: none"> <li>• Project design team must coordinate and work with the owner of the utility to ensure that appropriate protections are in place to avoid impacts. If impacts cannot be avoided and lines must be relocated or modified, plans are to be approved by the owner of the utility and all necessary authorizations are to be obtained before work begins, operations are not to be disrupted to the greatest extent practicable during construction, and relocated utility lines are constructed as-designed and operate as-designed.</li> <li>• For the sewer line running along Marsh Creek through Brentwood, the City has stated 1) no trees should be planted within a buffer of 6 feet on either side of the sewer line as measured from the point above ground</li> </ul>

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	<p>directly above the sewer line, 2) all existing manholes have to remain at or above the 100-year water surface elevation, and 3) the channel cannot be widened above the sewer line.</p>
<p><b><i>Recreational Improvements</i></b></p>	<p>Projects implemented under this Program could enhance opportunities for walking, hiking, and biking in the Program Area. In certain cases, the existing Marsh Creek Regional Trail or other local trail routes may need to be relocated to accommodate the widened channel and the newly created top of the bank. Any relocated trail sections would be designed in collaboration with EBRPD, City of Brentwood and/or City of Oakley Parks and Recreation Department to ensure that the materials, specifications, and practices meet or exceed existing parameters and are consistent with long-term trail planning. Recreational improvements consistent with local trail plans, EBRPD plans, and/or the HCP/NCCP may include trail realignments, new trail connections, free-span pedestrian bridges, benches, interpretive signs, and educational features.</p> <p>Potential Impacts: Construction related to recreational improvements could impact biological, cultural and water quality resources. Hardened infrastructure developed in areas that are currently undeveloped could result in a small but permanent loss of habitat.</p>
<p><b><i>Technical Requirements</i></b></p>	<ul style="list-style-type: none"> <li>• Project design team must coordinate and work with the owner of all trails and recreational facilities to ensure that: (a) relocation or modification plans are approved by the owner and meet the operating agencies design standards, (b) all necessary authorizations are obtained before work begins, (c) trails and recreational facilities are not disrupted, to the greatest extent practicable during construction, and (d) relocated trails and recreational facilities are constructed as-designed and operate as-designed.</li> <li>• Trails are subject to the limitations on exceptions to HCP/NCCP stream setback requirements. Project proponents are encouraged to site trails and access roads outside the required setback to reduce disturbance to wildlife that use adjacent streams and riparian habitats. When roads and trails cannot be sited outside the required setback, they must be sited as far from the stream channel as practicable, must adhere to limitations on exceptions to stream setback requirements described in HCP/NCCP Conservation Measure 1.7 and Table 6-2.</li> <li>• Project proponents are encouraged to use permeable or semi-permeable surfaces on roads and trails within stream setbacks.</li> <li>• Any trails or recreational facilities to be added, improved or relocated should be clearly shown on the project design plans.</li> </ul>
<p><b><i>Acquisition of Property in Fee-title or Easement</i></b></p>	<p>In order to implement the Program, public and private lands within the Program Area may need to be sold, donated or deed restricted. Land sales or transfers in fee-title or easement to public agencies such as CCCFCD, EBRPD, or others is considered a key component of this program. While the sale or donation of a right-of-way will not, in and of itself, result in changes to the environment, it is assumed that land transactions that are a part of this</p>

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Program Element	Description
	<p>program will be completed in order to enable ecological restoration activities to occur.</p> <p>Potential Impacts: There are no direct impacts from the transfer, donations or sale of land and all indirect impacts are described in the Program elements above.</p>
<i>Technical Requirements</i>	<ul style="list-style-type: none"> <li>Indirect impacts from sale, transfer or donation of real property, right-of-way, or deed restrictions that are completed as part of implementing the Program are considered in the Initial Study for the Program.</li> </ul>

In general, projects within this Program would range from being as small as < 0.5 acre to being as large as 6.5 acres. **Table 2** provides average dimensions and maximums for potential individual projects. These numbers were developed using data from the Three Creeks Parkway Restoration Project as well as opportunities identified in the *Lower Marsh Creek Stream Corridor Restoration Master Plan* (American Rivers 2015).

**Table 2: General Individual Project Dimensions**

Length of Channel Improved	Average: 750'; Max: 5,000'
Width of Cross-section Improved*	Average: 30'; Max: 90'
Area Improved**	Average: 0.75 acre; Max: 6.5 acres.
Volume of Soil Removed	Average: 5000 cu. yards; Max: 45,000 cu. yards.
*max of 90ft includes 75ft from top of bank and 15ft below top of bank on either side of the stream.	
** max area of improvement limited to 6 acres to allow for 0.5 acres of staging and accessories impacts.	

**A1.9. Planning/Preconstruction Measures**

Projects implemented under this Program will be required to develop stamped engineering plans and specifications from the Project Applicant as well as appropriate technical analyses that will enable meaningful review of the project by the CCCFCD and other responsible agencies. **Table 3** is a summary of the key site/project-specific analyses that will be required for each project to ensure impacts are mitigated to a less-than-significant level and benefits to flood conveyance, habitat restoration, and recreation are maximized to the greatest extent practicable.

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**Table 3: Preconstruction Related Measures**

Measure ID	Name	Measure
Pre-Con 1	Hydraulic Analysis	All projects covered under this Programmatic IS/MND are required to provide a hydraulic analysis that demonstrates the project, as-designed and expected to evolve over the initial 5-year period, has either a neutral or positive benefit for local flood conveyance capacity as well as water surface elevations upstream and downstream of the site.
Pre-Con 2	Biological Analysis	All projects covered under this Programmatic IS/MND will be required to follow the HCP/NCCP biological survey protocols to document site-specific existing biological conditions and any known or potential habitat for special-status species. Additional studies may be required to address non-HCP-covered species and for Section 7 Consultation with National Marine Fisheries Service (NMFS) to address any potential impacts to listed fishes or critical habitat.
Pre-Con 3	Cultural Resource Analysis	All projects covered under this Programmatic IS/MND will be required to conduct a record search of the database at the Northwest Information Center of the California Historical Resources Information System at Sonoma State University (NWIC) to determine if known archaeological or historic resources would be impacted by the site-specific project. If the project could result in impacts to know cultural resources, additional field surveys may be required. Project specific cultural resource analyses should be developed to meet CEQA requirements, AB 52 requirements, as well as the Federal requirements outlined in Section 106 of the National Historic Preservation Act.
Pre-Con 4	Geotechnical Analysis	All projects covered under this Programmatic IS/MND will be required to submit a project-specific geotechnical analysis to ensure that slopes, soils, and design elements meet current geotechnical standards for slope stability and earth movement.
Pre-Con 5	Maintenance Plan	All projects covered under this Programmatic Programmatic IS/MND will be required to develop a maintenance plan to (a) provide for specific goals and triggers for maintenance in the first 5 years after implementation, (b) articulate roles and responsibilities for short-term and long-term maintenance of the site, and (c) be in accordance with resource agency permits.

### **A1.10. General Construction Sequencing and Work Window**

The following provides a sequential list of the general steps that would occur during construction:

- Preconstruction surveys completed and submitted to resource agencies, sensitive areas are flagged.
- Project area is staked by engineer or survey firm for rough grading.
- Material and equipment mobilized to the staging area.
- Erosion and sediment control practices installed (see **Table 4**).
- Material and equipment mobilized to project site.
- Fish relocation, dewatering, etc., if applicable.
- Rough grading completed and then final grading, after approval.
- Areas temporarily disturbed during construction restored to pre-construction conditions.
- Material and equipment removed from the project site.
- Final erosion control measures installed, including seeding of native plant species.
- Planting of live plants in riparian and wetland areas, plants fenced or protected.

All grading, earthwork outside of the active channel and channel banks will be conducted between April 15<sup>th</sup> and October 31<sup>st</sup>. Grading and earthwork in and adjacent to the active channel and erosion control work will take place between July 1<sup>st</sup> and October 31<sup>st</sup>. Restoration planting will occur between October and February after structural erosion control practices and seeding has been implemented.

### **A1.11. Construction Equipment**

Typical heavy equipment including scrapers, excavator, backhoes, and tracked trucks would be used. Low ground pressure (LGP) equipment would be used to transport exported material between cut and fill areas. Equipment and vehicles would be staged along existing access roads or dedicated staging areas. Access would be limited to pre-established access routes/roads. All equipment would be steam-cleaned prior to arrival on-site to reduce the chances of non-native seeds or species being introduced by construction equipment.

### **A1.12. Construction-Related Best-Management Practices**

**Table 4** provides a list of general construction-related measures that will be applied to all projects that are implemented under this Program. This list is not exhaustive but BMPs are consistent with HCP/NCCP Conservation Measure 2.12 (pages 6-33). Key preconstruction planning measures are listed in **Table 3** and measures specific to each resource area are listed in the appropriate Initial Study sections. The Mitigation Monitoring and Reporting Program (MMRP) that will be prepared for this IS/MND will provide an accounting of all measures required for projects being implemented under this Program.

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**Table 4: Construction-Related Best Management Practices**

<b>Measure ID</b>	<b>Name</b>	<b>Measure</b>
C1	Erosion Control and Construction-Related Turbidity	<ol style="list-style-type: none"> <li>1 Gravel/sand bags or other erosion control measures will be employed to prevent runoff and construction-related turbidity.</li> <li>2 Upland soils exposed due to construction activities will be stabilized using native or noninvasive seed and, if necessary to control erosion, straw mulch.</li> <li>3 Any erosion control fabric will consist of natural fibers that will biodegrade over time. No plastic or other nonporous material will be used as part of a permanent erosion control approach.</li> <li>4 Other erosion control measures shall be implemented as necessary to ensure that sediment or other contaminants do not reach surface water bodies for stockpiled or reused/disposed sediments.</li> <li>5 Any fertilizer required for erosion control will be low nitrogen to avoid favoring invasive species.</li> </ol>
C2	Staging and Stockpiling of Materials	<ol style="list-style-type: none"> <li>1 All construction equipment will be staged in upland areas, away from sensitive natural communities or habitats.</li> <li>2 All construction-related items, including equipment, stockpiled material, temporary erosion control treatments, and trash will be removed within 72 hours of project completion. All residual soils and/or materials will be cleared from the project site.</li> <li>3 Building materials and other construction-related materials, including chemicals, will not be stockpiled or stored where they could spill into water bodies or storm drains, or where they could cover aquatic or riparian vegetation.</li> </ol>
C3	Spill Prevention and Response Plan	<p>A Spill Prevention and Response Plan will be developed prior to commencement of construction activities and will summarize the measures described below. The work site will be routinely inspected to verify that the Spill Prevention and Response Plan is properly implemented and maintained. Contractors will be notified immediately if there is a noncompliance issue.</p> <ol style="list-style-type: none"> <li>1 Equipment and materials for cleanup of spills will be available on-site.</li> <li>2 All spills and leaks will be cleaned up immediately and disposed of properly.</li> <li>3 Prior to entering the work site, all field personnel shall be appropriately trained in spill prevention, hazardous material control, and cleanup of accidental spills.</li> <li>4 Field personnel shall implement measures to ensure that hazardous materials are properly handled and the quality of water resources is protected by all reasonable means.</li> <li>5 Spill prevention kits shall always be in close proximity when using hazardous materials (e.g., crew trucks and other logical locations). All field personnel shall be advised of these locations and trained in their appropriate use.</li> <li>6 Absorbent materials will be used on small spills located on impervious surfaces rather than hosing down the spill; wash waters shall not discharge to surface waters. For small spills on pervious surfaces such as soils, wet materials will be excavated and properly disposed of rather than buried. The</li> </ol>

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Measure ID	Name	Measure
7		<p>absorbent materials will be collected and disposed of properly and promptly.</p> <p>As defined in 40 CFR 110, a federal reportable spill of petroleum products is the spilled quantity that:</p> <ul style="list-style-type: none"> <li>▪ Violates applicable water quality standards;</li> <li>▪ Causes a film or sheen on, or discoloration of, the water surface or adjoining shoreline; or</li> <li>▪ Causes a sludge or emulsion to be deposited beneath the surface of the water or adjoining shorelines.</li> </ul> <p>If a spill is reportable, the contractor’s superintendent will notify the Project applicant and the Project applicant will take action to contact the appropriate safety and cleanup crews to ensure that the Spill Prevention and Response Plan is followed. A written description of reportable releases must be submitted to the appropriate RWQCB and the California Department of Toxic Substances Control (DTSC). This submittal must contain a description of the release, including the type of material and an estimate of the amount spilled, the date of the release, an explanation of why the spill occurred, and a description of the steps taken to prevent and control future releases. The releases will be documented on a spill report form.</p> <p>If an appreciable spill has occurred, and results determine that project activities have adversely affected surface water or groundwater quality, a detailed analysis will be performed to the specifications of DTSC to identify the likely cause of contamination. This analysis will include recommendations for reducing or eliminating the source or mechanisms of contamination. Based on this analysis, the Land Trust or contractors will select and implement measures to control contamination, with a performance standard that surface and groundwater quality must be returned to baseline conditions. These measures will be subject to approval by the Project applicant, DTSC, and the RWQCB.</p>
C4	Equipment and Vehicle Maintenance and Cleaning	<ol style="list-style-type: none"> <li>1 All vehicles and equipment will be kept clean. Excessive build-up of oil or grease will be prevented.</li> <li>2 Vehicle and equipment maintenance activities will be conducted in a designated area to prevent inadvertent fluid spills from adversely impacting water quality. This area will be clearly designated with berms, sandbags, or other barriers.</li> <li>3 Secondary containment, such as a drain pan or drop cloth, to catch spills or leaks will be used when removing or changing fluids. Fluids will be stored in appropriate containers with covers, and properly recycled or disposed of off-site.</li> <li>4 Cracked batteries will be stored in a nonleaking secondary container and removed from the site.</li> <li>5 Spill cleanup materials will be stockpiled where they are readily accessible.</li> <li>6 Incoming vehicles and equipment will be checked for leaking oil and fluids (including delivery trucks and employee and subcontractor vehicles). Leaking vehicles or equipment will not be allowed on-site.</li> <li>7 Vehicles and equipment will not be washed on-site. Vehicle and equipment</li> </ol>

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<b>Measure ID</b>	<b>Name</b>	<b>Measure</b>
		washing will occur at an appropriate wash station.
C5	Refueling	<ol style="list-style-type: none"> <li>1 All fueling sites shall be equipped with secondary containment and avoid a direct connection to underlying soil, surface water, or the storm drainage system.</li> <li>2 For stationary equipment that must be fueled on-site, secondary containment such as a drain pan or drop cloth shall be provided in such a manner to prevent accidental spill of fuels to underlying soil, surface water, or the storm drainage system.</li> </ol>
C6	On-Site Hazardous Materials Management	<ol style="list-style-type: none"> <li>1 The products used and/or expected to be used and the end products that are produced and/or expected to be produced after their use will be inventoried.</li> <li>2 As appropriate, containers will be properly labeled with a “Hazardous Waste” label and hazardous waste will be properly recycled or disposed of off site.</li> <li>3 Contact of chemicals with precipitation will be minimized by storing chemicals in watertight containers or in a storage shed (completely enclosed), with appropriate secondary containment to prevent any spillage or leakage.</li> <li>4 Quantities of equipment fuels and lubricants greater than 55 gallons shall be provided with secondary containment that is capable of containing 110 percent of the volume of primary container(s).</li> <li>5 Petroleum products, chemicals, cement, fuels, lubricants, and non-storm drainage water or water contaminated with the aforementioned materials shall not be allowed to enter receiving waters or the storm drainage system.</li> <li>6 Sanitation facilities (e.g., portable toilets) will be surrounded by a berm, and a direct connection to the storm drainage system or receiving water will be avoided.</li> <li>7 Sanitation facilities will be regularly cleaned and/or replaced, and inspected regularly for leaks and spills.</li> <li>8 Waste disposal containers will be covered when they are not in use, and a direct connection to the storm drainage system or receiving water will be avoided.</li> <li>9 All trash that is brought to a project site during construction activities (e.g., plastic water bottles, plastic lunch bags) will be removed from the site daily.</li> </ol>
C7	Fire Prevention	<ol style="list-style-type: none"> <li>1 All earthmoving and portable equipment with internal combustion engines will be equipped with spark arrestors.</li> <li>2 During the high fire danger period (April 1–December 1), work crews will have appropriate fire suppression equipment available at the work site.</li> <li>3 On days when the fire danger is high, flammable materials will be kept at least 10 feet away from any equipment that could produce a spark, fire, or flame.</li> <li>4 On days when the fire danger is high, portable tools powered by gasoline-fueled internal combustion engines will not be used within 25 feet of any flammable materials unless at least one round-point shovel or fire extinguisher is within immediate reach of the work crew (no more 25 feet away from the work area).</li> </ol>

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<b>Measure ID</b>	<b>Name</b>	<b>Measure</b>
C8	Work Site Housekeeping	<ol style="list-style-type: none"> <li>1 The work site will be maintained in a neat and orderly condition, and left in a neat, clean, and orderly condition when work is complete.</li> <li>2 Materials or equipment left on the site overnight will be stored as inconspicuously as possible and will be neatly arranged.</li> </ol>
C9	BAAQMD CEQA Air Quality Guidelines Required Dust Control Measures	<ol style="list-style-type: none"> <li>1 The construction contractor shall reduce construction-related air pollutant emissions by implementing BAAQMD basic fugitive dust control measures, including: <ul style="list-style-type: none"> <li>▪ All exposed surfaces (e.g., parking areas, staging areas, soil piles, graded areas, and unpaved access roads) shall be watered two times per day.</li> <li>▪ All haul trucks transporting soil, sand, or other loose material off site shall be covered.</li> <li>▪ All visible mud or dirt track-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.</li> <li>▪ All vehicle speeds on unpaved surfaces shall be limited to 15 miles per hour.</li> <li>▪ Paving shall be restored as soon as possible after construction/repair is complete.</li> <li>▪ A publicly visible sign shall be posted at each active worksite with the telephone number and person to contact at the CCCFCD regarding dust complaints. This person shall respond and take corrective action within 48 hours. The BAAQMD phone number shall also be visible to ensure compliance with applicable regulations.</li> </ul> </li> </ol>

**A1.13. Potential Permits and Approvals from Public Agencies**

A critical component of planning projects is understanding the jurisdiction of multiple regulatory agencies and the types of approvals or permits that might be necessary to implement a project. The following is a list of potentially affected agencies and the corresponding type of approval that may be required.

- U.S. Army Corps of Engineers (USACE): A Section 404 Clean Water Act (CWA) permit would be required for placement of dredge or fill material into waters of the United States and work within navigable waters respectively. Individual projects under the Program would be designed to meet the conditions described in the Sacramento USACE Regional General Permit #1 (SPK-2001-00147), which covers discharge of dredge material or fill into Waters of the US under Section 404 of the CWA within the HCP/NCCP Program Area.
- California State Historic Preservation Office (SHPO): National Historic Preservation Act (NHPA) implementing regulations, as set forth in Title 36 Code of Federal Regulations (CFR) Parts 800 et. seq., require federal agencies to take into account the effects of their undertakings on historic properties and consult with stakeholders, including SHPO, on potential effects to resources that are listed or eligible for listing in the National Register of Historic Places. For projects covered under this Program, the most likely Federal agency to consult with SHPO will be the USACE through the 404 process.
- National Marine Fisheries Service (NMFS): Federal Endangered Species Act (FESA) and Magnuson-Stevens compliance would be required for potential effects on anadromous fish species federally-listed as

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threatened or endangered and effects on Essential Fish Habitat. Fall-run Chinook salmon are the salmonids known to currently use Marsh Creek at this point in time. This run is not listed under the FESA and neither juveniles nor adults would likely be in Marsh Creek during the late summer or early fall due to their life history. Marsh Creek is not considered Essential Fish Habitat by NMFS. For projects in Marsh Creek that are being conducted during the summer and early fall, consultation with NMFS may not be necessary, but changed circumstances such as observations of listed steelhead could result in the need for Section 7 consultations with NMFS.

- U.S. Fish and Wildlife Service (USFWS): FESA compliance would be required for potential effects on federally listed wildlife and resident aquatic species as threatened or endangered. Compliance with the Migratory Bird Treaty Act (MBTA) would be necessary to protect active nests of native birds. For projects under this Program, with the exception of any listed or special-status fishes, this compliance should mainly be accessed through the HCP/NCCP process (see below).
- East Contra Costa County Habitat Conservation Plan/Natural Community Conservation Plan (ECCC HCP/NCCP): The Program is located within HCP/NCCP inventory area and projects will be required to submit a Planning Survey Report (PSR). Projects within the Program would be consistent with Sections 2.3.1, 2.3.2 and 2.3.4 and all applicable conditions articulated in Chapter 6 of the HCP/NCCP. 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 HCP/NCCP complies with Section 10(a)(1)(B) of Federal Endangered Species Act and California Natural Community Conservation Planning Act of 2003 and as such covered activities are authorized for incidental take of HCP/NCCP covered species. Projects completed under HCP/NCCP coverage may be subject to mitigation fees for both permanent and temporary impacts to species habitats and implementation of specific conditions and conservation measures to avoid or minimize potential effects to species and/or its habitats. The HCP/NCCP requires reporting and fee payment to the HCP/NCCP Implementing Entity, the East Contra Costa County Habitat Conservancy, a joint exercise of powers authority formed by the Cities of Brentwood, Clayton, Oakley, and Pittsburg and Contra Costa County (Jones & Stokes Associates 2006). Project implemented under this Program may be required to pay HCP/NCCP fees.
- Central Valley Regional Water Quality Control Board (RWQCB), Section 401 Water Quality Certification: Section 401 of the CWA requires that any person applying for a federal CWA (Section 404) authorization, which may result in a discharge of pollutants into waters of the United States, must obtain a state water quality certification that the activity complies with all applicable water quality standards, limitations, and restrictions. No authorization may be issued by a federal agency until 401 certification has been granted.
- State Water Resources Control Board (SWRCB), Construction General Permit (CGP: Construction activities that disturb one acre or more of land, and construction on smaller sites that are part of a larger project, must comply with a Construction General Permit that regulates stormwater leaving construction sites (Section 402 of the CWA). Site owners must notify the state, prepare and implement a Stormwater Pollution Prevention Plan (SWPPP), and monitor the effectiveness of the plan. The contractor will need this permit right before construction as part of the Notice of Intent.
- San Francisco Bay RWQCB, Municipal Regional Stormwater National Pollutant Discharge Elimination System (NPDES) Permit: Any creek restoration done in conjunction with a project (i.e. subdivision development, or parking lot construction) to discharge stormwater to Marsh, Sand or Deer creeks would require compliance with the NPDES permit. Pursuant to the Federal Water Pollution Control Act (Clean Water Act) section 402(p), storm water permits are required for discharges from a municipal separate

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storm sewer systems (MS4s) serving a population of 100,000 or more. The Regional Water Quality Control Boards have adopted NPDES permits to regulate storm water for municipalities. The San Francisco Bay Region Municipal Regional Stormwater NPDES Permit (Order No. R2-2015-0049) is the governing stormwater permit for all of Contra Costa County.<sup>1</sup>

- California Department of Fish and Wildlife (CDFW): A Lake or Streambed Alteration Agreement, in accordance with Section 1602 of the California Fish and Game Code, would be required for work within the bed, channel or bank of the marsh. The project would also be required to comply with Section 2080 of the Fish and Game Code (protection of State-listed special status species), as applicable for non-HCP/NCCP covered species. In addition, all native bird species that occur in the project site are protected by the California Fish and Game Code. Fish and Game Code §§3503, 2513, and 3800 (and other sections and subsections) protect native birds, including their nests and eggs, from all forms of take. Disturbance that causes nest abandonment and/or loss of reproductive effort is considered “take” by CDFW.
- Contra Costa County Flood Control and Water Conservation District (CCCFCD): Any proposed work, activity, or encroachment in/on CCCFCD property or right of way requires that a CCCFCD Permit be obtained from the CCCFCD. The CCCFCD also requires an environmental document be adopted for most Flood Control Permit applications. In addition, work on private and public watercourses and drainage facilities in the unincorporated County areas is regulated by the Contra Costa County 1010 Drainage Ordinance. The 1010 Drainage Ordinance may require a drainage permit from the County for any work that involves man-made drainage facilities or natural watercourses. Some of the activities covered by this permit requirement include: Construction of creek improvements or bank stabilization, creek cleanup, removal/alteration of creek bank-stabilizing vegetation, construction of improvements within drainage easements or within natural watercourses, and construction or modification of drainage facilities.
- Delta Stewardship Council (Council): The Council may require a project to complete a Certification of Consistency. Created by the legislature in 2009, the Council is composed of members who represent different parts of the state and offer diverse expertise in fields such as agriculture, science, the environment, and public service. Of the seven, four are appointed by the Governor, one each by the Senate and Assembly, and the seventh is the Chair of the Delta Protection Commission. The Council is charged with implementing the Delta Plan. Projects implemented under this CEQA document will be consistent with the Delta Plan as they are all multi-benefit projects that will reduce flood risk associated with a changing climate, improve Delta water quality, restore denuded stream-side habitat, and enhance the Delta as a place.

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<sup>1</sup> The eastern portion of the County, which drains to the Delta and includes portions of unincorporated Contra Costa County, Flood Control District jurisdiction, and the cities of Antioch, Brentwood, and Oakley, is located within the geographic jurisdiction of the Central Valley Regional Water Board. The other County municipalities, including portions of unincorporated Contra Costa County and remaining Flood Control District jurisdiction, drain to the San Francisco Bay and are regulated by the San Francisco Bay Regional Water Board, and are Permittees subject to the San Francisco Bay Region Municipal Regional Stormwater NPDES Permit (Order No. R2-2015-0049). This stormwater permit is commonly known as the Municipal Regional Permit or MRP.

Permittees located within the Central Valley Region were previously regulated under the East Contra Costa County Municipal NPDES Permit issued by the Central Valley Regional Water Board (Order No. R5-2010-0102). In a designation letter issued pursuant to Water Code 13228(b), dated January 6, 2017, an agreement was reached between the San Francisco Bay and Central Valley Regional Water Boards to transfer regulatory authority of the communities in the eastern portion of the County from the Central Valley to the San Francisco Bay Regional Water Board. Therefore, the MRP is the governing NPDES permit for the entire County.

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- East Bay Regional Park District (EBRPD) Encroachment Permit: Any restoration work on the east bank of Marsh Creek will most likely impact the Marsh Creek Regional Trail, operated by the EBRPD. The EBRPD has an easement to maintain and operate the trail on CCCFCD property. The EBRPD also maintains and manages parks, staging areas and other facilities along the creeks. The EBRPD requires an encroachment permit for any project that impacts their trails or facilities. The encroachment permit requires a brief narrative description of the project and the exact location of the project. Larger projects require construction drawings and a trail re-routing plan if the Marsh Creek Trail will need to be closed or re-routed during construction. If a project will require a realignment of an existing trail, a new trail connection, or new trail infrastructure, this should be done in consultation with EBRPD.
- Cities of Brentwood or Oakley: The cities will likely require encroachment permits, grading permits, and possibly building or planning permits, depending on the scope and scale of the project.

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**B. ENVIRONMENTAL FACTORS POTENTIALLY AFFECTED**

All of the following potential environmental impacts are evaluated in this Initial Study. The environmental factors checked below would be potentially affected by the proposed program.

- |                                                    |                                                                         |                                                                       |
|----------------------------------------------------|-------------------------------------------------------------------------|-----------------------------------------------------------------------|
| <input type="checkbox"/> Aesthetics                | <input type="checkbox"/> Agriculture and Forest Resources               | <input type="checkbox"/> Air Quality                                  |
| <input type="checkbox"/> Biological Resources      | <input type="checkbox"/> Cultural Resources / Tribal Cultural Resources | <input type="checkbox"/> Energy                                       |
| <input type="checkbox"/> Greenhouse Gas Emissions  | <input type="checkbox"/> Geology / Soils                                | <input type="checkbox"/> Hazards / Hazardous Materials                |
| <input type="checkbox"/> Hydrology / Water Quality | <input type="checkbox"/> Land Use / Planning                            | <input type="checkbox"/> Mineral Resources                            |
| <input type="checkbox"/> Noise                     | <input type="checkbox"/> Population / Housing                           | <input type="checkbox"/> Public Services                              |
| <input type="checkbox"/> Recreation                | <input type="checkbox"/> Transportation                                 | <input type="checkbox"/> Utilities / Service Systems                  |
| <input type="checkbox"/> Wildfire                  | <input type="checkbox"/> Mandatory Findings of Significance             | <input checked="" type="checkbox"/> None with Mitigation Incorporated |

For the environmental issue areas where there is no potential for significant environmental impact, there is no potential for significant environmental impact to occur from construction, operation, or maintenance of the proposed project. This finding can be made using the project description, environmental setting, or other information as supporting evidence, which is provided in the Environmental Checklist below. For those environmental issue areas where there is potential for significant environmental impact, mitigation measures have been identified in this document that would reduce impacts to a less than significant level.

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**C. LEAD AGENCY DETERMINATION**

On the basis of this initial evaluation:

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

Signature *Lashun Cross*

Date *March 29, 2019*

Printed Name *Lashun Cross*  
Contra Costa County Department of Conservation and Development

Title *Principal Planner*

## **D. EVALUATION OF ENVIRONMENTAL EFFECTS<sup>2</sup>**

The Environmental Checklist and discussion that follows is based on sample questions provided in the CEQA Guidelines (Appendix G of the California Code of Regulations (CCR), Title 14, Division 6, Chapter 3), which focus on various individual concerns within 17 different broad environmental categories, such as air quality, cultural resources, land use and traffic (and generally arranged in alphabetical order). The Guidelines also provide specific direction and guidance for preparing responses to the Environmental Checklist. Each question in the Checklist essentially requires a “yes” or “no” reply as to whether or not the project will have a potentially significant environmental impact of a certain type, and, following a Checklist table with all of the questions in each major environmental heading, citations, information and/or discussion that supports that determination. The Checklist table provides, in addition to a clear “yes” reply and a clear “no” reply, two possible “in-between” replies, including one that is equivalent to “yes, but with changes to the project that the proponent and the Lead Agency have agreed to,” “no”, and another “no” reply that requires a greater degree of discussion, supported by citations and analysis of existing conditions, threshold(s) of significance used and project effects than required for a simple “no” reply. Each possible answer to the questions in the Checklist, and the different type of discussion required, are discussed below:

- **Potentially Significant Impact.** Checked if a discussion of the existing setting (including relevant regulations or policies pertaining to the subject) and project characteristics with regard to the environmental topic demonstrates, based on substantial evidence, supporting information, previously prepared and adopted environmental documents, and specific criteria or thresholds used to assess significance, that the project will have a potentially significant impact of the type described in the question.
- **Less Than Significant With Mitigation.** Checked if the discussion of existing conditions and specific project characteristics, also adequately supported with citations of relevant research or documents, determine that the project clearly will or is likely to have particular physical impacts that will exceed the given threshold or criteria by which significance is determined, but that with the incorporation of clearly defined mitigation measures into the project, that the project applicant or proponent has agreed to, such impacts will be avoided or reduced to less than significant levels.

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<sup>2</sup> A brief explanation is required for all answers except "No Impact" answers that are adequately supported by the information sources a lead agency cites in the parentheses following each question. A "No Impact" answer is adequately supported if the referenced information sources show that the impact simply does not apply to projects like the one involved (e.g., the project falls outside a fault rupture zone). A "No Impact" answer should be explained where it is based on project-specific factors as well as general standards (e.g., the project will not expose sensitive receptors to pollutants, based on a project-specific screening analysis).

All answers must take account of the whole action involved, including off-site as well as on-site, cumulative as well as project-level, indirect as well as direct, and construction as well as operational impacts.

"Potentially Significant Impact" is appropriate if there is substantial evidence leading to a fair argument that an effect is significant. If there are one or more "Potentially Significant Impact" entries when the determination is made without the possibility of mitigation, then an EIR is required.

"Less Than Significant w/ Mitigation" applies where the incorporation of mitigation measures would reduce an effect from "Potentially Significant Impact" to a "Less than Significant Impact." Mitigation measures and a brief explanation of how or whether they reduce the effect to a less than significant level is provided in the text of this report.

Earlier analyses may be used where, pursuant to tiering, Program EIR, Master EIR, or other CEQA processes, an effect has been adequately analyzed in an earlier EIR or negative declaration.

This checklist incorporates references to information sources for potential impacts (e.g., general plans, zoning ordinances). Reference to a previously prepared or outside document includes, where appropriate, a reference to the page or pages where the statement is substantiated. A source list is attached and other sources used or individuals contacted are cited in the discussion.

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- **Less Than Significant Impact.** Checked if a more detailed discussion of existing conditions and specific project features, also citing relevant information, reports or studies, demonstrates that, while some effects may be discernible with regard to the individual environmental topic of the question, the effect would not exceed a threshold of significance which has been established by the Lead or a Responsible Agency. The discussion may note that due to the evidence that a given impact would not occur or would be less than significant, no mitigation measures are required.
- **No Impact.** Checked if brief statements (one or two sentences) or cited reference materials (maps, reports or studies) clearly show that the type of impact could not be reasonably expected to occur due to the specific characteristics of the project or its location (e.g., the project falls outside the nearest fault rupture zone, or is several hundred feet from a 100-year flood zone, and relevant citations are provided). The referenced sources or information may also show that the impact simply does not apply to projects like the one involved. A response to the question may also be "No Impact" with a brief explanation that the basis of adequately supported project-specific factors or general standards (e.g., the project will not expose sensitive receptors to pollutants, based on a basic screening of the specific project).

The discussions of the replies to the Checklist questions must take account of the whole project involved in the project, including off-site as well as on-site effects, both cumulative and project-level impacts, indirect and direct effects, and construction as well as operational impacts. Except when a "No Impact" reply is indicated, the discussion of each issue must identify:

- a) The significance criteria or threshold, if any, used to evaluate each question; and
- b) The mitigation measure identified, if any, to reduce the impact to less than significance, with sufficient description to briefly explain how they reduce the effect to a less than significant level.

Earlier analyses may be used where, pursuant to the tiering, program Environmental Impact Report (EIR), or other CEQA process, an effect has been adequately analyzed in an earlier EIR or negative declaration (Section 15063(c)(3)(D) of the Guidelines). In this case, a brief discussion should identify the following:

- a) **Earlier Analysis Used.** Identify and state where they are available for review.
- b) **Impacts Adequately Addressed.** Identify which effects from the above checklist were within the scope of and adequately analyzed in an earlier document pursuant to applicable legal standards, and state whether such effects were addressed by mitigation measures based on the earlier analysis"
- c) **Mitigation Measures.** For effects that are "Less than Significant with Mitigation Measures Incorporated," describe the mitigation measures which were incorporated or refined from the earlier document and the extent to which they address site-specific conditions for the project.

## **E. EVALUATION OF ENVIRONMENTAL IMPACTS**

### **E1. AESTHETICS**

Environmental Factors and Focused Questions for Determination of Environmental Impact	Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant Impact	No Impact
a) Have a substantial adverse effect on a scenic vista.			X	
b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway.			X	
c) In non-urbanized areas, substantially degrade the existing visual character or quality of public views of the site and its surroundings? (Public views are those that are experienced from publicly accessible vantage points.) If the project is in an urbanized area, would the project conflict with applicable zoning and other regulations governing scenic quality?				X
d) Create a new source of substantial light or glare, which would adversely affect day or nighttime views in the area.				X

#### **E1.1. Setting**

Within its boundaries, Contra Costa County (the County) identifies scenic ridges and waterways as the two main scenic resources, in addition to many localized scenic features. Scenic ridges include hillsides and rock outcroppings and scenic waterways include the San Francisco, San Pablo, and Suisun bays. 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 Program Area. Views of Mount Diablo and the foothills are scenic resources within the Program Area. These scenic views provide an important balance to current and planned development (Contra Costa County 2005).

California Department of Transportation (Caltrans) manages the State Scenic Highway Program, provides guidance, and assists local government agencies, community organizations, and citizens with the process to officially designate scenic highways. There are no officially designated scenic highways in the proposed Program Area; however State Route 160 near Antioch and Highway 4 in Brentwood are currently categorized as Eligible State Scenic Highway (Caltrans 2018).

#### **Would the Program:**

##### **a) Have a substantial adverse effect on a scenic vista?**

A scenic vista is defined as a publicly accessible viewpoint that provides expansive views of a highly valued landscape. Public views of the Program Area in some locations could be considered expansive and a scenic vista.

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Implementation of the projects moving forward under the proposed Program would change these views by widening the floodplain and planting riparian vegetation along the creek(s). The views may be temporarily impacted during construction of individual projects. Some views may be permanently impacted as a result of riparian vegetation growth. These impacts would not result in an adverse effect on a scenic vista because after project implementation the views of restored parcels would consist of riparian vegetation – an improvement over the current condition of undeveloped (ruderal) parcels. Views of distant foothills and Mt. Diablo may be obscured by the growing vegetation; however, users of the open space would have access to alternative views of the scenic resources from within the Program Area. **Less than significant.**

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

Projects within the Program Area would not result in any damage to scenic resources. Existing, non-native trees may be removed to accommodate the restoration project but the transition from ruderal habitat to riparian habitat would result in improved views from and within the Program Area. **Less than significant.**

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

The Program Area primarily consists of open water, trapezoidal channels with little to no riparian vegetation surrounded by ruderal habitat. The proposed Program would improve the visual character of the individual project sites and their surroundings through riparian planting. Implementation of the Program would not result in degradation to the visual character of the area not conflict with any regulations governing scenic quality. **No impact.**

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

Construction of projects under the proposed Program would not result in a new source of nighttime lighting as no night work is permitted. No permanent lighting would be installed or allowed under the proposed Program. **No impact.**

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**E2. AGRICULTURE AND FORESTRY RESOURCES**

Environmental Factors and Focused Questions for Determination of Environmental Impact	Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant Impact	No Impact
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 nonagricultural use.			X	
b) Conflict with existing zoning for agricultural use, or a Williamson Act contract.			X	
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 Public Resources Code section 51104(g))?				X
d) Result in the loss of forest land or conversion of forest land to non-forest use?				X
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.			X	

**E2.1. Setting**

This section describes the environmental setting, regulatory setting and any potential impacts on agricultural and forestry resources that would result from the implementation of the proposed Program. Because the Program covers multiple Creekside parcels within the Program Area, the following discussion and impact evaluation applies generally to the region, but focuses specifically on parcels designated as prime, unique or of statewide importance that are within the Program Area.

In determining whether impacts to agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997) prepared by the California Department of Conservation as an optional model to use in assessing impacts on agriculture and farmland. In determining whether impacts to forest resources, including timberland, are significant environmental effects, lead agencies may refer to information compiled by the California Department of Forestry and Fire Protection regarding the state’s inventory of forest land, including the Forest and Range Assessment Project and the Forest Legacy Assessment project; and forest carbon measurement methodology provided in Forest Protocols adopted by the California Air Resources Board.

Contra Costa County currently has 26,484 acres of Prime Farmland, 3,205 acres of Unique Farmland and 7,420 acres of Farmland of Statewide Importance (California Department of Conservation 2010a). These figures include unincorporated portions of the County and those lands designated by the Contra Costa County General Plan (2005) as Important Agricultural Areas. The County has identified agricultural resources as very valuable and

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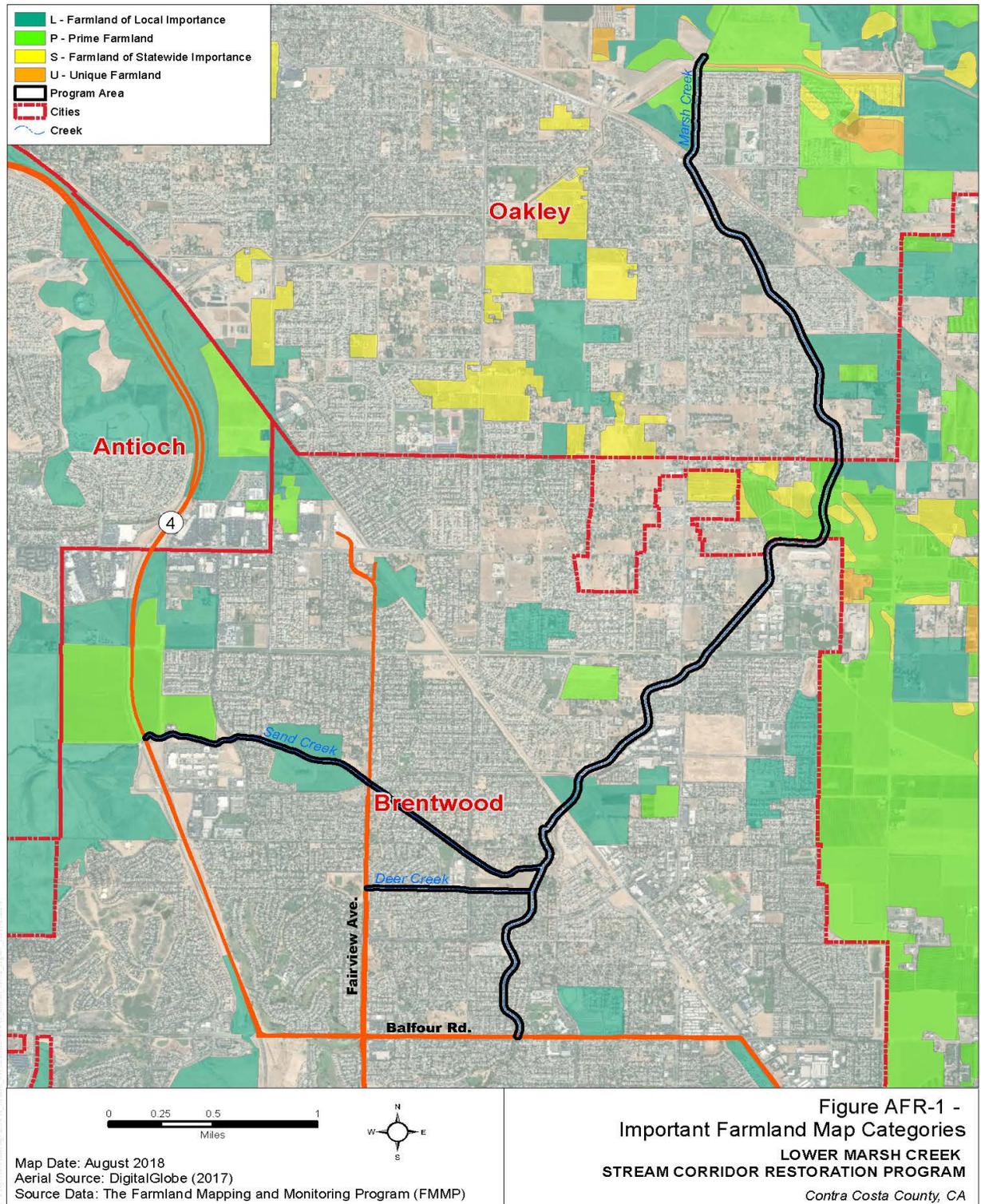
important. The County has established goals and policies in their General Plan (2005) to enhance and protect farmlands and minimize conflicts with other land uses.

Moreover, the voters approved an Urban Limit Line (ULL) for Contra Costa County with Measure C in 1990 and extended it to 2026 in 2006 with Measure L. The ULL was developed to guide future development, while protecting Open Space land use designation - including agriculture - both in unincorporated and incorporated areas of Contra Costa County. The entire Program Area is within the ULL, which allows for development and is also outside of the defined Agricultural Core to the east of Brentwood (City of Brentwood 2014). The 2014 Brentwood General Plan Land Use Map and the 2015 Zoning Map and General Plan Land Use Map for the City of Oakley reflect the updated land use and zoning designations, consistent with the County General Plan in regards to current and future agricultural land use designations and zoning (City of Oakley 2015).

Additional information about the Program Area and vicinity was obtained from review of the California Department of Conservation Farmland Mapping & Monitoring Program (FMMP). FMMP is a nonregulatory program and provides a consistent and impartial analysis of agricultural land use and land use changes throughout California. Creation of the FMMP was supported by the Legislature and a broad coalition of building, business, government, and conservation interests (California Department of Conservation Farmland Mapping and Monitoring Program 2016). Data from the FMMP is presented in **Figure 6**, below.

The 2016 Agricultural Preserves Map for Contra Costa County was used to analyze potential impacts from implementation of the Program on properties under the Williamson Act protection.

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**Figure 6. Important Farmland Map Categories**

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### Would the Program:

#### **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 nonagricultural use?**

The entire Program Area is within Contra Costa County's Urban Limit Line (ULL) which allows for development and is also outside of the defined Agricultural Core to the east of Brentwood (City of Brentwood 2014).

The FMMP shows Farmland of Local Importance in Oakley, north of Delta Road and west of Sellers Avenue. These parcels are slated for residential development with approved development maps and therefore, implementation of this Program would not result in any additional impact to these FMMP farmlands.

There is an additional 1,000 linear ft of Marsh Creek, in Brentwood, that is adjacent to Farmland of Local Importance (upstream of O'Hara Avenue). If fully implemented, the Program could result in impacts of up to 1.8 acres of farmland of this designation. This area is designated by the City of Brentwood as Regional Commercial and Business Park and within the County's ULL.

There is Farmland of Local Importance that is mapped along Sand Creek, upstream of Fairview Avenue. This area is designated by the City of Brentwood in their General Plan as Residential Low Density and Public Facility. If fully implemented, the Program would impact up to 3.7 acres of farmland. There is an additional 1,000 linear ft of stream within the Program Area on Sand Creek, just downstream of Highway 4, which is designated by the FMMP as Prime Farmland. This is the only Prime Farmland within the Program Area and, if fully implemented, the Program could impact 0.9 acres of this land. These lands are currently designated by the City of Brentwood as Mixed-Use Transportation and Regional Commercial and they are within the ULL.

There is an approximately 3,500 linear ft reach of the Program Area along Marsh Creek, south of Delta Road, in unincorporated Contra Costa County that is designated Agricultural Land, and contains Farmland of Statewide and Farmland of Local Importance. Only 250 linear ft of stream is adjacent to Farmland of Statewide Importance. If the Program were fully implemented along this 250-ft reach of Marsh Creek, a maximum of 0.25 acres of Farmland of Statewide Importance would be impacted. An additional 6.75 acres of Farmland of Local Importance could be converted to open space in the form of riparian, wetland or stream habitat, if the Program were fully implemented in this area. However, the conversion or loss of agricultural habitat within the County's ULL program is considered less than significant because these lands are no longer designated as agriculture. Agricultural loss or conversion that lies within the ULL is not subject to additional mitigation beyond what has already been implemented through permanent protection of farmland in the Agricultural Core and outside the ULL. Implementation of the Program would have a less than significant impact on Farmland of Statewide Importance, Prime Farmland and/or Unique Farmland within the Program Area. **Less than significant.**

#### **b) Conflict with existing zoning for agricultural use or a Williamson Act contract?**

The Program Area contains 2 small parcels (both less than 2 acres) in Oakley, north of Delta Road that are currently zoned Limited Agriculture and a couple of parcels adjacent to approximately 3,500 linear feet of Marsh Creek in unincorporated Contra Costa County that are currently zoned as Agriculture. There are no parcels within the Program Area protected under the Williamson Act. Restoring a streamside habitat corridor on zoned farmland does not conflict with existing farmland zoning in Oakley or the County. Therefore, the project does not conflict with existing zoning for agricultural use or a Williamson Act Contract. **Less than significant.**

#### **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),**

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**or timberland zoned Timberland Production or timberland (as defined by Public Resources Code §51104)?**

The Program Area is not located near land designated as Timber Resource (Christensen, et al 2015). **No impact.**

**d) Result in the loss of forest land or conversion of forest land to nonforest use?**

No forest land occurs in or immediately adjacent to the proposed Program Area; therefore, there would be no loss of forest land or conversion of forest land to nonforest use. **No impact.**

**e) Involve other changes in the existing environment, which, due to their location or nature, could result in conversion of Farmland, to nonagricultural use?**

The Program is narrowly focused on work within existing 75-ft and 50-ft stream setbacks directly adjacent to the top of bank of Marsh Creek and Sand Creek and Deer Creek, respectively. These changes in the environment, if the Program was implemented along the one reach of unincorporated Contra Costa County, would result in conversion of Farmland to nonagricultural uses. This impact is a tiny fraction of the existing farmland in Contra Costa County and is entirely within the ULL. Moreover, in nearly all cases, the existing stream setback area has already been converted from agricultural uses to either recreational trails or flood control maintenance roads. **Less than significant.**

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**E3. AIR QUALITY**

Environmental Factors and Focused Questions for Determination of Environmental Impact	Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant Impact	No Impact
a) Conflict with or obstruct implementation of the applicable air quality plan.			X	
b) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is nonattainment under an applicable federal or state ambient air quality standard.			X	
c) Expose sensitive receptors to substantial pollutant concentrations.			X	
d) Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people.			X	

**E3.1. Setting**

The U.S. Environmental Protection Agency (USEPA) and the California Air Resources Board (CARB) currently focus much of their air pollutant control efforts on five major air pollutants: ozone, nitrogen dioxide (NO<sub>2</sub>), carbon monoxide (CO), sulfur dioxide (SO<sub>2</sub>), particulate matter less than 10 micron diameter (PM<sub>10</sub>), and particulate matter less than 2.5 micron diameter (PM<sub>2.5</sub>). These are the most prevalent air pollutants emitted nationwide and statewide, and they are known to be harmful to human health when their ambient levels exceed certain concentrations. Consequently, federal and state ambient air quality standards have been set for each of these pollutants (known as “criteria” air pollutants”) at levels protective of human health, with an added margin of safety to afford additional protection to the young, the old and the infirm (i.e., sensitive receptors), who are more susceptible to their adverse health effects.

Many other chemical compounds, termed toxic air contaminants (TACs), emitted into the air are also regulated to limit their adverse impacts to human health and welfare. In California and in the Bay Area, the majority of the estimated carcinogenic/chronic health risks from TAC exposures have been attributed to relatively few TACs, the most important being particulate matter from diesel-fueled engines (DPM), which is responsible for about 80% of the cumulative cancer risk from all airborne TAC exposures.

**E3.1.1. Methodology**

This air quality analysis was performed using the methodologies recommended in *CEQA Air Quality Guidelines* (BAAQMD 2017). According to the Guidelines, any project would have a significant potential for causing/contributing to a local air quality standard violation or making a cumulatively considerable contribution to a regional air quality problem if its criteria pollutant emissions would exceed any of the thresholds during construction or operation as presented in **Table 5**.

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**Table 5. CEQA Air Quality Significance Thresholds for Criteria Air Pollutant Emissions**

Pollutant	Construction Average Daily (lbs./day)	Operational	
		Average Daily (lbs./day)	Maximum Annual (tons/year)
Reactive Organic Gases (ROG)	54	54	10
Oxides of Nitrogen (NO <sub>x</sub> )	54	54	10
Inhalable Particulate Matter (PM <sub>10</sub> )	82 (exhaust)	82	15
Fine Inhalable Particulate Matter (PM <sub>2.5</sub> )	54 (exhaust)	54	10
PM <sub>10</sub> /PM <sub>2.5</sub> (Fugitive Dust)	BMPs <sup>a</sup>	N/A	N/A

Notes: BMPs = Best Management Practices for Fugitive Dust (**Table 4**, Item C9)

N/A = Not Applicable

<sup>a</sup> If BAAQMD BMPs for fugitive dust control are implemented during construction, the impacts of such residual emissions are considered to be less than significant.

Source: Bay Area Air Quality Management District, 2017, California Environmental Quality Act Air Quality Guidelines.

The Guidelines also establish a relevant zone of influence for an assessment of project-level and cumulative health risk from TAC exposure to an area within 1,000 feet of a project site (termed the “zone of influence”). Project construction-related or project operational TAC impacts on sensitive receptors within the zone are considered significant if they exceed any of the following thresholds:

- An excess cancer risk level of more than 10 in one million
- A non-cancer hazard index greater than 1.0
- An incremental increase of greater than 0.3 micrograms per cubic meter (µg/m<sup>3</sup>) for annual average PM<sub>2.5</sub> concentrations

Cumulative impacts from TACs emitted from various sources<sup>3</sup> within the zone of influence on sensitive receptors would be considered cumulatively significant if they exceed the following thresholds:

- A combined excess cancer risk levels of more than 100 in one million
- A combined non-cancer hazard index greater than 10.0
- A combined incremental increase in annual average PM<sub>2.5</sub> concentrations greater than 0.8 µg/m<sup>3</sup>

**Would the Program:**

**a) Conflict with or obstruct implementation of the applicable air quality plan?**

The BAAQMD’s 2017 Clean Air Plan, *Spare the Air, Cool the Climate* (2017 Plan), focuses on two closely-related goals: protecting public health and protecting the climate (the latter addressed in Section E8 Greenhouse

<sup>3</sup> freeways, state highways or high volume roadways (i.e., the latter defined as having traffic volumes of 10,000 vehicles or more per day or 1,000 trucks per day), and from all BAAQMD-permitted stationary sources

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Gas). The 2017 Plan defines an integrated, multipollutant control strategy to reduce emissions of particulate matter, TACs, ozone precursors and greenhouse gases (GHG).

The 2017 Plan's proposed control strategies are based on four key priorities:

- Reduce emissions of criteria air pollutants and TACs from all key sources
- Reduce emissions of "super-GHGs" such as methane, black carbon and fluorinated gases
- Decrease demand for fossil fuels (i.e., gasoline, diesel and natural gas)
- Decarbonize the energy system

Compliance with approved CEQA emission thresholds are necessary conditions for determining whether a project would be consistent with all adopted 2017 Plan control measures and would not interfere with the attainment of 2017 Plan goals. As the analysis below demonstrates, implementation of projects under the Program would not have any significant and unavoidable air quality impacts because these projects would meet all CEQA limits on air pollutant emissions and their consequent health risks to the local population. **Less than significant.**

Program restoration activities would occur at select locations within the Program Area. Restoration activities would take place spring to fall pending permit conditions. Individual projects would typically be approximately 20-45 working days of active construction and are expected to range from 6.5 acres/4,000 linear feet to about 1.5 acres/675 linear feet. In some years there could be work on more than one section of the Program Area with each restoration section having a disturbance area/length in the ranges given above. But the number of sections or projects worked on per season would be limited to two or three at most. Work on two or three projects could occur simultaneously without impacting the various thresholds for air quality and therefore no additional analysis would be needed.

The Project would generate temporary emissions of criteria pollutants in construction equipment exhaust and fugitive dust from equipment and material movement. The *CEQA Air Quality Guidelines* recommend quantification of construction-related exhaust emissions and comparison of those emissions to the CEQA significance thresholds. Thus, the California Emissions Estimator Model (CalEEMod, Version 2016.3.2) was used for this purpose.

**Table 6** provides the estimated pollutant emissions from construction equipment, excavation material haul trucks and worker commute vehicles associated with work on each section for three work scenarios that extend over the disturbance area/length ranges given above. The average daily construction period emissions for each scenario were compared to the CEQA significance thresholds, as shown.

Daily emissions of each regulated air pollutant from each scenario's construction activities would be below the CEQA significance thresholds. This would also be the case for work activities occurring at multiple sites along the within the Program Area during the same season, provided the total number of projects in a given season be limited to three sites at most. **Less than significant.**

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**Table 6. Project Construction Criteria Pollutant Emissions (Average Pounds per Work Day)**

<b>Project Seasonal Restoration Effort</b>	<b>ROG</b>	<b>NOx</b>	<b>PM<sub>10</sub> (Exhaust)</b>	<b>PM<sub>2.5</sub> (Exhaust)</b>
“ <b>Large</b> ” (6.5 acres worked, extending 4,000 linear feet along creek, with 24,000 cu. yd. excavated)	1.04	14.5	0.5	0.4
“ <b>Medium</b> ” (4.5 acres worked, extending 2300 linear feet along creek, with 14,000 cu. yd. excavated)	1.05	14.2	0.5	0.4
“ <b>Small</b> ” (1.5 acres worked, extending 675 linear feet along creek, with 4,800 cu. yd. excavated)	0.93	11.3	0.4	0.4
<b>Significance Thresholds</b>	<b>54</b>	<b>54</b>	<b>82</b>	<b>54</b>
<b>Significant Impact?</b>	<b>No</b>	<b>No</b>	<b>No</b>	<b>No</b>

Fugitive dust resulting from earth movement and travel over unpaved ground could lead to local violations of ambient particulate standards unless adequate dust suppression measures are implemented. The *BAAQMD CEQA Air Quality Guidelines* require a number of construction BMPs to control fugitive dust. Implementation of the Program-wide BMPs (Table 4) by the applicant’s contractor would minimize potential impacts from fugitive dust. **Less than significant.**

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

The Bay Area is currently designated “nonattainment” for state and national ozone ambient air quality standards, for the state PM<sub>10</sub> standards, and for state and national PM<sub>2.5</sub> standards; it is “attainment” or “unclassified” with respect to standards for all the other major air pollutants. As discussed in subsection a) above, Program-related criteria pollutant emissions would be below the BAAQMD CEQA emission significance thresholds. And as discussed below in subsection c) below, Program-related TAC impacts would also be below the BAAQMD CEQA project-level and cumulative health risk significance thresholds. Therefore, implementation of the Program would not have considerable contributions to the Bay Area’s regional problems with ozone and particulate matter, or to local TAC exposures. **Less than significant.**

**c) Expose sensitive receptors to substantial pollutant concentrations?**

Cancer risk is the lifetime probability of developing cancer from exposure to carcinogenic substances. Following health risk assessment (HRA) guidelines established by the BAAQMD in *Recommended Methods for Screening and Modeling Local Risks and Hazards*, incremental cancer risks are estimated by applying established toxicity factors to modeled TAC concentrations. Adverse health impacts unrelated to cancer are measured using a hazard index (HI), which is defined as the ratio of a project’s incremental TAC exposure concentration to a published reference exposure level (REL) as determined by OEHHA. If the HI is greater than 1.0, then the impact is considered to be significant.

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Ambient diesel particulate matter (DPM) produced by construction equipment could substantially affect sensitive receptors within 1,000 feet of the locus of construction activity if such emissions were strong enough and lasted long enough. However, the CEQA significance thresholds for TACs are based on assumptions of exposure duration of a year or longer (i.e., a year for chronic non-cancer health impacts and  $PM_{2.5}$  concentrations; 70 years for cancer risk). Given that only three pieces of equipment (i.e., an excavator, a grader, and a dozer) would be used within each summer-season restoration area over an active period of 20 to 45 working days, the DPM emissions would be relatively minimal and the exposure period for any nearby residential receptors would be short in comparison to the exposure times needed to threaten adverse health impacts. Estimates of DPM emissions from a “large” restoration project (see  $PM_{2.5}$  emissions in **Table 6**) when used in the SCREEN3 dispersion model (Lakes Environmental, *SCREEN View Screening Air Dispersion Model [SCREEN3] User’s Guide*) indicate that maximum cancer risk, non-cancer hazard, and annual  $PM_{2.5}$  concentration to nearby residential receptors would be 1.2 per million, 0.03, and 0.16  $\mu\text{g}/\text{m}^3$  (micrograms per cubic meter) of  $PM_{2.5}$ , all substantially below the BAAQMD project-level thresholds. **Less than significant.**

The Program Area includes land uses that are predominantly agricultural or low-density suburban residential. There are a number of BAAQMD-permitted stationary TAC sources in this part of the County, mostly gas stations (sources of benzene emissions, which are carcinogenic) or emergency diesel-powered generators (which emit DPM during periodic, short-duration test operations). Most cluster along the major roadways or in its population/commercial centers and not along the Program Area corridors. The TACs emitted by these stationary sources contribute to local cancer risks and ambient  $PM_{2.5}$  concentrations that are low in comparison to the BAAQMD cumulative CEQA significance thresholds. In the few instances where stationary TAC sources are close to Marsh Creek, their local TAC impacts, in combination with the low cancer risk and  $PM_{2.5}$  concentration added during short periods (i.e., 20-45 days) of future restoration work, would also be low in comparison to the BAAQMD cumulative thresholds. **Less than significant.**

**d) Create objectionable odors affecting a substantial number of people?** BAAQMD CEQA odor criteria considers any project with the potential to frequently expose substantial populations to objectionable odors as causing a significant odor impact. Program activities include odors from equipment exhaust from construction sites, which would be small in scale and short in duration. **Less than significant.**

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**E4. BIOLOGICAL RESOURCES**

Environmental Factors and Focused Questions for Determination of Environmental Impact	Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant Impact	No Impact
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.		X		
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 U.S. Fish and Wildlife Service.		X		
c) Have a substantial adverse effect on state or federally protected wetlands (including but not limited to marsh, vernal pool, and coastal) through direct removal, filling, hydrological interruption, or other means.		X		
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.			X	
e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance.			X	

**E4.1. Setting**

The Program Area considered in this evaluation covers a maximum of 150 acres in eastern Contra Costa County. Individual projects moving forward under the proposed Program would be situated within predetermined stream setback areas located 75 feet from top of bank of Marsh Creek (with a maximum of 32,870 linear feet) and/or within a stream setback area located 50 feet from the top of bank along 11,445 linear feet of Sand Creek and along 4,185 linear feet of Deer Creek (**Figure 2**).

At this point in Program development, the exact location of project sites is not available; therefore, this impact evaluation considers all biological resources located within the larger 150-acre Program Area. Full build-out of the Program Area would not occur; however, for the purpose of this evaluation a full build-out scenario would represent the “worst case” scenario with regard to temporary, construction-related impacts. From a biological

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perspective, full build-out would represent a best-case scenario for the benefit of the ecological systems and biological resources within the Program Area.

Existing conditions within the Program Area primarily consist of anthropomorphic habitats, ruderal, nonnative annual grassland and freshwater marsh habitats. There is little to no woody riparian vegetation along the stream corridors and wetland vegetation in some areas is limited to a narrow 1–3-foot wide fringe along the low flow channel. Though the Program Area is generally degraded it does provide habitat for several common and special-status species including, but not limited to, western pond turtle, occasional adult Chinook salmon, western burrowing owl and periodic foraging California river otters. A brief description of habitat types within the Program Area is provided below.

### ***E4.1.1. Habitat Descriptions***

#### **Anthropogenic Habitat**

Anthropogenic habitat is dominated by plant species introduced by humans and established or maintained by human disturbances or activities (Holland and Keil 1990). Some are entirely artificial such as areas under active cultivation (e.g., rowcrops, orchards, vineyards). Others include areas used as rangeland or pasture, and areas influenced by urban or suburban landscaping or plantings. Cleared areas that are planted with or colonized by non-indigenous plant species can create distinct communities dominated by annual grasses and forbs, shrubs, or trees. Some of these communities are only perpetuated with direct human intervention such as irrigation or grazing, while some have naturalized and are able to persist without artificial means. In some situations, introduced non-indigenous species invade native habitats, altering the composition of the native understory or canopy, or both (Wood Biological Consulting 2016).

#### **Ruderal Habitat**

Ruderal habitat is that from which the native vegetation has been completely removed by grading, cultivation, or other historic surface disturbances. Left undeveloped, such areas typically become recolonized by invasive exotic species. Scattered native species might recolonize the site after disturbance has ceased. Ruderal sites are typically dominated by herbaceous species, although scattered woody shrubs and trees may also begin to appear if left undisturbed long enough. Typical vegetation within the Program Area's ruderal habitat consists of ripgut brome (*Bromus diandrus*), soft chess (*Bromus hordeaceus*), hare barley (*Hordeum murinum* ssp. *leporinum*) and Italian ryegrass (*Lolium multiflorum*). Ruderal sites are scattered throughout the Program area and are characteristic of road sides, fallow agricultural fields, vacant lots, and large landslides.

#### **Nonnative Annual Grassland Habitat**

Non-native annual grassland habitat within the Program Area is present in disjunct locations throughout the Program Area, but primarily within two relatively undisturbed areas just upstream of Fairview Avenue (approximately 60 acres) and upstream of Shady Willow Lane (approximately 45 acres) on Sand Creek. Unlike most of the Program Area, these areas are not in close proximity to human disturbance (e.g., residential developments). This vegetation community is dominated by a sparse to dense cover of non-native annual grasses and weedy annual and perennial forbs, primarily of Mediterranean origin, that have replaced native perennial grasslands as a result of human disturbance. However, where not completely out-competed by weedy non-native plant species, scattered native wildflower species and native perennial grass species considered remnants of the original vegetation, may also be common. Non-native grassland intergrades with other vegetation communities on site, in particular ruderal areas and ornamental vegetation.

#### **Open Freshwater Habitat**

Open freshwater habitat may consist of lakes and impoundments (i.e., lacustrine) and rivers and streams (i.e., riverine). These systems generally lack persistent emergent vegetation and flowing or surface water is usually present, at least seasonally. Within the Program Area, open freshwater habitat is confined between the banks of

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the creeks. The longitudinal profile of each of the stream corridors are primarily straightened, trapezoidal, unlined channels that are relatively gentle, resulting in a low flow velocity. The channel bottom consists of silty sediment and deposited rock and debris; some sections are hardened with mortared riprap.

### **Freshwater Marsh**

Freshwater marsh typically occurs in low-lying sites that are permanently flooded with fresh water and lacking significant current. This plant community is found on nutrient-rich mineral soils that are saturated for all or most of the year. Freshwater marsh is most extensive where surface flow is slow or stagnant or where the water table is so close to the surface as to saturate the soil from below. Freshwater marsh is distributed along the coast and in coastal valleys near river mouths and around the margins of lakes, springs, and streams (Holland 1986). There are numerous phases of freshwater marsh. Emergent freshwater marsh, for example, characteristically forms a dense vegetative cover dominated by perennial, emergent monocots 0.3–4.6 m (1–15 ft) high that reproduce by underground rhizomes. Vernal or seasonal freshwater marsh occurs on sites that are wet following winter rains but may be completely dry by summer; such sites support mostly low-growing annual herbs (Wood Biological Consulting 2016). There is a limited amount of freshwater marsh habitat within the Program Area situated where a narrow band of standing water persists along creek shorelines.

### **Creeping Wildrye**

Creeping Wildrye (*Elymus triticoides*) occurs on heavy clay to clay loam soils. Stands are generally on poorly drained floodplains, drainage and valley bottoms, mesic flats and slopes, and marshes. Creeping wildrye is adapted to a wide range soil types and is tolerant of alkaline and saline conditions. Found along coastal northern, central and southern California, Creeping wildrye extend into the Sacramento-San Joaquin River Delta, the Central Valley, and the Mono Basin, occurring at elevations from 0 to 2,300 m (0–544 ft). One stand of creeping rye grass, which was likely planted as part of a restoration effort, is located on the west bank of Marsh Creek just north of the Dainty Avenue Bridge (Wood Biological Consulting 2016).

### ***E4.1.2. Regulations***

The following section lists the various federal, state, and local environmental laws and regulations that apply to this Program.

#### ***Federal Regulations***

##### **Clean Water Act**

The Federal Clean Water Act (CWA) is the primary federal law protecting the quality of the nation's surface waters, including lakes, rivers, and coastal wetlands. Section 404 regulates the discharge of dredged and fill materials into waters of the United States (comprising wetlands and other waters of the United States). CWA Section 401 requires that applicants for a federal license or permit for activities that may result in the discharge of a pollutant into waters of the United States obtain certification from the RWQCB that the proposed discharge will comply with state water quality standards. The authority to issue water quality certifications in the project area is vested with the Central Valley RWQCB and the State Water Board. Project applicants may need to obtain a permit from USACE and RWQCB for restoration activities that may impact wetland fringe habitat.

##### **Endangered Species Act**

FESA was enacted in 1973 for the purpose of protecting fish and wildlife species (and their habitats) that have been identified by the USFWS or NMFS as threatened or endangered. USFWS and NMFS administer FESA; in general, NMFS is responsible for protection of FESA-listed marine and anadromous fish species, while FESA-listed terrestrial species and freshwater aquatic species are under USFWS jurisdiction. Specific areas within the

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geographic range of a federally listed species may be designated as “Critical Habitat” and receive protection as well.

Projects moving forward under the proposed Program may impact species protected under FESA. These projects could qualify for ESA coverage through an existing permit between USFWS and East Contra Costa County Habitat Conservancy through the HCP/NCCP (Section 10(a)(1)(B) of FESA and California Natural Community Conservation Planning Act of 2003). The existing permit provides FESA coverage for 28 special-status species (Jones & Stokes 2006). For those species that are covered under the HCP/NCCP and that occur within the future project area(s) the applicant would be required to demonstrate compliance with the HCP/NCCP through preparation of an Application and Planning Survey Report (PSR). The PSR would be completed by CDFWS and USFWS approved biologists to identify potentially present special-status species, potential project impacts on those species, and appropriate mitigation measures as included in the HCP/NCCP. For those listed species not covered under the HCP/NCCP and within the Program Area (e.g., special-status fish) the project applicant would be required to evaluate potential impacts through preparation of a Biological Assessment (BA). The BA would be provided to the appropriate agency (either NMFS and/or USFWS) which would determine the process for compliance with FESA.

### **Migratory Bird Treaty Act**

The federal Migratory Bird Treaty Act (MBTA) (16 USC, Section 703, Supp. I, 1989) prohibits killing, possessing, or trading in migratory birds, except in accordance with regulations prescribed by the Secretary of the Interior. The MBTA makes it unlawful, unless expressly authorized by permit pursuant to federal regulations, to “pursue, hunt, take, capture, kill, attempt to take, capture or kill, offer for sale, sell, offer to purchase, purchase, deliver for shipment, ship, cause to be shipped, deliver for transportation, transport, cause to be transported, carry, or cause to be carried by any means whatever, receive for shipment, transportation or carriage, or export at any time, or in any manner, any migratory bird, or any part, nest, or egg of any such bird.” Projects moving forward under the proposed Program may disturb active nests (including nestlings or eggs) which would trigger the need for compliance with the MBTA (16 U.S.C. 703-712). Permits are not issued under the MBTA, but the law requires project proponents to evaluate potential impacts on active nests and nesting birds.

### **Magnuson-Stevens Fishery Conservation and Management Act**

The Magnuson-Stevens Fishery Conservation and Management Act (MSA) requires all federal agencies to consult with NMFS regarding all actions or proposed actions permitted, funded, or undertaken that may adversely affect essential fish habitat (EFH). EFH is defined as “waters and substrate necessary to fish for spawning, breeding, feeding, or growth to maturity.” The proposed Program Area does not contain EFH pursuant to the MSA (NMFS 2018).

### ***State Regulations***

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

The California Endangered Species Act (CESA) ensures that “all native species of fishes, amphibians, reptiles, birds, mammals, invertebrates, and plants, and their habitats, threatened with extinction and those experiencing a significant decline which, if not halted, would lead to a threatened or endangered designation, will be protected or preserved.” Under CESA, it is unlawful to “take” a State-listed endangered or threatened species. Fish and Game Code section 86 defines take as “hunt, pursue, catch, capture or kill or attempt to hunt, pursue, catch, capture or kill.” Compliance with CESA would be required if the construction or operation of the project would cause the incidental “take” of any State-listed plant or wildlife species known to occur within the Program Area.

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

Migratory birds are protected by California Fish and Game Code (CFGF) §3503, which prohibits the take, possession, or needless destruction of the nest or eggs of any bird. Specifically, CFGF §3503.5 prohibits the take, possession, or needless destruction of any nests, eggs or birds in the orders Falconiformes (new world vultures, hawks, eagles, ospreys and falcons, among others) or Strigiformes (owls); CFGF §3511 prohibits the take or possession of fully protected birds; and CFGF §3513 prohibits the take or possession of any migratory nongame bird or part thereof as designated in the MBTA. Construction disturbance that causes nest abandonment and/or loss of reproductive effort is considered “take” by CDFW. Project activities associated with vegetation removal that could disturb active nests (including nestlings or eggs) would trigger the need for GHMWC to comply with the CFGF (§§3503, 3511, and 3513). CFGF §§1600-1607 require project proponents to obtain a Lake or Streambed Alteration Agreement (LSAA) authorization from CDFW if a project would divert, obstruct, or change the natural flow of the bed, channel, or bank of any river, stream, or lake. An LSAA must also be issued if the project would use material from streambeds designated by CDFW in which there is at any time an existing fish or wildlife resource or from which these resources derive benefit.

### **County Regulations**

Contra Costa County Ordinance No. 2007 – 53 describes implementation procedures for conserving habitat and covered species under the East Contra Costa County HCP/NCCP. The HCP/NCCP requires reporting and fee payment to the HCP/NCCP Implementing Entity, the East Contra Costa County Habitat Conservancy, a joint exercise of powers authority formed by the Cities of Brentwood, Clayton, Oakley, and Pittsburg and Contra Costa County. Rather than individually surveying, negotiating, and securing mitigation, project proponents receive regulatory permits by completing a PSR, paying a fee (and/or dedicating land) and adhering to limited protocols to avoid and minimize impacts. Fees are paid into two separate reserves, a Development Fee and a Wetland Fee. The Development Fee requires payment based on a cost per acre for all acres converted to nonhabitat with the cost per acre based on the HCP fee zone. The Wetland Fee mitigates for impacts to Jurisdictional Wetlands and Waters, riparian woodland/scrub or stream buffers. Therefore, the Program’s participation in the HCP/NCCP could provide a mechanism to adequately mitigate impacts to potentially occurring covered sensitive species and habitats on future project sites.

However, the HCP/NCCP is not purely a mitigation program. Though Habitat Conservation Plans are generally exclusively mitigation, Natural Community Conservation Plans have a higher level of conservation and require a contribution to the recovery of species (above and beyond any mitigation obligations). The HCP/NCCP has an adopted conservation strategy that involves land acquisition, habitat restoration, monitoring and adaptive management, and management in perpetuity.

Regionally, some of these conservation actions are funded with developer fees (mitigation) and some with grant funding. The East Contra Contra County HCP/NCCP has an approved funding strategy of drawing from developer fees for mitigation and public funds for contribution to recovery of species. The overall funding is approximately 48%/52% funding (or mitigation vs nonmitigation conservation). The grant funding and public funds do not off-set mitigation obligations. Rather these public funds fund conservation actions that are above and beyond mitigation requirements. The strategy is to augment the large amounts of conservation that happen as mitigation (because of mitigation though the HCP/NCCP) to achieve even greater benefits to species. The Conservancy has applied for and received both acquisition and restoration funds for this purpose (IRWMP Prop 84 & 50, USBR, CDFW- Prop 1 and Local Assistance Grants, USFWS and others). None of these funds offset mitigation obligations of developers.

When a grant proposal states it is “consistent with the HCP”, it means that it is consistent with the conservation strategy of the HCP/NCCP. The HCP/NCCP highlights restoration opportunities along Marsh Creek as they are

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important for creek/streamside habitat and riparian corridor restoration and protection. For example, when constructed, the Three Creeks Parkway Restoration Project in the City of Brentwood will not be counted toward mitigation goals. It will be counted to restoration of habitat above and beyond the mitigation requirement (A. Fatement 2016).

### ***E4.1.3. Special-Status Species***

A list of regionally occurring special-status species was compiled into a table based on CDFW's California Natural Diversity Data Base (CNDDDB) and review of *Special-Status Species Proposed for Coverage in the ECCC HCP/NCCP*, Vol. 1/Table 3-8 and Vol. 2/Appendix D (Jones & Stokes Associates 2006). Biologists also reviewed the USFWS IPaC Trust Resources Report for Contra Costa County (USFWS 2018), the California Native Plant Society (CNPS) Inventory of Rare and Endangered Plants (CNPS 2018), and the USFWS National Wetlands Inventory (NWI).

### ***Special-Status Plants***

For the purposes of this evaluation, special-status plant species are defined as plant species listed as endangered, threatened, or proposed for listing under FESA as amended (Code of Federal Regulations [CFR], Title 50, Section 17); plant species covered under the HCP/NCCP; locally rare species defined by CEQA guidelines 15125(c) and 15380, which may include species that are designated as sensitive, declining, rare, locally endemic or as having limited or restricted distribution by various federal, state and local agencies, organizations and watch lists; plant species assigned California Rare Plant Ranks 1A, 1B, 2A, 2B, 3, and 4 in the CNPS Inventory of Rare and Endangered Vascular Plants of California (CNPS 2013); and/or Native Plant Protection Act of 1977.

Due to the large and widespread area covered under this Program a focused survey for special-status plants was not conducted in support of this evaluation. Based on the site reconnaissance, a review of available databases and literature and familiarity with the regional flora, a total of 53 special-status plant species were identified as having some potential to occur in the region (table available upon request). Of these, most were ruled out based on the lack of suitable habitat, range restrictions, habitat disturbance or the fact that they have not previously been recorded from the Program Area. Rare plant surveys for species covered by the HCP/NCCP will be required on a project-by-project basis.

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

For the purpose of this evaluation, special-status wildlife are defined as follows:

- Species listed as endangered, threatened, or proposed for listing under FESA as amended (CFR, Title 50, Section 17);
- Species protected under the Migratory Bird Treaty Act (16 U.S. Code [USC] 703-712);
- Species protected under the Bald and Golden Eagle Protection Act (16 U.S.C. 668-668d; June 8, 1940) as amended;
- Species protected under California Endangered Species Act (CESA; California Code of Regulations Title 14, Section 670.5);
- Species protected under California Fish and Game Code (Sections 1901, 2062, 2067, 3511, 4700, 5050 and 5515);
- Species designated as Species of Special Concern or Fully Protected by the CDFW; and
- Species covered under the HCP/NCCP; and
- Locally rare species defined by CEQA guidelines 15125(c) and 15380, which may include species that are designated as sensitive, declining, rare, locally endemic or as having limited or restricted distribution by various federal, state and local agencies, organizations and watch lists.

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**Table 7. Special-status Wildlife with Potential to Occur in the Program Area**

Common Name	Species Name	Listing Status*
<b>Federal/State Listed, Proposed, Candidate and/or Fully Protected Fish and Wildlife Species</b>		
Steelhead Central Valley DPS	<i>Oncorhynchus mykiss irideus</i>	FT, CH,
California red-legged frog	<i>Rana draytonii</i>	FT, CSC, HCP/NCCP
Swainson's hawk	<i>Buteo swainsoni</i>	ST, HCP/NCCP
White-tailed kite	<i>Elanus leucurus</i>	FP
<b>Sensitive and Locally Rare Species</b>		
Chinook salmon Central Valley fall/ late fall-run ESU	<i>Oncorhynchus tshawytscha</i>	CSC
Western pond turtle	<i>Actinemys marmorata</i>	CSC, HCP/NCCP
Silvery legless lizard	<i>Anniella pulchra pulchra</i>	CSC, HCP/NCCP
Western burrowing owl	<i>Athene cunicularia hypugaea</i>	CSC, HCP/NCCP
Northern harrier	<i>Circus hudsonius</i>	CSC
Loggerhead shrike	<i>Lanius ludovicianus</i>	CSC
Pallid bat	<i>Antrozous pallidus</i>	CSC

**\*EXPLANATION OF LISTING CODES**

FEDERAL	STATE	COUNTY
FE = Federally listed as Endangered	FP = Fully Protected	HCP/NCCP = Covered species
FT = Federally listed as Threatened	SE = State listed as Endangered	
CH = Critical Habitat (Proposed or Final) is designated	ST = State listed as Threatened	
	CSC = California Species of Special Concern	

*Steelhead - Central Valley DPS.* Steelhead is a federally threatened species with designated Critical Habitat. This species spawns in freshwater in areas with suitable spawning gravels; juveniles require cool, clean water, cover, and sufficient dissolved oxygen. Steelhead spawn in the Sacramento and San Joaquin rivers and tributaries before migrating to the Delta and Pacific Ocean. There is marginally suitable habitat present within the Program Area, although the Program Area is not within critical habitat for this species. The movement of fish is currently restricted to the lower 16 km (10 mi) of Marsh Creek downstream of the dam at Marsh Creek Reservoir.

*Chinook Salmon - Central Valley fall/ late fall-run ESU.* Chinook salmon is a California Species of Special Concern. Chinook spawns in freshwater in areas with suitable spawning gravels; juveniles require cool, clean water, cover, and sufficient dissolved oxygen. The Central Valley fall/late fall-run ESU is currently the most abundant of the Central Valley races. The lower reaches of Marsh Creek are considered to provide habitat for Central Valley fall-run chinook, possibly supporting adult migration, spawning, incubation, and rearing (Jones & Stokes 2003). This species has been documented from Oakley (CDFW 2018) and Brentwood (Robins, personal observation 2001). The movement of fish is currently restricted to the lower 16 km (10 mi) of Marsh Creek downstream of the dam at Marsh Creek Reservoir. Fall/late fall run Chinook have a truncated natal stream life history and commonly young of the year leave their natal stream and begin to smolt during the late spring. As such, this species is unlikely to be in the Program Area during the summer in-stream construction season.

*California red-legged frog.* California red-legged frog is a HCP/NCCP-covered species that is listed as federally threatened and is also a California Species of Special Concern. California red-legged frog is known only from one CNDDDB occurrence within the Brentwood USGS 7.5-minute quadrangle (CDFW 2018). Small portions of

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the Program Area are within the area of modeled migration and aestivation habitat for California red-legged frog under the HCP/NCCP (HCP/NCCP Chapter 4: Figure 4-3). The Program Area may provide low quality breeding habitat for this species.

*Western pond turtle.* Western pond turtle is a HCP/NCCP-covered species and a California Species of Special Concern. Western pond turtle habitat includes ponds, marshes, rivers, streams, and irrigation canals. Nests are typically constructed in upland habitat within 0.25 mile of aquatic habitat. Although there are no CNDDDB occurrence records within 1 mile of the Program Area (CDFW 2018), several turtles were observed in Marsh Creek during reconnaissance surveys.

*Silvery legless lizard.* Silvery legless lizard is a HCP/NCCP-covered species and a California Species of Special Concern. Legless lizards occur in areas with sandy or loose soils. These soils allow them to construct subsurface burrows where they spend the majority of their lives. Stabilized sand dunes seem especially preferable (Jennings and Hayes 1994). The Program area contains limited suitable habitat for this species in undisturbed sandy areas along Sand Creek. There are two CNDDDB occurrences for this species within 1 mile of the Program Area (CDFW 2018).

*Western burrowing owl.* Western burrowing owl is a HCP/NCCP-covered species and a California Species of Special Concern. Burrowing owls require habitat with three basic attributes: open, well drained terrain; short, sparse vegetation; and underground burrows or burrow facsimiles. Burrowing owls occupy grasslands, deserts, sagebrush scrub, agricultural areas (including pastures and untilled margins of cropland), earthen levees and berms, coastal uplands, urban vacant lots, and the margins of airports, golf courses, and roads. There are several CNDDDB occurrences for this species throughout the Program Area (CDFW 2018).

*Swainson's hawk.* Swainson's hawk is a HCP/NCCP-covered species that is listed as State threatened. The natural foraging habitat of Swainson's hawks throughout the majority of their North American range is relatively open stands of grass-dominated vegetation and relatively sparse shrublands. The species is more abundant in areas of moderate cultivation than in either grassland or areas of extensive cultivation. In a study of movements and habitat use, it was found that single trees or riparian areas were used most often for nesting (Estep 1989). Foraging habitat is present along lower Marsh Creek downstream of the City of Brentwood's Wastewater Treatment Plant and upstream of Delta Road, where there is a relatively large area of agriculture (approximately 2,000 linear feet) that provides a large area of open space suitable for foraging. There have been recent observations of this species perched in trees adjacent to Marsh Creek within the Program Area and two CNDDDB occurrences for this species within 1 mile of the Program Area (CDFW 2018).

*Northern harrier.* Northern harrier is a California Species of Special Concern. The northern harrier is a ground-nesting species, building its nests in large expanses of undisturbed grassland or marsh habitat where tall, dense vegetation offers concealment. Northern harriers forage for a wide variety of species in a range of open habitats, flying low over the ground as they search for prey. It is because of their hunting methods that northern harriers require largely uninterrupted expanses of open habitat. There are no CNDDDB records of northern harriers within 1 mile of the Program Area (CDFW 2018). The agricultural fields and non-native annual grassland habitat in the Program Area provides suitable nesting and foraging habitat for this species.

*White-tailed kite.* White tailed kite is a fully-protected species under CFGC. Fully Protected species may not be taken or possessed at any time and no licenses or permits may be issued for their take except for collecting these species for necessary scientific research. This species breeds in a variety of habitats including grasslands, cultivated fields, oak woodlands, and suburban areas where prey is abundant. Trees and orchards within the Program Area provide marginal nesting habitat for this species. The grassland land cover near Marsh Creek and Sand Creek provides suitable foraging habitat for this species.

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*Loggerhead shrike.* Loggerhead shrike is a California Species of Special Concern. Loggerhead shrikes occur through most of the low elevation areas of California and occupy a wide variety of habitats including grasslands, shrublands, riparian areas, open woodlands, ruderal and developed areas, and agricultural lands. They nest in shrubs or low trees, which are present within the Program Area. There is one CNDDDB occurrence of this species from within 1 mile of the Program Area (CDFW 2018). Suitable nesting and foraging habitat is present in the agricultural areas adjacent to Marsh Creek and in open grassland habitat adjacent to Sand and Deer Creeks.

*Pallid bat.* Pallid bat is a California Species of Special Concern. Pallid bats occur in deserts, grasslands, shrublands, woodlands, and forests and are most commonly found in dry habitats. Day and night roosts include crevices in rocky outcrops and cliffs, caves, mines, trees, and various human structures such as bridges (especially wooden and concrete girder designs), barns, porches, bat boxes, and both human-occupied and vacant buildings. Tree roosts occur in basal hollows of coast redwoods and giant sequoias, bole cavities of oaks, exfoliating ponderosa pine and valley oak bark, deciduous trees in riparian areas, and fruit trees in orchards (Sherwin and Rambaldini 2005). Maternity roosts generally occur in structures, caves, or mines that provide enough space for at least small groups of bats. There are no CNDDDB records of pallid bat within 1 mile of the Program Area (CDFW 2018). The Program Area contains marginal roosting and foraging habitat for pallid bat. The Program Area does not contain suitable habitat for maternal roosting.

### **Would the Program:**

#### **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 CDFW and USFWS?**

Post-Program activities would result in habitat modifications that would benefit special-status plants and wildlife through improved ecological conditions. However, construction of Program activities may adversely affect special-status species if present. Because projects moving forward under the proposed Program would be consistent with the ECCC HCP/NCCP, most of the construction-related impacts on special-status species would be covered. As described earlier, the HCP/NCCP includes measures to avoid and minimize take of covered species, which would be included as conditions on development for applicable projects as well as possible mitigation fees. It would be the responsibility of future project proponents to design and implement their projects in compliance with listed measures in the HCP/NCCP.

Because compliance with the HCP/NCCP requires project proponents implement specific conditions and conservation measures to avoid or minimize potential effects to species and/or their habitats, it is unlikely any project moving forward under the Program would result in a significant impact on any special-status species. For those special-status species that are not covered under the HCP/NCCP, and with potential to occur in the Program Area, the project applicant(s) would be required to implement minimization and avoidance measures as outlined below.

#### **Special-Status Fish**

Although there are no records for steelhead or Chinook salmon occurring in Marsh Creek in the CNDDDB, though fall-run Chinook have been observed in the system. Due to habitat factors, steelhead are considered unlikely to be present in the system and historical analysis by Leidy et al. (2005) did suggest that no steelhead have been observed in Marsh Creek since at least 1942. Marsh Creek is not considered Critical Habitat for Central Valley steelhead. While fall-run Chinook salmon are not listed under either FESA or CESA, they are a state species of concern. Fall run Chinook are known to use Marsh Creek and have been observed on multiple occasions since 2001. Fall run Chinook have the greatest potential to occur within the Program Area between November and June

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based on the timing of adult and juvenile migrations in and through the waterways of the Sacramento/San Joaquin Delta (NMFS 2012).

### **Impact BIO-1 – Disturbance to Special-Status Fish**

Although the vast majority of construction activities would occur above the OHWM and during the dry season, some limited work such as restoration of habitat or site-specific armoring could occur in the low-flow channel. To the extent that this work in the low-flow channel requires either dewatering or excavation, take of steelhead or Chinook, if present, could occur. Due to life history traits, take of Chinook during instream construction work between June-Oct is highly unlikely as juveniles are known to have vacated their natal streams by summer and are not known to over-summer in Marsh Creek or its tributaries. Neither of these species is covered under the HCP/NCCP. To ensure there is no take of either of these species is limited to the greatest extent practicable, if work in the low-flow channel becomes necessary, Mitigation Measure BIO-1 would be implemented and impacts would be reduced. In addition, consultation with NMFS will ensure these measures are sufficient to reduce and/or avoid impacting species during construction. Once the proposed improvements are constructed, the project would not impede or interfere with fish movement. In fact the project would improve conditions for movement of fish species in this area. **Less than significant with mitigation.**

#### *Mitigation Measure BIO-1: Special-status Fish Protective Measures*

To minimize and avoid impacts to Chinook salmon and steelhead, the following measures will be implemented:

1. Seasonal Avoidance. In-stream work shall be limited to June 1 to October 31.
2. In-Stream Activities. If in-stream construction or dewatering is required, the following precautionary measures should be implemented:
  - a. A qualified biologist shall present an environmental awareness program working on site.
  - b. A qualified biologist should monitor all in-stream activities.
  - c. If dewatering is proposed, monitor the installation of coffer dams. During dewatering, a qualified biologist should check for stranded aquatic wildlife. Dewatering pumps must be fitted with intake screens with a mesh no greater than 5 mm (0.2 in) and BMPs will be installed to minimize sediment transport during installation of coffer dams.
  - d. Native aquatic species (non-special-status fish species) should be relocated upstream or downstream of the cofferdams by a qualified biologist. Use of electro-fishing should be conducted per NMFS/CDFW guidelines. Non-native species should be euthanized in accordance with the guidance of the CDFW. All wildlife encounters should be documented and reported to the CDFW. If listed salmonids are present, the NMFS shall be consulted to determine the appropriate measures to ensure compliance with FESA.

### **Impact BIO-2 – Disturbance to Special-Status Plants**

Implementation of the Program may result impacts on special-status plants as defined in Section E4.1.3 above. Implementation of project-wide BMPs (**Table 4**), in addition to any specific conditions and conservation measures stipulated in the HCP/NCCP combined with Mitigation Measure BIO-2 as described below would reduce this potential impact. **Less than significant with mitigation.**

#### *Mitigation Measure BIO-2: Special-status Plant Protective Measures*

- Project applicant(s) will retain a qualified biologist to determine if there is the potential for special-status plants to occur in the project area.

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- If there is the potential for their occurrence, the biologist will look for these species during the properly-timed floristic survey.
- If present, construction of the project will include a buffer zone of 20 feet around the plants to avoid impacts to the plants, whenever possible.
- Removal of invasive, non-native plants by hand (i.e. using hand tools, hand pulling, etc.) within this buffer may occur and is recommended to protect special-status plants.
- If impacts to specialstatus plants are unavoidable, the project applicant will coordinate with the appropriate resource agencies and local experts to determine whether transplantation of special-status plant species is feasible. If the agencies concur that transplantation is a feasible mitigation measure, the biologist will develop and implement a transplantation plan in coordination with the appropriate agencies. If the impacted species are annuals, it is expected that the current seed crop from the individuals to be lost would be collected (as well as immediate soils making up the dormant seed bed) and then sown on appropriate habitat located on the project site. If the species is a perennial, it is expected that both the seed and the plants themselves would be salvaged and relocated. Seed from the populations that would be impacted may be collected and propagated at a native plant nursery, prior to planting to increase the potential for establishment and survival.

### **Impact BIO-3 – Disturbance to Special-Status Birds**

Several species of birds may use the agricultural fields, fallow fields, non-native annual grassland and freshwater marsh areas within Program Area for foraging, roosting and nesting and wintering. Implementation of the Program may result temporary impacts on special-status birds including white-tailed kite, northern harrier and loggerhead shrike as well as birds protected by CFGC §3503 and birds protected by the MBTA may occur during construction of individual projects under the Program. Potential construction-related impacts may include temporary changes in foraging patterns or territories, noise disturbance, winter roost abandonment, etc. Implementation of project-wide BMPs (**Table 4**) in addition to Mitigation Measure BIO-3 would reduce this impact. **Less than significant with mitigation.**

#### *Mitigation Measure BIO-3: Special-Status Bird Protective Measures*

- To the extent feasible, vegetation removal activities shall not occur during the bird breeding season of February 15 through August 31.
- If vegetation removal must occur during the breeding season, all sites shall be surveyed by a qualified biologist to verify the presence or absence of nesting birds.
- Preconstruction surveys will be conducted no more than two weeks prior to the start of work from February 15 – August 31.
- If the survey indicates the potential presence of nesting birds, a buffer will be placed around the nest in which no work will be allowed until the young have successfully fledged. The size of the nest buffer will be determined by the biologist in consultation with the CDFW, and will be based to a large extent on the nesting species and its sensitivity to disturbance. The buffers may be increased or decreased, as appropriate, depending on the bird species and the level of disturbance anticipated near the nest.

### **Impact BIO-4 – Disturbance to California Red-legged Frog**

Implementation of project activities under this Program could temporarily disturb aquatic and upland habitat with potential to support the movement and/or estivation of federally threatened California red-legged frog. Compensatory mitigation for impacts to California red-legged frog, if necessary, would be achieved through payment of wetland mitigation fees for permanent and temporary impacts, as required under the HCP/NCCP. In

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addition to fees, potential impacts to this species during construction would be minimized through implementation of Mitigation Measure BIO-4. **Less than significant with mitigation.**

### Mitigation Measure BIO-4: California red-legged frog Protective Measures

- A USFWS/CDFW–approved biologist will identify if any potential red-legged frog breeding habitat (Section 6.3.1 of the HCP/NCCP, Planning Surveys) exists within the project boundaries.
- If the project site contains suitable breeding habitat, then the project proponent will notify USFWS, CDFW, and the Conservancy of the presence and condition of potential breeding habitat, as described below. No preconstruction surveys are required.
- Written notification to USFWS, CDFW, and the Conservancy, 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).

### **Impact BIO-5 – Disturbance to Western Pond Turtle and Silvery Legless Lizard**

The Program Area contains suitable foraging, dispersal, and/or breeding habitat for western pond turtle and marginal habitat for silvery legless lizard. During construction, there is potential for injury or mortality of these reptiles moving through the site, due to being crushed by vehicles, humans, or construction equipment associated with proposed project activities. Potential impacts to HCP/NCCP-covered reptile species during construction would be minimized through implementation of Mitigation Measure BIO-5 which would reduce this impact. **Less than significant with mitigation.**

### Mitigation Measure BIO-5: Compliance with HCP/NCCP

In addition and consistent with HCP/NCCP Conservation Measure 2.12 *Wetland, Pond, and Stream Avoidance and Minimization*, the following measure will be implemented to avoid and minimize impacts to Western pond turtle and silvery legless lizard during construction activities.

- The HCP/NCCP requires written notification to the USFWS, CDFW, and the ECCC Habitat Conservancy prior to disturbance of any suitable breeding habitat. If necessary, impacts to western pond turtle and silvery legless lizard, and their habitat, would be mitigated through payment of applicable development fees and wetland mitigation fees for permanent and temporary impacts, as required under the HCP/NCCP (Sections 4.1.1.4 and 4.4.2).

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### **Impact BIO-6 – Disturbance to Swainson’s Hawk Nest Site**

If an active nest of a Swainson’s hawk was present on or immediately adjacent to a future project during implementation of the Proposed program then construction activities could result in the destruction or abandonment of an active nest. Because of the regional rarity of this species, loss of an active Swainson’s hawk nest would be significant under CEQA. Implementation of Mitigation Measures BIO-6 would reduce this impact. **Less than significant with mitigation.**

#### *Mitigation Measure BIO-6: Swainson’s Hawk Nest Site Protective Measures*

The project would comply with HCP/NCCP species-level measures for the Swainson’s hawk, which require a qualified biologist to conduct a preconstruction survey no more than one month prior to construction to establish whether Swainson’s hawk nests within 1,000 feet of the project site are occupied. If a nest is determined to be occupied, covered activities within 1,000 feet of the nest would be prohibited during the nesting season (i.e., March 15 through September 15) to prevent nest abandonment. In addition, Swainson’s hawk nest trees removed from the project site during the non-nesting season would be mitigated as required by the HCP/NCCP.

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 Implementing Entity (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).

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- 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.

### **Impact BIO-7 – Disturbance to Western Burrowing Owl**

The proposed Program activities could impact nesting and/or roosting burrowing owls if present during construction. If an active nest of a burrowing owl were present on or immediately adjacent to a future project site during construction activities, then the project could result in the destruction or abandonment of an active nest. Because of the regional rarity of this species, loss of an active burrowing owl's nest would be significant under CEQA. Implementation of Mitigation Measure BIO-7 would reduce this impact. **Less than significant with mitigation.**

#### *Mitigation Measure BIO-7: Western Burrowing Owl Protective Measures*

Program projects would comply with HCP/NCCP species-level measures for burrowing owl. 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 habitat for western burrowing owl. Surveys are to be conducted no more than 30 days prior to the onset of construction. 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. 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.

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 (California Department of Fish and Game 1995). 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.

### **Impact BIO-8 – Disturbance to Pallid Bat**

Project construction activities could impact suitable roosting and/or foraging habitat for special-status pallid bat, if present. Implementation of Mitigation Measure BIO-8 would reduce this potential impact. **Less than significant with mitigation.**

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### Mitigation Measure BIO-8: Pallid bat Protective Measures

Project-related impacts to pallid bat roosting habitat can be avoided or minimized by implementing the following measure:

- All potential roost trees within 50-feet of the project site will be surveyed for the presence of bat roosts by a qualified biologist. The survey may entail direct inspection of the trees or nocturnal surveys. The survey will be conducted no more than two weeks prior to the initiation of tree removal and ground disturbing activities. If no roosting sites are present, then trees will be removed within two weeks following the survey.
- If roosting habitat is present and occupied, then a qualified biologist will determine the species of bats present and the type of roost (i.e., day roost, night roost, maternity roost). If it is determined that the bats are not a special-status species and that the roost is not being used as a maternity roost, then the bats may be evicted from the roost using methods developed by a biologist experienced in developing and implementing bat mitigation and exclusion plans.
- If the bats are found to be pallid bats or the roost is being used as a maternity roost by any bat species, then a biologist experienced in bat mitigation and exclusion plans must prepare an eviction plan detailing the methods of excluding bats from the roost(s) and the methods to be used to secure the existing roost site(s) to prevent its reuse prior to removal. Removal of the roost(s) will only occur after the eviction plan has been approved by CDFW.
- Tree removal surrounding roost trees will be conducted without damaging the roost trees.
- No diesel or gas-powered equipment will be stored or operated directly beneath a roost site.
- All construction activity in the vicinity of an active roost will be limited to daylight hours.

### **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 CDFW or USFWS?**

Sensitive natural communities recorded from the project region include alkali meadow, alkali seep, cismontane alkali marsh, coastal and valley freshwater marsh, coastal brackish marsh, northern claypan vernal pool, stabilized interior dunes, valley needlegrass grassland, and valley sink scrub (Wood 2016). However, there are no known special-status natural communities in the Program Area. Although the Program's projects would involve the removal of some limited riparian habitat along the stream corridors in order to widen the channel, substantially greater riparian habitat would be created by converting the creek channel to a more natural channel and planting the banks with riparian trees and plant species.

### **Impact BIO-9 – Disturbance to Riparian Habitat**

Removal of native trees is not anticipated under the proposed Program. However, if tree removal is unavoidable, then the project proponent shall implement measures consistent with the HCP/NCCP (outlined below), measures outlined in any CDFW LSAA permits, and local tree ordinances, if applicable. The following measures would be implemented to offset potential impacts of construction activities under the proposed Program. Implementation of Mitigation Measure BIO-9, combined with the BMPs listed in Table 4 of this document, would reduce potential impacts. **Less than significant with mitigation.**

### Mitigation Measure BIO-9: Riparian Habitat Protective Measures

BMPs provided in **Table 4**, in addition to the following general construction requirements, would be implemented:

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- Equipment storage, fueling, and staging areas will be sited on disturbed areas or on ruderal or non-sensitive nonnative grassland land cover types, when these sites are available, to minimize risk of direct discharge into riparian areas or other sensitive land cover types.
- No erodible materials will be deposited into watercourses. Loose soil, or other debris material will not be stockpiled within stream channels or on adjacent banks.
- All no-take species will be avoided.
- Construction activities will comply with the Migratory Bird Treaty Act and will consider seasonal requirements for birds and migratory nonresident species, including covered species.
- Temporary stream diversions, if required, will use clean sand or gravel in bags or other approved methods that minimize in-stream impacts and effects on wildlife.
- Silt fencing or other sediment trapping method will be installed down-gradient from construction activities to minimize the transport of sediment off site.
- Barriers will be constructed to keep wildlife out of construction sites, as appropriate.
- On-site monitoring will be conducted throughout the construction period to ensure that disturbance limits, BMPs, and HCP restrictions are being implemented properly.
- Active construction areas will be watered regularly to minimize the impact of dust on adjacent vegetation and wildlife habitats, if warranted.
- Vegetation and debris must 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.
- Cut-and-fill slopes will be revegetated with native, noninvasive nonnative, or nonreproductive (i.e., sterile hybrids) plants suitable for the altered soil conditions.
- Tree protection fencing will be used during the construction process to prevent direct damage to trees and their growing environment located just outside of the construction site (avoided trees). The fencing will consist of blaze orange barrier fencing supported by metal “T rail” fence posts and will be placed at or outside of the driplines of avoided trees to the extent feasible based on the limits of the area to be graded. The fencing will be installed before site preparation, construction activities or tree removal/trimming begins, and will be installed under the supervision of a qualified arborist.
- Heavy machinery will not be allowed to operate or park within or around areas containing avoided trees. If it is necessary for heavy machinery to operate within the dripline of avoided trees, then a layer of mulch or pea gravel at least 4 inches deep will be placed on the ground beneath the dripline. A 0.75-inch sheet of plywood will be placed on top of the mulch. The plywood and mulch will reduce compaction of the soil within the dripline.
- Construction materials (e.g., gravel, aggregate, heavy equipment), project debris, and waste material will not be placed adjacent to or against the trunks of avoided trees.
- If the trimming of tree canopy is required to allow the movement of construction machinery, all branches to be removed will be pruned back to an appropriate sized lateral or to the trunk by following proper pruning guidelines. All trimming will be conducted under the supervision of a certified arborist.

### **c) Have a substantial adverse effect on state or federally protected wetlands (including, but not limited to, marsh, vernal pool, and coastal) through direct removal, filling, hydrological interruption, or other means?**

Prior to initiating any work associated with projects under the Program the project proponent/applicant will have a qualified wetland specialist to conduct a wetland delineation in accordance with the USACE wetland delineation guidelines and determine if project activities would result in impacts on protected wetlands as defined by Section 404/401 of the CWA. Project applicants will strive to design individual projects to avoid and minimize wetland impacts. If an impact is unavoidable and the project would result in direct removal, filling, hydrological

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interruption, then the applicant will obtain the appropriate regulatory permits as determined through consultation with USACE, RWQCB and CDFW. In addition, the project proponent will comply with the HCP/NCCP and can utilize that mechanism to determine the implementation of appropriate avoidance and minimization measures and payment of applicable fees. The applicant will provide relevant information about the project site(s) to the appropriate regulatory agencies. The applicant will abide by all requirements contained in the Section 404/401 permit to ensure that there will not be a net loss of wetland function or values.

### **Impact BIO-10 – Disturbance to Wetlands**

Implementation of avoidance and minimization measures during construction and post-construction ecological improvements to wetlands are anticipated to result in a net increase in wetland acreage and function at individual project sites, however, it is possible that a net loss of wetland functions or values could occur during implementation of the Program. **Less than significant with mitigation.**

#### *Mitigation Measure BIO-10: Wetland Protective Measures*

Projects under this Program would result in a net increase in wetland footprint and function; therefore, mitigation for temporary impacts would not require compensatory mitigation. If impacts on wetland resources are deemed greater than the net benefit of the project then USACE and RWCQB may require one of the following standard mitigation measures:

- Establishment, reestablishment, enhancement, rehabilitation, or preservation of wetlands either on- or off-site to compensate for the wetland functions lost. USACE shall determine the compensation ratio for this option based on a variety of factors; typically, it is greater than 1:1. USACE will likely also require on-going monitoring and annual reporting for compensatory mitigation; and/or
- Payment into a USACE-approved in-lieu fee fund, specifically the National Fish and Wildlife Fund (NFWF) sponsored In Lieu Fee Program (if available); or
- Purchase of an appropriate number of credits at a USACE-approved mitigation bank.

### **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?**

Lower Marsh Creek corridor is contiguous with extensive open shoreline lands downstream; however, it connects to the uppermost part of the watershed only after passing through commercial, industrial and residential development and numerous buried culverts. Much of the aquatic habitat in the Program Area lacks significant riffles, pools, irregular bank features, and overhanging vegetation that provide suitable cover or refuge for resident or dispersing wildlife. Furthermore, the adjacent residential neighborhoods and commercial development bring predators such as pets, feral animals, and those attracted to human habitation. Increased human activity, noise, and lighting further inhibit the movements of wildlife species. Post-Program does not involve any activities that would interfere with the movements or migrations of fish or wildlife, or impede use of a known wildlife nursery site. Implementation of projects under the Program would result in improved conditions for the movement of native fish and wildlife species over the long term. However, temporary impacts on movement of wildlife species during construction activities may occur; however these impacts would be short term and would only occur in discrete areas allowing movement of wildlife to occur in available habitat that surrounds individual project sites. **Less than significant.**

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**e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance.**

Vegetation within the Program Area primarily consists of ruderal habitat and non-native annual grassland. Implementation of individual projects under the proposed Program may result in conversion of these two vegetation types to riparian vegetation, seasonal wetland and/or herbaceous annual and perennial grasses and forbs. A key component of the Program is to plant numerous trees alongside the creeks to provide shade for pedestrians utilizing the trails and to shade waters within the creeks to improve water quality. The removal of native trees protected by local tree ordinances is not expected; however, if removal of native trees is unavoidable, the project applicant(s) would comply with tree replacement standards and would provide a greater number of trees than are currently on-site. **Less than significant.**

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**E5. CULTURAL RESOURCES / TRIBAL CULTURAL RESOURCES**

Environmental Factors and Focused Questions for Determination of Environmental Impact	Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant Impact	No Impact
a) Cause a substantial adverse change in the significance of a historical resource as defined in § 15064.5.		X		
b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to § 15064.5.		X		
c) Disturb any human remains, including those interred outside of dedicated cemeteries.		X		
d) Cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code section 21074 as either: <ol style="list-style-type: none"> <li>1) 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, that is listed or eligible for listing on the California Register of Historical Resources, or on a local register of historical resources as defined in Public Resources Code § 5020.1(k), or</li> <li>2) a resource determined by a lead agency, in its discretion and supported by substantial evidence, to be significant according to the historical register criteria in Public Resources Code § 5024.1 (c), and considering the significance of the resource to a California Native American tribe.</li> </ol>				X

**E5.1. Setting**

The geology of the Program Area is recent (Holocene 11,700 years ago to present) alluvial loam or clay, or sand dunes (Dibblee and Minch 2006). Prior to European contact the Program Area would have consisted of Valley Grassland (Munz and Keck 1968). Several soils are mapped within the Program Area including Brentwood, Capay, Dehli, Kimball, Rincon, Sorrento, and Sycamore (Welch 1977: Sheets 21 and 29). For the most part, these soils are well-draining soils that typically support the growth of grasses, forbs, and scattered oaks. Historically these soils have primarily been used for growing crops, orchards, and grains with some areas used for pasture or homesites (Welch 1977:12-13, 15, 20, 28, 42, and 49-51).

At the time of European settlement, the Program Area was situated in an area near the boundary between the Bay Miwok and the Northern Valley Yokuts (Kroeber 1925; Levy 1978; Wallace 1978). Both the Bay Miwok and the Northern Valley Yokuts were hunter-gatherers who lived in rich marsh and plains environments, which allowed for dense populations with complex social structures (Kroeber 1925; Levy 1978; Wallace 1978). The Bay Miwok settled in large, permanent villages about which were distributed seasonal camps and task-specific sites. Primary

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villages were inhabited throughout the year while other sites were visited seasonally to obtain particular resources. Sites were often established near fresh water sources and at ecotones where plant and animal life were diverse and abundant. The environmental setting enjoyed by the Bay Miwok provided abundant plant and animal resources for their use (Kroeber 1925; Levy 1978). The Northern Valley Yokuts also settled in large, permanent villages about which were distributed seasonal camps and task-specific sites. While their primary village sites were occupied throughout the year, they generally were located on, or near, low mounds and the banks of large watercourses. Other sites were visited to procure resources that were especially abundant or available only during certain seasons. Populations were not evenly distributed, but rather clustered in a narrow strip of land along the San Joaquin River and its main tributaries, in accordance with periodic flooding (Wallace 1978:463). This region provided variety and an abundance of fish, fowl, small and large game mammals, acorns, tule roots, and seeds as sources of subsistence.

Historically, a large portion of the Program Area lies within the Rancho Los Meganos. The rancho was granted to Jose Noriega in 1835. Mr. Noriega built some corrals and outbuildings on the land and then sold it to John Marsh in 1837. Mr. Marsh constructed an adobe house on the land and lived in it for many years. In 1851 Marsh, a widower, married his second wife Abbie Tuck. They had a daughter, Alice, in 1852. Mr. Marsh wanted to build a stone mansion for his wife and began constructing this building, but in 1855 Mrs. Marsh died. Mr. Marsh was killed the following year (Hoover et al. 2002:62 and 63). The Marsh House had fallen into disrepair, but it is now a part of a State Historic Park, and recently local groups have been working on restoring the building. The Marsh House was listed on the National Register of Historic Places in 1971. The Marsh house is located nearly two and a half miles south of the southern end of the study area.

### ***E5.1.1. Methodology***

Archival research included examination of the library and project files by Tom Origer & Associates. A review (NWIC File No. 17-2891) was completed of the archaeological site base maps and records, survey reports, and other materials on file at the Northwest Information Center (NWIC), Sonoma State University, Rohnert Park. Sources of information included but were not limited to the current listings of properties on the National Register of Historic Places, California Historical Landmarks, California Register of Historical Resources, and California Points of Historical Interest as listed in the Office of Historic Preservation's *Historic Property Directory* (OHP 2012).

### ***Regulations***

CEQA requires lead agencies to determine if a project would have an adverse impact on a significant cultural resource (Public Resources Code § 21084, 21084.1, 21083.2). A resource can be a precontact or historic structure, object, site, or district, and is considered significant if:

- It is listed in or has been determined eligible for listing in the California Register of Historic Resources (CRHR);
- It is included in a local register of historical resources, as defined in Public Resources Code 5020.1(k);
- It has been identified as a significant in an historical resources survey, as defined in Public Resources Code 5024.1(g); or
- It is determined to be historically significant by the CEQA lead agency [CCR Title 14, §15064.5(a)].

The CRHR eligibility criteria are used to determine significance. A significant resource must meet one of the four criteria, as follows:

- The resource is associated with events that have made a significant contribution to the broad patterns or California's history and cultural heritage;

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- The resource is associated with the lives of persons important in our past;
- The resource 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
- The resource has yielded, or may be likely to yield, information important in prehistory or history.

If a significant resource would be impacted, the project applicant must determine whether there is substantial evidence in the administrative record to support a finding of significant effect (Section 21080(e)). CEQA requires examination of mitigation measures or feasible project alternatives that would avoid or minimize any impacts or potential impacts.

Effective July 1, 2015, Assembly Bill 52 amended CEQA to mandate consultation with California Native American tribes during the CEQA process to determine whether or not the proposed project may have a significant impact on a Tribal Cultural Resource, and that this consideration be made separately from cultural and paleontological resources. Section 21073 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 Native American Heritage Commission (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:

- 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:
- Included or determined to be eligible for inclusion in the CRHR; and/or
- Included in a local register of historical resources as defined in subdivision (k) of Section 5020.1; and/or
- 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.

Because criteria listed above also meet the definition of a Historical Resource under CEQA, a Tribal Cultural Resource may also require additional consideration as a Historical Resource. Tribal Cultural Resources may or may not exhibit archaeological, cultural, or physical indicators.

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 (21080.3.2[b]), whereby the lead agency uses its best judgement in requiring mitigation measures that avoid or minimize impact to the greatest extent feasible.

### **Would the Project:**

**a) Cause a substantial adverse change in the significance of a historical resource as defined in § 15064.5?**

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On May 31, 2018, a record search of the database at the Northwest Information Center of the California Historical Resources Information System at Sonoma State University (NWIC) was completed by Tom Origer & Associates (TOA) to determine if archaeological or historic resources would be impacted by implementation of the program (available upon request) This archival review encompasses all land within a quarter-mile corridor centered on portions of Deer Creek, Marsh Creek, and Sand Creek (study area). The portion of Deer Creek is from Fairview Avenue in Brentwood to its confluence with Marsh Creek. The Sand Creek segment is from State Highway 4 in Brentwood to the confluence with Marsh Creek. The portion of Marsh Creek is from Balfour Road in Brentwood to Cypress Road in Oakley.

A search of the archaeological base maps at the NWIC found that an estimated forty percent of the Lower Marsh Creek archival review area had been subjected to prior historical resources study as documented in 47 reports (TOA 2018). These studies resulted in the documentation of twelve historical resources within the study area; though eight of the twelve resources are components of a complex at a single location. All of the resources recorded within the study area are historic-era sites.

### **Impact CR-1 – Disturbance to Historical Resources**

There are known and potentially unknown historical resources within the Program study area. However, implementation of Mitigation Measure CR-1 and CR-2 would reduce this potential impact to less than significant with mitigation. **Less than significant with mitigation.**

*Mitigation Measure CR-1: Conduct Identification Efforts by a Qualified Archaeologist*

As projects are designed and proposed, they should be reviewed by an archaeologist who meets the Secretary of the Interior's standards to evaluate their potential to impact existing or unknown historical resources. If it appears that a project could impact existing or unknown historical resources, then the project area should be subjected to an historical resources study that complies with Federal requirements outlined in Section 106 of the National Historic Preservation Act to identify resources (including buried archaeological resources).

*Mitigation Measure CR-2: Conduct Identification Training and Stop Work if Archaeological Resources are Encountered During Construction*

The construction contractor shall participate in a historical resource identification training session by a qualified archaeologist in order to be aware of the potential resources that might be uncovered. If archaeological resources are encountered during project construction, work shall be temporarily halted in the vicinity of the discovered materials and construction contractor shall avoid altering these materials and their context until a qualified archaeologist has evaluated the resource. Recommendations on how to treat the resource by the qualified archaeologist may include evaluation, preservation in place, archaeological test excavation and/or archaeological data recovery, and a draft and final report documenting such activities.

**b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to § 15064.5?**

### **Impact CR-2 – Disturbance to Archaeological Resources**

As discussed in subsection a) above, there are known and potentially unknown resources that could be impacted by proposed Program activities. However, implementation of Mitigation Measures CR-1 and CR-2 would reduce this potential impact. **Less than significant with mitigation.**

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**c) Disturb any human remains, including those interred outside of formal cemeteries?**

**Impact CR-3 – Disturbance to Human Remains**

Excavation has the potential of disturbing previously unrecorded Native American remains. However, implementation of Mitigation Measure CR-3 would reduce this potential impact. **Less than significant with mitigation.**

*Mitigation Measure CR-3: Discovery of Human Remains.*

If at any time during site preparation, excavation, or other ground disturbance associated with the proposed project, human remains are discovered, the construction contractor shall immediately cease and desist from all further site excavation and notify the District and the District shall notify the sheriff-coroner. If the coroner determines that the remains are not of recent origin, a full archeological report shall be prepared and representatives of the local Native California Indian group shall be contacted. Disturbance shall not resume until the significance of the archeological resource is determined and appropriate mitigations to preserve the resource on the site are established.

**d) Cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code § 21074 as either:**

- 1) 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, that is listed or eligible for listing on the California Register of Historical Resources, or on a local register of historical resources as defined in Public Resources Code § 5020.1(k), or
- 2) A resource determined by a lead agency, in its discretion and supported by substantial evidence, to be significant according to the historical register criteria in Public Resources Code § 5024.1 (c), and considering the significance of the resource to a California Native American tribe?

The State of California's Native American Heritage Commission, members of the Amah Mutsun Tribal Band of Mission San Juan Bautista, Indian Canyon Mutsun Band of Costanoan, Muwekma Ohlone Indian Tribe of the San Francisco Bay Area, The Ohlone Indian Tribe, and the Coastanoan Rumsen Carmel Tribe were contacted in writing in support of this project (letter available upon request). This contact represents notification regarding the project to provide an opportunity to comment and does not constitute consultation with tribes. The Native American Heritage Commission replied with a letter dated January 27, 2017, in which they provided a list of tribes to be contacted that have cultural affiliations within the proposed project area. The District initiated consultation with the Wilton Rancheria via a letter dated July 2, 2018 as part of the consultation effort with California Native American tribes that are traditionally and culturally affiliated with the geographic area that the proposed project is within. To date, no tribe has contacted the District and the District is awaiting response from the Wilton Rancheria. No other comments have been received as of the date of this report. **No impact.**

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**E6. ENERGY**

Environmental Factors and Focused Questions for Determination of Environmental Impact	Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant Impact	No Impact
a) Result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation?				X
b) Conflict with or obstruct a state or local plan for renewable energy or energy efficiency?				X

**E6.1. Setting**

In 2018 former Governor Jerry Brown signed Senate Bill 100 committing California to obtaining 60% of its electric energy from carbon-free sources and 100% of electric energy coming from renewable sources by the year 2045. The former governor also signed an executive order establishing a target for the State to be carbon-neutral by 2045. In order to comply with the State policies, the Department of Conservation and Development (DCD) for Contra Costa County presented findings of the Contra Costa Renewable Resources Potential Study in December 2018 (The Cadmus Group 2018). The study finds that there is potential for 50-83% of the electricity consumed in the County to come from local renewable sources, primarily wind and solar. The results of this study are being incorporated by DCD into the County’s General Plan update and the Climate Action Plan update, both scheduled for 2020.

**Would the Program:**

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

Implementation of the Program would not require use of electric energy resources during construction activities. **No impact.**

**b) Conflict with or obstruct a state or local plan for renewable energy or energy efficiency?**

The proposed program is consistent with State goals for decreasing dependence on non-renewable sources of energy. The 2018 Renewable Resources Potential Study identified wind and solar as potential sources of renewable energy for the County (The Cadmus Group 2018). The study concluded that the stream setback areas identified in the HCP/NCCP, and which make up the Program Area considered in this evaluation, are not suitable for wind or solar developments because these areas provide habitat value and have viewshed concerns (The Cadmus Group 2018). Restoring the setback areas for flood control through planting native vegetation will not conflict with existing state or local plans for renewable energy or energy efficiency. **No impact.**

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**E7. GEOLOGY AND SOILS**

Environmental Factors and Focused Questions for Determination of Environmental Impact	Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant Impact	No Impact
<p>a) Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving:</p> <ul style="list-style-type: none"> <li>i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.</li> <li>ii) Strong seismic ground shaking.</li> <li>iii) Seismic-related ground failure, including liquefaction.</li> <li>iv) Landslides.</li> </ul>			<p style="text-align: center;">X</p> <p style="text-align: center;">X</p> <p style="text-align: center;">X</p> <p style="text-align: center;">X</p>	
<p>b) Result in substantial soil erosion or the loss of topsoil.</p>			<p style="text-align: center;">X</p>	
<p>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?</p>			<p style="text-align: center;">X</p>	<p style="text-align: center;">X</p>
<p>d) Be located on expansive soil, as defined in Table 181-B of the Uniform Building Code (1994), creating substantial risks to life or property.</p>			<p style="text-align: center;">X</p>	
<p>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.</p>				<p style="text-align: center;">X</p>
<p>f) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?</p>		<p style="text-align: center;">X</p>		

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### E7.1. Setting

According to the Association of Bay Area Governments' (ABAG) Liquefaction Susceptibility in the Bay Area Map, liquefaction potential in the proposed Program Area is considered moderate to high (ABAG 2018). Individual projects under the Program have potential to be affected by seismic hazards, landslide potential and expansive soils. The Great Valley fault, a buried thrust fault, underlies the general Brentwood area. The location of the Great Valley fault is inferred from regional data; the fault does not extend to the ground surface and its location is not accurately known (ENGEO 2015).

The geology of the Program area is recent (Holocene 11,700 years ago to present) alluvial loam or clay, or sand dunes (Dibblee and Minch 2006). A review of the paleontological database at the University of California Museum of Paleontology showed that a Pleistocene mastodon jaw was found during excavation for the Mokelumne Aqueduct (TOA 2018). The fossil was found at a depth of ten feet below the ground surface in sands with fine gravels. No exact coordinates for the collection site are with the fossil; however, based on the description provided it was collected near the intersection of Brentwood Boulevard and Sunset Road in the city of Brentwood.

### Would the Program:

**a) Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death due to 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?**

The Program Area is not delineated on the Alquist-Priolo Earthquake Fault Zoning Map. The Program Area could experience ground shaking due to an earthquake of moderate to high magnitude generated within the San Francisco Bay Region. If cut slopes to create the floodplain and flood benches are steeper than 3:1, they could become unstable or collapse as a result of ground shaking. However, projects constructed under the Program would not expose people or habitable structures to potential substantial adverse effects due to rupture of a known earthquake fault, seismic ground shaking, liquefaction, or landslides because the implementation of the Program would not result in habitable structures but restored riparian habitat. That said, the proposed Program requires projects to implement **Pre-Con 4: Geotechnical Analysis (Table 3, in the Program description)** and comply with all recommendations specified in the report. **Less than significant.**

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

Construction activities involving soil disturbance, such as excavation, stockpiling, and grading could result in increased erosion. However, substantial erosion is considered unlikely due to the final grades for the floodplain terraces and channel banks post-construction (3:1 or lower) and required erosion control post-construction. Construction activities of one acre or more are subject to the permitting requirements of the National Pollutant Discharge Elimination System (NPDES) General Permit for Discharges of Storm Water Runoff Associated with Construction Activity (General Permit). In addition, project-wide BMPs provided in **Table 4** will be implemented and include measures guiding the management and operation of construction sites to control and minimize the potential contribution of pollutants to stormwater runoff from these areas. **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?**

While the liquefaction potential in the proposed Program Area is considered moderate to high, implementation of **Pre-Con 4: Geotechnical Analysis (Table 3, in the Program description)** would not affect the stability of the

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geologic unit or soil or result in on or off-site landslide, lateral spreading, subsidence, liquefaction, or collapse. **Less than significant.**

**d) Be located on expansive soil, as defined in Table 181-B of the Uniform Building Code (1994), creating substantial risks to life or property?**

The Program Area may include expansive soils, but with proper engineering, the construction and operation of the pipeline is not expected to result in any significant adverse short- or long-term impacts related to geology, soils or seismicity and there would be no substantial risk to life or property. **Less than significant.**

**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 septic tanks are proposed under the proposed Program. **No impact.**

**f) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?**

The Program Area primarily contains Holocene alluvial deposits, which are considered too young to be fossil bearing. However, deposits below the alluvium would be older, and could contain fossils.

### **Impact GEO-1 – Disturb Paleontological Resources**

If Program projects require excavation below Holocene deposits (greater than 10 feet deep) then there could be impacts to paleontological resources. Implementation of Mitigation Measure GEO-1 would minimize the potential impact of an accidental discovery of a unique paleontological resource or geologic feature. **Less than significant with mitigation.**

*Mitigation Measure GEO-1: Conduct Identification Training and Stop Work if Paleontological Resources are Encountered During Construction.*

The construction contractor shall participate in a paleontological resource identification training session by a qualified paleontologist in order to be aware of the potential resources that might be uncovered. If paleontological resources are encountered during project construction, work shall be temporarily halted in the vicinity of the discovered materials and construction personnel shall avoid altering these materials and their context until a qualified paleontologist has evaluated the resource. Recommendations on how to treat the resource by the qualified paleontologist may include evaluation, preservation in place, test excavation and/or paleontological data recovery, and a draft and final report documenting such activities.

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**E8. GREENHOUSE GAS**

Environmental Factors and Focused Questions for Determination of Environmental Impact	Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant Impact	No Impact
a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?			X	
b) Conflict with an applicable plan, policy or regulation of an agency adopted for the purpose of reducing the emissions of greenhouse gases?				X

**E8.1. Setting**

Gases that trap heat in the atmosphere are referred to as greenhouse gases (GHGs) because they capture heat radiated from the sun as it is reflected back into the atmosphere, much like a greenhouse does. The accumulation of GHGs has been implicated as the driving force for global climate change. The primary GHGs are carbon dioxide (CO<sub>2</sub>), methane (CH<sub>4</sub>), and nitrous oxide (N<sub>2</sub>O), ozone, and water vapor. While the presence of the primary GHGs in the atmosphere are naturally occurring, they are also emitted from human activities, accelerating the rate at which these compounds occur within earth’s atmosphere.

There is international scientific consensus that human-caused increases in GHGs have and would continue to contribute to global warming. Potential global warming impacts in California may include, but are not limited to, loss in snow pack, sea level rise, more extreme heat days per year, more high ozone days, more large forest fires, and more drought years. Secondary effects are likely to include a global rise in sea level, impacts to agriculture, changes in disease vectors, and changes in habitat and biodiversity. California passed the California Global Warming Solutions Act of 2006 (Assembly Bill No. 32; California Health and Safety Code Division 25.5, Sections 38500, et seq., or AB 32), which requires California Air Resources Board (CARB) to design and implement emission limits, regulations, and other measures, such that statewide GHG emissions will be reduced to 1990 levels by 2020.

The Bay Area Air Quality Management District (BAAQMD) is the primary agency responsible for air quality regulation in the nine-county San Francisco Bay Area Air Basin. As part of that role, the BAAQMD has prepared *CEQA Air Quality Guidelines* that provide CEQA thresholds of significance for operational GHG emissions from land use projects (i.e., 1,100 metric tons of CO<sub>2</sub>e per year), which is also considered the definition of a cumulatively considerable contribution to the global GHG burden and, therefore, of a significant cumulative impact, but has not defined thresholds for project construction GHG emissions. The Guidelines methodology and thresholds of significance have been used in this Initial Study’s analysis of potential GHG impacts associated with the Project.

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### Would the Program:

#### **a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?**

The CalEEMod (California Emissions Estimator Model, Version 2016.3.2) model was used to quantify GHG emissions associated with the proposed Program construction activities. The estimated GHG emissions are 16 to 60 metric tons per year. Since the Program would restore portions of the Program Area and create flow conditions closer to their natural state, there would be no net new operational GHG emissions associated with implementation of the proposed Program. **Less than significant.**

#### **b) Conflict with an applicable plan, policy or regulation of an agency adopted for the purpose of reducing the emissions of greenhouse gases?**

The BAAQMD's Spare the Air, Cool the Climate (2017 Plan), focuses on two closely-related goals: protecting public health from air pollutant exposures and protecting global climate from GHG emissions from human activities. Consistent with the GHG reduction targets adopted by the State of California, the 2017 Plan lays the groundwork for a long-term effort to reduce Bay Area GHG emissions 40 percent below 1990 levels by 2030 and 80 percent below 1990 levels by 2050.

The 2017 Plan GHG control strategy is based on the following key priorities:

- Reduce emissions of “super-GHGs” such as methane, black carbon and fluorinated gases.
- Decrease demand for fossil fuels (i.e., gasoline, diesel and natural gas).
  - Increase efficiency of the energy and transportation systems.
  - Reduce demand for vehicle travel, and high-carbon goods and services.
- Decarbonize the energy system.
  - Make the electricity supply carbon-free.
  - Electrify the transportation and building sectors.

Since the proposed Project would have no operational GHG emissions after the creek restoration and flood risk reduction actions (as described in the Project Description) are complete and would have no direct or indirect effects on Bay Area or statewide energy or transportation systems, the proposed Program does not conflict with any plan, policy or regulation adopted for the purpose of reducing GHG emissions nor conflict with any County or State policies to reduce GHG emissions. **No impact.**

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**E9. HAZARDS AND HAZARDOUS MATERIALS**

Environmental Factors and Focused Questions for Determination of Environmental Impact	Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant Impact	No Impact
a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials.			X	
b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment.			X	
c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within a quarter mile of an existing or proposed school.				X
d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 (“Cortese List,” prepared by the California Integrated Waste Management Board) and, as a result, would it create a significant hazard to the public or the environment.				X
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.				X
f) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan.			X	
g) Expose people or structures, either directly or indirectly, to a significant risk of loss, injury or death involving wildland fires.				X

**Would the Program:**

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

The proposed Program would not create a significant hazard to the public or the environment. No routine transportation or disposal of hazardous materials is proposed. However, during construction, fuel would be used at the project site and re-fueling may occur within the limits of the project staging areas. Implementation of the Program-wide BMPs (Table 4) by the applicant’s contractor would minimize potential impacts from hazardous materials. **Less than significant.**

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**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?**

Construction activities would involve the use of certain potentially hazardous materials such as fuels as described above. Fuel would be contained within vessels engineered for safe storage. **Less than significant.**

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

Sand Creek within the proposed Program Area is located 200 feet north of William B. Bristol Middle School; however, Program implementation would not result in hazardous emissions or the release of hazardous materials. **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 (“Cortese List,” prepared by the California Integrated Waste Management Board) and, as a result, would it create a significant hazard to the public or the environment?**

The Program Area does not include any sites that are currently on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5, which is California Department of Toxic Substances Control (DTSC) Hazardous Waste and Substances Site List (Cortese List) and would not create a significant hazard to the public or the environment. One site located 0.4-mile west of Marsh Creek in Oakley (Cook Battery Reclamation Site) is currently on the DTSC’s list. This site was used for a battery reclamation business in the 1950s and 1960s but has since been cleaned and capped and does not currently pose a threat to human health or the environment (DTSC 2016). **No 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?**

The proposed Program is not located within two miles of a public airport or public use airport. The closest airport is Byron Airport, which is located 7.7 miles southwest of the Program Area. **No impact.**

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

The proposed Program would not be expected to interfere with an emergency response plan or emergency evacuation plan. The District would require their construction contractor develop and implement a traffic management plan (detail provided under Transportation and Traffic) that ensures any temporary street obstruction would be subject to all emergency access standards and requirements. **Less than significant.**

**h) Expose people or structures, either directly or indirectly, to a significant risk of loss, injury or death involving wildland fires?**

The Program Area is located in a Non-Very High Fire Hazard Severity Zone area and is designated as a Local Responsibility Area (CalFire 2009). Implementation of the proposed Program would not result in the construction of structures on the project site or increase the site’s overall fire hazard severity. Therefore, the Program is not expected to create hazardous fire conditions and would not increase wildfire potential, nor would it expose people to wildfire risks. **No impact.**

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**E10. HYDROLOGY AND WATER QUALITY**

Environmental Factors and Focused Questions for Determination of Environmental Impact	Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant Impact	No Impact
a) Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality.			X	
b) Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin.				X
c) Substantially alter the existing drainage pattern of the 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.			X	
ii) Substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site.				X
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.			X	
iv) Impede or redirect flood flows.			X	
d) In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation.				X

**E10.1. Setting**

The Marsh Creek watershed drains the east side of Mount Diablo. Marsh Creek collects drainages from other tributaries such as Sand Creek and Deer Creek and continues flowing northerly through the cities of Brentwood and Oakley before discharging into the San Joaquin River. Marsh Creek is a perennial, 4<sup>th</sup> order stream. The watershed originates in the Morgan Territory on the north side of Mt. Diablo and covers some 332 km<sup>2</sup> (128 mi<sup>2</sup>). Marsh Creek flows for 48 km (30 mi) and empties into the tidally-influenced Dutch Slough, and then Big Break and the lower San Joaquin River.

Marsh Creek Dam, located near Briones Valley, was constructed in 1963 and contains runoff from approximately 38 percent of the watershed (PWA 2006). The four major tributaries draining into Marsh Creek are Briones Creek, Dry Creek, Deer Creek and Sand Creek. The confluence of Briones and Marsh Creeks is at the Marsh Creek Reservoir and the confluence with Dry Creek is upstream of Balfour Road. Briones and Dry creeks are not within the Program Area. Deer and Sand Creeks flow into Marsh Creek within the Program Area and have their confluences approximately 800 ft apart in the City of Brentwood. Historically, much of the lower reaches of Marsh Creek were dry in the summer. Currently, flowing surface water is present within the Program Area to its

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mouth; these flows are made up primarily of nuisance water resulting from an elevated water table caused by runoff from agricultural and landscape irrigation and urban discharges (NHI & DSC 2007).

FEMA online floodmaps reviewed in August of 2018 illustrate that the entire Program Area is within a Regulatory Floodway designated as Zone AE, an area subject to inundation with a 1.0 percent annual-chance of flood (FEMA 2018). These maps have been updated with the results from CCCFCD two hydraulic reports from 2010 that document the status of Marsh Creek and its tributaries in meeting the District and FEMA's flood control targets of containing the 100-year water surface and the 50-year water surface plus freeboard (Boucher 2010 and Louis 2010). The modeling outputs and recommendations from these reports conclude that multiple locations along the Marsh Creek channel are currently under capacity and that new development along the creek corridor will require CCCFCD to coordinate with both the cities of Brentwood and Oakley to ensure that future development be designed to address these inadequacies. Moreover, both reports state that in their current condition, these creek channels do not have the capacity to accommodate the co-benefits of flood control, riparian habitat restoration, creation of wildlife corridors and improved recreational opportunities.

### **Would the Program:**

#### **a) Violate any water-quality standards or waste discharge requirements?**

Implementation of Program-wide BMPs described in **Table 4** will minimize potential water quality impacts during construction and will ensure that projects moving forward under the proposed Program do not violate water quality standards. During construction of the projects proposed under the Program, there will be a potential for increased erosion, sedimentation, and discharge of polluted runoff from the project sites. All projects will be required to obtain Section 401 of the CWA Water Quality Certifications from the Central Valley RWQCB and, depending on project size, a Stormwater Pollution Prevention Plan (SWPPP) to the SWRCB. Development and implementation of a SWPPP will include control measures (BMPs) to control erosion and release of sediment and other pollutants from the site. The 401 certification and SWPPP would ensure that construction activities would not cause an exceedance of the RWQCB water quality standards.

Moreover, post-projects under this Program would explicitly be designed to decrease creek flow velocities and erosion potential while improving water quality. The Program would reduce the potential for erosion by lowering the water stage, reducing the velocity by widening the cross-sectional velocity of the channel, and establishing native riparian vegetation where compatible with the flood management objectives. The planting of vegetation such as trees along the widened creek channel would provide shade for surface waters, thereby decreasing water temperatures and increasing dissolved oxygen levels. This vegetation will also stabilize the banks, further reducing the potential for chronic bank erosion. Thus, the proposed Program would reduce erosion and improve water quality at project sites covered under this Program as compared to existing conditions. As a result, the Program would not involve any activity that would result in an exceedance of a water quality standard. **Less than significant.**

#### **b) Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin?**

The projects moving forward under the proposed Program would not decrease groundwater supplies or interfere substantially with groundwater recharge. Projects proposed under this Program would not result in further incision of stream channels and the potential resultant impact of lowered groundwater tables. **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:**

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*i) Result in substantial erosion or siltation on- or off-site?*

The projects moving forward under the proposed Program would not substantially alter the existing drainage pattern of the surrounding area in a manner that would result in erosion or siltation either on the project site or at subsequent off-site locations. In fact, projects developed under this Program will be explicitly designed to improve local and regional hydraulics and will reduce erosion and siltation. However, construction of Program projects may result in erosion or siltation. Implementation of BMPs identified in **Table 4** would minimize potential water quality impacts. **Less than significant.**

*ii) Substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site?*

The projects moving forward under the proposed Program would not add additional impervious surface to the area and would not substantially alter existing drainage patterns in the vicinity. The Program would not increase the rate or amount of surface runoff or result in flooding either on or off-site. In fact, the projects under this Program will be designed to reduce on-site and off-site flooding. **No 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?*

The projects moving forward under the proposed Program would not create or contribute runoff water that could exceed the capacity of existing or planned drainage systems. As described in a), implementation of Program-wide BMPs described in **Table 4**, would minimize potential water quality impacts during construction. **Less than significant.**

*iv) Impede or redirect flood flows?*

The projects moving forward under the proposed Program would not be designed or implemented in a manner that would impede or redirect flood flows outside of the active stream channel. Project elements such as large woody debris installation and/or increase bank roughness resulting from native tree canopy could result in hydraulic changes within the active channel, but will not result in any additional flood risk to adjacent properties outside of the active stream channel as the projects under this Program will be designed to reduce on-site and off-site flooding. **Less than significant.**

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

The Program Area is not subject to seiches, tsunamis, or mudflows. **No impact.**

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**E11. LAND USE AND PLANNING**

Environmental Factors and Focused Questions for Determination of Environmental Impact	Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant Impact	No Impact
a) Physically divide an established community.				X
b) Cause a significant environmental impact due to conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect.				X

**E11.1. Setting**

The Contra Costa County General Plan is built around the interrelationship between the established Urban Limit Line (ULL), 65/35 Land Preservation Standard, and land use designations identified in this Land Use Element. The ULL, originally established by County voters through their adoption of Measure C-1990 and extended through Measure L-2006, is an integral feature of the Land Use Element. In general, the purpose of the ULL is twofold: (1) to ensure preservation of identified nonurban agricultural, open space, and other areas by establishing a line beyond which no urban land uses can be designated during the term of this General Plan, and (2) to facilitate enforcement of the 65/35 Standard. During the terms of the General Plan and ULL, properties that are located outside the ULL may not obtain General Plan Amendments that would re-designate them for an urban land use. In addition, those properties outside the ULL may be subject to various agricultural and open space preservation measures identified in the General Plan. The 65/35 Standard limits urban development to no more than 35 percent of the land in the County and requires at least 65 percent of all land in the county to be preserved for agriculture, open space, wetlands, parks, and other nonurban uses. The 65/35 Standard operates on a countywide basis and therefore includes urban and nonurban uses within cities as well as unincorporated areas.

The entire Program Area is inside the ULL. All but a small piece of the Program Area (south of Delta Road) is within incorporated portions of Oakley and Brentwood. The areas of Oakley and Brentwood are designated in those respective General Plans for a range of urban land-uses. The piece of the Program Area that is in unincorporated Contra Costa County is designated as Agriculture in the County General Plan.

The Program Area is also within the jurisdiction of the East Contra Costa County HCP/NCCP (Jones & Stokes Associates 2006). All work proposed under this Program will be conducted within the HCP/NCCP's established stream setbacks of 75 feet on Marsh Creek and 50 feet on Deer and Sand Creeks (HCP/NCCP Chapter 6, Conservation Measures 1.7 and 2.12 and Table 6-2). The setbacks were established for parcels and development projects subject to compliance with the HCP/NCCP to protect existing aquatic resources and provide areas to restore and enhance stream, riparian, and floodplain habitat. Ecological restoration within these setbacks is an approved use and is directly compatible with the goals and policies of the HCP/NCCP. Future development in the setback is extremely limited, though on-site flood detention facilities (C3 facilities), future expansion of flood control channels to accommodate growth within and downstream of the ULL, and activities that enhanced ecosystem processes and recreation are allowed.

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**Would the Program:**

**a) Physically divide an established community?** Residential subdivisions are present in the Program Area; however, creek restoration projects would be situated within the creek and adjacent setbacks outside the subdivisions. Established communities would not be divided as a result of Program implementation. **No impact.**

**b) Cause a significant environmental impact due to conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect?** The entire Program Area is within the ULL and the activities proposed under the Program are compatible and directly support the land-use policies and designations in the County General Plan and both Brentwood and Oakley's General Plans. In fact, implementation of the Program will directly support policies and actions within the HCP/NCCP that are developed to avoid and mitigate environmental impacts associated with urban development and infrastructure expansion. **No Impact.**

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**E12. MINERAL RESOURCES**

Environmental Factors and Focused Questions for Determination of Environmental Impact	Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant Impact	No Impact
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.				X
b) Result in the loss of availability of a locally-important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan.				X

**E12.1. Setting**

Within the Program Area, mineral resources could include sand, gravel, coal, oil, and gas. Aggregate resource areas within the Program Area are classified as either MRZ-1, MRZ-3 or MRZ-4 in the California Division of Mines and Geology’s 1987 Mineral Land Classification: Aggregate Materials in SF-Monterey Bay Area. The Brentwood Quadrangle contains the entire Program Area (**Figure 7**). Areas classified MRZ-1 are "areas where adequate information indicates that no significant mineral deposits are present, or where it is judged that little likelihood exists for their presence". Approximately 85% of the Program Area is classified as MRZ-1. There is a polygon of MRZ-3, to the west of Marsh Creek which appears to overlay areas of Domengine sandstone and Quarternary Dune Sand deposits. Areas classified MRZ-3 contain mineral deposits, but their significance cannot be evaluated from available data. There are 107 of these polygons delineated in the 1987 Report and only one of these is in close proximity to the Program Area. It exists west of Marsh Creek north of Sunset Blvd and extends just north of Delta Road. MRZ-4 indicates areas where available information is inadequate for assignment to any other MRZ category. There is a polygon of MRZ-4 to the south of Sand Creek near Highway 4, a small polygon near the Brentwood Wastewater Treatment Plant and one at the downstream extent of the Program Area near Cypress Road.

In general, sand is likely the most significant economic mineral deposit found in the Program Area and likely to exist in large quantities in the MRZ-3 polygon. It is possible that significant deposits of coal and specialty sand remain in the Program Area, within the Domengine sandstone. Oil and gas have been sporadically produced in the region since 1864 and are recovered from sands mostly of the Eocene age, at depths of approximately 4,000 feet. The potential for additional oil and gas reserves exists within the Program Area. Dry gas is presently being produced in the northeast portion of Brentwood, and the potential for additional reserves exists throughout the area (City of Brentwood 2014). While the Brentwood and East Brentwood oil and gas well are in close proximity to the Program Area, both of these facilities are no longer operational. The Brentwood field was operational from 1962-2005 and the East Brentwood field was operational from 1972-2016 (Elam and Hector, 2018). There are no existing active oil or gas wells or mineral extraction on or in the vicinity of the Program Area.

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Figure 7. Mineral Land Classification Map

**Would the Program:**

**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?**

According to the California Division of Mines and Geology Mineral Land Classification Map (Brentwood Quadrangle, Plate 2.28) the Program Area is located in an area with potential to contain mineral deposits (i.e. sand, gravel, and crushed stone), but the significance cannot be determined from available data. The proposed Program lies outside of any designated sand and gravel harvesting/mining areas. Furthermore, the proposed Program is located within the County ULL, which is designated for urban uses and limited nonurban uses, of which mining is not included. Therefore, the Project would not result in the loss of a known mineral resource. **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?**

The proposed Program is within an area that is already developed and would not result in the loss of availability of any locally-important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan. **No impact.**

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**E13. NOISE**

Environmental Factors and Focused Questions for Determination of Environmental Impact	Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant Impact	No Impact
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.		X		
b) Generation of excessive groundborne vibration or groundborne noise levels.			X	
c) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels.				X

**E13.1. Setting**

Environmental noise has many documented undesirable effects on human health and welfare, either psychological (e.g., annoyance and speech interference) or physiological (e.g., hearing impairment and sleep disturbance). The severity of such noise impacts have been measured through lab and field studies, and exposure standards have been established to limit their disruptive effects (i.e., *Guidelines for Community Noise*, World Health Organization, 1999). The most common contributors to community noise problems are often transportation sources (i.e., highways, railroads, aircraft, etc.). Temporary noise sources (e.g., diesel-powered equipment at a construction site) are also the common and widespread causes of substantial community noise impacts.

Sound intensity (loudness) perceived by the human ear is typically measured in A-weighted decibels (dBA) with a range of 0 (threshold of hearing) to 140 (threshold of pain); the higher the decibels, the greater the intensity. Exposure to high noise levels affects the human body, with prolonged exposure to 75 decibels (dB) or above increasing tension and thereby affecting blood pressure, heart function, and the nervous system; 85 dB or above resulting in physical damage to hearing; and 90 dB or above resulting in permanent cell damage. Prolonged exposure to 140 dB or above may cause a feeling of pain in the ear, and 190 dB or above would likely rupture the eardrum and permanently damage the inner ear.

When distance is the only factor considered, sound levels from point sources of noise typically decrease by about 6 dB for every doubling of distance from the noise source. When the noise source is a continuous line, such as vehicle traffic on a highway, sound levels decrease by about 3 dB for every doubling of distance. Sound attenuation can also be affected by topographic features and structural barriers that absorb, reflect, or scatter sound waves, as well as atmospheric conditions (i.e., wind speed and direction, humidity levels, and temperatures) and the presence of dense vegetation.

Sound from multiple sources operating in the same area (i.e., pieces of equipment operating on a construction site) would result in a combined sound level that is greater than that from any individual source. The combined noise level produced by multiple noise sources is calculated using logarithmic summation. For example, if one

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bulldozer produces a noise level of 80 dBA, then two bulldozers operating side by side would generate a combined noise level of 83 dBA.

Section 65302(f) of the California Government Code requires that all city and county general plans include a noise element that identifies and provides mitigation for any existing and perceivable noise problems. The Noise Element of Contra Costa County’s General Plan follows the California Department of Health Services’ Guidelines for the Preparation and Content of the Noise Element of the General Plan, which defines noise metrics, discusses the process of noise element development, and presents land use compatibility guidelines based on various noise levels. Contra Costa County, however, does not have a noise ordinance and therefore does not specify construction or operational noise level limits.

The County General Plan’s standard for daily-average outdoor noise levels in residential areas is 60 dBA. The Noise Element of the County’s General Plan specifies 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. This CEQA analysis will consider the project to have a significant construction noise impact if it would create a temporary noise increase of greater than 10 dB over the existing ambient noise level due to construction-related activities following the implementation of the above noise control and administrative measures.

**Table 8. Typical Construction Equipment Noise Levels**

<b>Equipment</b>	<b>Noise Level (Lmax at 50 feet, dB, Slow*)</b>
Backhoe <sup>a</sup>	84
Excavator	84
Dump Truck <sup>a</sup>	82
Pump – Engine (with noise attenuation) <sup>b</sup>	71
Grader	85
Loader	80
Sweeper <sup>a</sup>	88
Generator (with noise attenuation) <sup>b</sup>	60

\*This is the maximum instantaneous noise level as measured by the Federal Highway Administration (FHWA) for each equipment type. The average noise level (Leq) experienced at a receptor would vary depending on distance to receptor and the percentage of time during which the equipment operates. For example, a backhoe operated for a half hour over a one-hour period would produce an hourly Leq 3 dB less than the Lmax

<sup>a</sup> Roadway Construction Noise Model Users Guide, Federal Highway Administration, January 2006.

<sup>b</sup> Manufacturer’s Data: Pump – Generator based on Baker Corp 18 inch pump size, generator based on Multiquip Silent Diesel Generator - 11 kVA, 11 kW, 120/240V, 1-Phase portable generator.

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### Would the Program:

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.**

Construction activities and traffic would cause temporary increases in noise due to site grading, use of construction equipment, and operation of construction vehicles. Table 8 identifies the typical construction equipment that would be operated intermittently over the course of construction at individual project sites and would last approximately 20-45 days during summer/fall work season.

Routine noise levels from conventional construction activities (with a typical mix and number of pieces of equipment operating on the site) range from 75 to 86 dB(A) equivalent continuous noise level (Leq) at a distance of 50 feet, from 69 to 80 dB(A) Leq at a distance of 100 feet, from 55 to 66 dB(A) Leq at a distance of 500 feet, and 48 to 60 dB(A) Leq at a distance of 1,000 feet. Noise levels at the nearest sensitive receptors are likely to be lower because the projects would be relatively small in size (less than 6.5 acres) and would require only a few pieces of construction equipment operating for a relatively short time during the construction period (approximately 20-45 working days).

### **Impact NOISE-1 – Temporary Noise Disturbance to Sensitive Receptors During Construction**

Noise from grading activities could impact the surrounding residences and park facilities that are located less than 50 feet from various project areas along the creeks. Implementation of Mitigation Measure NOISE-1, which requires the project to comply with the City of Brentwood and/or the City of Oakley noise ordinances, would reduce this impact. **Less than significant with mitigation.**

*Mitigation Measure NOISE-1: Limit Hours for Construction Activities in Brentwood and Oakley*

CCCFCD, project applicant and contractor shall ensure that construction activities be limited to the hours set forth in Brentwood Municipal Code Section 9.32.050 as follows:

Outside Heavy Construction:

Monday-Friday	8:00 AM to 5:00 PM
Saturday	9:00 AM to 4:00 PM

CCCFCD, project applicant and contractor shall ensure that construction activities be limited to the hours set forth in Oakley Municipal Code Section 4.2.208d as follows:

Outside Heavy Construction:

Monday-Friday	7:30 AM to 7:00 PM
Saturday	9:00 AM to 7:00 PM

Implementation of the proposed Program would not add any permanent new sources of noise to the Program Area. The creeks are currently maintained by the CCCFCD and will continue to be routinely maintained after implementation of individual projects covered under the Program. Monitoring of project sites would add a small number of vehicle trips to individual sites during the first 1-5 years post construction. In addition, trail improvements may increase the number of visitors to Marsh Creek, which may potential increase the number of

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vehicles accessing parking facilities near Marsh Creek. However, this increase is not expected to be substantial compared to baseline conditions. Implementation of the proposed Program would not result in a permanent increase in ambient noise levels above current conditions. **Less than Significant.**

### **b) Generation of excessive groundborne vibration or groundborne noise levels?**

Implementation of the proposed Program would not add any permanent new sources of noise to the Program Area. The most vibration-intensive piece of construction equipment is a pile driver, but no pile driving will be required for Program projects. Other types of construction equipment are far less vibration-intensive. Next in intensity are heavily loaded trucks or large tracked earth-moving equipment, which could pose a damage or annoyance threat if they regularly and often come within 25 feet of a vibration-sensitive receptor during construction. Other equipment to be used commonly for the Project (i.e., excavator, loader, grader, etc.) as identified in **Table 8** would have even less potential for impact to local vibration-sensitive receptors. **Less than significant.**

### **c) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?**

The proposed Program is not located within two miles of a public airport or public use airport nor located within an airport land use plan. **No impact.**

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**E14. POPULATION AND HOUSING**

Environmental Factors and Focused Questions for Determination of Environmental Impact	Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant Impact	No Impact
a) Induce substantial unplanned population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure).				X
c) Displace substantial numbers of people or housing, necessitating the construction of replacement housing elsewhere.				X

**E14.1. Setting**

According to the current Contra Costa County General Plan, “The remainder of East County includes the unincorporated Bethel Island and Discovery Bay communities, as well as the cities of Brentwood and Oakley. In this area, an additional 29,600 homes are projected by Association of Bay Area Governments (ABAG) between 2000 and 2010 which would result in a population of about 97,800 more people by the year 2020.” This development has been addressed through the General Plan, updated General Plans for Brentwood and Oakley, as well as the Urban Limit Line. While the housing crisis and great recession had a significant impact on expansion of housing within the Program Area, Brentwood was the 6<sup>th</sup> fastest growing City in California as of 2016 and Oakley was not far behind. For example, according to the City of Brentwood the population grew over 100% from 2000 to 2010 and then another 18.5% between 2010 to 2016 with an additional estimate of nearly 12% growth between 2016-2020.

**Would the Program:**

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

The proposed Program would not induce any unplanned population growth in an area because the project implemented under this Program will not propose any physical or regulatory change that would remove a restriction to or encourage population growth in an area. **No impact.**

**b) Displace substantial numbers of people or housing, necessitating the construction of replacement housing elsewhere?**

The proposed Program would not displace a substantial number of people or housing since the Program’s projects would be located in areas that are already designated for no development (e.g., setbacks). **No impact.**

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**E15. PUBLIC SERVICES**

Environmental Factors and Focused Questions for Determination of Environmental Impact	Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant Impact	No Impact
a) Result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the following public services:				X
i) Fire protection.				X
ii) Police protection.				X
iii) Schools.				X
iv) Parks.				X
v) Other public facilities.				X

**Would the Program:**

**a) Result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the following public services: i) fire protection; ii) police protection; iii) schools; iv) parks; or v) other public facilities?**

No physical or environmental impacts associated with the provision of new or altered governmental facilities would result from implementation of the Program. **No impact.**

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**E16. RECREATION**

Environmental Factors and Focused Questions for Determination of Environmental Impact	Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant Impact	No Impact
a) 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.		X		
b) Include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment.				X

**E16.1. Setting**

The Marsh Creek corridor is an integral part of both local and regional trail systems. The EBRPD owns and maintains the Marsh Creek Regional Trail, which follows the mainstem of Marsh Creek approximately 6.5 miles from Big Break in Oakley to Concord Avenue/Creekside Park in Brentwood. EBRPD has proposed an expansion of the trail that would link it to Round Valley Regional Park upstream of the Marsh Creek Reservoir (**Figure 3**, Program Description). The current Marsh Creek Regional Trail also links to the Big Break Regional Trail along the Delta to the north and the Delta De Anza Regional Trail near Cypress Road in Oakley (**Figure 3**, Program Description). In addition to these regional trail linkages, the Marsh Creek Regional Trail links a number of small community parks or pocket parks in Brentwood and Oakley. In its current condition, the trail is heavily used and runs along the creek corridor for much of its length. Unfortunately, the trail lacks shade, greatly impeding its utility and safety for users during the warmer months. Sand Creek currently supports a small recreational trail that extends from Fairview Avenue to Minnesota Avenue Deer Creek has a trail from Fairview Avenue to San Jose Avenue. Neither of these trails currently have a formal connection to the larger Marsh Creek Regional Trail.

**Would the Program:**

**a) 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?**

**Impact REC-1 – Disturbance to Recreational Facilities**

Marsh Creek Regional Trail in Brentwood and the un-named trails along Sand Creek and Deer Creek provide recreational facilities to the general public. Trail access and conditions would be improved with implementation of projects under the Program through improved shade, aesthetics, and recreational opportunities. Construction of the proposed Program may temporarily impact users of the trails; however, trail access would be maintained through implementation of Mitigation Measure REC-1. **Less than significant with mitigation.**

*Mitigation Measure REC-1:* Provide Trail Users with Clear Re-Route / Detour Options During Construction

Program project applicants and their contractors will coordinate with local traffic and recreational districts to minimize disturbance to the public trail from creek restoration activities located on or adjacent to, Marsh Creek

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Trail. Appropriate signage, pedestrian/user management, and detours will be provided by the contractor, and a haul route will be designated and clearly marked.

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

The proposed Program does not propose the expansion or construction of additional recreational facilities. **No impact.**

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**E17. TRANSPORTATION AND TRAFFIC**

Environmental Factors and Focused Questions for Determination of Environmental Impact	Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant Impact	No Impact
a) Conflict with a program, plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle, and pedestrian facilities.		X		
b) Conflict or be inconsistent with CEQA Guidelines Section 15064.3(b).			X	
c) Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment).				X
d) Result in inadequate emergency access.		X		

**E17.1. Setting**

The Contra Costa Transportation Authority (CCTA) is a public agency formed to manage the County's transportation sales tax program and conduct countywide transportation planning. CCTA is responsible for maintaining and improving the County's transportation system by planning, funding, and delivering critical transportation infrastructure projects and programs that connect the communities safely and efficiently including bicycle and pedestrian projects as described in the 2018 Countywide Bike and Pedestrian Plan (Contra Costa Transit Authority 2018). In addition, the Transportation and Circulation Element of the General Plan includes goals and policies regarding Contra Costa County bikeways.

**Would the Program:**

**a) Conflict with a program, plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle, and pedestrian facilities**

There would be no permanent increase in traffic as a result of the proposed Program and therefore would not conflict with a program, plan, ordinance or policy addressing the circulation system. Project construction under the proposed Program would generate off-site construction worker vehicle round trips and trucks hauling equipment and materials to and from the project site which may temporarily impact existing traffic patterns. **Mitigation Measure Traffic-1** would minimize impacts.

**Impact TRAFFIC- 1: Temporary Increase in Construction Traffic**

Implementation of Mitigation Measure TRAFFIC-1 would ensure potential impacts associated with temporary increases in construction traffic are mitigated to a less than significant level. **Less than significant with mitigation.**

**Mitigation Measure TRAFFIC-1: Prepare a Traffic Control Plan Prior to Construction**

A traffic control plan will be submitted with an encroachment permit application. In compliance with this requirement, the project applicant(s) will require their construction contractor to prepare a traffic control plan in

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accordance with professional engineering standards prior to construction. The traffic control plan shall be submitted to the Cities of Brentwood and/or Oakley for review and approval prior to construction.

### **b) Conflict or be inconsistent with CEQA Guidelines § 15064.3(b) which pertains to vehicle miles travelled?**

In July 2020 CEQA Guidelines require project proponents to evaluate impacts based on vehicle miles traveled (VMT) and § 15064.3 sets for the criteria and methodology for evaluating these impacts. Projects implemented under the proposed Program would generate inherently low vehicles miles traveled (VMT) for potential increase in visitors accessing the improved creek segments post-construction. and short term increases of VMT during construction activities. Impacts associated with construction-related emissions have been evaluated and mitigated in Sections E3 Air Quality and E8 Greenhouse Gas of this document and therefore Program implementation would not require additional transportation evaluation or analyses. The Program is consistent with SB 743. **Less than significant.**

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

The proposed Program would not change the design or alignment of nearby roadways and would not introduce vehicles that are not already travelling on area roads. **No impact.**

### **d) Result in inadequate emergency access?**

The construction contractor would establish methods for maintaining traffic flow in the project vicinity and minimize disruption to emergency vehicle access. Implementation of mitigation measure TRAFFIC-1 would ensure potential impacts associated with temporary impacts on emergency access would be reduced. **Less than significant with mitigation.**

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**E18. UTILITIES AND SERVICE SYSTEMS**

Environmental Factors and Focused Questions for Determination of Environmental Impact	Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant Impact	No Impact
a) Require or result in the relocation or construction of new or expanded water or wastewater treatment, or storm water drainage, electric power, natural gas, or telecommunication facilities, the construction of which could cause significant environmental effects.				X
b) Have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry, and multiple dry years?				X
c) Result in a determination by the wastewater treatment provider, which serves or may serve the project that it has inadequate capacity to serve the project's projected demand in addition to the provider's existing commitments.				X
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.			X	
e) Comply with federal, state, and local statutes and regulations related to solid waste.				X

**Would the Program:**

**a) Require or result in the relocation or construction of new or expanded water or wastewater treatment, or storm water drainage, electric power, natural gas, or telecommunication facilities, the construction of which could cause significant environmental effects?**

The proposed Program would not result in the relocation or construction of new or expanded water or wastewater treatment, or storm water drainage, electric power, natural gas, or telecommunication facilities. It would be the responsibility of the construction contractor to obtain water that would be used for dust control during construction activities. The contractor would obtain water from an off-site source and truck it to the Program's project sites. Reintroduced drought-tolerant, native vegetation and proposed trees would rely upon precipitation, storm water runoff from the surrounding areas, and creek inundation however supplemental limited watering over the first three years may be required to ensure plant establishment. The limited irrigation would not require the relocation of existing water facilities or construction of new water facilities. **No impact.**

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

The proposed Program does not require water entitlements. **No impact.**

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**c) Result in a determination by the wastewater treatment provider, which serves or may serve the project that it has inadequate capacity to serve the project's projected demand in addition to the provider's existing commitments?**

The proposed Program would not require wastewater treatment and therefore would have no impact on wastewater demands or providers. **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.**

The proposed Program would not generate solid waste. While construction may generate solid waste it would not be in excess of State or local standards, or in excess of the capacity of local infrastructure. **Less than significant.**

**e) Comply with federal, state, and local statutes and regulations related to solid waste?**

The proposed Program and individual project applicants would be required to comply with all pertinent regulations regarding the disposal of solid waste generated by construction activities. **No impact.**

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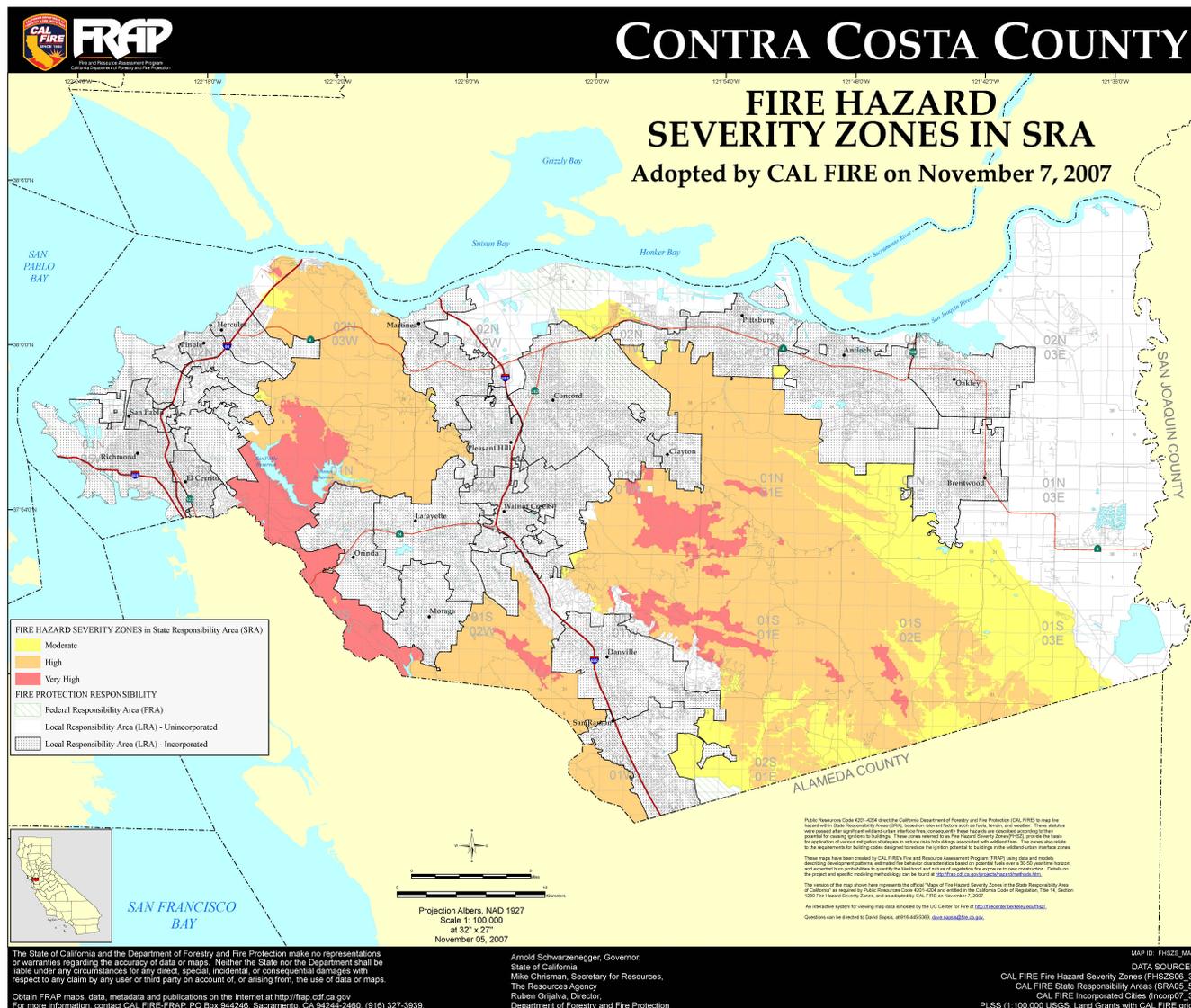
**E19. WILDFIRE**

Environmental Factors and Focused Questions for Determination of Environmental Impact	Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant Impact	No Impact
Is the project located in or near state responsibility areas or lands classified as high fire hazard severity zones? If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would the project:				X
a) Substantially impair an adopted emergency response plan or emergency evacuation plan?				X
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?			X	
c) Require the installation 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?			X	
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?			X	

**E19.1. Setting**

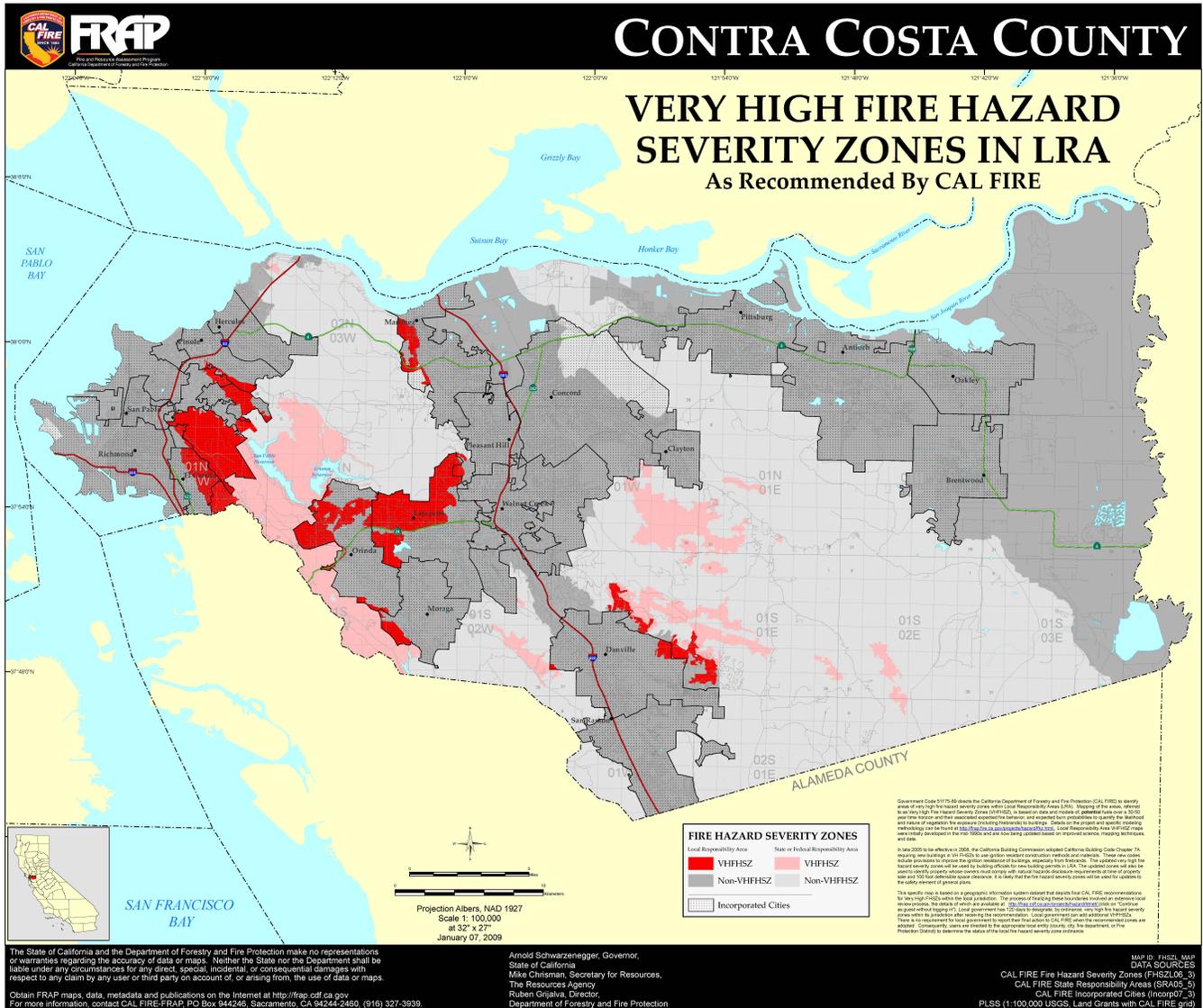
CalFire is the state agency responsible for mapping wildfire hazards and fire severity zones. The 2007 Contra Costa County Fire Severity Hazard Zones map (**Figure 8**) shows areas within the State Responsibility in the County and is the most recent map available for these data. The map in **Figure 8** shows that the entire Program Area is outside of the State Responsibility Area (SRA). The SRA closest to the Program Area is to the south, in the upper Marsh Creek Watershed, and is categorized as moderate for fire hazard severity. This area is more than 2 miles from the Program Area. **Figure 9** was updated in 2009 and shows the areas that are recommended for local responsibility. Similarly to **Figure 8**, there are no Very High Fire Hazard Severity Zones in or near the Program Area.

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**Figure 8. 2007 Contra Costa County Fire Severity Hazard Zone map**

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**Figure 9. 2009 Contra Costa County Fire Severity Hazard Zone map showing Local Responsibility Areas.**

**Would the Program:**

**a) Substantially impair an adopted emergency response plan or emergency evacuation plan?**

The City of Oakley's 2015 *Facilities Emergency Action and Fire Prevention Plan Oakley*

(<https://www.ci.oakley.ca.us/wp-content/uploads/2015/09/Final-EAP-FPP.pdf>) and the Contra Costa County

Office of Emergency Services 2011 *Contra Costa Operational Area: Emergency Operations Plan*

(<http://www.co.contra-costa.ca.us/DocumentCenter/View/7352/Emergency-Operations-Plan-2010-11?bidId=>),

appear to be the only two adopted emergency response/evacuation plans that cover the Program Area.

Implementation of the Program is not expected to impair the ability of the City or of the County to respond to an emergency or enable evacuation. **No impact.**

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**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?**

Implementation of the Program would likely result in increase tree canopy along the stream corridors, but anticipated vegetation management for flood channel purposes would not exacerbate wildfire risks. **Less than significant.**

**c) Require the installation 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?**

Implementation of projects within the Program could result in new infrastructure such as pedestrian bridges and may require existing flood control roads, trails, and possibly utilities moved further away from the creek banks. The Program will not result in new roads, trails, or utilities being installed and therefore, will not result in new infrastructure that could exacerbate fire risk or result in on-going impacts to the environment. **Less than significant.**

**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?**

Implementation of the Program is intended to improve ecological conditions, increase drainage capacity in local streams, and improve channel stability. Any project implemented under this Program will be required to illustrate compliance with floodplain management regulations and will not result in increase downstream flooding. The Program will be implemented along reaches of Marsh, Sand and Deer Creek that are historic floodplain terraces, devoid of steep slopes (aside from existing channel banks) or geologic features that could result in landslides. **Less than significant.**

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**E20. MANDATORY FINDINGS OF SIGNIFICANCE**

Environmental Factors and Focused Questions for Determination of Environmental Impact	Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant Impact	No Impact
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?			X	
b) Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects.)			X	
c) Does the project have environmental effects, which will cause substantial adverse effects on human beings, either directly or indirectly?			X	

**Would the Program:**

**a) Does the project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, substantially reduce the number or restrict the range of a rare or endangered plant or animal, or eliminate important examples of the major periods of California history or prehistory?**

Implementation of the proposed Program would benefit the quality of the environment, improve habitat for fish and wildlife and increase populations of plant and animal communities. The Program would also improve habitat conditions for wildlife movement thereby enhancing the range of species within the watershed. None of the activities covered under the Program would eliminate important examples of California history or prehistory. Temporary impacts associated with construction during restoration activities would be short term and localized. At no point would all 150 acres of the Program Area be simultaneously under construction. In general, projects within this Program would range from being as small as < 0.5 acre to being as large as 6.5 acres. Temporary disturbance of small project areas would be considered less than significant because the habitat being restored is low quality and unlikely to support special-status plants or animals in their current state. Furthermore, all potentially significant impacts would be reduced to a less-than-significant level with the mitigation measures described in the resource sections of this IS/MND and through implementation of measures required by regulatory agencies during the permitting phase of the project(s). No long-term adverse impacts were identified and

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construction and operation of the proposed Program would not permanently degrade the quality of the environment. **Less than significant.**

### **b) Does the project have impacts that are individually limited, but cumulatively considerable?**

CEQA Guidelines (Section 15355[b]) define cumulative impacts as those resulting from closely related past, present, and reasonably foreseeable projects. CEQA Guidelines (Section 15125[a]) also define the analytical baseline as the conditions on the ground at the time that the Initial Study is prepared. Impacts of past projects are generally considered as part of these baseline conditions.

Restoration activities associated with the proposed Program could potentially contribute to cumulative impacts in conjunction with other projects in the area. These projects, while in the same region, would be held to the same environmental impact evaluation and compliance regulations as the proposed Program. Temporary (construction-generated) impacts to air quality, biological resources, cultural resources, noise, recreational resources and traffic for all projects, would be fully mitigated through measures identified in respective environmental compliance documents. No additional cumulative impacts were identified for the Program. **Less than significant.**

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

In general, construction sites present many hazards that have the potential to adversely affect human beings either through impaired air quality, construction noise and vibration or traffic impacts. These hazards are temporary, lasting only for the duration of Program's project construction activities (approximately 20-45 work days). Restoration of the creeks would result in improved environmental conditions for humans through increased shade and improved water quality. Visually, the Program would also result in improved conditions for humans using the recreational facilities located along the Program Area creek corridors. To mitigate for the potential short-term impacts which may cause a substantial adverse effects on human beings, CCCFCD has committed to implementing project-wide BMPs (**Table 4**) and resource-specific, mitigation measures. **Less than significant.**

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