Department of Conservation and Development

30 Muir Road
Martinez, CA 94553

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Contra Costa County

FILED
AUG 02 2016
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August 3, 2016

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

County File No. CP 16-39

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 the Department of Conservation and Development of Contra Costa County has prepared an Initial Study for the following project:

PROJECT NAME: Three Creeks Parkway Restoration

LEAD AGENCY: Contra Costa County Department of Conservation and Development

APPLICANT: Contra Costa County Flood Control District

LOCATION: Marsh Creek (Dainty Avenue to Union Pacific Railroad tracks), Brentwood

ZONING: Low and Medium Residential Density

DESCRIPTION: The Contra Costa County Flood Control and Water Conservation District, in partnership with American Rivers, a non-profit organization that protects rivers and restores damaged rivers, proposes to widen and restore approximately 4,000 linear feet of the Marsh Creek channel from Dainty Avenue to an existing pedestrian bridge just before the Union Pacific Railroad tracks with floodplain benches, which will meet the District's standards for 100-year flood protection, and native riparian vegetation that will enhance habitat and recreation. Some work may occur within the flow line of the creek to create in-stream habitat by placing boulders and large woody debris, and the placement of rock slope protection. The project will also include a slight relocation of the existing East Bay Regional Park District Marsh Creek trail along the eastern bank to the new grade. Minor modifications to sewer line manholes may be required to accommodate changes in ground elevation. In all cases, grading will be performed around manholes so that potential spills from manholes would initially drain away from Marsh Creek.

Construction is anticipated to begin summer 2017. Excavation and grading activities would occur during the dry season (July to October) with plant restoration occurring afterwards

(November to December) and may take up to two construction seasons to complete. 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 this project.

ENVIRONMENTAL EFFECTS: The Initial Study (IS) for the proposed project identified potentially significant impacts in the environmental area of Air Quality, Biological Resources, Cultural Resources, Geology and Soils, and Noise. Environmental analysis determined that measures were available to mitigate potential adverse impacts to insignificant levels. As a result, a Mitigated Negative Declaration (MND) has been prepared pursuant to Public Resources Code Section 21080(c), 21063.5, and Article 6 of the California Environmental Quality Act (CEQA) Guidelines.

Pursuant to the requirements of CEQA (CEQA Guidelines Section 15071) the Initial Study/Mitigated Negative Declaration (IS/MND) describes the proposed project; identifies, analyzes, and evaluates the potential significant environmental impacts, which may result from the proposed project; and identifies measures to mitigate adverse environmental impacts. Mitigations identified in this document designed for the proposed project will ensure that the project will not cause a significant impact on the environment.

A copy of the 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://www.co.contra-costa.ca.us/4629/Public-Notices. All documents referenced in the IS/MND are available on request.

PUBLIC COMMENT PERIOD: The 30-day public comment period for accepting comments on the adequacy of the environmental document is from **August 3, 2016 to September 2, 2016**. Any comments should be in writing and submitted to the following address and/or email address:

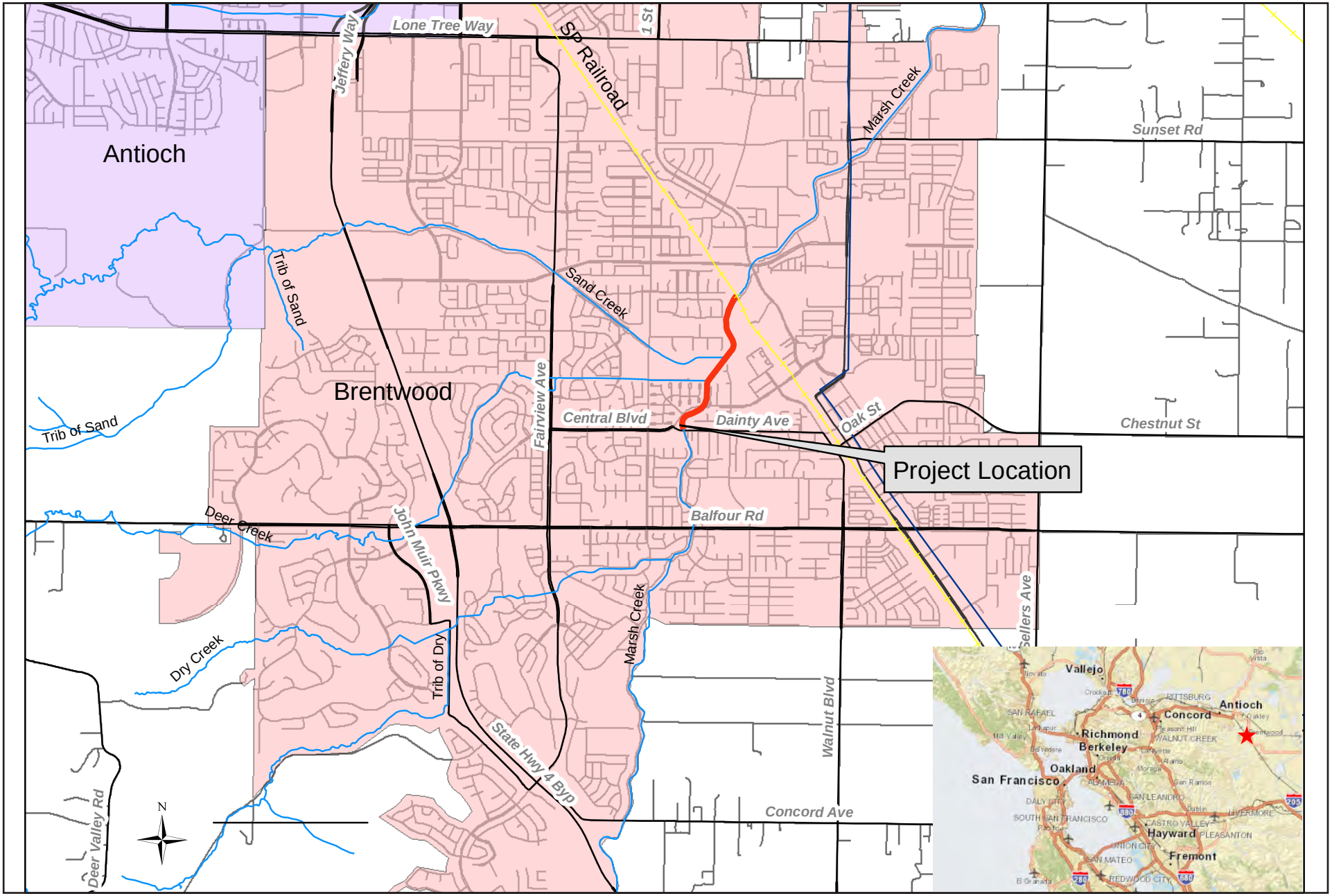
Claudia Gemberling, Environmental Analyst II
Contra Costa County Public Works Department
255 Glacier Drive
Martinez, CA 94553
claudia.gemberling@pw.cccounty.us

It is anticipated that the proposed IS/MND will be considered for adoption at the County Board of Supervisors meeting on **September 27, 2016**. To confirm the Board date, please contact Claudia Gemberling at (925) 313-2192.

8-2-16

Lead Agency Representative — Date
Contra Costa County Department of Conservation and Development

Attachments: Figure 1: Project Location
Figure 2: Site Plan
Figure 3: Project Area Photographs



SOURCE: Restoration Design Group, Inc. 2016

FIGURE 1

IMPACT SCIENCES

Project Location

1273.001-06/16

500 250 0 500

APPROXIMATE SCALE IN FEET

SOURCE: Restoration Design Group, Inc. 2016

FIGURE 2

IMPACT SCIENCES

Site Plan

1273.001-08/16

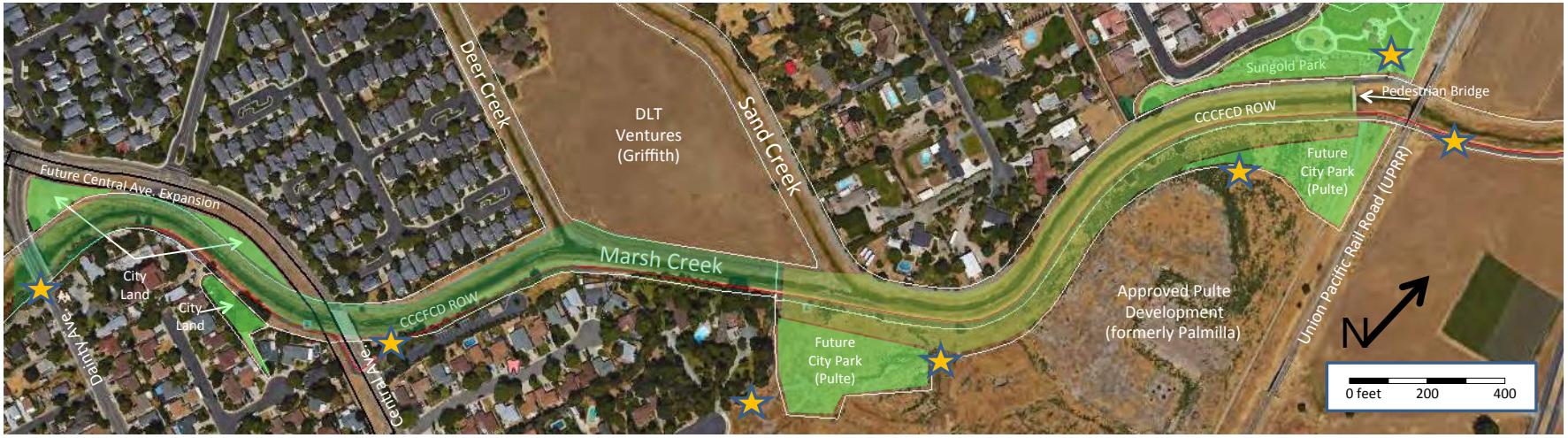
Looking upstream to Central Ave. Bridge

Looking upstream to Deer Creek in flood

Looking upstream to Deer Creek in drought

Looking upstream at Sand Creek confluence

Looking upstream from UPRR tracks



The Three Creeks Parkway Restoration Project will restore native vegetation and functional floodplains along 4,000 linear feet of Marsh Creek. American Rivers and the Friends of Marsh Creek Watershed are working with the Contra Costa County Flood Control District (CCCFCD) to integrate the project into adjacent city parks, the Pulte development (formerly Palmilla) and potentially DLT Ventures (Griffith).

Legend

- EBRPD Regional Trail
- Lower Parkway
- Upper Parkway
- City Land/Parks
- Public Access Points

Looking upstream from Central Ave. bridge

Looking upstream from Pedestrian bridge

Looking up from Sand Creek confluence

Looking down from Sand Creek confluence

SOURCE: American Rivers, 2016

FIGURE 3

IMPACT SCIENCES

Project Area Photographs

1273.001-07/16

THREE CREEKS PARKWAY RESTORATION PROJECT

Initial Study and
Proposed Mitigated Negative Declaration

The following Initial Study has been prepared in compliance with CEQA.

Prepared By:

Impact Sciences
505 14th Street, Suite 1230
Oakland, CA 94612

Prepared For:

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

and

American Rivers
2150 Allston Way, Suite 320
Berkeley, CA 94704
Contact: Sarah Beamish
(415) 203-3766

County Project No.: 16-39

August 2016

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INTRODUCTION

Initial Study

The Three Creeks Parkway Restoration project is a proposal put forth by the Contra Costa County Flood Control and Water Conservation District and American Rivers to widen and improve an approximately 4,000-foot section of Marsh Creek in the City of Brentwood to provide additional flood conveyance capacity and restore riparian habitat along the creek. Pursuant to Section 15063 of the *State CEQA Guidelines* (Title 14, California Code of Regulations, Sections 15000 et seq.), an Initial Study is a preliminary environmental analysis that is used by the lead agency (the public agency principally responsible for approving or carrying out the proposed project) as a basis for determining what level of environmental review is appropriate (Environmental Impact Report, a Mitigated Negative Declaration, or a Negative Declaration) for a project. The *State CEQA Guidelines* require that an Initial Study contain a project description, description of environmental setting, identification of environmental effects by checklist or other similar form, explanation of environmental effects, discussion of mitigation for significant environmental effects, evaluation of the project's consistency with existing, applicable land use controls, and the name of persons who prepared the study.

As shown in the Determination in Section IV of this document, and based on the analysis contained in this Initial Study, it has been determined that the proposed project would not result in any significant impacts that cannot be mitigated to less than significant levels. Therefore, preparation of a Mitigated Negative Declaration is appropriate.

Public and Agency Review

This Initial Study/Proposed Mitigated Negative Declaration will be circulated for public and agency review from August 3, 2016 to September 2, 2016. Copies of this document are available for review at the Contra Costa County Public Works Department at the address below and the County's webpage: http://www.co.contra-costa.ca.us/4629/Public-Notices.

Comments on this Initial Study/Proposed Mitigated Negative Declaration must be received by 5:00 PM on September 2, 2016 and can be sent by regular mail or emailed to:

Contra Costa County Flood Control and Water Conservation District
255 Glacier Drive
Martinez, CA 94553
Attn: Claudia Gemberling
claudia.gemberling@pw.cccounty.us

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Organization of the Initial Study

This Initial Study is organized into the following sections.

Section 1 – Project Information: provides summary background information about the proposed project, including project location, lead agency, and contact information.

Section 2 – Project Description: includes a description of the proposed project, including the need for the project, the project's objectives, and the elements included in the project.

Section 3 – Environmental Factors Potentially Affected: identifies what environmental resources, if any, would involve at least one significant or potentially significant impact that cannot be reduced to a less than significant level.

Section 4 – Determination: indicates whether impacts associated with the proposed project would be significant, and what, if any, additional environmental documentation is required.

Section 5 – Evaluation of Environmental Impacts: contains the Environmental Checklist form for each resource and presents an explanation of all checklist answers. The checklist is used to assist in evaluating the potential environmental impacts of the proposed project and determining which impacts, if any, need to be further evaluated in an EIR.

Section 6 – References: lists documents used in the preparation of this document.

Section 7 – Initial Study Preparers: lists the names of individuals involved in the preparation of this document.

Technical studies prepared for this Initial Study are available at Contra Costa County Public Works Department at the address noted above.

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1. PROJECT INFORMATION

Project title:

Three Creeks Parkway Restoration Project

Lead agency name and address:

Contra Costa County Department of Development and Conservation
30 Muir Road
Martinez, CA 94553

Contact person and phone number:

Claudia Gemberling
(925) 313-2192
Claudia.Gemberling@pw.cccounty.us

Project location:

Marsh Creek between just north of Dainty Avenue bridge and south of Union Pacific Railroad bridge in the City of Brentwood

Project sponsor's name and address:

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

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2. PROJECT DESCRIPTION

2.1 Introduction

The Three Creeks Parkway Restoration project is a multi-benefit flood control and creek restoration project proposed by the Contra Costa County Flood Control and Water Conservation District ("District" or "CCCFCD") and American Rivers, a non-profit organization that protects wild rivers and restores damaged rivers. It proposes to improve flood conveyance capacity and restore native vegetation along an approximately 4,000 linear feet section of Marsh Creek located in Brentwood by widening the channel with a floodplain (or sections where more constrained, floodplain benches) and planting with native vegetation. When implementation is complete, the project site will include up to 1.0 acres of frequently inundated floodplain (seasonal wetland), 1.87 acres of woody riparian vegetation, and 1.87 acres of grasslands and native scrub. The project will also enhance habitat and recreation within the watershed.

In addition to the District and American Rivers, other project partners include the City of Brentwood, the Friends of Marsh Creek Watershed (FOMCW), East Contra Costa County Habitat Conservancy (ECCCHC), and East Bay Regional Park District (EBRPD).

2.2 Project Location and Surrounding Land Uses

Marsh Creek watershed, located about 35 miles east of San Francisco, is uniquely situated between the Bay-Delta and the Diablo Range, providing an important ecological corridor in a burgeoning urban area. Marsh Creek flows 30 river miles from the eastern slope of Mount Diablo State Park in central Contra Costa County to the San Joaquin Delta at Big Break in Oakley. Major tributaries to Marsh Creek include Dry, Deer, and Sand Creeks. Through the existing EBRPD park facilities and trails, Marsh Creek also provides a cultural and physical connection to the Delta, allowing East County residents to walk and bike from Big Break and its aquatic recreation facilities, through Oakley to downtown Brentwood. Thus, Marsh Creek provides one of the longest, non-motorized pathways in Contra Costa County.

The project site is located along Marsh Creek in the City of Brentwood (**Figure 1)**. The upper/southern limit of the project is just north of Dainty Avenue Bridge while the lower/northern limit is the pedestrian bridge across Marsh Creek about 175 feet south of the Union Pacific Railroad (UPRR) tracks. Marsh Creek trail, a regional trail owned by EBRPD is located on the east bank of Marsh Creek within the project area. As shown in **Figure 2**, the project is divided into three reaches:

Upper Reach

Upper Reach is the upper 1,600 linear-foot section of the creek from near Dainty Avenue Bridge up to Deer Creek confluence.

The area to the east and west of the Upper Reach is developed with residential neighborhoods (**Figure 3**).[1] A vacant 0.4-acre City-owned parcel is located on the east side of the Upper Reach just

[1] Future parks shown in **Figure 3** are not part of the proposed project and will not be analyzed in this Initial Study. CEQA analysis of the future City parks were conducted by adjacent development properties.

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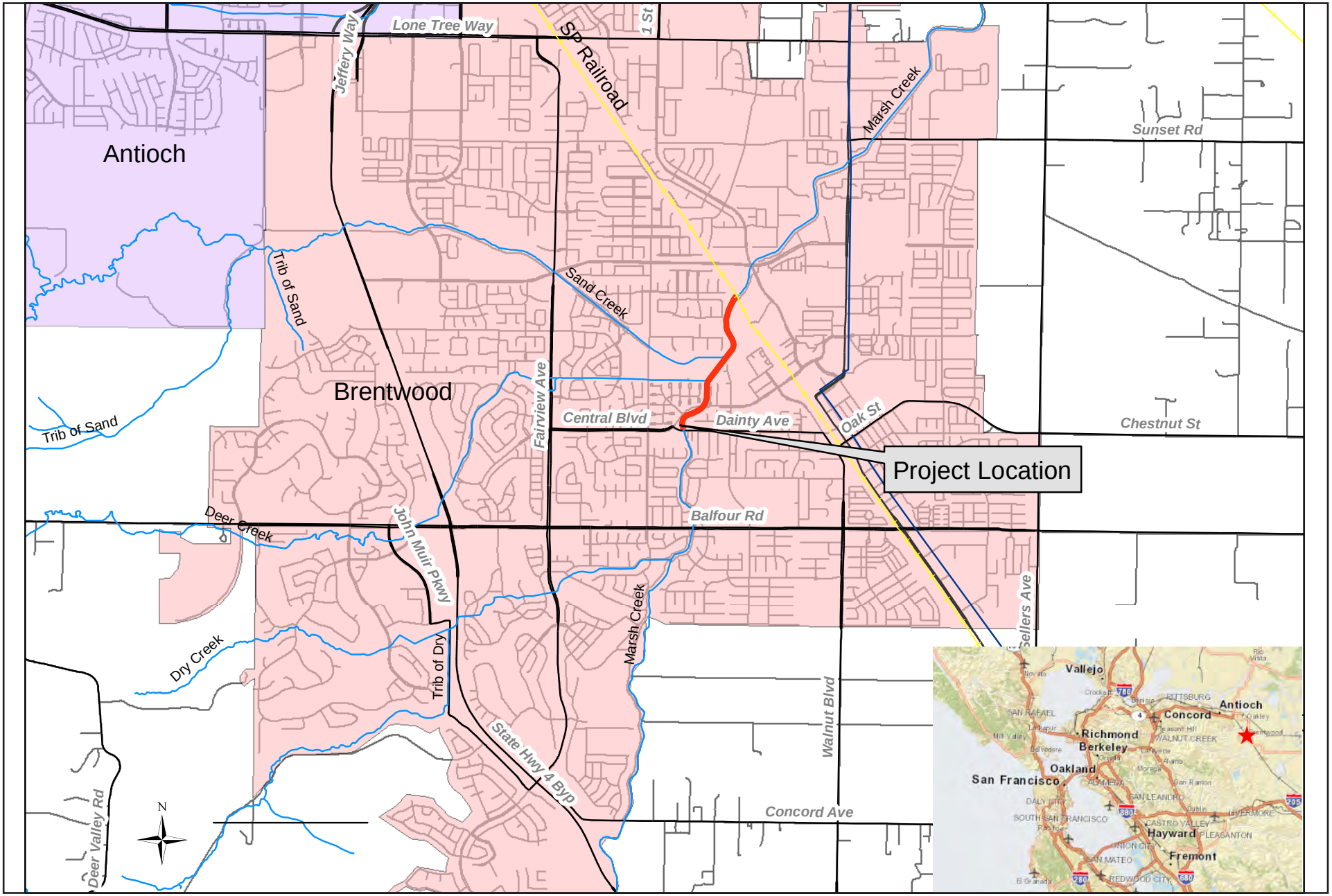

SOURCE: Restoration Design Group, Inc. 2016

FIGURE 1

IMPACT SCIENCES

Project Location

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APPROXIMATE SCALE IN FEET

SOURCE: Restoration Design Group, Inc. 2016

FIGURE 2

IMPACT SCIENCES

Site Plan

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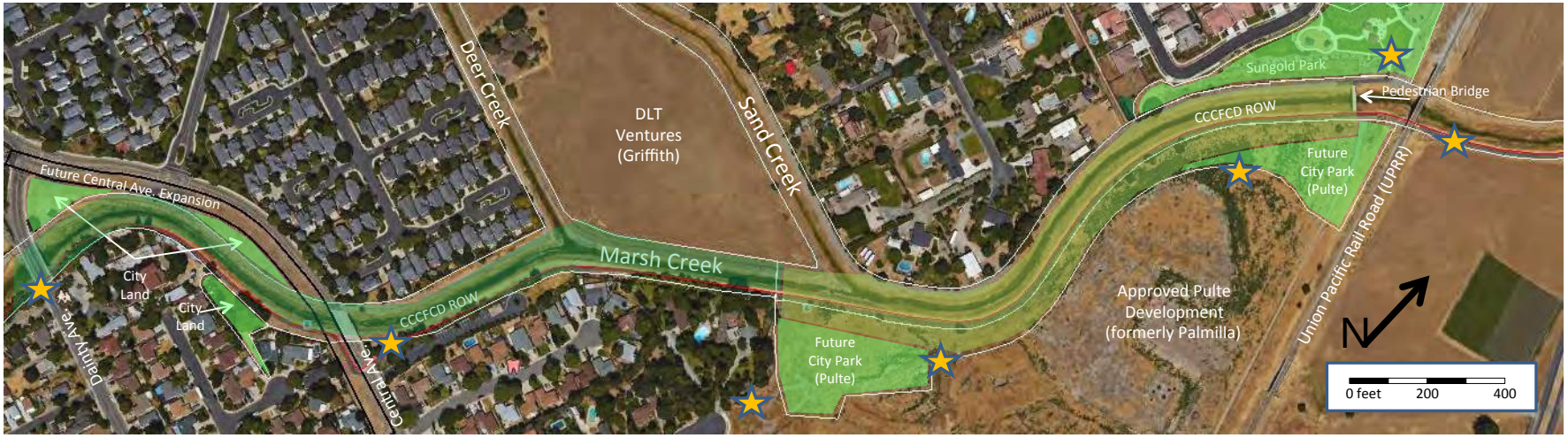
Looking upstream to Central Ave. Bridge

Looking upstream to Deer Creek in flood

Looking upstream to Deer Creek in drought

Looking upstream at Sand Creek confluence

Looking upstream from UPRR tracks



The Three Creeks Parkway Restoration Project will restore native vegetation and functional floodplains along 4,000 linear feet of Marsh Creek. American Rivers and the Friends of Marsh Creek Watershed are working with the Contra Costa County Flood Control District (CCCFCD) to integrate the project into adjacent city parks, the Pulte development (formerly Palmilla) and potentially DLT Ventures (Griffith).

Legend

- EBRPD Regional Trail
- Lower Parkway
- Upper Parkway
- City Land/Parks
- Public Access Points

Looking upstream from Central Ave. bridge

Looking upstream from Pedestrian bridge

Looking up from Sand Creek confluence

Looking down from Sand Creek confluence

SOURCE: American Rivers, 2016

FIGURE 3

IMPACT SCIENCES

Project Area Photographs

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south of Central Boulevard. Willow Wood School/Dainty Center (Preschool-7th grade/infant care) is located to the east of the Upper Reach between Central Boulevard and Dainty Avenue. There is a vacant strip of land to the west between the creek and Central Boulevard owned by the District and City of Brentwood. Residential neighborhoods are present to the west of Central Boulevard and Marsh Creek up to Deer Creek (**Figure 3**).

Middle Reach

Middle Reach is the 800 linear-foot section of the creek between Deer Creek confluence and just south of Sand Creek confluence.

Lands to the east of the Middle Reach are developed with residential subdivisions whereas the land to the west (Griffith parcel) is undeveloped at this time (**Figure 3**).

Lower Reach

Lower Reach is the 1,600 linear-foot section of the creek from just south of the Sand Creek confluence to the pedestrian bridge (**Figure 3**).

Lands to the east of the Lower Reach are undeveloped at this time although a linear city park is planned adjacent to the creek and the remaining area is the site of the approved Pulte residential subdivision (formally known as Palmilla subdivision). Single-family homes (Carmel Estates) and a city park (Sungold Park) are located to the west of the Lower Reach.

2.3 Project Need and Objectives

During the 1960s and early 1970s, approximately 7.9 miles of Marsh Creek from the mouth of the creek near Big Break on San Joaquin Delta in Oakley to the Dry Creek confluence in Brentwood were channelized into earthen and armored trapezoidal flood control channels. To provide conveyance capacity, the flood control channel was designed with steep banks, all riparian vegetation along the channel was removed, and the earthen channel was vegetated with non-native grasses. The channel was designed for a 50-year flood event in an agricultural setting.

Since the flood control channel was constructed, the upper watershed has remained mostly protected parklands and open space, but the lower watershed has urbanized rapidly. Over the last 25 years, the population of the Marsh Creek watershed has increased six fold. This development has transformed the watershed into a dense residential and commercial area, covering open space with impervious surfaces, substantially increasing runoff volume and degrading water quality. The District has constructed detention basins on each of Marsh Creek's three tributaries (Dry, Deer, and Sand Creeks) to accommodate increased run-off associated with urban development and impervious surfaces; however, urban and agricultural runoff remain issues.

An Engineer's Report prepared by the District in January 1990 identified the need to widen 7,000 feet of Marsh Creek to reduce flooding in the lower portion of the watershed. Based on the report, the District prepared a plan to widen the creek in three phases, with Phase I involving creek widening from Summer Circle to near Dainty Avenue Bridge, Phase II (" Upper Reach") involving widening from near Dainty Avenue Bridge to Deer Creek confluence, and Phase III ("Middle Reach") widening the creek between Deer Creek and Sand Creek. In March 1990 the "Draft Environmental Impact Report for the Marsh Creek

Watershed, Regional Drainage Plan" was published and a Final EIR was subsequently approved. Following this approval, Phase I was completed in 2000, which included the installation of a new concrete culvert at Dainty Avenue and creek widening that was almost entirely on the east bank.

Downstream of Phase I, Marsh Creek does not meet the District's standards for flood protection, exposing adjacent homes and businesses to flood risk. When looking at the capacity within the channel the District requirement for containment is controlled by the 50-year water surface elevation level (WSEL) plus freeboard or the 100-year WSEL, whichever one is higher. District analysis indicates that for the channel downstream of Phase I project, the 50-year WSEL plus freeboard will be greater than the 100-year WSEL and dictates the channel design. The project will widen the downstream sections of the creek so that the 100-year storm water surface elevation level and the 50-year storm plus WSEL would be contained within the creek channel.

Both the channelization that was implemented in the 1960s and early 1970s and the removal of riparian vegetation for flood management have limited the ecological functions of the creek. These factors have severely limited habitat complexity, structure, shade, riparian inputs, and floodplain wetlands. High velocities during annual peak flow events, which are exacerbated by increased peak run-off from newly urbanized surfaces, presumably flush most of the egg and larval stages of aquatic species downstream. Poor water quality from urban run-off is made worse by the lack of wetlands, shade, and microbial activity. Relatively high temperatures combined with low dissolved oxygen levels have caused four major fish kills on Marsh Creek over the last nine years. The combination of fish kills and poor habitat complexity limits the productivity, diversity, and resilience of the creek ecosystem. The project proposes to improve the ecological functions of the creek by reducing flow velocities, creating wetlands, and restoring riparian habitat. Although much of the watershed has been constrained by urbanization, the Three Creeks Parkway Restoration project site is the longest remaining stretch of undeveloped land along the creek where there is still an opportunity to widen the channel and provide a more natural creek system that is connected to the historic floodplain.

Lastly, the project would improve recreational amenities. Currently the Marsh Creek Trail located along the east bank of Marsh Creek passes through a primarily treeless stretch of land. With the restoration of riparian vegetation along the creek banks, the project would provide areas where trail users can stop in the shade and enjoy the beauty of the creek which will improve the experience of the trail users.

2.4 Project Components

This project is an innovative non-structural approach to flood management and habitat restoration. Instead of trying to control the creek in a narrow zone with levees and floodwalls, it focuses on giving the creek more room to safely convey flood waters while also providing habitat for aquatic and terrestrial species. **Table 1** below presents basic information about the project. Details of the project components follow the table.

Table 1
Project Data

Element	Upper Reach	Middle Reach	Lower Reach
Length	1,600 feet	800 feet	1,600 feet
Total Area Disturbed	2.1 acres	1.0 acre	4.25 acres
Soil Excavation	5,500 cu yards	3,500 cu yards	15,000 cu yards
Floodplain or bench width	3-15 feet	3-15 feet	10-30 feet
Bench slopes to top of bank	2:1 or 3:1	2:1 or 3:1	3:1 or less typical, 2:1 max.
Temporary Staging/Access Areas[1]	Within creek parcels (017-17C-004, 017-20C-XXX) or adjacent City-owned parcel (017-210-004, 017-201-038, 017-260-080, 017-280-113)[2]	Within creek parcel (017-17C-004) or adjacent parcel (017-110-011)[2]	Within creek parcels (017-17C-004) or adjacent private parcels (017-170-008, 017-170-007)
Permanent Access/Maintenance Easements[1]	017-260-080 017-280-113 017-201-038 017-210-029	017-110-011	017-170-007 017-170-008

[1] Some or all of the non-County-owned parcels would potentially require a temporary construction easement for access and staging and/or permanent easement for access and/or maintenance.
[2] Parcel numbers and ownership information shown on **Figures 4**, **6**, and **8**.

2.4.1 Channel Widening

The main function of expanding the channel is to create enough conveyance capacity to allow for the planting of woody riparian vegetation (trees) while also safely conveying large flood flows. The project would increase the cross-sectional area of the stream channel by excavating 24,000 cubic yards (5,500 for upper, 3,500 for middle, and 15,000 for lower reach,) of earth along approximately 4,000 linear feet of both banks of Marsh Creek to create new floodplain.

Upper Reach

As noted earlier, the Upper Reach is approximately 1,600 feet of the channel between just north of Dainty Avenue bridge and Deer Creek confluence. The reach is constrained by development on both sides and channel widening in this section would include excavation of both banks to construct a number of floodplain benches on both sides of the creek of varying widths with slopes ranging from 2:1 to 3:1 (**Figure 4**). The benches would be located above the ordinary high water mark (OHWM). The construction of the floodplain benches would satisfy the District's freeboard requirements for an earthen

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SOURCE: Restoration Design Group, Inc. 2016

FIGURE 4

IMPACT SCIENCES

Upper Reach Improvements

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channel. **Figure 5** presents existing and modified creek cross-sections for this reach.

Once the benches are constructed, permanent slope protection such as erosion control matting or other biotechnical methods would be installed on all benches and slopes for slope stabilization and to prevent long-term effects of erosion. The selected erosion control material would provide soil stabilization and promote vegetation growth.

Widening the channel cross-section is expected to decrease velocities and erosion potential. However, detailed hydraulic modeling that will be completed to inform the final design may indicate that some bank armoring is necessary where the expanded channel will taper down to the existing channel at the downstream project boundary. In one location along the Upper Reach, the project would require a retaining wall along approximately 250 feet on the left (west) bank due to the presence of Central Boulevard in Brentwood that will extend approximately 5 feet above ground. The retaining wall would rise from the back of the floodplain and would not touch the low flow channel. The project also includes replacement and repair of grouted rock at the Deer Creek confluence.

Middle Reach

The Middle Reach, which is about 800 feet in length, would be widened along the west bank as part of the proposed project. As the Middle Reach is also constrained, channel widening would involve excavation of both banks to construct a number of floodplain benches of varying widths as shown in **Figure 6**, with slopes ranging from 2:1 to 3:1. The benches would be located above the OHWM. The construction of the floodplain benches would satisfy the District's freeboard requirements for an earthen channel. **Figure 7** presents existing and modified creek cross-sections for this reach.

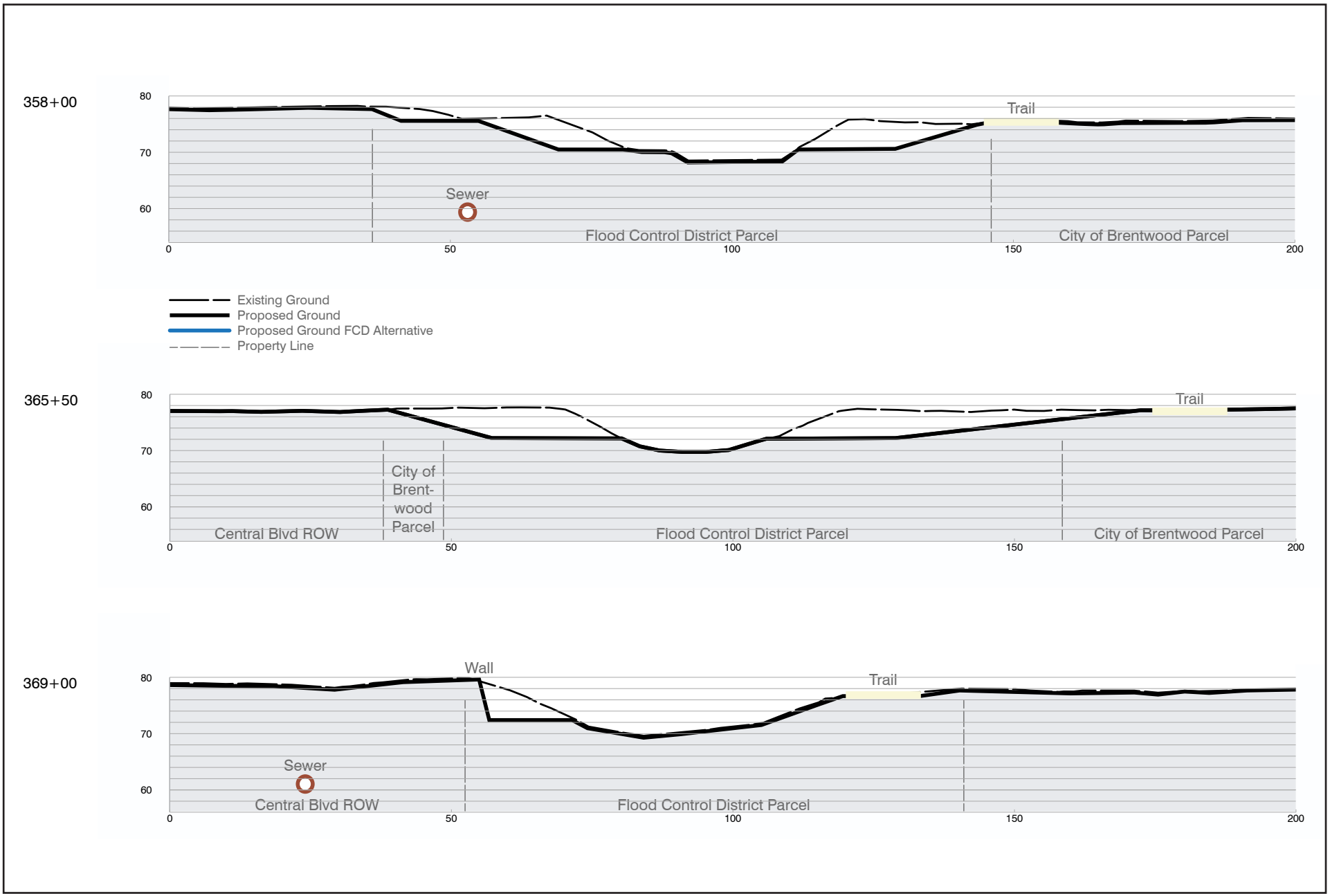
Lower Reach

The Lower Reach, which is about 1,600 feet in length, is less constrained, and more substantial widening of the channel is planned for this area. The project would excavate the east bank of the creek down to the OHWM to create a 10 to 40-foot wide floodplain with slopes typically 3:1 or less, but never more than 2:1 (**Figure 8**). **Figure 7** presents existing and modified creek cross-sections for this reach. If bank protection is necessary at some locations, the project would use biotechnical methods or large rocks to create an aesthetically pleasing bank.

Although erosion is currently not a problem, the project would reduce the potential for erosion by lowering 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. To prevent weathering and erosion of slopes, permanent slope protection in the form of erosion control matting, armor, biotechnical methods, or appropriate ground cover would be installed, and the material would provide soil stabilization and promote vegetation growth.

2.4.2 Low-Flow Channel

The existing low-flow channel within project limits is engineered with rock grade control structures and banks. The existing, engineered channel has proven stable over the last 40 years and the rock grade



SOURCE: Restoration Design Group, Inc. 2016

FIGURE 5

IMPACT SCIENCES

Upper Reach Cross-Sections

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SOURCE: Restoration Design Group, Inc. 2016

FIGURE 6

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Middle Reach Improvements

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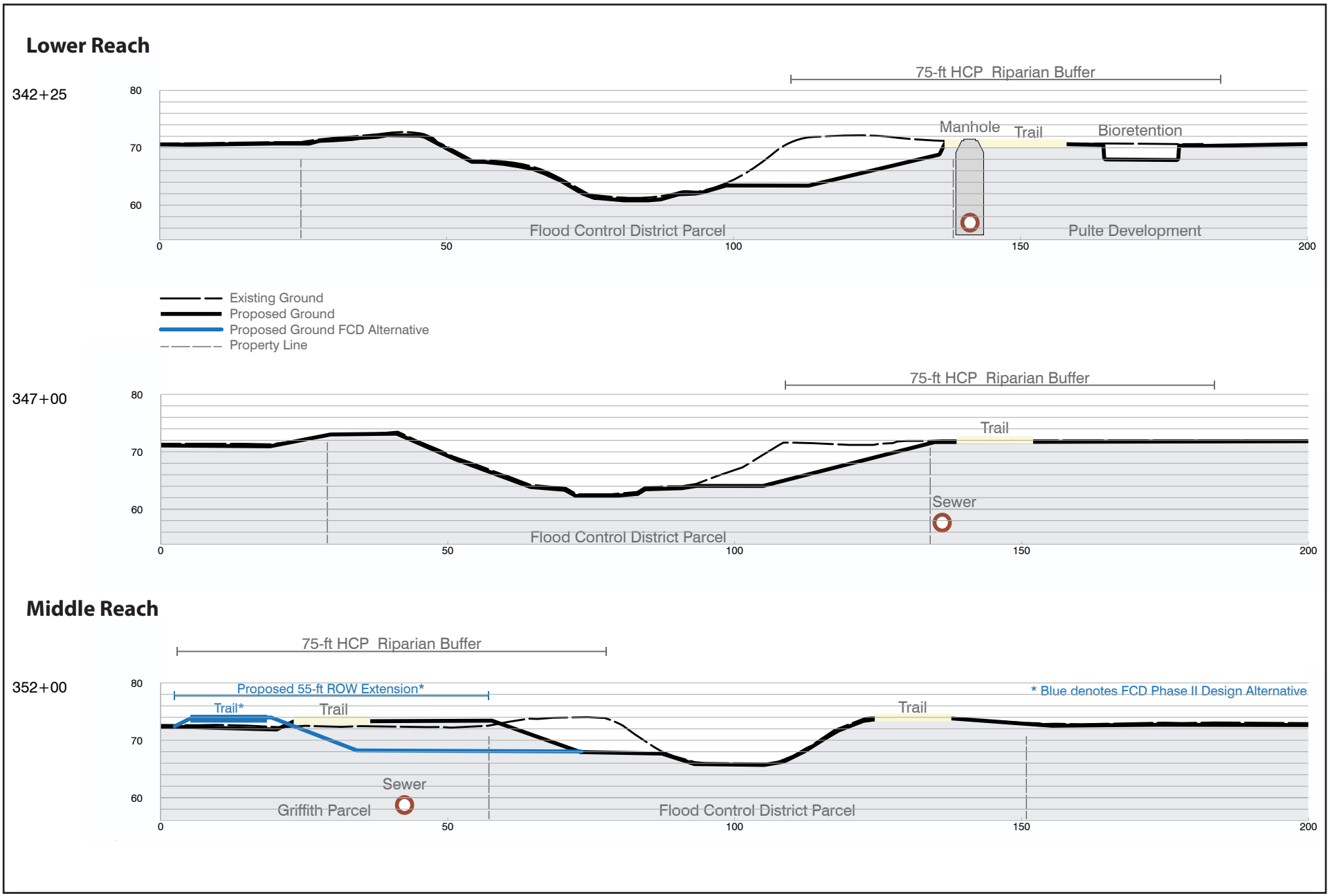

SOURCE: Restoration Design Group, Inc. 2016

FIGURE 7

IMPACT SCIENCES

Middle and Lower Reach Cross-Sections

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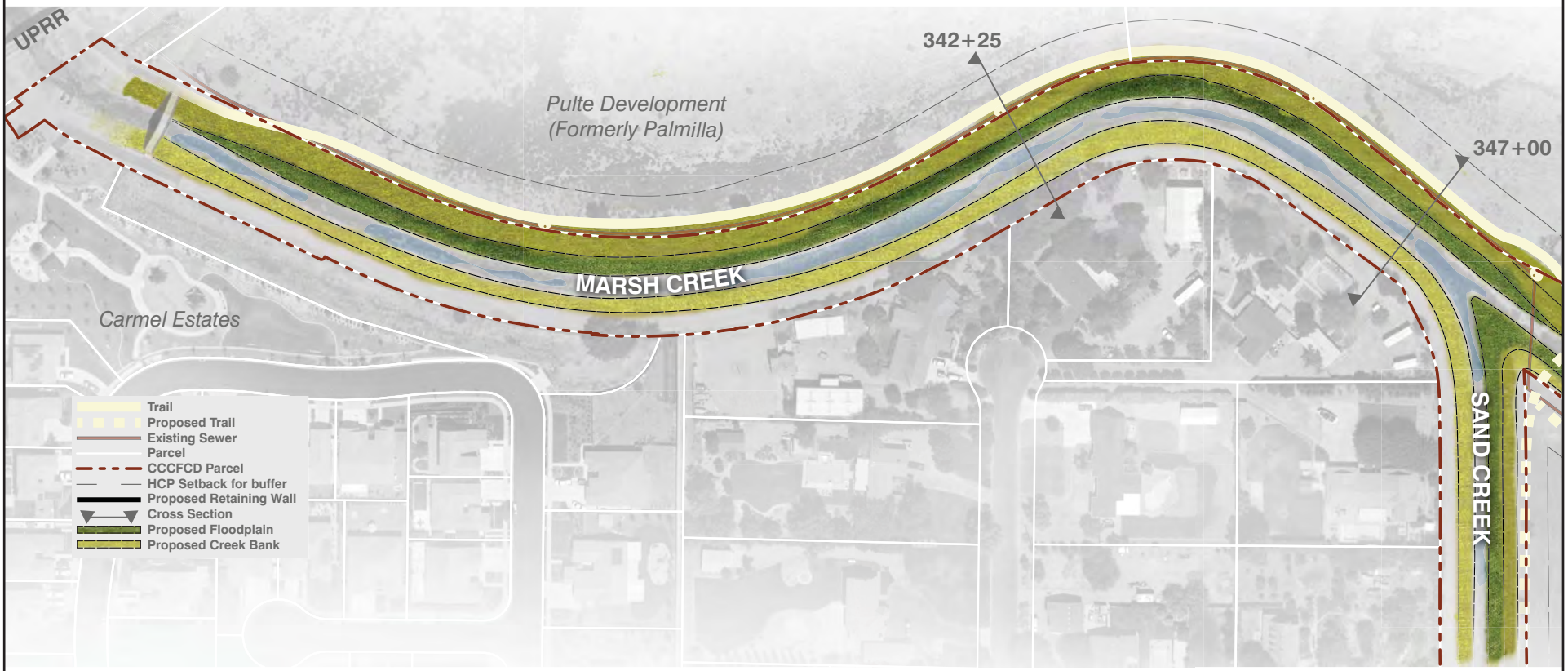

SOURCE: Restoration Design Group, Inc. 2016

FIGURE 8

IMPACT SCIENCES

Lower Reach Improvements

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control structures create a sequence of pools and riffles that provide some habitat for aquatic species. The excavation for floodplain widening typically will not touch the low-flow channel below the OHWM. The new floodplain would be graded to inundate during the storm events with the low-flow channel continuing to function much as it does today. Some work in the low-flow channel may be performed and would include creation of instream habitat in the low-flow channel by placing boulders and large woody debris, and the placement of rock slope protection in some portions of the low-flow channel in the Upper and Middle Reaches.

2.4.3 Sewer Line Relocation

A City of Brentwood sewer main is located on the west side of the Upper Reach (as shown in **Figures 4 and 5**). For most of the length, the sewer is within the Central Boulevard right of way. However, a portion of this sewer is located within one of the District's parcels where flood control improvements would be constructed. The sewer line is over 15 feet deep, at least 4 feet below the flow line of the creek. As the sewer line is below the maximum depth of excavation, it would not be relocated.

Near Sand Creek confluence in the Middle and Lower Reach, the sewer main crosses under the creek and continues north along the east bank of the Lower Reach. In the Lower Reach, the sewer line is located within the area that would be excavated to create the right (east) bank floodplain. The sewer line would most likely not be relocated to the east on the Pulte residential subdivision project site. The City of Brentwood has requested that the floodplain widening be stopped short of the existing sewer alignment so it does not need to be relocated. Throughout the project reach, minor modifications to sewer manholes may be required to accommodate changes in ground elevation. In all cases, grading will be performed around manholes so that potential spills from manholes would initially drain away from Marsh Creek.

2.4.4 Establishment of Wetlands

The newly created flood benches and floodplain would be inundated when flows in the creek rise during typical storm events that recur nearly annually. The floodplain and benches would be expected to be inundated frequently enough that they will support wetlands. The project would create approximately 3.6 acres of frequently inundated floodplain (seasonal wetland). However, to minimize mosquito breeding in the aquatic environment, floodplain and benches would be sloped at two percent to drain flood flows back to the creek and prevent ponding that would allow mosquitos to breed.

2.4.5 Revegetation Activities

Where possible, existing trees along the creek would be protected and retained. Following the construction of channel widening activities, depending on location, the project area would be planted with native wetland forbs, grasses, shrubs, and trees. Riparian trees would be planted along the banks and would include valley oak, sycamore, live oak, blue oak, box elder, buckeye, cottonwood, and willow. Slopes and banks would be planted with grassland and scrub species, which would include creeping wild rye (*Leymus triticoides*), California brome (*Bromus carinatus*), purple needlegrass (*Nassella pulchra, deawned*), dense-flowered lupine (*Lupinus microcarpus* var. *densiflorus)*, mugwort (*Artemisia douglasiana*), common fiddleneck (*Amsinchkia menziesii* var.*intermedia*), elegant clarkia (*Clarkia unguiculata*), and California poppy (*Eschscholzia californica*). Areas of the floodplain would be planted with seasonal wetland species that will include, but not be limited to, creek clover (*Trifolium obtusiflorum*), Baltic rush (*Juncus balticus*), and deer sedge (*Carex praegracilis*).

In 2000, the District completed Phase I widening of Marsh Creek from Dainty Avenue upstream to approximately Summer Circle (F**igure 2**). While additional widening of this segment is not proposed for this project due to constraints from the adjacent subdivisions, native shrubs and trees may be planted to provide a continuous riparian corridor with the existing riparian vegetation upstream of this segment and the proposed restoration of the project.

2.4.6 Recreational Improvements

The project would enhance opportunities for strolling, hiking, and biking along Marsh Creek. Marsh Creek trail would be relocated to the new top of the eastern bank along Upper and Middle Reach as part of the proposed project. The relocated trail section within the Upper Reach would be routed to pass under the Central Avenue road bridge. The trail section along the eastern bank of the Lower Reach would be relocated by the Pulte developer and this trail relocation is not within the scope of this project. However, the project would reduce the gradient of the steep slope between the creek and the trail and would provide a new unpaved foot trail within the created floodplain. Pervious pavement is being considered for use on the relocated trail. The City of Brentwood Parks, Trails, and Recreation Master Plan (2002) shows a future pedestrian bridge connecting the current Marsh Creek Regional Trail to the Griffith (DLT Ventures) property in the Middle Reach that would allow people to safely access and cross the creek as well as access possible future trails along Sand Creek and/or Deer Creek. These components are not part of this project. The City of Brentwood will be updating its Master Plan and the location of these features may be adjusted appropriately.

The lower 1,600 feet of the project would be integrated into a new linear city park, which would provide passive recreation amenities and native landscaping consistent with creek restoration. Consistent with the standards of the East Contra Costa County Habitat Conservation Plan (HCP), native trees would be planted within a 60-linear foot band of two city parks, along the west side of Pulte development within the HCP/NCCP required setback to provide a natural buffer adjacent to the creek. The project would also include interpretive signs along Marsh Creek.

2.5 Project Construction Activities and Schedule

The proposed project has most of the permanent right of way required for construction. However, as indicated in **Table 1**, temporary construction easements or small permanent takes may be needed from the City of Brentwood and other property owners in order to access adjacent parcels during construction. Construction is anticipated to begin summer 2017. Excavation and grading activities would occur during the dry season (July to October) with plant restoration occurring afterwards (November to December) and may take up to two construction seasons to complete.

2.5.1 Upper Reach

Grading and earthmoving activities along the Upper Reach would take place over a period of approximately 2 weeks during the dry season. Construction equipment to be used would include tractors, backhoes, excavators, graders, and dump trucks. Staging for the Upper Reach portion of the project would be within the District-owned parcels or on a City-owned parcel to the east of the creek south of Central Boulevard. Approximately 5,500 cubic yards of soil excavated for channel expansion would require disposal. The excavated materials would be temporarily stored in the staging area and later removed for use on other nearby land development projects or would be off-hauled to the Dutch

Slough project site in Oakley where it would be used as fill. Other construction activities along this reach would include revegetation and planting, as well as the relocation of the regional trail.

2.5.2 Middle Reach

Grading and earthmoving activities along the Middle Reach would also take place over a period of approximately 1 to 2 weeks during the dry season. Construction equipment to be used would include tractors, backhoes, excavators, graders, and dump trucks. Staging for the Middle Reach portion of the project would take place on the District-owned parcels that contain the Middle Reach of the creek. Approximately 3,500 cubic yards of spoils excavated for channel expansion would require disposal. Similar to the Upper Reach, the excavated materials would be temporarily stored in the staging area and later removed for use on other nearby land development projects or would be off-hauled to the Dutch Slough project site where it would be used as fill. Other construction activities along this reach would include revegetation and planting, as well as the relocation of the regional trail.

2.5.3 Lower Reach

Construction of the Lower Reach improvements would take place over a period of approximately 4 weeks during the dry season. Staging for the Lower Reach portion of the project would take place on the District-owned parcels containing the creek or the adjacent vacant private land parcel. Construction equipment to be used would include tractors, backhoes, excavators, graders, and dump trucks. Approximately 11,000 cubic yards of spoils excavated for channel expansion would require disposal, with the remainder of the excavated materials (4,000 cubic yards) used on site. Similar to the other two reaches, the excavated materials would be temporarily stored in the staging area and later removed for use on other nearby land development projects or would be off-hauled to the Dutch Slough project site where it would be used as fill. Other construction activities along this reach would include revegetation and planting.

2.6 Long Term Maintenance

Following the construction of the proposed improvements, the project area would be maintained by the District, with EBRPD responsible for continued maintenance of the regional trail.

2.7 Permits and Approvals Required

In addition to review and approval of the proposed project by the District pursuant to CEQA, the proposed project will also require the following permits and approvals for implementation:

- Clean Water Act (CWA) Section 404 Permit from the U.S. Army Corps of Engineers for construction in the Waters of the U.S.
- CWA Section 401 Certification from the Central Valley Regional Water Quality Control Board
- Section 1602 Streambed Alteration Agreement from the California Department of Fish and Wildlife
- EBRPD Encroachment Permit
- District Encroachment Permit
- City of Brentwood Grading Permit

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3. SUMMARY OF ENVIRONMENTAL EFFECTS

The proposed project could potentially affect the environmental factor(s) checked below. The following pages present a more detailed checklist and discussion of each environmental factor.

☐ Aesthetics	☐ Agriculture and Forestry Resources	☐ Air Quality
☐ Biological Resources	☐ Cultural Resources, including Tribal Cultural Resources	☐ Geology / Soils
☐ Greenhouse Gas Emissions	☐ Hazards & Hazardous Materials	☐ Hydrology / Water Quality
☐ Land Use / Planning	☐ Mineral Resources	☐ Noise
☐ Population / Housing	☐ Public Services	☐ Recreation
☐ Transportation / Traffic	☐ Utilities / Service Systems	☐ Mandatory Findings of Significance

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4. DETERMINATION

On the basis of this initial evaluation:

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

☑ 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.

☐ The proposed project MAY have a significant effect on the environment and an ENVIRONMENTAL IMPACT REPORT is required.

8-2-16

Lead Agency Representative DATE
Contra Costa County Department of Conservation and Development

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5. EVALUATION OF ENVIRONMENTAL EFFECTS

All items on the Initial Study Checklist that have been checked "Less Than Significant Impact" or "No Impact" indicate that, upon evaluation, the District on behalf of the Contra Costa County Department of Conservation and Development has determined that the proposed project could not have a significant adverse environmental effect relating to that issue. For items that have been checked "Less Than Significant with Mitigation Incorporated," the District has determined that the proposed project would not have a significant adverse environmental effect as the mitigation measures presented in this Initial Study would be implemented as part of the project. For each checklist item, the evaluation has considered the impacts of the project both individually and cumulatively.

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5.1 Aesthetics

5.1.1 Background

The project is located in a rapidly urbanizing area of eastern Contra Costa County, in the City of Brentwood. At the present time, the creek is a trapezoidal flood control channel with practically no riparian vegetation. The earthen channel is steep sloped and planted with non-native grasses. A narrow band of ruderal freshwater marsh habitat is present along the base of the channel banks. Marsh Creek Trail is located on top of the eastern bank of the creek. Residential subdivisions are present on both sides of the creek for most of the project's length. A vacant City-owned parcel is located on the east side of the Upper Reach just south of Central Boulevard and another city park (Sungold Park) is present on the west side of the Lower Reach. A linear park is planned adjacent to the east side of the Lower Reach. A residential subdivision project (Pulte) is approved for the area east of the Lower Reach.

5.1.2 Environmental Checklist and Discussion

AESTHETICS Would the project…	Potentially Significant Impact	Less than Significant with Project-level Mitigation	Less than Significant Impact	No Impact
a) Have a substantial adverse effect on a scenic vista?	☐	☐	☑	☐
b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?	☐	☐	☑	☐
c) Substantially degrade the existing visual character or quality of the site and its surroundings?	☐	☐	☑	☐
d) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?	☐	☐	☐	☑

DISCUSSION:

Project

a. A scenic vista is defined as a publicly accessible viewpoint that provides expansive views of a highly valued landscape. Although public views of the Upper Reach are available from Dainty Avenue and Central Boulevard, the views are generally not expansive and would not be considered a scenic vista. Expansive views of the creek and the broader landscape are available from Sungold Park to the west of the Lower Reach and from the EBPRD regional trail, especially in the area of the Middle and Lower Reaches. The implementation of the proposed project would change these views by widening the floodplain and planting riparian vegetation along the creek.

However, this change would not adversely affect the scenic views in the area but would in fact enhance the views by adding trees and other riparian vegetation along the creek banks. The impact would be *less than significant*.

b. There is no state designated scenic route in the immediate vicinity of the proposed project. However, some trees will be removed but the project will be restored with native riparian trees and understory vegetation. Therefore, the project impact would be *less than significant*.

c. The proposed project would excavate both banks of the creek, widen the channel, and restore the area by planting native plant species and riparian trees. During construction, the project area would appear disturbed and a small number of existing trees would be removed when the creek banks are excavated. However the duration of construction would be short and once the construction is completed, new trees and other native plants appropriate to the project area would be planted. Once the new plantings are established, the visual character and quality of the creek corridor would improve relative to current conditions. Impacts of the proposed project on the visual character of the project site and its surroundings would be *less than significant.*

d. The project does not include the installation of any temporary or permanent lighting. Construction work would be completed during daytime hours and no lighting would be required. Therefore implementation of the project would not create a new source of substantial light or glare that would adversely affect day or nighttime views in the area. There would be *no impact*.

5.2 Agricultural and Forestry Resources

5.2.1 Background

The project is located in Contra Costa County. The Farmland Mapping and Monitoring Program (FMMP) identifies the project site as Urban and Built-Up Land[2] (California Department of Conservation 2014).

The project site is bordered on the east by residential subdivisions, a vacant City-owned parcel, two planned parks, Willow Wood School/Dainty Center, and an approved residential subdivision. To the west, the project site is bordered by residential subdivisions and a city park. The land between Deer Creek and Sand Creek to the west of the Middle Reach is presently undeveloped land planned for future residential subdivision development (City of Brentwood General Plan 2014). All lands adjacent to the creek are designated Urban and Built-Up land by the FMMP.

5.2.2 Environmental Checklist and Discussion

AGRICULTURAL AND FORESTRY RESOURCES Would the project…	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 non-agricultural use?	☐	☐	☐	☑
b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?	☐	☐	☐	☑
c) Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code Section 12220(g)) or timberland (as defined by Public Resources Code Section 4526)?	☐	☐	☐	☑
d) Result in the loss of forest land or conversion of forest land to non-forest use?	☐	☐	☐	☑

[2] Land occupied by structures with a building density of at least 1 unit to 1.5 acres, or approximately 6 structures to a 10-acre parcel. This land is used for residential, industrial, commercial, construction, institutional, public administration, railroad and other transportation yards, cemeteries, airports, golf courses, sanitary landfills, sewage treatment, water control structures, and other developed purposes.

e) Involve other changes in the existing environment, which, due to their location or nature, could result in conversion of Farmland to non-agricultural use or conversion of forest land to non-forest use?	☐	☐	☐	☑

DISCUSSION:

a. The project site is designated as Urban and Built-up Land by the FMMP. As a result, implementation of the proposed project would not result in the conversion of land designated either as Prime Farmland, Unique Farmland, or Farmland of Statewide Importance to non-agricultural use. There would be *no impact*.

b. The project site is not under a Williamson Act contract and is not zone for agricultural use. There would be *no impact* from the implementation of the project on land under a Williamson Act contract and/or zoned for agricultural use.

c., d. Timberland is defined in PRC Section 4526 as "land designated by the board[3] as experimental forest land, which is available for, and capable of, growing a crop of trees of a commercial species used to produce lumber and other forest products, including Christmas trees." The project site contains no mapped timberland, and there would be *no impact* from implementation of the proposed project.

Forest land is defined in PRC Section 12220(g) as "land that can support 10-percent native tree cover of any species, including hardwoods, under natural conditions, and that allows for management of one or more forest resources, including timber, aesthetics, fish and wildlife, biodiversity, water quality, recreation, and other public benefits." The project site does not contain any forest lands. Therefore, implementation of the proposed project would not result in the loss of or conversion of forest land to non-forest use. There would be *no impact*.

e. The project would not involve any land use changes that could indirectly lead to the conversion of Important Farmland or forest lands to other uses. Furthermore, as discussed above, most of the parcels near the project site are developed with residential subdivisions, and those properties that are currently undeveloped are designated Urban and Built-Up Land by the FMMP. There would be *no impact*.

[3] Board of Forestry and Fire Protection

5.3 Air Quality

5.3.1 Background

The project area is subject to air quality planning programs developed in response to both the Federal Clean Air Act (CAA) and the California Clean Air Act (CCAA). Within the San Francisco Bay Area, air quality is monitored, evaluated, and regulated by the U.S. Environmental Protection Agency (EPA), the California Air Resources Board (CARB), and Bay Area Air Quality Management District (BAAQMD).

The project is located in eastern Contra Costa County, which, along with eight other counties, is within the San Francisco Bay Area Air Basin (SFBAAB or Air Basin).

Air pollutants are emitted by a variety of sources, including mobile sources such as automobiles; stationary sources such as manufacturing facilities, power plants, and laboratories; and area sources such as homes and commercial buildings. While some of the air pollutants that are emitted need to be examined at the local level, others are predominantly an issue at the regional level. For instance, ozone (O3) is formed in the atmosphere in the presence of sunlight by a series of chemical reactions involving oxides of nitrogen (NOx) and reactive organic gases (ROG). Because these reactions are broad-scale in effects, the effects of ozone typically are analyzed at the regional level (i.e., in the Air Basin) rather than the local level. On the other hand, other air pollutants such as sulfur dioxide (SO2), respirable particulate matter (PM10), fine particulate matter (PM2.5), carbon monoxide (CO), lead (Pb), and toxic air contaminants (TAC) are a potential concern in the immediate vicinity of the pollutant source because the pollutants are emitted directly or are formed close to the source. TACs are also known as hazardous air pollutants. Therefore, the study area for emissions of SO2, PM10, PM2.5, CO, Pb, and TAC is the local area nearest the source, such as in the vicinity of construction sites, whereas the study area for regional pollutants such as NOx and ROG is the entire Air Basin.

Air pollutants typically are categorized as criteria pollutants or TACs. The criteria pollutants are those regulated at the federal level by U.S. EPA and at the state and regional level by CARB and BAAQMD, respectively. These include O3, PM10, PM2.5, CO, nitrogen dioxide (NO2), SO2, and Pb. O3 is a secondary pollutant formed during photochemical reactions with precursor pollutants. As such, O3 is measured by assessing emissions of its precursors, ROG and NO2. TACs are airborne pollutants for which there are no air quality standards, but are known to have adverse human health effects and therefore are regulated. TACs are generated by a number of sources, including stationary sources, mobile sources such as automobiles and heavy-duty construction equipment, particularly diesel-fueled vehicles.

Air quality in the Air Basin is monitored by the BAAQMD and CARB. Based on pollutant concentrations measured at monitoring stations within the Air Basin, the SFBAAB is classified as being either in attainment or non-attainment of federal and state air quality standards. The Air Basin is designated nonattainment for the federal O3 8-hour standard, the state O3 1-hour standard, the state PM10 standard, and the state and federal PM2.5 standards. For all other federal and state standards, the Air Basin is in attainment or unclassified.

Some groups of people are considered more sensitive to adverse effects from air pollution than the general population. These groups are termed "sensitive receptors." Sensitive receptors include children, the elderly, and people with existing health problems, who are more often susceptible to respiratory infections and other air quality-related health problems. Locations where these groups of people are found, such as schools, childcare centers, hospitals, and nursing homes, are all considered sensitive receptors. Air pollution impacts are assessed, in part, based on potential effects on sensitive receptors.

Several sensitive receptors are located in the vicinity of the project site. Specifically, single-family homes are located adjacent to the work areas on the east side of the creek between Dainty Avenue and Central Boulevard; on the west side of the creek between Central Boulevard and Deer Creek; and along the east side of the Middle Reach. Willow Wood School/Dainty Center is also located adjacent to the east side of the creek at the corner of Dainty Avenue and Central Boulevard.

The *BAAQMD CEQA Air Quality Guidelines* ("BAAQMD Guidelines") set forth methodologies and quantitative significance thresholds that a lead agency may use to estimate and evaluate the significance of a project's air emissions. The BAAQMD Guidelines present thresholds for evaluating both construction-phase and operational emissions, and include numeric thresholds for criteria pollutants and health-based evaluation criteria for TACs. The BAAQMD Guidelines do not recommend quantification of fugitive dust emissions but note that the impact from a project's fugitive dust emissions during construction would be significant unless dust control measures and other best management practices are implemented. Although due to litigation related to the BAAQMD Guidelines, the BAAQMD is not recommending the use of the thresholds in its Guidelines, the thresholds are used by most Bay Area lead agencies, and have been used in this Initial Study to evaluate the project's air quality impacts.

5.3.2 *Environmental Checklist and Discussion*

AIR QUALITY Would the project…	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?	☐	☐	☑	☐
b) Violate any air quality standard or contribute substantially to an existing or projected air quality violation?	☐	☑	☐	☐
c) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is in non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors)?	☐	☐	☑	☐
d) Expose sensitive receptors to substantial pollutant concentrations?	☐	☐	☑	☐

e) Create objectionable odors affecting a substantial number of people?	☐	☐	☑	☐

DISCUSSION:

a. A project would be considered to conflict with or obstruct implementation of the regional air quality plans if it would be inconsistent with the emissions inventories contained in the regional air quality plans. Emission inventories are developed based on projected increases in population and vehicle miles traveled (VMT) within the region. Project-generated increases in population or VMT could, therefore, potentially conflict with regional air quality attainment plans. Due to the nature of the creek restoration activities, implementation of the proposed project would not result in increased population or related increases in vehicle miles traveled within the region. As a result, implementation of the proposed project would not be anticipated to conflict with existing or future air quality planning efforts. The proposed project would have a *less than significant* impact.

b. Implementation of the proposed project would result in short-term emissions associated with ground disturbance and use of construction equipment and vehicles. Minimal emissions are anticipated after the activities are completed, for reasons presented below.

Construction

Construction-generated emissions are short term and of temporary duration, lasting only as long as construction activities occur, but have the potential to result in a significant air quality impact. The channel widening and restoration activities would result in temporary emissions associated with excavation and motor-vehicle exhaust from construction equipment and worker trips, as well as the movement of construction equipment especially on unpaved surfaces. Emissions of airborne particulate matter are largely dependent on the amount of ground disturbance associated with site preparation activities.

Criteria Pollutant Emissions

Emissions of criteria pollutants from mainly excavation activities, grading and off-hauling were estimated using the CalEEMod model. A conservative scenario was modeled that assumed that the Upper Reach and Lower Reach improvements would be under construction at the same time and the Middle Reach improvements would be constructed shortly thereafter. Therefore all of the construction activities would take place over a 37-day period. The estimated construction emissions are provided below in **Table 2, Estimated Construction Emissions**.

Table 2
Estimated Construction Emissions (lbs per day)

	CO	NOx	ROG	PM (fugitive dust)	PM10 (Exhaust)	PM2.5 (Exhaust)
Project	24.4	20.9	2.4	138.7	0.81	0.74
Significance Thresholds	**None**	**54**	**54**	**None**	**82**	**54**
Exceedance?	No	No	No	No	No	No

Source: Impact Sciences, Inc. 2016.

As shown in **Table 2**, if the Upper Reach and Lower Reach are concurrently under construction and the Middle Reach is constructed shortly after, the proposed project would result in emissions that would not exceed the thresholds of significance for criteria pollutants. The impact from air pollutant emissions during the construction-phase of the project would be *less than significant.*

Fugitive Dust

As mentioned above, movement of construction equipment, especially on unpaved surfaces, during construction activities and off-hauling excavated materials could temporarily generate fugitive dust, including PM10 and PM2.5 emissions. Unless properly controlled, vehicles leaving the site would deposit mud on local roadways, which could be an additional source of airborne dust after it dries. Fugitive dust emissions would vary from day to day, depending on the nature and magnitude of construction activity and local weather conditions. Fugitive dust emissions would also depend on soil moisture, silt content of soil, wind speed, and the amount of equipment operating. Larger dust particles would settle near the source, while fine particles would be dispersed over greater distances from the construction site. The BAAQMD Guidelines consider the impact from a project's construction-phase dust emissions to be less than significant if best management practices listed in the guidelines are implemented. Without these BMPs, the impact from fugitive dust emissions would be potentially significant. Thus, to ensure that construction-phase emissions are controlled and minimized, **Mitigation Measure AIR-1** is included which requires that dust control and other BMPs put forth by the BAAQMD are implemented by the proposed project.

Mitigation Measure AIR-1:

The construction contractor(s) shall implement the following BMPs during project construction:

- All exposed surfaces (e.g., parking areas, staging areas, soil stockpiles, graded areas, and unpaved access roads) shall be watered two times per day.
- All haul trucks transporting soil, sand, or other loose material off-site shall be covered.

- 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.

- All vehicle speeds on unpaved roads shall be limited to 15 mph.

- All roadways, driveways, and sidewalks to be paved shall be completed as soon as possible and feasible.

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

- All construction equipment shall be maintained and properly tuned in accordance with manufacturer's specifications. All equipment shall be checked by a certified mechanic and determined to be running in proper condition prior to operation.

- Post a publicly visible sign with the telephone number and person to contact at the Lead Agency regarding dust complaints. This person shall respond and take corrective action within 48 hours. The Air District's phone number shall also be visible to ensure compliance with applicable regulations.

Community Health Risk

In addition to an evaluation of the potential impacts from a project's construction-phase emissions of criteria pollutant and fugitive dust, the BAAQMD Guidelines recommend an evaluation of potential community health risk and hazards from a project's construction emissions of toxic air contaminants (TACs). For assessing community risks and hazards, a 1,000 foot radius around the project boundary is recommended in the BAAQMD Guidelines. The proposed project would involve the use of diesel-fueled construction equipment which would result in diesel particulate emissions which are considered a TAC in the vicinity of the work areas. Due to the nature of the proposed project, the fact that only a few pieces of equipment would be used on each reach (no more than 3 pieces of equipment), and the short duration of work, the potential for a significant impact is low. However, sensitive receptors such as residences and a daycare center are located less than 50 feet from where project construction activities would occur and could be potentially affected. The impact would be *potentially significant*. To avoid impacts to nearby sensitive receptors, the project will be required to implement **Mitigation Measure AIR-2** which will ensure that cleaner engines are utilized for construction equipment to reduce diesel particulate emissions.

Mitigation Measure AIR-2:

All diesel-powered off-road equipment larger than 50 horsepower and operating on the site for more than two days continuously during the duration of construction shall, at a minimum, meet U.S. EPA emissions standards for Tier 2 engines or equivalent.

Operation

Operational air emission impacts are associated with any change in permanent use of the project site as a land use change can add new on-site stationary or area sources to the project site or increase the number of vehicles trips to and from the project site. No change in land use is proposed as part of the channel widening and restoration activities. Although restoration activities may attract more people to utilize the Marsh Creek Trail, no significant permanent increase in vehicle trips to the creek would result due to the proposed project. The small number of vehicle trips associated with the monitoring and maintenance activities would not significantly increase VMT. Therefore, operational emissions associated with the proposed project would not change substantially from existing conditions, and would not exceed the applicable BAAQMD thresholds of significance for operational emissions. The impact from air pollutant emissions during operation would be *less than significant*.

c. As described above in Response b, the proposed project would not result in temporary increases in air pollutant emissions that would exceed the applicable BAAQMD thresholds of significance for construction emissions of criteria pollutants. In addition, BMPs would be implemented to control fugitive dust and other construction-phase emissions. The proposed project would also not result in a substantial amount of air pollutant emissions during operation. As a result, increases of temporary and long-term air pollutant emissions would not result in a cumulatively considerable net increase of any of the pollutants for which the project region is in nonattainment status for federal or state ambient air quality standards. This impact would be *less than significant*.

d. The potential for project construction activities to affect sensitive receptors is analyzed above under Response b. As noted there, although TAC emissions during construction could result in a potentially significant community health impact, it would be reduced to a *less than significant* level by **Mitigation Measure AIR-2** set forth above.

e. Construction of the proposed project would require the use of diesel-fueled equipment, which has an associated odor. However, odors would be short term and temporary and would disperse rapidly. They would not be pervasive enough to affect a substantial number of people or to be objectionable. Consequently, construction of the proposed project would not cause or be affected by odors, and the impact would be less than significant. Furthermore, **Mitigation Measures AIR-1** and **AIR-2** would be implemented to minimize diesel exhaust emissions emitted on the project site during construction.

5.4 Biological Resources

5.4.1 Background

The project site is situated in a rapidly developing part of eastern Contra Costa County. Adjacent land uses include single-family residential neighborhoods to the north, west and south, and vacant lands zoned for residential development to the east and west. A section of the Marsh Creek Regional Trail follows the top of Marsh Creek's eastern bank.

The entire study area, which encompasses both banks of Marsh Creek over a section approximately 4,000 feet long, has been highly modified historically by flood control and agricultural activities. The upland portions of the study area were dryland farmed as recently as 2003 and were under cultivation at least as long ago as 1938; Marsh Creek has had much the same alignment going back at least as long ago as then. Although most of the Marsh Creek channel on site is lined with earthen banks, portions have been armored with grouted riprap. Multiple storm drains outfall into the channel. The left (western) bank is topped with a gravel access roadbed and backs up onto fenced back yards or adjacent residences, and a vacant field. The right (east) bank is topped with the paved Marsh Creek Regional Trail and bordered with an old barbed wire fence in the Lower Reach. The upland fields within and adjacent to the project site is former agricultural land that has gone fallow but is routinely disked for weed and fire control (Wood 2016).

No natural, unaltered plant communities are present onsite or the project vicinity. Although native plant species are present, none of the habitats present are considered indigenous and natural; each is characterized as a product of post-disturbance recolonization. The predominant vegetation type is ruderal. Anthropogenic habitat, consisting of plantings, is present along the Marsh Creek Regional Trail and on adjacent properties. A narrow band of ruderal freshwater marsh habitat is present along the base of each channel bank (Wood 2016).

Reconnaissance-level surveys were performed on May 12, 2015 and November 17, 2015 by Wood Biological Consulting. During both surveys, all habitat types at and adjacent to the study area were surveyed and classified, and plant and wildlife species observed were recorded.

Special-status Plants

Special-status plants include plant species that are listed or proposed for listing under the Federal Endangered Species Act (FESA) or California Endangered Species Act (CESA) or considered by the California Native Plant Society (CNPS) to be "rare, threatened or endangered in California"(California Rare Plant Rank 1A, 1B and 2). A total of 61 special-status plant species have been recorded in the nine U.S. Geological Survey (USGS) quadrangles surrounding the project site and were evaluated in the February 2016 Biological Resource Assessment. Of the 61 species, eight special-status plant species are mapped by the 2015 California Natural Diversity Database (CNDDB) as having been recorded from within 3.0 miles of the project site. These include brittlescale (*Atriplex depressa*), big tarplant (*Blepharizonia plumosa*), round-leaved filaree (*California macrophylla*), San Joaquin spearscale (*Extriplex joaquiniana*), stinkbells (*Fritillaria agrestis*), Brewer's western flax (*Hesperolinon breweri*), Antioch Dunes evening primrose (*Oenothera deltoides* ssp. *howelliii*), and showy golden madia (*Madia radiata*).

No federally or State-listed plant species or California Rare Plant Rank 1A, 1B and 2 species were detected within the study area and none is expected to occur within the project disturbance areas due to level of historical disturbance and lack of appropriate habitat.

Special-status Wildlife Species

Special-status wildlife species include animal taxa listed or proposed for listing under the FESA or CESA; taxa considered by the California Department of Fish and Wildlife (CDFW) to be a Species of Special Concern (SSC); and taxa which meet the criteria for listing, even if not currently included on any list, as described under CEQA Section 15380. In addition, many wildlife species receive protection under the Bald and Golden Eagle Protection Act (BGEPA), the Migratory Bird Treaty Act (MBTA), and the Migratory Bird Treaty Reform Act (MBTRA). The California Fish and Game Code (CFGC) provides specific language protecting birds and raptors, "fully protected birds," "fully protected mammals," "fully protected reptiles and amphibians," and "fully protected fish." The California Code of Regulations (CCR) prohibits the take of fully protected fish, certain fur-bearing mammals, and restricts the taking of amphibians and reptiles (Wood 2016).

The potential for a total of 78 special-status wildlife species to occur in the area to be disturbed by the project was evaluated in the February 2016 Biological Resource Assessment. Based on the availability of suitable habitat, there is potential for nine special-status wildlife species to occur on site. These include silvery legless lizard, California red-legged frog, Pacific pond turtle, Chinook salmon, steelhead (Central Valley distinct population segment (DPS)), burrowing owl, white-tailed kite, loggerhead shrike, and Swainson's hawk. Of the nine species, two of these species were observed on site during surveys: burrowing owl was observed nesting within the study area and Swainson's hawk was observed hunting on site.

East Contra Costa County Habitat Conservation Plan/Natural Community Conservation Plan

The proposed project site is located within the East Contra Costa County Habitat Conservation Plan/Natural Community Conservation Plan ("HCP/NCCP" or "Plan") inventory area. The Plan is intended to provide a comprehensive framework to protect natural resources in eastern Contra Costa County, while improving and streamlining the environmental permitting process for impacts of new development on Endangered and Threatened species, and other species covered by the HCP/NCCP.

The permit area for the East Contra Costa County HCP/NCCP generally includes land within the urban limit lines in the cities of Clayton, Pittsburg, Oakley, and Brentwood and Contra Costa County. The local jurisdictions who are permittees under the HCP/NCCP include the cities of Brentwood, Clayton, Oakley, and Pittsburg, Contra Costa County, Contra Costa County Flood Control and Water Conservation District, East Bay Regional Park District, and the Conservancy. Currently, all participating jurisdictions have approved the HCP/NCCP and have adopted implementing ordinances and the fee structures set forth in the HCP/NCCP.

As required by the FESA, the HCP/NCCP includes measures to avoid and minimize take of covered species, which would be included as conditions on development for applicable projects. It is the responsibility of project proponents to design and implement their projects in compliance with listed measures in the HCP/NCCP.

The proposed project's participation in the HCP/NCCP would provide a mechanism to adequately mitigate impacts to all potentially occurring covered sensitive species and habitats on the project site.

5.4.2 *Environmental Checklist and Discussion*

BIOLOGICAL RESOURCES Would the project…	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 Wildlife or U.S. Fish and Wildlife Service?	☐	☑	☐	☐
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 Wildlife or U.S. Fish and Wildlife Service?	☐	☐	☑	☐
c) Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?	☐	☑	☐	☐
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?	☐	☐	☐	☑
e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	☐	☐	☑	☐
f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?	☐	☐	☐	☑

DISCUSSION:

a. Special-status Plants

As stated above, 61 special-status plant species have been recorded within the nine USGS quad area inclusive of the project site and were evaluated in the February 2016 Biological Resource Assessment. However, none of the special-status plant species were observed during site reconnaissance surveys and are not expected to occur on the project site due to the level of disturbance, soils, lack of suitable habitat or substrate, and geographic isolation from known populations. Therefore, *no impacts* to special-status plant species would occur.

Special-status Wildlife Species

As noted above, the potential exists for nine special-status wildlife species to occur on site: silvery legless lizard, California red-legged frog, Pacific (Western) pond turtle, Chinook salmon, steelhead (Central Valley DPS), burrowing owl, white-tailed kite, loggerhead shrike, and Swainson's hawk. The potential also exists for numerous other bird species that are protected under the MBTA and CFGC to be present in the area. The potential for the project to affect these species is evaluated below.

Reptiles and Amphibians

Populations of California red-legged frog, Pacific (Western) pond turtle, and silvery legless lizard have been recorded from the project region. Although the occurrence of these species on the project site is considered unlikely, the lack of significant barriers to movement between known source populations and the project site means that the potential exists for these species to move into harm's way during project construction and direct mortalities could result. Direct and indirect impacts to California red-legged frog, Pacific (Western) pond turtle, and silvery legless lizard would be considered *significant.* Implementation of **Mitigation Measure BIO-1** would reduce impacts to these species to a *less than significant* level.

Mitigation Measure BIO-1:

To avoid and minimize impacts to California red-legged frog, Pacific (Western) pond turtle, and silvery legless lizard during construction activities, the project will implement the following measures:

1. Coverage under the HCP/NCCP. The project proponent shall apply for coverage under the HCP/NCCP. Participation in the HCP/NCCP, including implementation of appropriate avoidance and minimization measures and payment of applicable fees

would provide the project proponent with incidental take coverage for California red-legged frog, Pacific (Western) pond turtle, and silvery legless lizard.[4]

2. Seasonal Avoidance. If required by the Streambed Alteration Agreement or Water Quality Certification, work shall be limited to the dry season, from April 15 to October 15.

3. Minimize Nighttime Work. If required by the Streambed Alteration Agreement or Water Quality Certification, nighttime construction shall be restricted to avoid effects on nocturnally active species such as California red-legged frog.

4. Environmental Awareness Program. Prior to the commencement of construction activities, a qualified biologist shall present an environmental awareness program to all construction personnel working on site. At a minimum the training should include a description of special-status species that could be encountered, their habitats, regulatory status, protective measures, work boundaries, lines of communication, reporting requirements, and the implications of violations of applicable laws.

5. Wildlife Exclusion Fencing. Prior to the start of construction, wildlife exclusion fencing (WEF)[5] shall be installed as warranted and consistent with the HCP/NCCP to isolate the work area from any habitats potentially supporting special-status animals or through which such species may move. The final project plans shall indicate where and how the WEF is to be installed. The bid solicitation package special provisions shall provide further instructions to the contractor about acceptable fencing locations and materials. The fencing shall remain throughout the duration of the work activities, be regularly inspected and properly maintained by the contractor. Fencing and stakes shall be completely removed following project completion.

6. Best Management Practices (BMPs). Prior to the initiation of work, BMPs shall be in place to prevent the release of any pollutants or sediment into the creek, storm drains, or tributaries; all BMPs shall be properly maintained. Leaks, drips, and spills of hydraulic fluid, oil, or fuel from construction equipment shall be promptly cleaned up to prevent contamination of water ways. All workers shall be properly trained regarding the importance of preventing and cleaning up spills of contaminants. Protective measures should include, at a minimum:

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[4] The HCP/NCCP requires written notification to the USFWS, CDFW, and the Habitat Conservancy prior to disturbance of any suitable breeding habitat for California red-legged frog. However, the project area does not contain any suitable breeding habitat for this species. Because the project will receive take coverage under the HCP/NCCP, preconstruction surveys are not required for California red-legged frog (non-breeding), Pacific (Western) pond turtle and silver legless lizard.

[5] Wildlife Exclusion Fencing should provide a barrier for terrestrial wildlife gaining access to the project work areas. The fencing may vary to meet the needs of a particular species, but should be buried and/or backfilled to prevent animals passing under the fence and should be high enough to deter reptiles and amphibian or small mammals from climbing or jumping over the fence. Acceptable fencing materials including ERTEC E-Fence® (Ertec Environmental Systems LLC), plywood, corrugated metal, silt fencing or other suitable materials.

a. No discharge of pollutants from vehicle and equipment cleaning should be allowed into any storm drains or watercourses.

b. Spill containment kits should be maintained onsite at all times during construction operations and/or staging or fueling of equipment.

c. Coir rolls or straw wattles should be installed along or at the base of slopes during construction to capture sediment.

7. Erosion Control. Graded areas shall be protected from erosion using a combination of silt fences, fiber rolls along toes of slopes or along edges of designated staging areas, and erosion control netting (such as jute or coir) as appropriate on sloped areas.

8. Construction Site Restrictions. The following site restrictions shall be implemented to avoid adversely affecting sensitive habitats and harm or harassment to listed species:

a. Any fill material shall be certified to be non-toxic and weed free.

b. All food and food-related trash items shall be enclosed in sealed trash containers and removed completely from the site at the end of each day.

c. No pets from project personnel shall be allowed anywhere in the project site during construction.

d. No firearms shall be allowed on the project site except for those carried by authorized security personnel, or local, State or Federal law enforcement officials.

e. All equipment shall be maintained such that there are no leaks of automotive fluids such as gasoline, oils or solvents and a Spill Response Plan shall be prepared. Hazardous materials such as fuels, oils, solvents, etc. shall be stored in sealable containers in a designated location that is isolated from wetlands and aquatic habitats.

f. Servicing of vehicles and construction equipment including fueling, cleaning, and maintenance should occur only at sites isolated from any aquatic habitat unless separated by topographic or drainage barrier or unless it is an already existing gas station. Staging areas may occur closer to the project activities as required.

9. Proper Use of Erosion Control Devices. Plastic mono-filament netting (e.g., that used with erosion control matting) or similar material shall not be used within the project area; wildlife can become entangled or trapped in such non-biodegradable materials. Acceptable substitutes include coconut coir matting, tackified hydroseeding, blown straw, or other organic mulching material.

10. Protocol for Species Observation – Pacific (Western) pond turtle and silvery legless lizard. If a Pacific (Western) pond turtle or silvery legless lizard is encountered in the project site, work in the area of the finding must cease immediately until the animal either moves out of harm's way of its own accord or is safely relocated well upstream or downstream of the project site. Only a qualified biologist with a scientific collection permit issued by the CDFW may handle and relocate Pacific (Western) pond turtle or silvery legless lizard. Any sightings and relocation of Pacific (Western)

pond turtle and silvery legless lizard should be reported to the CDFW and the CNDDB.

Fish Species

Although there are no records for steelhead or Chinook salmon occurring in Marsh Creek in the 2015 CNDDB and occurrence on site for both species is considered unlikely, recent sightings of fall-run Chinook have been reported within Marsh Creek and suitable habitat for steelhead is present in the project area. Populations of listed salmonids have not been regularly observed in Marsh Creek; any present would be considered stray migrants. Listed salmonids have the greatest potential to occur within the project area between November and June based on the timing of adult and juvenile migrations in and through the waterways of the Sacramento/San Joaquin Delta (National Marine Fisheries Service 2012). 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 could occur. Neither of these species is covered under the HCP/NCCP and direct and indirect impacts to either steelhead or Chinook would be considered *significant*. To ensure there is no take of either of these species if work in the low-flow channel becomes necessary, **Mitigation Measure BIO-2** would be implemented and impacts would be reduced to *less than significant.* In addition, consultation with the National Marine Fisheries Service (NMFS) will confirm these measures are sufficient; otherwise, additional measures may be implemented as appropriate. 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.

Mitigation Measure BIO-2:

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 October31.

2. In-Stream Activities: If in-stream construction or dewatering is required, the following precautionary measures should be implemented:

a. A preconstruction survey of the aquatic environment shall be performed by a qualified biologist.

b. A qualified biologist shall present an environmental awareness program working on site.

c. A qualified biologist should monitor all in-stream activities.

d. If dewatering is proposed, a qualified biologist should 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.

e. Native species (non-special-status fish species) should be relocated upstream or downstream of the cofferdams by a permitted biologist. 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 conformance with ESA.

Migratory and Special-status Birds

The project site trees, shrubs, vines, and grasslands provide suitable nesting habitat for four special-status bird species (Swainson's hawk, white-tailed kite, burrowing owl, and loggerhead shrike) as well as many other migratory bird species. As noted earlier, during site reconnaissance surveys, an occupied nesting burrow of burrowing owl was observed in the study area, and a foraging Swainson's hawk was observed on the ground, perching and directly overhead during the survey.

Ground disturbing activities such as grubbing, grading, trenching, and tree removal or pruning could result in direct or indirect impacts to nesting birds by causing the destruction or abandonment of occupied nests and mortality of young. In addition, noise from construction activities could disrupt active nests. Any direct or indirect impact on an active nest of the special-status bird species or species protected by the MBTA and CFGC would be *a potentially significant impact*. Implementation of **Mitigation Measure BIO-3** would reduce impacts to nesting birds to less than significant.

Mitigation Measure BIO-3:

In order to avoid impacts to nesting Swainson's hawk, white-tailed kite, burrowing owl, loggerhead shrike, and other bird species protected under the MBTA and CFGC during project implementation, the measures outlined below shall be implemented.

1) <u>Environmental Awareness Program</u>. Prior to the commencement of construction activities, a qualified biologist shall present an environmental awareness program to all construction personnel working on site. At a minimum the training shall include a description of special-status species that could be encountered, their habitats, regulatory status, protective measures, work boundaries, lines of communication, reporting requirements, and the implications of violations of applicable laws.

2) <u>Swainson's hawk</u> is a federally listed threatened species and is covered under the HCP/NCCP. Nonetheless, every effort should be made to ensure that no take of Swainson's hawk occurs. Therefore, the measures outlined below should be implemented.

    a) The project proponent should apply for coverage under the HCP/NCCP. Participation in the HCP/NCCP would provide the applicant with incidental take coverage for Swainson's hawk and satisfy any requirements for mitigation for loss of habitat.

    b) Prior to any ground disturbance during the nesting season (March 15-September 15), a qualified biologist shall conduct a preconstruction survey no more than one month prior to construction to determine if there are any

active Swainson's hawk nests within 305 meters (1,000 feet) of the project site.

c) If there are no occupied nests within this buffer, no further action is needed.

d) If an active nest is present within this buffer, the measures outlined below shall be followed.

- Construction activities are not permitted within 305 meters (1,000 feet) of an occupied nest to prevent nest abandonment. However, if site-specific conditions or the nature of the activity warrant a small buffer, a qualified biologist should coordinate with CDFW and USFWS to determine the appropriate buffer size.
- Construction activities may proceed prior to September 15 if the young Swainson's hawks have fledged, as determined by a qualified biologist.

3) White-tailed kite is a state-listed fully protected species; it is not covered under the HCP/NCCP and incidental take of the species is not allowed. To ensure that no take of white-tailed kite or other migratory raptors occurs, the measures outlined below shall be implemented.

a) Prior to any ground disturbance during the nesting season (February 1-August 31), a qualified biologist shall conduct a preconstruction survey no more than two weeks prior to construction to determine if there are any active nests of white-tailed kite or other migratory raptors within 76 meters (250 feet) of the project site.

b) Prior to the removal or significant pruning of any trees, they shall be inspected by a qualified biologist for the presence of raptor nests. This is required during both the breeding season and non-breeding season. If a suspected raptor nest is discovered, the CDFW shall be notified. Pursuant to CFGC Section 3503.5, raptor nests, whether or not they are occupied, may not be removed until approval is granted by the CDFW.

c) If there are no occupied nests within this buffer, no further action is needed.

d) If an active nest is present within this buffer, the measures outlined below shall be implemented.

- Construction activities are not permitted within 76 meter (250 feet) of an occupied nest to prevent nest abandonment. However, if site-specific conditions or the nature of the activity warrant a small buffer, a qualified biologist should coordinate with the CDFW and/or USFWS to determine the appropriate buffer size. Nest monitoring may be warranted for activities that would occur within a smaller buffer.
- Construction activities may proceed prior to August 31 if the young white-tailed kites or other raptor species have fledged, as determined by a qualified biologist.

4) Burrowing owl is a State species of special concern and a covered species under the HCP/NCCP. To ensure that no take of burrowing owl occurs, the measures outlined below shall be implemented.

a) Prior to any ground disturbance during the nesting season (February 1-August 31), a CDFW-approved biologist shall conduct a preconstruction survey of all suitable burrowing owl habitat that would be affected by the project. The survey shall be performed no more than 30 days prior to construction to determine if there are any active nests of burrowing owl within 153 m (500 ft) of the project site, access permitting.

b) If there are no occupied nests within this buffer, no further action is needed.

c) If an active nest is present within this buffer, the measures outlined below shall be implemented.

- If an occupied burrowing owl nest site is present within the limits of work, construction may not proceed. The taking of burrowing owls or occupied nests is prohibited under CFGC.[6] Nest sites must be flagged and protected by a designated disturbance-free buffer zone of at least 76 meters (250 feet).
- Construction activities are not permitted within 76 meters (250 feet) of an occupied nest to prevent nest abandonment.
- Construction may proceed if a qualified biologist monitors the nest and determines that the adults have not begun egg-laying and incubation or that the juveniles have fledged.
- Burrowing owls may be passively excluded from occupied burrows outside of the breeding season (i.e., September 1-January 31), in consultation with the CDFW. All owls should be passively excluded from burrows within 49 meters (160 feet) of the work site. Passive exclusion is achieved by installing one-way doors in the burrow entrances. Doors should be in place for at least 48 hours and the site should be monitored daily for at least one week to confirm that the burrow has been abandoned.

5) Loggerhead shrike is a state species of special concern; it is not covered under the HCP/NCCP and incidental take of the species is not allowed. To ensure that no take of loggerhead shrike or any other migratory passerines occurs, the measures outlined below shall be implemented.

a) If ground-disturbing activities (i.e., site clearing, disking, grading, etc.) can be performed outside of the nesting season (i.e., between September 1 and January 31), no additional surveys are warranted.

b) Prior to any ground disturbance during the nesting season (February 1-August 31), a qualified biologist should conduct a preconstruction survey no more than two weeks prior to construction to determine if there are any active nests of loggerhead shrike or any other migratory passerines nests within 30 meters (100 feet) of the project site.

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[6] CFGC §§3503, 3503.5 and 3800

c) If there are no occupied nests within this buffer, no further action is needed.

d) If an active nest is present within this buffer, the following measures shall be implemented.

- Construction activities are not permitted within 30 meters (100 feet) of an occupied nest to prevent nest abandonment. However, if site-specific conditions or the nature of the activity warrant a smaller buffer, a qualified biologist should coordinate with the CDFW and USFWS to determine the appropriate buffer size. Nest monitoring may be warranted for activities that would occur within a smaller buffer.
- Construction activities may proceed prior to August 31 if the young birds have fledged, as determined by a qualified biologist.

f. 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 on the project site. Although the project would involve the removal of some limited riparian habitat along the creek 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. Thus, the impact of the project on sensitive natural communities and riparian habitat would be *less than significant*.

g. During the 2015 site visits, a preliminary delineation of jurisdictional waters of the U.S. and waters of the State was performed.[7] Marsh Creek is expected to qualify as a water of the U.S. and a water of the State. Thus, as currently proposed, the project would result in impacts to jurisdictional waters. Impacts to the channel are regulated and fall under the jurisdiction of the U.S. Army Corps of Engineers (USACE), Regional Water Quality Control Board (RWQCB), and the CDFW. The proposed project would grade back both banks of Marsh Creek to an elevation just above the OHWM. The total length of channel to be altered is 4,000 feet. The impact on federal and state waters would be *potentially significant*. With the implementation of **Mitigation Measure BIO-4**, project impacts to jurisdictional waters would be reduced to a *less than significant* level.

Mitigation Measure BIO-4:

In order to avoid, minimize and compensate for unavoidable impacts on waters of the U.S./waters of the State, the measures outlined below shall be implemented.

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[7] Methods were in accordance with the procedures outlined in *Corps of Engineers Wetlands Delineation Manual* (Environmental Laboratory, 1987) and the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region* (USACE, 2008). Determination of the limits of the ordinary high water mark (OHWM) conformed to procedures outlined in USACE (2006).

1) Impacts on waters of the U.S. will be avoided by restricting grading to an elevation above the OHWM; avoidance of impacts to waters of the State is not feasible. Long-term impacts shall be minimized by limiting the use of hardened structures (e.g., grouted riprap) in preference of bio-engineering solutions as much as is practicable. Surface water connections must not be permanently blocked or interrupted and the installation of drop-structures or other features that create barriers to wildlife movement shall be avoided.

2) Prior to construction, the project proponent will need to secure authorization from the USACE, RWQCB, and CDFW in conformance to the Clean Water Act and Lake and Streambed Alteration Program.

3) Participation in the HCP/NCCP is expected to satisfy the requirements of the regulatory agencies for compensatory mitigation for unavoidable impacts on stream channels, wetlands and riparian habitat. A Planning Survey Report shall be completed and submitted to the East Contra Costa County Habitat Conservancy. The submittal shall include detailed drawings illustrating all temporary and permanent impacts.

4) Per the terms of the adopted HCP/NCCP, a wetland mitigation fee or on-site habitat restoration will mitigate the impacts. If accepted by the regulatory agencies, no additional mitigation for wetland impacts is typically required. HCP/NCCP fee payment will occur at project contract award.

5) For all work within and adjacent to the stream channel and riparian habitat, best management practices (BMPs) must be incorporated into the project design to minimize environmental effects. These include the following:

    - Construction in the active channels shall be restricted to the dry season (April 15-October 15).
    - Personnel conducting ground-disturbing activities within or adjacent to the buffer zone of wetlands, ponds, streams, or riparian woodland/scrub shall be trained by a qualified biologist in these avoidance and minimization measures and the permit obligations.
    - If dewatering is necessary, water released downstream of work areas must be as clean or cleaner than flows entering the work area. Sediment-laden water shall be either pumped onto upland sites for infiltration or into Baker tanks for settling, prior to being released back into the channel. Coffer dams shall consist of clean, silt-free sand or gravel in sand bags, or a comparable material. All coffer dam materials must be promptly removed when no longer needed.
    - High visibility temporary construction fencing should be erected between the outer edge of the limits of construction and adjacent streams or habitats to be preserved. Temporary construction fencing will be removed upon the completion of work.
    - Grading or construction near channels shall be isolated with silt fencing or other BMPs to prevent sedimentation. BMPs shall be regularly inspected.
    - Vehicles and equipment shall be parked on existing roads or previously disturbed areas.

- Equipment working in channels must be in good working order and free of leaks of fuel, oil, and hydraulic fluids. Drip pans shall be placed under vehicles and equipment over waterways and spill clean-up materials should be kept onsite at a convenient location.
- Equipment maintenance and refueling shall be performed well away from the top of bank of any channel; storm drain inlets shall be protected from an accidental release of contaminants.
- Concrete washings or other contaminants must not be permitted to enter the stream channel or any storm drain inlet.
- Any concrete structures or cured-in-place pipe linings shall be allowed to cure before coming in contact with surface flows.
- Construction debris and materials shall be stockpiled away from watercourses.
- Appropriate erosion-control measures (e.g., coconut coir matting, tackified hydroseeding, blown straw or other organic mulching material) shall be used on site to reduce siltation and runoff of contaminants into wetlands, ponds, streams, or riparian woodland/scrub. Plastic mono-filament netting (e.g., that used with erosion control matting) or similar material should not be used within the action area; wildlife can become entangled or trapped such non-biodegradable materials. Erosion-control measures shall be placed between the outer edge of the buffer and the project site.
- Fiber rolls used for erosion control shall be certified as free of noxious weed seed.
- Construction staging areas past the channel banks must be located away from any wetlands or other sensitive habitats as identified by a qualified biologist.
- Newly graded earthen channel slopes shall be revegetated with a native seed mix developed by a qualified restorationist. Seed mixtures applied for erosion control shall not contain invasive nonnative species, and be composed of native species or sterile nonnative species. Straw or mulch shall also be applied to all bare surfaces. The seed mix and mulch shall be applied prior to the onset of the first winter-season rains.
- Herbicide shall not be applied within 30 meters (100 feet) of wetlands, ponds, streams, or riparian habitat. However, where appropriate to control serious invasive plants, herbicides that have been approved by the U.S. EPA for use in or adjacent to aquatic habitats may be used as long as label instructions are followed and applications avoid or minimize impacts on covered species and their habitats. In seasonal or intermittent stream or wetland environments, appropriate herbicides may be applied during the dry season to control nonnative invasive species. Herbicide drift should be minimized by applying the herbicide as close to the target area as possible and by avoiding applying during windy days.
- Additional measures may be outlined in the conditions of the permits issued by the USACE, RWQCB, CDFW, and the Habitat Conservancy. All permit conditions must be conformed to.

d. As mentioned above, limited construction work could occur in the low-flow channel and take of steelhead or Chinook could occur. To ensure there is no take of either of these species if work in the low-flow channel becomes necessary, **Mitigation Measure BIO-2** would be implemented to ensure temporary impacts to wildlife movement would be *less than significant*. Consultation with National Marine Fisheries Service (NMFS) would be conducted by the USACE during the USACE permit application process.

Marsh Creek is not part of an uninterrupted riparian corridor and although it is contiguous with extensive open shoreline lands downstream, it connects to the uppermost part of the watershed only after passing through commercial, industrial and residential development and numerous culvert outfalls. Much of the Lower Reach of Marsh Creek 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. For these reasons, the section of Marsh Creek that constitutes the project site is not expected to serve as a significant wildlife corridor. Although, construction activities would disturb wildlife that use the creek in the project area this disturbance would be temporary. Furthermore, the implementation of the proposed habitat restoration and enhancement project would serve to improve the quality of available habitat for wildlife use, including movement of fish species. Thus, *less than significant* impacts to wildlife movement would occur.

e. The natural vegetation within the project area consists of annual grasses and forbs with a few scattered oaks. Project implementation would require removal of predominantly ruderal vegetation consisting of herbaceous annual and perennial grasses and forbs. Trees planned for removal include one valley oak (dbh[8] estimated to be 40 inches), two live oaks (14-inch dbh), and 5-10 non-native trees (8-inch dbh). The City of Brentwood Oak Tree Preservation Ordinance requires that any healthy oak trees (4-inch dbh or greater) that are removed within Planned Development 20 (PD-20) areas shall be replaced with 48-inch box blue oak trees with a canopy width of 7 to 8 feet and a height of 17 feet. The ordinance requires that all trees shall be planted in public lands, the golf course, open space areas or view easements.

Although the proposed project is not subject to the City's tree ordinance, trees to be planted along the creek would still comply with tree replacement standards and would provide a greater number of trees than are currently on-site. A key component of the proposed project is to plant numerous trees alongside the creek to provide shade for pedestrians utilizing the Marsh Creek Trail and to shade waters within the creek to improve water quality. Thus, the impact would be *less than significant*.

f. The East Contra Costa County HCP/NCCP was adopted in August of 2007. The HCP/NCCP provides a framework to protect natural resources in eastern Contra Costa County, while improving and streamlining the environmental permitting process for impacts on endangered species. Rather than individually surveying, negotiating, and securing mitigation, project proponents will receive required permits by paying a fee (and/or dedicating land) and adhering

[8] Diameter of a tree measured at breast height or approximately 4.5 feet from the ground.

to Plan-required avoidance and minimization measures. 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 non-habitat with the cost per acre based on the HCP fee zone. The proposed project does not propose any building or structure development and would not convert any areas to non-habitat. Nonetheless, the project would temporarily disturb habitat and potentially affect covered species and payment of the Development Fee would be required. The Wetland Fee requires payment based on the amount and type of wetland or waters affected. The proposed project would comply with the HCP/NCCP and project impacts to species, habitat, and wetlands would be mitigated through the payment of Wetland Impact fees to the HCP/NCCP (or on-site habitat restoration). Therefore, the proposed project would not conflict with the provisions of an adopted HCP/NCCP and there would be *no impact.*

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5.5 Cultural Resources

5.5.1 Background

The project area is situated on the western margin of California's Central Valley, one of two principal grassland communities that exist in California. The combination of the climate and arable soils has produced rich farmland leading to extensive agricultural use of the region, which has resulted in the disappearance of much of the original marsh and grassland community. Annual precipitation in the region is 6 to 29 inches. The climate is Mediterranean and temperatures in the summer are high (WSA 2016). No standing structures are present on the project site.

On November 10, 2015, WSA conducted a records search for the project at the Northwest Information Center at Sonoma State University (NWIC) (File No. 15-0613). The records search included a review of cultural resource and excavation reports and recorded cultural resources within 1/4-mile radius of the project area. The records search also included a review of the Office of Historic Preservation Directory.

A total of two cultural resources studies have been conducted within the project area, and a total five cultural resources studies have been conducted within 1/4-mile radius of the project.

The records search indicated that no previously recorded resources are within the project area. One previously recorded resource, the Union[9] Pacific Railroad (P-07-000813), is located within 1/4-mile of the project area. The resource is a segment of the historic Union Pacific Railroad[6] whose alignment has been recorded in a number of different locations.

WSA Staff Archaeologist David Buckley conducted a field reconnaissance of the proposed project area on November 17, 2015. The survey began at the southeast corner of the project area at the intersection of Dainty Avenue and proceeded north along the eastern side of Marsh Creek. The survey proceeded around the north end of the project area and then continued south along the west side of Marsh Creek, terminating back at Dainty Avenue. No prehistoric or historic deposits were observed during the archaeological survey and no evidence of prehistoric cultural soils (midden) was observed during the archaeological survey (WSA 2016).

5.5.2 Environmental Checklist and Discussion

CULTURAL RESOURCES Would the project…	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 Section 15064.5?	☐	☐	☑	☐

[9] The railroad is listed as Union Pacific in the record but actually is currently known as Southern Pacific Railroad.

b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to Section 15064.5?	☐	☑	☐	☐
c) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	☐	☑	☐	☐
d) Disturb any human remains, including those interred outside of formal cemeteries?	☐	☑	☐	☐
e) Would the project cause a substantial adverse change in the significance of a tribal cultural resource as defined in Public Resources Code 21074?	☐	☐	☐	☑

DISCUSSION:

a. The project site consists of a section along Marsh Creek and the Marsh Creek Trail. The site does not contain buildings or structures that would qualify as historical resources. *No impact* on a structure or feature of the built environment that qualifies as a historical resource would occur.

b.,d. As noted above, no recorded archaeological resources are known from the project area. No prehistoric or historic deposits were observed during the archaeological survey and no evidence of prehistoric cultural soils (midden) was observed during the archaeological survey. However, given that associated grave goods and human remains have been identified at various places along the banks of Marsh Creek at other locations, all of the areas immediately adjacent to Marsh Creek are considered sensitive for prehistoric archaeological deposits. Therefore, project impacts to unknown cultural resources or human remains would be potentially significant. **Mitigation Measure CUL-1** would reduce the impacts to unknown historic and prehistoric archaeological resources and human remains to a *less than significant* level.

Mitigation Measure CUL-1:

Crew training, initial monitoring by a qualified archaeologist to determine an appropriate level of monitoring for the duration of the project, and additional spot checks pending the results of the initial monitoring shall be conducted prior to and during ground disturbing activities.

A qualified archaeologist shall be present on the project site to monitor ground disturbing activities and inspect excavated soils to identify any cultural resources and human remains as deemed appropriate by the qualified archaeologist.

All construction crew workers shall attend a training session led by a qualified archaeologist that discusses (1) the reasons for archaeological resource monitoring; (2) regulatory policies protecting resources and human remains; (3) basic identification of archaeological resources; and (4) the protocol to follow in case of a discovery of such resources.

In accordance with CEQA Guideline §15064.5 (f), should any previously unknown historic or prehistoric resources, including but not limited to charcoal, obsidian or chert flakes, grinding bowls, shell fragments, bone, pockets of dark, friable soils, glass, metal, ceramics, wood, privies, trash deposits or similar debris, be discovered during ground disturbing activities, work within 25 feet of these materials should be stopped until a qualified professional archaeologist has an opportunity to evaluate the potential significance of the find and to consult with the lead agency about what appropriate mitigation would be appropriate to protect the resource.

In the event that human remains, or possible human remains, are encountered during project-related ground disturbance, in any location other than a dedicated cemetery, there shall be no further excavation or disturbance of the site or any nearby area reasonably suspected to overlie adjacent remains until the coroner of the county in which the human remains are discovered has determined, that the remains are not subject to the provisions of Section 27492 of the Government Code or any other related provisions of law concerning investigation of the circumstances, manner and cause of death, and the recommendations concerning treatment and disposition of the human remains have been made to the person responsible for the excavation, or to his or her authorized representative, in the manner provided in Section 5097.98 of the Public Resources Code.

The County Coroner, upon recognizing the remains as being of Native American origin, is responsible to contact the NAHC within 24 hours. The Commission has various powers and duties, including the appointment of a Most Likely Descendant (MLD) to the project. The MLD, or in lieu of the MLD, the NAHC, has the responsibility to provide guidance as to the ultimate disposition of any Native American remains.

c. There are no known significant fossil deposits or paleontological resources located in the City of Brentwood (City of Brentwood 2014a). However, the geologic conditions within the city provide suitable conditions for the possibility of fossils to exist at depths of five to 10 feet below ground surface. The project site is mapped as Quaternary-aged alluvial deposits. Geologic formations, including various Quaternary subunits have a high to moderate potential for paleontological resources (City of Brentwood 2014a). Therefore, excavation on the project site could potentially inadvertently unearth and damage paleontological resources. Project impacts to paleontological resources would be *potentially significant*. **Mitigation Measure CUL-2** would be implemented to reduce the impact on paleontological resources to a *less than significant* level.

Mitigation Measure CUL-2:

Prior to project construction, construction personnel shall be informed of the potential for encountering significant paleontological resources. All construction personnel shall be informed of the need to stop work in the vicinity of a potential discovery until a qualified paleontologist has been provided the opportunity to assess the significance of the find and implement appropriate measures to protect or scientifically remove the find. Construction personnel shall also be informed of the requirements that unauthorized collection resources are prohibited.

e. Assembly Bill (AB) 52, which came into effect on July 1, 2015, requires that lead agencies consider the effects of projects on tribal cultural resources and conduct consultation with federally and

non-federally recognized Native American tribes early in the environmental review process. According to AB 52, it is the responsibility of the tribes to formally request of a lead agency that they be notified of projects in the lead agency's jurisdiction so that they may request consultation. One tribe, Wilton Rancheria, has contacted the District[10] requesting notification regarding projects proposed by the County. A letter was sent to Wilton Rancheria in October 2015 and no responses have been received to date. Although at this time, no other tribes have contacted the District requesting notification, the District proactively contacted the Native American Heritage Commission (NAHC) to obtain a list of Native American individuals and organizations that may have knowledge of or interest in tribal cultural resources in the project area. On February 1, 2016, WSA sent out letters to Native American tribes identified by NAHC notifying them of the proposed project and followed up with phone calls. Comments and recommendations were received from three Native American contacts. Ms. Zwierlein representing the Amah/Mutsun Tribal Band recommended construction to proceed with caution and call an archaeologist, if needed. Ms. Sayers representing the Indian Canyon Mutsun Band of Costanoan recommended archaeological and Native American monitoring during ground disturbance. Ms. Cambra representing the Muwekma Ohlone Indian Tribe of the SF Bay Area recommended consultation with the lead agency and asked for a report on how they responded to the archaeologist's recommendations. A record of the Native American consultation can be found in the 2016 Cultural Resources Assessment Report. The District has determined that with the mitigation measures outlined above, the proposed project would not affect any known tribal cultural resources in the area. The impact would be *less than significant*.

[10] The District is coordinating with Native American tribes on behalf of the County.

5.6 Geology and Soils

5.6.1 Background

The project area is mapped as Quaternary-aged alluvial deposits. These soils are described as surficial sediments of alluvial clay and loam. Over the majority of the project site, soils encountered include clay with varying amounts of sand, silt, and gravel. The site is generally covered by seasonal grasses and weeds (ENGEO 2015). The existing Marsh Creek Trail consists of asphalt and landscaped gravels covering the surface.

5.6.2 Environmental Checklist and Discussion

GEOLOGY and SOILS Would the project…	Potentially Significant Impact	Less than Significant with Mitigation	Less than Significant Impact	No Impact
a) Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:				
i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.	☐	☐	☑	☐
ii) Strong seismic ground shaking?	☐	☑	☐	☐
iii) Seismic-related ground failure, including liquefaction?	☐	☐	☑	☐
iv) Landslides?	☐	☐	☐	☑
b) Result in substantial soil erosion or the loss of topsoil?	☐	☐	☑	☐
c) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?	☐	☑	☐	☐
d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property?	☐	☐	☑	☐
e) Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater?	☐	☐	☐	☑

DISCUSSION:

a. i. The San Francisco Bay Area contains numerous active earthquake faults. Numerous small earthquakes occur every year in the San Francisco Bay Region, and larger earthquakes have been recorded and can be expected to occur in the future. The project site is not located within a currently designated Alquist-Priolo Earthquake Fault Zone and no known surface expression of active faults is believed to exist within the project site. The nearest active faults are the Greenville fault and Mount Diablo Thrust fault, located approximately 8 miles and 15 miles to the west, respectively. The two faults are considered capable of a moment magnitude earthquake of 7.0 and 6.7, respectively. Additionally, 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).

Although the project site lies within a seismically active region, there are no known active faults crossing the project site and the site is not located within an Earthquake Fault Zone. Therefore, ground rupture is unlikely at the project site and the impact would be *less than significant*.

a. ii. The project site could experience ground shaking due to an earthquake of moderate to high magnitude generated within the San Francisco Bay Region, similar to that which has occurred in the past. Therefore, 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. The impact would be *potentially significant*. The proposed project would implement **Mitigation Measure GEO-1**, which requires the project to comply with all recommendations specified in Section 3.3 of the Geotechnical Report**,** including those pertaining to slope construction, to reduce the potential for slope deformation in the event of an earthquake. Compliance with **Mitigation Measure GEO-1** would ensure *less than significant* impacts from seismic ground shaking.

Mitigation Measure GEO-1:

The proposed project shall comply with all recommendations specified in Section 3.3 of the May 2015 Geotechnical Report prepared by ENGEO.

a. iii. According to the Association of Bay Area Governments (ABAG), the liquefaction susceptibility of the project site ranges from moderate to very high. The liquefaction susceptibility is high along the northeastern portion of the site adjacent to the railroad and very high along Marsh Creek. However, during field explorations conducted by ENGEO on December 9, 2014, no materials that would be classified as susceptible to liquefaction that are situated above groundwater levels were encountered. Furthermore, the project does not include any structures that would be inhabited by people. Thus, the impact from liquefaction would be *less than significant*.

a. iv. The proposed project site is relatively flat and not located in an area susceptible to landslides. Therefore, the proposed project would not be affected by landslides and *no impact* would occur.

b. During construction activities, such as excavation of the creek channel, there could be potential for erosion and discharge of eroded sediment into Marsh Creek. Construction projects that involve disturbance of over 1.0 acre of land are required by law to seek coverage under the state's National Pollutant Discharge Elimination System (NPDES) General Permit for Discharge of

Storm Water Associated with Construction Activity. As part of this permit, construction projects disturbing over 1.0 acre (such as the proposed project) are required to file a notice of intent (NOI) with the State Water Resources Control Board and implement a site-specific Storm Water Pollution Prevention Plan (SWPPP), which would specify Best Management Practices (BMPs) to reduce the contribution of sediments, spilled and leaked liquids from construction equipment, and other construction-related pollutants to project site runoff. The District on behalf of the County would have oversight responsibility over the three reaches and would have the authority to stop construction in the event the SWPPP is improperly implemented. As a result of compliance with the law related to construction site runoff, the impact related to soil erosion during construction would be *less than significant.*

Upon project completion, implemented restoration activities would reduce flow velocities within the creek thereby reducing erosion potential. Replanting native riparian vegetation along the creek and wetland plants within the excavated floodplain benches would also prevent soil loss. Additionally, permanent slope protection would be installed on newly cut slopes to prevent long-term effects of erosion and weathering. Matting, armor, revegetation, or biotechnical methods would be installed at the completion of slope construction and selected erosion control material would provide soil stabilization and promote vegetation growth. Thus, impacts from soil erosion following project completion would be *less than significant*.

c. As noted above, no liquefiable materials were observed on the project site. Lateral spreading is a failure within a nearly horizontal soil zone (possibly due to liquefaction) that causes the overlying soil mass to move toward a free face or down a gentle slope. Due to the lack of liquefiable materials encountered at the site, the potential for lateral spread is also low. Therefore, the project site is not underlain by unstable soils and impacts are *less than significant*.

d. Near surface soils on the project site exhibit high expansion potential with a Plasticity Index (PI) value of 34 with a Liquid Limit of 51, as documented by Terrasearch in a boring just east of the Sand Creek confluence. Expansive soils shrink and swell as a result of moisture changes, which can cause soil heaving and cracking. No buildings are proposed as part of the project, and furthermore, the proposed project would implement **Mitigation Measure GEO-1**, which requires the project to comply with all recommendations specified in Section 3.3 of the Geotechnical Report. There would be a *less than significant impact* from expansive soils.

e. No septic tanks or alternative wastewater disposal systems are included in the proposed project, and there would be *no impact*.

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5.7 Greenhouse Gas Emissions

5.7.1 Background

General

Global climate change refers to any significant change in climate measurements, such as temperature, precipitation, or wind, lasting for an extended period (i.e., decades or longer) (U.S. EPA 2014). Climate change may result from:

- natural factors, such as changes in the sun's intensity or slow changes in the Earth's orbit around the sun;
- natural processes within the climate system (e.g., changes in ocean circulation, reduction in sunlight from the addition of greenhouse gas (GHG) and other gases to the atmosphere from volcanic eruptions); and
- human activities that change the atmosphere's composition (e.g., through burning fossil fuels) and the land surface (e.g., deforestation, reforestation, urbanization, desertification).

The primary change in global climate has been a rise in the average global tropospheric temperature of 0.2 degree Celsius per decade, determined from meteorological measurements worldwide between 1990 and 2005. Climate change modeling using 2000 emission rates shows that further warming is likely to occur, which would induce further changes in the global climate system during the current century (IPCC 2007). Changes to the global climate system and ecosystems, and to California, could include declining sea ice and mountain snowpack levels, rising average global sea levels, and many other potentially severe problems (IPCC 2007).

The natural process through which heat is retained in the troposphere[11] is called the "greenhouse effect." The greenhouse effect traps heat in the troposphere through a threefold process as follows: (1) short-wave radiation in the form of visible light emitted by the Sun is absorbed by the Earth as heat; (2) long-wave radiation is re-emitted by the Earth; and (3) GHGs in the upper atmosphere absorb or trap the long-wave radiation and re-emit it back towards the Earth and into space. This third process is the focus of current climate change actions.

While water vapor and carbon dioxide (CO_2) are the most abundant GHGs, other trace GHGs have a greater ability to absorb and re-radiate long-wave radiation. To gauge the potency of GHGs, scientists have established a Global Warming Potential (GWP) for each GHG based on its ability to absorb and re-emit long-wave radiation over a specific period. The GWP of a gas is determined using CO_2 as the reference gas, which has a GWP of 1 over 100 years (IPCC 1996).[12] For example, a gas with a GWP of 10 is 10 times more potent than CO_2 over 100 years. The use of GWP allows GHG emissions to be reported using CO_2 as a baseline. The sum of each GHG

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11 The troposphere is the bottom layer of the atmosphere, which varies in height from the Earth's surface to 10 to 12 kilometers).

12 All Global Warming Potentials are given as 100-year values.

multiplied by its associated GWP is referred to as "carbon dioxide equivalents" (CO_2e). This essentially means that 1 metric ton of a GHG with a GWP of 10 has the same climate change impacts as 10 metric tons of CO_2.

Regulatory Setting

In 2005, in recognition of California's vulnerability to the effects of climate change, then-Governor Schwarzenegger established Executive Order S-3-05, which sets forth a series of target dates by which statewide emissions of GHGs would be progressively reduced, as follows: by 2010, reduce GHG emissions to 2000 levels (approximately 457 $MMTCO_2e$); by 2020, reduce emissions to 1990 levels (estimated at 427 $MMTCO_2e$); and by 2050 reduce statewide GHG emissions to 80 percent below 1990 levels (approximately 85 $MMTCO_2e$).

In response, the California legislature passed Assembly Bill No. 32 in 2006 (California Health and Safety Code Division 25.5, Sections 38500, et seq., or AB 32), also known as the Global Warming Solutions Act. AB 32 requires ARB to design and implement emission limits, regulations, and other measures, such that feasible and cost-effective statewide GHG emissions are reduced to 1990 levels by 2020 (representing a 25 percent reduction from forecast emission levels) (OPR 2008).

Pursuant to AB 32, ARB adopted a Scoping Plan in December 2008, outlining measures to meet the 2020 GHG reduction limits. Assembly Bill 32 (AB 32) *Climate Change Scoping Plan* indicates how reductions in significant GHG sources will be achieved through regulations, market mechanisms, and other actions. The AB 32 Scoping Plan recommendations are intended to curb projected business-as-usual growth in GHG emissions and reduce those emissions to 1990 levels.

5.7.2 Environmental Checklist and Discussion

GREENHOUSE GAS EMISSIONS Would the project…	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?	☐	☐	☑	☐
b) Conflict with an applicable plan, policy, or regulation adopted for the purpose or reducing the emissions of greenhouse gases?	☐	☐	☑	☐

DISCUSSION:

a. Implementation of the proposed project would result in small increases of GHG emissions that are associated with global climate change. Estimated GHG emissions attributable to the proposed project would be primarily associated with increases of CO_2 from mobile sources including construction haul trucks (to off-haul excavated materials), and equipment used during the construction of the proposed project. There would be minimal operational GHG emissions for reasons presented below.

Construction

During implementation of creek restoration activities, GHGs would be emitted from the operation of construction equipment and from construction worker vehicles and haul truck trips to and from the project site. GHG emissions during construction were estimated using the CalEEMod model. Based on CalEEMod, construction activities on the project site would generate approximately 44.6 $MTCO_2e$ in 2017. There are no quantitative thresholds put forth by the BAAQMD for the evaluation of the significance of a project's construction emissions. However, these estimated one-time emissions are lower than the 1,100 $MTCO_2e$ threshold that is put forth by the BAAQMD for the evaluation of the impact from a project's operation emissions. Therefore, the emissions are considered too small to result in a significant change in global climate change. The impact from the construction phase GHG emissions associated with the proposed project would be *less than significant*.

Operation

A small number of periodic vehicle trips would be made to the project site initially for monitoring the success of the plantings and in the long run for creek maintenance. The number of vehicle trips to monitor the plantings would be minimal and would not substantially increase GHG emissions. The vehicle trips for creek maintenance would be about the same number as the trips currently made to the area by the District staff under current conditions. The impact from operational emissions would be *less than significant*.

b. The proposed project would result in a minimal increase in GHG emissions, as described above. Therefore, the proposed project would not conflict with AB 32 or other state laws and regulations related to GHG emissions and the impact would be *less than significant*.

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5.8 Hazards and Hazardous Materials

5.8.1 Background

Nearby land uses are primarily residential subdivisions, Willow Wood School/Dainty Center, city parks, and vacant lands planned for residential development and city parks. Historically, Marsh Creek has been highly modified by the District and various agricultural activities. Pesticides may be present in soils due to historic agricultural use of the site and surrounding areas. However, a Phase I ESA analysis prepared in 2003 for the adjacent Pulte project site, determined that DDE and DDT chlorinated pesticide concentrations on the Pulte project site were less than 0.079 parts per million (ppm), and DDT concentrations were less than the detection limit of 0.010 ppm (City of Brentwood 2014b). Existing hazardous materials use in the creek area is limited to the use of certain herbicides to control invasive species and use of fuel in vehicles used to access the various portions of the creek.

5.8.2 Environmental Checklist and Discussion

HAZARDS & HAZARDOUS MATERIALS Would the project…	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?	☐	☐	☑	☐
b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?	☐	☐	☑	☐
c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	☐	☐	☐	☑
d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?	☐	☐	☐	☑
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area?	☐	☐	☐	☑

f) For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area?	☐	☐	☐	☑
g) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	☐	☐	☑	☐
h) Expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?	☐	☐	☐	☑

DISCUSSION:

Project

a., b. There are no known environmental hazards on the project site. The proposed project would not involve routine use, storage, transport, and disposal of hazardous materials in any significant quantities. Small quantities of hazardous materials, including fuel for construction equipment would be used on-site during construction activities. All activities would comply with state and federal hazard and hazardous material regulations, thus the risk associated with the routine transport, use, and disposal of hazardous materials would be minimal. The impacts related to hazardous materials would be *less than significant*.

c. Willow Wood School/Dainty Center is the nearest school to the project site, located approximately 50 feet to the east of the Upper Reach between Central Boulevard and Dainty Avenue. However, the proposed project would not involve handling of hazardous or acutely hazardous materials, substances, or waste. Therefore, *less than significant* impacts would occur. .

d. According to CERCLIS, Geotracker, and EnviroStor database searches for known hazardous materials contamination, conducted on May 25, 2016, the project site is not located on a property associated with a hazardous site listed under Government Code Section 65962.5, also known as the Cortese List. As a result, the proposed project would not create a significant hazard to the public or the environment associated with a hazardous site listed under Government Code Section 65962.5. There would be *no impact*.

e., f. The project site is not located within 2 miles of a public or private airport. The closest airport is the Byron Airport-C83 located approximately 8 miles southeast of the project site. No structures are proposed as part of the project. There would be *no impact*.

g. Implementation of the proposed project would have no effect on emergency evacuation plans for the surrounding area. The project site is a 4,000 linear feet section of Marsh Creek. The surrounding area is primarily agricultural, residential, and vacant lands planned for residential development and city parks. Creek restoration activities would produce 24,000 cubic yards of excavated soils. About 4,000 cubic yards of the excavated soils would be used on-site as fill while the remaining 20,000 cubic yards would require haul trucks to transport and dispose of the

materials off-site. Due to the volume involved and the provision in the project to stockpile the excavated materials and remove when needed, a large number of vehicle trips would not be generated that could interfere with emergency access to or from the areas adjoining the project site during construction. Access to the site would be from Griffith Lane, a cul-de-sac connecting to Central Boulevard or from the soon-to-be constructed Bella Drive and Island Palm Way within the Pulte Development east of the project site. Construction work and associated vehicle trips would not restrict access to or block any public roads and would not interfere with an adopted emergency response or evacuation plan. Additionally, the project contractor would be required to notify emergency personnel with construction details and schedule prior to the start of construction. The impact would be *less than significant*.

h. The project site 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 restoration activities would not result in the construction of structures on the project site or increase the site's overall fire hazard severity. Therefore, implementation of the proposed project would not increase risks to the public from wildfires. There would be *no impact*.

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5.9 Hydrology and Water Quality

5.9.1 Background

At the project location, Marsh Creek is a perennial, 4th order stream.[13] The watershed originates in the Morgan Territory on the north side of Mt. Diablo and covers some 128 miles^2. Marsh Creek flows for 30 miles and empties into the tidally influenced Dutch Slough, and then Big Break and the lower San Joaquin River (Wood 2016).

Marsh Creek Dam, located near Briones Valley and approximately 3.9 miles upstream of the project, was constructed in 1963 and impounds runoff from approximately 38 percent of the Marsh Creek watershed. 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; Dry Creek flows into Marsh Creek approximately 0.5 mile upstream of the project site; and Deer and Sand Creeks flow into Marsh Creek within the project site. Historically, much of the lower reaches of Marsh Creek were dry in the summer. Currently, flowing surface water is present from lower Marsh Creek to its mouth; these flows are made up primarily of water resulting from an elevated water table caused by runoff from agricultural and landscape irrigation and urban discharges (Wood 2016).

The project site is located in FEMA Flood Zone AE, an area subject to inundation with a 1.0 percent annual-chance of flood (FEMA 2016).

5.9.2 Environmental Checklist and Discussion

HYDROLOGY & WATER QUALITY Would the project…	Potentially Significant Impact	Less than Significant with Mitigation	Less than Significant Impact	No Impact
a) Violate any water quality standards or waste discharge requirements?	☐	☐	☑	☐
b) Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)?	☐	☐	☐	☑

[13] See http://en.wikipedia.org/wiki/Strahler_Stream_Order for descriptions of stream orders.

c)	Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on- or off-site?	☐	☐	☑	☐
d)	Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site?	☐	☐	☑	☐
e)	Create or contribute runoff water which would exceed the capacity of existing or planned storm water drainage systems or provide substantial additional sources of polluted runoff?	☐	☐	☑	☐
f)	Otherwise substantially degrade water quality?	☐	☐	☑	☐
g)	Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?	☐	☐	☐	☑
h)	Place within a 100-year flood hazard area structures which would impede or redirect flood flows?	☐	☐	☐	☑
i)	Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam?	☐	☐	☐	☑
j)	Inundation by seiche, tsunami, or mudflow?	☐	☐	☐	☑

DISCUSSION:

a. During construction of the proposed project, there is a potential for increased erosion, sedimentation, and discharge of polluted runoff from the project site. As discussed in Response b **in Section 5.6** above, NPDES requires that the proposed project develop and implement a SWPPP, including control measures (or Best Management Practices) to control erosion and release of sediment and other pollutants from the site. The SWPPP would ensure that construction activities would not cause an exceedance of the Central Valley Regional Water Quality Control Board's (RWQCB) water quality standards. As a result, the project's construction activities would not result in an exceedance of a water quality standard and the impact would be *less than significant*.

Operation of the proposed project would decrease creek flow velocities and erosion potential while improving water quality. The project would reduce the potential for erosion and sediment transport 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 the currently low dissolved oxygen levels. Thus, the proposed project would reduce erosion and improve water quality on the project site as compared to existing conditions. As a result, the project would not involve any activity that would result in an exceedance of a water quality standard and the impact would be *less than significant.*

b. Implementation of the proposed project would not result in any groundwater extraction. Additionally, the restoration activities would not increase impervious surfaces on the project site, and therefore would not interfere with groundwater recharge. There would be *no impact.*

c. Channel widening would reduce flow velocity and thereby reduce the potential for scour and erosion, although as noted in the Project Description, detailed hydraulic modeling may indicate that some bank armoring is necessary where the expanded channel will taper down to the existing channel at the downstream project boundary or in other locations. By including appropriate erosion and scour control measures, lowering the water stage, reducing flow velocity by widening the creek channel, and establishing native riparian vegetation, the proposed project would reduce erosion potential of the creek section. The impact related to soil erosion would be *less than significant.*

d. Implementation of the proposed project would not negatively impact Marsh Creek, its tributaries or alter drainage patterns of the surrounding area to cause excess runoff or floods. No impervious development would occur as part of the project that would increase the volume of storm water runoff. The project site is located in FEMA Flood Zone AE, an area subject to inundation with a 1.0 percent annual-chance of flood. The proposed project is an innovative non-structural approach to flood management that focuses on giving the creek more room to safely convey flood waters. Restoration activities would entail increasing the cross-sectional area of the stream channel by excavating earth along both banks of the Upper Reach and Middle Reach to create new floodplain benches and along the east bank of the Lower Reach to create a new 10 to 40 foot floodplain. The purpose of the channel widening is to create enough conveyance capacity to safely convey large flood flows known to Marsh Creek. The newly created flood benches and floodplain would be inundated when flows in the creek rise during typical storm that reoccur nearly annually. Thus, the proposed project would improve creek flow to reduce impacts from flood hazards. Impacts would be *less than significant*.

e. As previously mentioned, the proposed project would be required to implement a SWPPP, which will include erosion and water pollution control measures, to control off-site sediment delivery during construction. As a result, the proposed project would not provide substantial additional sources of polluted runoff. Operational impacts to polluted runoff are discussed in Response a above. This impact is considered *less than significant*.

f. Currently, poor water quality within the creek from urban run-off is made worse by the lack of wetlands, shade, and microbial activity. Relatively high temperatures combined with low dissolved oxygen levels have caused four major fish kills on Marsh Creek over the last nine years. As mentioned above, the proposed project would plant trees along the creek section to provide shade thereby decreasing water temperatures. Planting native riparian vegetation within the

widened creek would also help increase dissolved oxygen levels and improve water quality. Therefore, impacts would be beneficial and *less than significant.*

g.-j. The project site is located within a federally designated 100-year flood hazard area. However, no housing or structures are proposed as part of the planned channel widening and restoration activities. The project site is not in an area that could be inundated by a seiche, tsunami, or mudflow. There would be *no impact*.

5.10 Land Use and Planning

5.10.1 Background

The project is located along Marsh Creek in the City of Brentwood. Lands surrounding the project area are developed with residences and city parks, and vacant lands are planned for residential development and city parks.

5.10.2 Environmental Checklist and Discussion

LAND USE & PLANNING Would the project…	Potentially Significant Impact	Less than Significant with Mitigation	Less than Significant Impact	No Impact
a) Physically divide an established community?	☐	☐	☐	☑
b) Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?	☐	☐	☐	☑
c) Conflict with any applicable habitat conservation plan or natural community conservation plan?	☐	☐	☐	☑

DISCUSSION:

a. Residential subdivisions are present on both sides of the creek and an approved subdivision is planned for the vacant land to the east of the Lower Reach. However, there is no established community located on the project site and due to the nature of the creek restoration project, *no impact* would occur.

b. The project site is mapped as a waterway in the General Plan. The City's General Plan is not applicable to the project. Furthermore, the project would not change the land use of the parcels that contain the creek. Therefore, there would be *no impact.*

c. The proposed project is within the ECCC HCP/NCCP, and anticipated project impacts would be mitigated through the payment of a Development Fee and Wetland Impact fee (or on-site restoration) to the East Contra Costa County Habitat Conservancy. Therefore, the proposed project would not conflict with the provisions of an adopted HCP or NCCP and there would be *no impact*.

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5.11 Mineral Resources

5.11.1 Background

Within the City of Brentwood, mineral resources include sand, gravel, coal, oil, and gas. In general, sand is likely the most significant economic mineral deposit found. It is possible that significant deposits of coal and specialty sand remain in the western portion of Brentwood, 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 city. 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 2014a). Aggregate resource areas within the City of Brentwood are classified as either MRZ-1 or MRZ-4 in SMARA Mineral Land Classification Maps.[14] Mineral resource extraction is not permitted under the Resource Management Directives of the Department of Parks and Recreation.

There are no existing active oil or gas wells or mineral extraction on or in the vicinity of the project site.

5.11.2 Environmental Checklist and Discussion

MINERAL RESOURCES Would the project…	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?	☐	☐	☐	☑
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?	☐	☐	☐	☑

DISCUSSION:

a. - b. The project site is located along Marsh Creek. There are no mineral resources on the project site and no mineral extraction occurs or is known to have occurred on the project site. There would be *no impact*.

14 MRZ-4 are areas where available information is inadequate for assignment to any other MRZ classification. MRZ-1 Areas where adequate information indicates that no significant mineral deposits are present, or where it is judged that little likelihood exists for their presence.

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5.12 Noise

5.12.1 Background

Noise-sensitive land uses generally include those uses where exposure to noise would result in adverse effects, as well as uses where quiet surroundings are an essential element of their intended purpose. Residential dwellings are of primary concern because of the potential for increased and prolonged exposure of individuals to both interior and exterior noise levels. Other noise-sensitive land uses include hospitals, convalescent facilities, parks, hotels, churches, libraries, and other uses where low interior noise levels are essential.

The project site is located along Marsh Creek where the surrounding areas are being rapidly urbanized with residential and commercial uses. The primary noise sources in the project area include traffic noise from local roadways. The Union Pacific Railroad, located approximately 175 feet north of the Lower Reach is currently inactive. The closest highway, SR-4 is located approximately 2.2 miles west of the project site. Residential homes, a daycare center, city parks, and vacant lands are adjacent to the project site.

The nearest sensitive receptors to the Upper Reach are located within Willow Wood School/Dainty Center and residential neighborhoods less than 50 feet to the east. There are also residential neighborhoods located approximately 100 feet to the west of Central Boulevard and Marsh Creek up to Deer Creek.

Lands to the east of the Middle Reach are also developed with single-family residences and the nearest receptors are about 50 feet from the proposed construction activities.

The nearest sensitive receptors to the Lower Reach are single-family homes and Sungold Park located less than 50 feet to the west.

5.12.2 Environmental Checklist and Discussion

NOISE Would the project…	Potentially Significant Impact	Less than Significant with Mitigation	Less than Significant Impact	No Impact
a) Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?	☐	☐	☑	☐
b) Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?	☐	☐	☑	☐
c) A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?	☐	☐	☑	☐

d) A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?	☐	☑	☐	☐
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?	☐	☐	☐	☑
f) For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels?	☐	☐	☐	☑

DISCUSSION:

a. The potential for construction noise to exceed the City of Brentwood noise standards are detailed in Response d below. Once the project is constructed, there would be no increase in operational noise in the project area due to the project. Creek restoration may increase visitors utilizing the Marsh Creek Trail. However this increase would not be substantial enough to cause noise levels to increase above the City's noise standards. Thus, the impact would be *less than significant*.

b. Channel widening and restoration activities would not require pile-driving, blasting, or other activities that could cause substantial groundborne vibration or noise. Project construction activities would include the use of tractors, loaders, excavators, graders, which are not sources of significant groundborne vibration or noise. Haul trucks could result in some level of vibration while hauling materials off-site. However, the vibrations would be the range that is experienced in urban areas from truck movement. The impact would be *less than significant.*

c. Implementation of the proposed project would not add any new sources of noise to the project area. The creek section is currently maintained by the District and will continue to be upon project implementation, thereby not increasing vehicle trips for maintenance. In the first few years of project operation, monitoring of the restoration efforts would add a small number of vehicle trips to the project site. In addition, due to restoration of riparian vegetation along the creek banks and trail improvements, the project would improve the experience of the trail users as well as provide areas where trail users can stop in shade and enjoy the beauty of the creek. This may result in an increase in visitors to the creek and a resultant increase in vehicular traffic to parking facilities near Marsh Creek. However this increase would not be substantial compared to existing conditions. Therefore, there would not be a substantial permanent increase in noise levels related to mobile sources. The impact would be *less than significant*.

d. Construction activities would require the use of tractors, loaders, excavators, graders, and haul trucks. The number of construction vehicle trips would increase, depending on the specific activity that is underway. Also the location of the construction activities would differ with each reach and all of the improvements may not be constructed within the same timeframe on all three reaches. Furthermore, sensitive receptors that are proximate to one reach would be affected by

the noise from construction on that reach and generally would not be affected by noise generated by the work on other reaches due to distance and attenuation.

The area to the east of the Upper Reach is developed with residential neighborhoods that are less than 50 feet away from the proposed widening. A school and daycare center is also located on the east bank of the creek just north of Dainty Avenue. Land to the west between Dainty Avenue and Central Boulevard is owned by the District and is vacant. Residential neighborhoods are present to the west of Central Boulevard and Marsh Creek up to Deer Creek (approximately 100 feet from the proposed activities). Construction activities in the Upper Reach would take place over the short timeframe of about 2 weeks.

Lands to the east of the Middle Reach are also developed with single-family residences and the nearest receptors are about 50 feet from the proposed construction activities. Lands to the west of the Middle Reach are vacant and no sensitive receptors are present in that area. Construction activities in the Middle Reach would take place over 1 to 2 weeks.

Lands to the east of the Lower Reach are undeveloped at this time although future city parks are planned adjacent to the creek and the remaining area is the site of the approved Pulte residential subdivision. Single-family homes and a city park (Sungold Park) are located to the west of the Lower Reach (less than 50 feet). Construction activities would take place over about 4 weeks.

Construction activities and traffic would cause temporary increases in noise due to site grading, use of construction equipment, and operation of construction vehicles. Construction equipment would be operated intermittently over the course of construction on each reach. 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 small size of the project would require only a few pieces of construction equipment and they would be operating for a relatively short time during the construction period.

Nonetheless, noise from channel widening and restoration activities could impact the surrounding residences, school and daycare center, and park facilities that are located less than 50 feet from various work areas along the creek section. However, with implementation of **Mitigation Measure NOISE-1**, which requires the project to comply with the Brentwood Noise Ordinance and limits construction activities to daytime hours, the impact would be *less than significant.*

Mitigation Measure NOISE-1

The project contractor shall ensure that construction activities shall 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

e., f. The project site is not located within 2 miles of a public or private airport. The closest airport is the Byron Airport-C83 located approximately 8 miles southeast of the project site. No structures are proposed as part of the project. There would be *no impact*.

5.13 Population and Housing

5.13.1 Background

The project site is surrounded by residential uses, a private elementary school and daycare center, city parks, vacant land planned for residential use and city parks, and vacant land. The project site does not include any housing.

5.13.2 Environmental Checklist and Discussion

POPULATION & HOUSING Would the project…	Potentially Significant Impact	Less than Significant with Mitigation	Less than Significant Impact	No Impact
a) Induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?	☐	☐	☐	☑
b) Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?	☐	☐	☐	☑
c) Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?	☐	☐	☐	☑

DISCUSSION:

a. The proposed project does not include the construction of homes and/or businesses. In addition, the proposed project would not construct any new roads or infrastructure that could support future development. As a result, the proposed project would not induce substantial population growth in the area, either directly or indirectly. There would be *no impact*.

b.- c. There are no residences on the project site or people currently living on the site. Impacts from project implementation would not affect the existing residences adjacent to the creek section. As a result, the proposed project would not displace any housing or people. There would be *no impact*.

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5.14 Public Services

5.14.1 Background

The proposed project is the implementation of creek widening and restoration activities. There are no structures on the project site and implementation of the proposed project would not include the construction of any habitable structures.

5.14.2 Environmental Checklist and Discussion

PUBLIC SERVICES Would the project…	Potentially Significant Impact	Less than Significant with Mitigation	Less than Significant Impact	No Impact
a) Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:				
i) Fire protection?	☐	☐	☐	☑
ii) Police protection?	☐	☐	☐	☑
iii) Schools?	☐	☐	☐	☑
iv) Parks?	☐	☐	☐	☑
v) Other public facilities?	☐	☐	☐	☑

DISCUSSION:

Project

a.i. Fire protection services in the project vicinity are provided by the East Contra Costa Fire Protection District (ECCFPD). Implementation of the proposed project would not increase population growth in the area, and thus would not affect the ECCFPD services or response time.

The project site is located in a Non-Very High Fire Hazard Severity Zone area and is designated as a Local Responsibility Area.[15] Implementation of the proposed project would not result in the construction of structures on the project site or increase the site's overall fire hazard severity.

[15] CalFire Contra Costa County Fire Hazard Severity Zone Map, Local Responsibility Area, http://frap.fire.ca.gov/webdata/maps/contra_costa/fhszl_map.7.pdf, accessed June 1, 2016.

Therefore, implementation of the proposed project would have *no impact* on fire protection services.

a.ii.-v. Implementation of the proposed project would not indirectly or directly increase the population. Police services are provided by the City of Brentwood Police Department. Channel widening and restoration activities would not impact existing police services or response time. Further, implementation of the proposed project would not increase the need for school or park facilities, or other facilities such as public libraries. There would be *no impact*.

5.15 Recreation

5.15.1 Background

The project site is located along Marsh Creek and there are no structures on the project site. Sungold Park is located adjacent to the west of the Lower Reach. Additionally, a vacant City-owned parcel is located on the east side of the Upper Reach just south of Central Boulevard. There is a vacant strip of land to the west between the creek and Central Boulevard owned by the District and City of Brentwood.

5.15.2 Environmental Checklist and Discussion

RECREATION Would the project…	Potentially Significant Impact	Less than Significant with Mitigation	Less than Significant Impact	No Impact
a) Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?	☐	☐	☐	☑
b) Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?	☐	☐	☐	☑

DISCUSSION:

a., b. Due to the nature of the proposed project, its implementation would not induce population growth that would increase demand for recreational facilities. There would be no deterioration of recreational facilities (including the project site) due to implementation of the restoration activities, rather the creek restoration activities would improve the overall condition of the creek. The Marsh Creek Trail would be relocated as part of the proposed project in the Middle and Upper Reaches. The Pulte developer would relocate the trail section in the Lower Reach. The trail would be in the same general alignment and would be depressed in the area of Central Boulevard to pass under the roadway. The proposed project would enhance opportunities for strolling, hiking, and biking along Marsh Creek. Furthermore, the lower 1,600 feet of the project would be integrated into a new linear city park, which would provide passive recreation amenities and native landscaping consistent with creek restoration. There would be *no impact*.

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5.16 Transportation and Traffic

5.16.1 Background

Local access to the creek section is provided from the south via Central Boulevard and from the north via O'Hara Avenue and Sand Creek Road. SR-4 is located approximately 2.2 miles west of the project site and provides regional access to the project site.

5.16.3 Environmental Checklist and Discussion

TRANSPORTATION & TRAFFIC Would the project…	Potentially Significant Impact	Less than Significant with Mitigation	Less than Significant Impact	No Impact
a) Conflict with an applicable plan, ordinance, or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit?	☐	☐	☑	☐
b) Conflict with an applicable congestion management program, including, but not limited to level of service standards established by the county congestion management agency for designated roads and highways?	☐	☐	☑	☐
c) Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks?	☐	☐	☐	☑
d) Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	☐	☐	☐	☑
e) Result in inadequate emergency access?	☐	☐	☐	☑
f) Conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities?	☐	☐	☐	☑

DISCUSSION:

a., b. Implementation of the proposed project would not induce population growth on the project site or in its vicinity such that new vehicle trips would be generated. In addition, the proposed project

would not construct any new roads or infrastructure that could support future development. However, creek widening and restoration activities such as off-hauling of excavated fill material would require the use of construction haul trucks and would temporarily increase the number of vehicles accessing the project site. Construction vehicles would access the project site via local roadways and existing maintenance roads or the regional trail along the creek. However, construction activities on the Upper and Middle Reaches would involve no more than 2 weeks for each reach, and the Lower Reach work would at most involve up to 30 days. Due to the small scale and short duration of the project, project construction would not generate a large number of vehicle trips. Once construction is completed, the creek section will continue to be maintained by the District, thereby not increasing vehicle trips for maintenance. In the first few years of project operation, monitoring of the restoration efforts would add a small number of vehicle trips to the project site. In addition, due to restoration of riparian vegetation along the creek banks and trail improvements, the project would improve the experience of the trail users as well as provide areas where trail users can stop in shade and enjoy the beauty of the creek. This may result in an increase in visitors to the creek and a resultant increase in vehicular traffic to parking facilities near Marsh Creek. However this increase would not be substantial compared to existing conditions. Therefore, the project would not conflict with applicable transportation plans, congestion management program, policies, or ordinances or result in congestion on Central Boulevard, O'Hara Avenue, Sand Creek Road, or SR-4. The impact would be *less than significant.*

c. Implementation of the proposed project would not result in the construction of permanent structures and would have no effect on air traffic patterns and existing air traffic safety. There would be *no impact.*

d.-f. Implementation of the proposed project would not result in the construction of roads or infrastructure. As mentioned in **Section 2.4.6** above, the proposed project would route the regional trail under an existing road bridge thereby eliminating two dangerous intersections where the existing trail crosses busy roadways (Dainty Avenue and Central Boulevard). The proposed project would reduce the gradient of the steep slope between the creek and the trail and provide a new foot trail and a new pedestrian bridge that would allow additional access for people to cross the creek within the Middle Reach. Therefore the proposed project would improve pedestrian walkability and there would be *no impact.*

The proposed project would not adversely impact the nearby roadways. All creek restoration activities would take place on the project site. Emergency access to nearby residences as well as public transit, bicycle, and pedestrian facilities would not be impeded by implementation of the proposed project. There would be *no impact.*

5.17 Utilities and Service Systems

5.17.1 Background

There are no existing buildings on the project site. A City of Brentwood sewer main is located on the west side of the Upper Reach. For most of the length, the sewer is within the Central Boulevard right of way. However, a portion of this sewer is located within one of the District's parcels where flood control improvements would be constructed. The sewer line is over 15 feet deep, at least 4 feet below the flow line of the creek. However, the sewer line is below the maximum depth of excavation and would not be relocated.

Near Sand Creek confluence in the Middle and Lower Reach, the sewer main crosses under the creek and continues north along the east bank of the Lower Reach. In the Lower Reach, the sewer line is located within the area that would be excavated to create the easterly floodplain.

5.17.2 Environmental Checklist and Discussion

UTILITIES & SERVICE SYSTEMS Would the project…	Potentially Significant Impact	Less than Significant with Mitigation	Less than Significant Impact	No Impact
a) Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?	☐	☐	☐	☑
b) Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	☐	☐	☐	☑
c) Require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	☐	☐	☐	☑
d) Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?	☐	☐	☐	☑
e) Result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the providers existing commitments?	☐	☐	☐	☑
f) Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?	☐	☐	☐	☑

g) Comply with federal, state, and local statutes and regulations related to solid waste?	☐	☐	☐	☑

DISCUSSION:

a., e. Implementation of the proposed project would not generate any wastewater. Therefore, implementation of the proposed project would not result in any exceedances of any wastewater requirements. There would be *no impact.*

b. The proposed project would not increase demand for water or generate wastewater. 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 construction sites. Reintroduced native vegetation and proposed trees may require irrigation for the first few years. Irrigation practices may include the use of Dri-Water time release gel packs and if necessary, piped water, which would be available from adjacent subdivisions and city parks. Upon successful establishment, the new vegetation and trees would rely upon precipitation, storm water runoff from the surrounding areas, and creek inundation. Implementation of the proposed project would not require irrigated water or generate wastewater. Therefore, the proposed project would not require the expansion of existing water or wastewater facilities or construction of a new water or wastewater facility. There would be *no impact.*

With respect to the sewer line in the project area, the proposed project would not relocate the sewer line. In the Lower Reach, minor modifications to sewer manholes may be required to accommodate changes in ground elevation. In all cases, grading would be performed around manholes so that potential spills from manholes would initially drain away from Marsh Creek.

c. Implementation of the proposed project would not increase impervious surfaces on the project site that would generate additional storm water. The existing Marsh Creek Trail is paved. While that pavement will be removed, the same amount of pavement would be placed to create the relocated trail. Additionally, pervious pavement is being considered for use on the relocated trail and if utilized would reduce runoff. Therefore, there would be *no impact* related to construction of new storm water facilities to handle project runoff.

d. Implementation of the project activities would not require potable water. There would be *no impact* to existing water supplies.

f., g. The proposed project would not create any additional solid waste. There would be *no impact* to solid waste facilities or regulations relating to solid waste.

5.18 Mandatory Findings of Significance

MANDATORY FINDINGS OF SIGNIFICANCE Would the project…	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?	☐	☑	☐	☐
b) Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects)?	☐	☐	☑	☐
c) Does the project have environmental effects that will cause substantial adverse effects on human beings, either directly or indirectly?	☐	☐	☑	☐

DISCUSSION:

a. Please refer to responses under Biological Resources items (a) through (f), and Cultural Resources items (a) through (e), above. Future development on the project site would not significantly affect fish or wildlife habitat, nor would it eliminate examples of California history or prehistory. With the implementation of **Mitigation Measures BIO-1** through **BIO-4** and **Mitigation Measures CUL-1** and **CUL-2**, identified above in this Initial Study, all impacts would be reduced to a less than significant level and the proposed project would not degrade the quality of the environment. Impacts under this criterion would be *less than significant*.

b. Implementation of the proposed restoration project would not result in cumulative impacts. Creek restoration activities would manage flows, restore native vegetation, improve water quality within Marsh Creek, and improve walkability of the existing Marsh Creek Trail. No structures are proposed for the project and creek restoration activities would not directly or indirectly induce population growth. Therefore *less than significant* cumulative impacts from the proposed project have been identified.

c. The proposed project would not directly or indirectly cause substantial adverse effects on human beings. Air emissions and noise from construction activities would be the only impacts through which the proposed project could have an effect on human beings; however, all construction-

related air quality and noise impacts would be mitigated to less than significant levels by implementation of **Mitigation Measures AIR-1, AIR-2,** and **Mitigation Measure NOISE-1** and would therefore avoid causing substantial adverse effects on human beings. Further, compliance with **Mitigation Measure GEO-1** would ensure a stabilized design for a flood conveyance zone. For all other resource areas, the proposed project would either have *less than significant* impacts, or, impacts that would not affect human beings.

6. REFERENCES

CalFire. 2009. Contra Costa County Fire Hazard Severity Zone Map, Local Responsibility Area. http://frap.fire.ca.gov/webdata/maps/contra_costa/fhszl_map.7.pdf. Accessed May 25, 2016.

California Department of Conservation Farmland Mapping and Monitoring Program. 2014. Contra Costa County ftp://ftp.consrv.ca.gov/pub/dlrp/FMMP/pdf/2014/con14.pdf.

California Department of Conservation. 2014. The Land Conservation Act Maps. http://www.conservation.ca.gov/dlrp/lca/Pages/Index.aspx

City of Brentwood. 2014a. City of Brentwood General Plan 2020 Draft EIR. April.

City of Brentwood. 2014b. Palmilla Initial Study/Mitigated Negative Declaration Prepared by Raney Planning & Management. March.

ENGEO. 2015. Geotechnical Exploration Three Creeks Parkway Restoration Project, Brentwood. May 15.

Federal Emergency Management Agency (FEMA). 2016. National Flood Hazard ArcGIS Layer, Accessed May 25, 2016.

Governor's Office of Planning and Research (OPR). Technical Advisory- CEQA and Climate Change: Addressing Climate Change through California Environmental Quality Act (CEQA) Review, June 19, 2008. http://opr.ca.gov/docs/june08-ceqa.pdf. Accessed May 30, 2016.

Intergovernmental Panel on Climate Change (IPCC). 2007. Climate Change 2007: The Physical Science Basis, Summary for Policymakers. https://www.ipcc.ch/pdf/assessment-report/ar4/wg1/ar4-wg1-spm.pdf. Accessed May 30, 2016.

Impact Sciences, Inc. 2016. CalEEmod Emissions Modeling for the Three Creeks Parkway Restoration Project. June.

USEPA. 2014. Causes of Climate Change. http://www.epa.gov/climatechange/science/causes.html. March 18. Accessed May 30, 2016.

Wood Biological Consulting. 2016. Biological Resource Assessment for the Three Creeks Restoration Project at Marsh Creek. February 9, as revised June 9.

WSA. 2016. Cultural Resources Assessment Report Three Creeks Parkway Restoration Project, Brentwood. May.

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MITIGATION MONITORING AND REPORTING PROGRAM

The California Environmental Quality Act (CEQA) requires that a Lead Agency establish a program to monitor and report on mitigation measures adopted as part of the environmental review process to avoid or reduce the severity and magnitude of potentially significant environmental impacts associated with project implementation. CEQA (Public Resources Code Section 21081.6 (a) (1)) requires that a Mitigation Monitoring and Reporting Program (MMRP) be adopted at the time that the public agency determines to approve a project for which an EIR or a Negative Declaration (ND) has been prepared, to ensure that mitigation measures identified in the EIR or ND are fully implemented.

The MMRP for the Three Creeks Parkway Restoration project is presented in **Table 4.0-1, Mitigation and Monitoring Reporting Program**. **Table 4.0-1** includes the full text of project-specific mitigation measures identified in the Initial Study/Mitigated Negative Declaration. The MMRP describes implementation and monitoring procedures, responsibilities, and timing for each mitigation measure, including:

Number: Identifies the number of the mitigation measure.

Mitigation Measure: Provides full text of the mitigation measure as provided in the final Initial Study/Mitigated Negative Declaration.

Monitoring/Reporting Action(s): Designates responsibility for implementation of the mitigation measure and when appropriate, summarizes the steps to be taken to implement the measure.

Mitigation Timing: Identifies the stage of the project during which the mitigation action will be taken.

Monitoring Schedule: Specifies procedures for documenting and reporting mitigation implementation.

The Contra Cost County Flood Control and Water Conservation District and American Rivers may modify the means by which a mitigation measure will be implemented, as long as the alternative means ensure compliance during project implementation. The responsibilities of mitigation implementation, monitoring, and reporting extend to several district departments and offices. The manager or department lead of the identified unit or department will be directly responsible for ensuring the responsible party complies with the mitigation. The Contra Costa County Flood Control and Water Conservation District is responsible for the overall administration of the program and for assisting relevant departments and project managers in their oversight and reporting responsibilities. The Contra Costa County Flood Control and Water Conservation District is also responsible for ensuring the relevant parties understand their charge and complete the required procedures accurately and on schedule.

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Table 1
Mitigation Monitoring and Reporting Program

Number	Mitigation Measure	Monitoring/Reporting Action(s)	Mitigation Timing	Monitoring Schedule
AIR QUALITY				
AIR-1:	The construction contractor(s) shall implement the following BMPs during project construction: • All exposed surfaces (e.g., parking areas, staging areas, soil stockpiles, graded areas, and unpaved access roads) shall be watered two times per day. • All haul trucks transporting soil, sand, or other loose material off-site shall be covered. • 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. • All vehicle speeds on unpaved roads shall be limited to 15 mph. • All roadways, driveways, and sidewalks to be paved shall be completed as soon as possible and feasible. • Idling times shall be minimized either by shutting equipment off when not in use or reducing the maximum idling time to five minutes (as required by the California airborne toxics control measure Title 13, Section 2485 of California Code of Regulations [CCR]). Clear signage shall be provided for construction workers at all access points. • All construction equipment shall be maintained and properly tuned in accordance with manufacturer's specifications. All equipment shall be checked by a certified mechanic and determined to be	Contra Costa County Flood Control and Water Conservation District Include in construction contract(s)	Monitor compliance during construction	Confirm and document during construction

Number	Mitigation Measure	Monitoring/Reporting Action(s)	Mitigation Timing	Monitoring Schedule
	running in proper condition prior to operation. • Post a publicly visible sign with the telephone number and person to contact at the Lead Agency regarding dust complaints. This person shall respond and take corrective action within 48 hours. The Air District's phone number shall also be visible to ensure compliance with applicable regulations.			
AIR-2:	All diesel-powered off-road equipment larger than 50 horsepower and operating on the site for more than two days continuously during the duration of construction shall, at a minimum, meet U.S. EPA emissions standards for Tier 2 engines or equivalent.	Contra Costa County Flood Control and Water Conservation District Include requirement in construction contract(s)	During construction	Confirm and document during construction
BIOLOGICAL RESOURCES				
BIO-1:	To avoid and minimize impacts to California red-legged frog, Pacific (Western) pond turtle, and silvery legless lizard during construction activities, the project will implement the following measures: **1.** Coverage under the HCP/NCCP. The project proponent shall apply for coverage under the HCP/NCCP. Participation in the HCP/NCCP, including implementation of appropriate avoidance and minimization measures and payment of applicable fees would provide the project proponent with incidental take coverage for California red-legged frog, Pacific (Western) pond turtle, and silvery legless lizard. **2.** Seasonal Avoidance. If required by the Streambed Alteration Agreement or Water Quality Certification, work shall be limited to the dry season, from April 15 to October 15. **3.** Minimize Nighttime Work. If required by the Streambed Alteration Agreement or Water Quality Certification, nighttime construction shall be restricted to avoid effects on nocturnally active species such as California red-legged frog.	Contra Costa County Flood Control and Water Conservation District File application, obtain HCP/NCCP coverage, and implement measures by including them in the construction contract(s)	Prior to start and during construction	Confirm and document during construction

Number	Mitigation Measure	Monitoring/Reporting Action(s)	Mitigation Timing	Monitoring Schedule
	4. Environmental Awareness Program. Prior to the commencement of construction activities, a qualified biologist shall present an environmental awareness program to all construction personnel working on site. At a minimum the training should include a description of special-status species that could be encountered, their habitats, regulatory status, protective measures, work boundaries, lines of communication, reporting requirements, and the implications of violations of applicable laws. **5.** Wildlife Exclusion Fencing. Prior to the start of construction, wildlife exclusion fencing (WEF) shall be installed as warranted and consistent with the HCP/NCCP to isolate the work area from any habitats potentially supporting special-status animals or through which such species may move. The final project plans shall indicate where and how the WEF is to be installed. The bid solicitation package special provisions shall provide further instructions to the contractor about acceptable fencing locations and materials. The fencing shall remain throughout the duration of the work activities, be regularly inspected and properly maintained by the contractor. Fencing and stakes shall be completely removed following project completion. **6.** Best Management Practices (BMPs). Prior to the initiation of work, BMPs shall be in place to prevent the release of any pollutants or sediment into the creek, storm drains, or tributaries; all BMPs shall be properly maintained. Leaks, drips, and spills of hydraulic fluid, oil, or fuel from construction equipment shall be promptly cleaned up to prevent contamination of water ways. All workers shall be properly trained regarding the importance of preventing and cleaning up spills of contaminants. Protective measures should include, at a minimum: No discharge of pollutants from vehicle and equipment cleaning should be allowed into any storm drains or watercourses. a. Spill containment kits should be maintained onsite at all times during construction operations and/or			

Number	Mitigation Measure	Monitoring/Reporting Action(s)	Mitigation Timing	Monitoring Schedule
	staging or fueling of equipment. b. Coir rolls or straw wattles should be installed along or at the base of slopes during construction to capture sediment. **7.** Erosion Control. Graded areas shall be protected from erosion using a combination of silt fences, fiber rolls along toes of slopes or along edges of designated staging areas, and erosion control netting (such as jute or coir) as appropriate on sloped areas. **8.** Construction Site Restrictions. The following site restrictions shall be implemented to avoid adversely affecting sensitive habitats and harm or harassment to listed species: a. Any fill material shall be certified to be non-toxic and weed free. b. All food and food-related trash items shall be enclosed in sealed trash containers and removed completely from the site at the end of each day. c. No pets from project personnel shall be allowed anywhere in the project site during construction. d. No firearms shall be allowed on the project site except for those carried by authorized security personnel, or local, State or Federal law enforcement officials. e. All equipment shall be maintained such that there are no leaks of automotive fluids such as gasoline, oils or solvents and a Spill Response Plan shall be prepared. Hazardous materials such as fuels, oils, solvents, etc. shall be stored in sealable containers in a designated location that is isolated from wetlands and aquatic habitats. f. Servicing of vehicles and construction equipment including fueling, cleaning, and maintenance should occur only at sites isolated from any aquatic habitat			

Number	Mitigation Measure	Monitoring/Reporting Action(s)	Mitigation Timing	Monitoring Schedule
	unless separated by topographic or drainage barrier or unless it is an already existing gas station. Staging areas may occur closer to the project activities as required. **9.** Proper Use of Erosion Control Devices. Plastic mono-filament netting (e.g., that used with erosion control matting) or similar material shall not be used within the project area; wildlife can become entangled or trapped in such non-biodegradable materials. Acceptable substitutes include coconut coir matting, tackified hydroseeding, blown straw, or other organic mulching material. **10.** Protocol for Species Observation – Pacific (Western) pond turtle and silvery legless lizard. If a Pacific (Western) pond turtle or silvery legless lizard is encountered in the project site, work in the area of the finding must cease immediately until the animal either moves out of harm's way of its own accord or is safely relocated well upstream or downstream of the project site. Only a qualified biologist with a scientific collection permit issued by the CDFW may handle and relocate Pacific (Western) pond turtle or silvery legless lizard. Any sightings and relocation of Pacific (Western) pond turtle and silvery legless lizard should be reported to the CDFW and the CNDDB.			
BIO-2:	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 preconstruction survey of the aquatic environment	Contra Costa County Flood Control and Water Conservation District Retain qualified biologist to implement the measures.	Prior to start and during construction	Confirm and document during construction

Number	Mitigation Measure	Monitoring/Reporting Action(s)	Mitigation Timing	Monitoring Schedule
	shall be performed by a qualified biologist. b. A qualified biologist shall present an environmental awareness program working on site. c. A qualified biologist should monitor all in-stream activities. d. If dewatering is proposed, a qualified biologist should 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. e. Native species (non-special-status fish species) should be relocated upstream or downstream of the cofferdams by a permitted biologist. 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 conformance with ESA.			
BIO-3:	In order to avoid impacts to nesting Swainson's hawk, white-tailed kite, burrowing owl, loggerhead shrike, and other bird species protected under the MBTA and CFGC during project implementation, the measures outlined below shall be implemented. **1.** Environmental Awareness Program. Prior to the commencement of construction activities, a qualified biologist shall present an environmental awareness program to all construction personnel working on site. At a minimum the training shall include a description of special-status species that could be encountered, their habitats, regulatory status,	Contra Costa County Flood Control and Water Conservation District Retain qualified biologist to implement the measures.	Prior to start and during construction	Confirm and document during construction

Number	Mitigation Measure	Monitoring/Reporting Action(s)	Mitigation Timing	Monitoring Schedule
	protective measures, work boundaries, lines of communication, reporting requirements, and the implications of violations of applicable laws. **2.** Swainson's hawk is a federally listed threatened species and is covered under the HCP/NCCP. Nonetheless, every effort should be made to ensure that no take of Swainson's hawk occurs. Therefore, the measures outlined below should be implemented. a. The project proponent should apply for coverage under the HCP/NCCP. Participation in the HCP/NCCP would provide the applicant with incidental take coverage for Swainson's hawk and satisfy any requirements for mitigation for loss of habitat. b. Prior to any ground disturbance during the nesting season (March 15-September 15), a qualified biologist shall conduct a preconstruction survey no more than one month prior to construction to determine if there are any active Swainson's hawk nests within 305 meters (1,000 feet) of the project site. c. If there are no occupied nests within this buffer, no further action is needed. d. If an active nest is present within this buffer, the measures outlined below shall be followed. • Construction activities are not permitted within 305 meters (1,000 feet) of an occupied nest to prevent nest abandonment. However, if site-specific conditions or the nature of the activity warrant a small buffer, a qualified biologist should coordinate with CDFW and USFWS to determine the appropriate buffer size. • Construction activities may proceed prior to			

Number	Mitigation Measure	Monitoring/Reporting Action(s)	Mitigation Timing	Monitoring Schedule
	September 15 if the young Swainson's hawks have fledged, as determined by a qualified biologist. **3.** White-tailed kite is a state-listed fully protected species; it is not covered under the HCP/NCCP and incidental take of the species is not allowed. To ensure that no take of white-tailed kite or other migratory raptors occurs, the measures outlined below shall be implemented. a. Prior to any ground disturbance during the nesting season (February 1-August 31), a qualified biologist shall conduct a preconstruction survey no more than two weeks prior to construction to determine if there are any active nests of white-tailed kite or other migratory raptors within 76 meters (250 feet) of the project site. b. Prior to the removal or significant pruning of any trees, they shall be inspected by a qualified biologist for the presence of raptor nests. This is required during both the breeding season and non-breeding season. If a suspected raptor nest is discovered, the CDFW shall be notified. Pursuant to CFGC Section 3503.5, raptor nests, whether or not they are occupied, may not be removed until approval is granted by the CDFW. c. If there are no occupied nests within this buffer, no further action is needed. d. If an active nest is present within this buffer, the measures outlined below shall be implemented. • Construction activities are not permitted within 76 meter (250 feet) of an occupied nest to prevent nest abandonment. However, if site-specific conditions or the nature of the activity warrant a small buffer, a qualified biologist should			

Number	Mitigation Measure	Monitoring/Reporting Action(s)	Mitigation Timing	Monitoring Schedule
	coordinate with the CDFW and/or USFWS to determine the appropriate buffer size. Nest monitoring may be warranted for activities that would occur within a smaller buffer. • Construction activities may proceed prior to August 31 if the young white-tailed kites or other raptor species have fledged, as determined by a qualified biologist. **4.** Burrowing owl is a State species of special concern and a covered species under the HCP/NCCP. To ensure that no take of burrowing owl occurs, the measures outlined below shall be implemented. a. Prior to any ground disturbance during the nesting season (February 1-August 31), a CDFW-approved biologist shall conduct a preconstruction survey of all suitable burrowing owl habitat that would be affected by the project. The survey shall be performed no more than 30 days prior to construction to determine if there are any active nests of burrowing owl within 153 m (500 ft) of the project site, access permitting. b. If there are no occupied nests within this buffer, no further action is needed. c. If an active nest is present within this buffer, the measures outlined below shall be implemented. • If an occupied burrowing owl nest site is present within the limits of work, construction may not proceed. The taking of burrowing owls or occupied nests is prohibited under CFGC. Nest sites must be flagged and protected by a designated disturbance-free buffer zone of at least 76 meters (250 feet). • Construction activities are not permitted within			

Number	Mitigation Measure	Monitoring/Reporting Action(s)	Mitigation Timing	Monitoring Schedule
	76 meters (250 feet) of an occupied nest to prevent nest abandonment. • Construction may proceed if a qualified biologist monitors the nest and determines that the adults have not begun egg-laying and incubation or that the juveniles have fledged. • Burrowing owls may be passively excluded from occupied burrows outside of the breeding season (i.e., September 1-January 31), in consultation with the CDFW. All owls should be passively excluded from burrows within 49 meters (160 feet) of the work site. Passive exclusion is achieved by installing one-way doors in the burrow entrances. Doors should be in place for at least 48 hours and the site should be monitored daily for at least one week to confirm that the burrow has been abandoned. **5.** Loggerhead shrike is a state species of special concern; it is not covered under the HCP/NCCP and incidental take of the species is not allowed. To ensure that no take of loggerhead shrike or any other migratory passerines occurs, the measures outlined below shall be implemented. a. If ground-disturbing activities (i.e., site clearing, disking, grading, etc.) can be performed outside of the nesting season (i.e., between September 1 and January 31), no additional surveys are warranted. b. Prior to any ground disturbance during the nesting season (February 1-August 31), a qualified biologist should conduct a preconstruction survey no more than two weeks prior to construction to determine if there are any active nests of loggerhead shrike or any other migratory passerines nests within 30 meters (100 feet) of the project site.			

Number	Mitigation Measure	Monitoring/Reporting Action(s)	Mitigation Timing	Monitoring Schedule
	c. If there are no occupied nests within this buffer, no further action is needed. d. If an active nest is present within this buffer, the following measures shall be implemented. • Construction activities are not permitted within 30 meters (100 feet) of an occupied nest to prevent nest abandonment. However, if site-specific conditions or the nature of the activity warrant a smaller buffer, a qualified biologist should coordinate with the CDFW and USFWS to determine the appropriate buffer size. Nest monitoring may be warranted for activities that would occur within a smaller buffer. • Construction activities may proceed prior to August 31 if the young birds have fledged, as determined by a qualified biologist.			
BIO-4:	In order to avoid, minimize and compensate for unavoidable impacts on waters of the U.S./waters of the State, the measures outlined below shall be implemented. 1. Impacts on waters of the U.S. will be avoided by restricting grading to an elevation above the OHWM; avoidance of impacts to waters of the State is not feasible. Long-term impacts shall be minimized by limiting the use of hardened structures (e.g., grouted riprap) in preference of bio-engineering solutions as much as is practicable. Surface water connections must not be permanently blocked or interrupted and the installation of drop-structures or other features that create barriers to wildlife movement shall be avoided. 2. Prior to construction, the project proponent will need to secure authorization from the USACE, RWQCB, and CDFW in conformance to the Clean Water Act and Lake and Streambed Alteration Program.	Contra Costa County Flood Control and Water Conservation District Obtain permits; obtain coverage under HCP/NCCP; include BMPs in construction contract (s)	Prior to start and during construction	Confirm and document during construction

Number	Mitigation Measure	Monitoring/Reporting Action(s)	Mitigation Timing	Monitoring Schedule
	3. Participation in the HCP/NCCP is expected to satisfy the requirements of the regulatory agencies for compensatory mitigation for unavoidable impacts on stream channels, wetlands and riparian habitat. A Planning Survey Report shall be completed and submitted to the East Contra Costa County Habitat Conservancy. The submittal shall include detailed drawings illustrating all temporary and permanent impacts. 4. Per the terms of the adopted HCP/NCCP, a wetland mitigation fee or on-site habitat restoration will mitigate the impacts. If accepted by the regulatory agencies, no additional mitigation for wetland impacts is typically required. HCP/NCCP fee payment will occur at project contract award. 5. For all work within and adjacent to the stream channel and riparian habitat, best management practices (BMPs) must be incorporated into the project design to minimize environmental effects. These include the following: • Construction in the active channels shall be restricted to the dry season (April 15-October 15). • Personnel conducting ground-disturbing activities within or adjacent to the buffer zone of wetlands, ponds, streams, or riparian woodland/scrub shall be trained by a qualified biologist in these avoidance and minimization measures and the permit obligations. • If dewatering is necessary, water released downstream of work areas must be as clean or cleaner than flows entering the work area. Sediment-laden water shall be either pumped onto upland sites for infiltration or into Baker tanks for settling, prior to being released back into the channel. Coffer dams shall consist of clean, silt-free sand or gravel in sand bags, or a comparable material. All coffer dam materials			

Number	Mitigation Measure	Monitoring/Reporting Action(s)	Mitigation Timing	Monitoring Schedule
	must be promptly removed when no longer needed. • High visibility temporary construction fencing should be erected between the outer edge of the limits of construction and adjacent streams or habitats to be preserved. Temporary construction fencing will be removed upon the completion of work. • Grading or construction near channels shall be isolated with silt fencing or other BMPs to prevent sedimentation. BMPs shall be regularly inspected. • Vehicles and equipment shall be parked on existing roads or previously disturbed areas. • Equipment working in channels must be in good working order and free of leaks of fuel, oil, and hydraulic fluids. Drip pans shall be placed under vehicles and equipment over waterways and spill clean-up materials should be kept onsite at a convenient location. • Equipment maintenance and refueling shall be performed well away from the top of bank of any channel; storm drain inlets shall be protected from an accidental release of contaminants. • Concrete washings or other contaminants must not be permitted to enter the stream channel or any storm drain inlet. • Any concrete structures or cured-in-place pipe linings shall be allowed to cure before coming in contact with surface flows. • Construction debris and materials shall be stockpiled away from watercourses.			

Number	Mitigation Measure	Monitoring/Reporting Action(s)	Mitigation Timing	Monitoring Schedule
	• Appropriate erosion-control measures (e.g., coconut coir matting, tackified hydroseeding, blown straw or other organic mulching material) shall be used on site to reduce siltation and runoff of contaminants into wetlands, ponds, streams, or riparian woodland/scrub. Plastic mono-filament netting (e.g., that used with erosion control matting) or similar material should not be used within the action area; wildlife can become entangled or trapped such non-biodegradable materials. Erosion-control measures shall be placed between the outer edge of the buffer and the project site. • Fiber rolls used for erosion control shall be certified as free of noxious weed seed. • Construction staging areas past the channel banks must be located away from any wetlands or other sensitive habitats as identified by a qualified biologist. • Newly graded earthen channel slopes shall be revegetated with a native seed mix developed by a qualified restorationist. Seed mixtures applied for erosion control shall not contain invasive nonnative species, and be composed of native species or sterile nonnative species. Straw or mulch shall also be applied to all bare surfaces. The seed mix and mulch shall be applied prior to the onset of the first winter-season rains. • Herbicide shall not be applied within 30 meters (100 feet) of wetlands, ponds, streams, or riparian habitat. However, where appropriate to control serious invasive plants, herbicides that have been approved by the U.S. EPA for use in or adjacent to aquatic habitats may be used as long as label			

Number	Mitigation Measure	Monitoring/Reporting Action(s)	Mitigation Timing	Monitoring Schedule
	instructions are followed and applications avoid or minimize impacts on covered species and their habitats. In seasonal or intermittent stream or wetland environments, appropriate herbicides may be applied during the dry season to control nonnative invasive species. Herbicide drift should be minimized by applying the herbicide as close to the target area as possible and by avoiding applying during windy days. • Additional measures may be outlined in the conditions of the permits issued by the USACE, RWQCB, CDFW, and the Habitat Conservancy. All permit conditions must be conformed to.			
CULTURAL RESOURCES				
CUL-1:	• Crew training, initial monitoring by a qualified archaeologist to determine an appropriate level of monitoring for the duration of the project, and additional spot checks pending the results of the initial monitoring shall be conducted prior to and during ground disturbing activities. • A qualified archaeologist shall be present on the project site to monitor ground disturbing activities and inspect excavated soils to identify any cultural resources and human remains as deemed appropriate by the qualified archaeologist. • All construction crew workers shall attend a training session led by a qualified archaeologist that discusses (1) the reasons for archaeological resource monitoring; (2) regulatory policies protecting resources and human remains; (3) basic identification of archaeological resources; and (4) the protocol to follow in case of a discovery of such resources. • In accordance with CEQA Guideline §15064.5 (f), should any previously unknown historic or prehistoric resources, including but	Contra Costa County Flood Control and Water Conservation District Retain qualified archaeologist to implement identified measures; also include in construction contract(s)	Prior to start and during construction	Confirm and document during construction

Number	Mitigation Measure	Monitoring/Reporting Action(s)	Mitigation Timing	Monitoring Schedule
	not limited to charcoal, obsidian or chert flakes, grinding bowls, shell fragments, bone, pockets of dark, friable soils, glass, metal, ceramics, wood, privies, trash deposits or similar debris, be discovered during ground disturbing activities, work within 25 feet of these materials should be stopped until a qualified professional archaeologist has an opportunity to evaluate the potential significance of the find and to consult with the lead agency about what appropriate mitigation would be appropriate to protect the resource. • In the event that human remains, or possible human remains, are encountered during project-related ground disturbance, in any location other than a dedicated cemetery, there shall be no further excavation or disturbance of the site or any nearby area reasonably suspected to overlie adjacent remains until the coroner of the county in which the human remains are discovered has determined, that the remains are not subject to the provisions of Section 27492 of the Government Code or any other related provisions of law concerning investigation of the circumstances, manner and cause of death, and the recommendations concerning treatment and disposition of the human remains have been made to the person responsible for the excavation, or to his or her authorized representative, in the manner provided in Section 5097.98 of the Public Resources Code. • The County Coroner, upon recognizing the remains as being of Native American origin, is responsible to contact the NAHC within 24 hours. The Commission has various powers and duties, including the appointment of a Most Likely Descendant (MLD) to the project. The MLD, or in lieu of the MLD, the NAHC, has the responsibility to provide guidance as to the ultimate disposition of any Native American remains.			
CUL-2:	Prior to project construction, construction personnel shall be informed of the potential for encountering significant paleontological resources. All construction personnel shall be informed of the need to stop work in the	Contra Costa County Flood Control and Water Conservation District	Prior to start of construction	Confirm and document during construction

Number	Mitigation Measure	Monitoring/Reporting Action(s)	Mitigation Timing	Monitoring Schedule
	vicinity of a potential discovery until a qualified paleontologist has been provided the opportunity to assess the significance of the find and implement appropriate measures to protect or scientifically remove the find. Construction personnel shall also be informed of the requirements that unauthorized collection resources are prohibited.	Include in construction contract(s)		
GEOLOGY AND SOILS				
GEO-1	The proposed project shall comply with all recommendations specified in Section 3.3 of the May 2015 Geotechnical Report prepared by ENGEO.	Contra Costa County Flood Control and Water Conservation District Follow recommendations of geotechnical report	During project design, prior to start of excavation, and during construction	Document compliance upon completion of construction
NOISE				
NOISE-1	The project contractor shall ensure that construction activities shall 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	Contra Costa County Flood Control and Water Conservation District Include in construction contract(s)	During construction	Document compliance during construction